

Joseph F. Horn

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Education

Ph.D. in Aerospace Engineering, Georgia Institute of Technology, June 1999.

M.S. in Mechanical and Aerospace Engineering, University of Virginia, August 1992.

B.S. in Aerospace Engineering, University of Virginia, May 1990.

Experience

Associate Professor, Penn State University, July 2006 to present.

- Teaching undergraduate and graduate level courses in system dynamics, aircraft stability and control, fundamentals of aeronautics, automatic controls, rotorcraft design, and rotorcraft stability and control.
- Current Research Programs (and corresponding sponsors):
 - Simulation Model Validation and Handling Qualities Analysis of the X-49A Compound Helicopter (U.S. Army, Piasecki Aircraft Corporation)
 - Flight Control Design for Rotorcraft with Variable Rotor Speed (U.S. Army / National Rotorcraft Technology Center)
 - Handling Qualities and Gust Alleviation Characteristics of Helicopters Using Active Rotors (U.S. Army / Center for Rotorcraft Innovation / Sikorsky Aircraft Corporation, The Boeing Company)
 - Control Design Methodologies for Improving Rotorcraft Gust Rejection with On-Blade Control (NASA Ames Research Center)
 - Innovative Rotorcraft Flight Control Systems Options to Enhance Shipboard Operations (U.S. Navy, Barron Associates Inc.)
 - Intelligent Control and Coordination of UAV (Penn State Applied Research Laboratory)

Associate Director of the Penn State Vertical Lift Research Center of Excellence, July 2006 to present.

- One of four key faculty members at Penn State who manage the VLRCOE (the Penn State VLRCOE is one of only two Vertical Lift Research Centers funded by the U.S. Army)
- The VLRCOE involves more than 25 faculty members and supports over 55 graduate students.

Assistant Professor, Penn State University, July 2000 to June 2006.

Senior Engineer, Sikorsky Aircraft Corporation, Electronic Flight Controls/Simulation, Handling Qualities Group, Stratford, CT. July 1999 to July 2000.

- Handling qualities, stability and control development on S-92 program.
- Handling qualities, simulation, and control law development on Cypher II UAV program.

Graduate Research Assistant, Georgia Tech., School of Aerospace, September 1996 to June 1999.

- Developed flight envelope limiting systems for the V-22 and XV-15 aircraft using neural network limit prediction and tactile cueing through an active center stick. Demonstrated envelope cueing system in piloted simulation at the Boeing Helicopters Flight Simulation Laboratory.

Project Engineer, Piasecki Aircraft Corporation, Essington, PA. August 1992 to August 1996.

- Flying Qualities and Simulation Specialist for the U.S. Army Vectored Thrust Combat Agility Demonstrator (VTCAD) Program. Conducted wind tunnel testing, developed simulation models and flight control laws. Conducted real-time flight simulation studies at the McDonnell-Douglas Helicopter Systems Full Mission Simulator, the NASA Ames Vertical Motion Simulator, and the Boeing Helicopters Flight Simulation Laboratory.
- Developed flight simulation code and control laws for the U.S. Navy SH-60F/VTDP (program later became the X-49A experimental compound helicopter)

Patents

- US Patent Number 7,438,259 Compound aircraft control system and method. Inventors: Frank N. Piasecki, Joseph F. Horn, Andrew S. Greenjack
- US Patent Number 6,332,105 Neural network based automatic limit prediction and avoidance system and method. Inventors: Anthony J. Calise, Joseph F. Horn, J.V.R. Prasad

Awards and Associations

- Technical Chair of the 68th American Helicopter Society (AHS) Annual Forum (2011-2012)
- Deputy Technical Chair of the 67th American Helicopter Society (AHS) Annual Forum (2010-2011)

- Associate Editor of the Journal of the American Helicopter Society, 2010 - Present
- AHS Handling Qualities Technical Committee, 2004- Present, Chair 2009-2010
- Associate Fellow of the American Institute Aeronautics and Astronautics (AIAA)
- 2006 Georgia Institute of Technology Council of Outstanding Young Engineering Alumni
- 2003 American Helicopter Society Award for Best Paper in Flight Simulation
- 1998 Robert L. Lichten Award from the American Helicopter Society (AHS)

Graduated Students

Eric Schmidt, MS in Electrical Engineering, 2010, Currently Research Scientist, Numerica Corporation.

Gurbuz Ozdemir, MS, 2009, Currently a PhD student under advisement of Dr Horn at Penn State.

Thanan Yomchinda, MS, 2009, Currently a PhD student under advisement of Dr Horn at Penn State.

Brian Geiger, PhD, 2009, MS 2006. Currently a senior engineer in charge of unmanned systems with Piasecki Aircraft Corporation, Essington PA.

Wei Guo, PhD, 2009. Currently with Appareo Systems LLC, Fargo ND.

Eric Tobias, MS 2008. Currently a contractor with U.S. Army Aeroflightdynamics Directorate (AFDD) at NASA Ames research center, Moffett Field CA.

Sade Sparbanie, MS 2008. Currently with Sikorsky Aircraft Corporation, Stratford CT.

Nilesh Sahani, MS 2002, PhD 2005. Currently with Bell Helicopter Textron, Fort Worth TX.

Dooyong Lee, PhD 2005. Currently with Advanced Rotorcraft Technologies (ART), Mountain View CA.

Devendra Tolani, PhD 2005. Currently a Senior Research Scientist with Intelligent Automation, Inc., Rockville MD.

Derek Bridges, MS 2005. Currently with LIGO laboratory, Baton Rouge, LA.

Matthew Swartzwelder, MS 2003. Currently an officer with U.S. Navy and a Naval Test Pilot, Patuxent River Naval Air Station MD.

Recent Invited Lectures

1. *Modeling and Simulation to Predict Pilot Workload of Ship-Based Rotorcraft*. Presented to the U.S. Naval Air Warfare Center Workshop on Aerodynamic Modeling and Simulation in Support of Ship-Aircraft Integration, California, Maryland, September 15, 2009.
2. *Methods for Rotorcraft Flight Dynamics Modeling, Identification, and Control*. A short course and workshop presented to Centro Italiano Ricerche Aereospaziali (CIRA), Capua, Italy, September 18-23, 2008.
3. *Modeling and Alleviation of Airwake Disturbances on Rotorcraft in Shipboard Operations*, An invited lecture to the SAE/IEEE Aerospace Guidance and Control Systems Committee Meeting, Salt Lake City, Utah, March 6, 2008
4. *Recent Research on Flight Dynamics, Simulation and Control at the Pennsylvania State University*, A series of lectures presented to the Nanjing University of Aeronautics and Astronautics, Nanjing, China, October 8-11, 2007.
5. *Advanced Modeling and Control Design for Helicopter Shipboard Operations*, An invited presentation to the HeliJapan conference, Nagoya, Japan, November 16, 2006.

Publications in Archival Journals

1. Horn, J.F., Schmidt, E.M., Geiger, B.R., and Deangelo, M.P., "Neural Network Based Trajectory Optimization for Unmanned Aerial," *AIAA Journal of Guidance, Control, and Dynamics*. In press 2011.
2. Geiger, B.R., Horn, J.F., Sinsley, G.L., Ross, J.A., and Long, L.N., "Flight Testing a Real Time Implementation of a UAV Path Planner Using Direct Collocation," *AIAA Journal of Guidance, Control, and Dynamics*, Vol. 31, (6), November-December 2008, pp.1575-1586.
3. Yasar, M., Ray, A., and Horn, J.F., "A Comprehensive Control Strategy for Integrated Flight/Propulsion Systems," *Journal of Aerospace Engineering – Proceedings of the Institute of Mechanical Engineers Part G*, Vol. 222, (6), June 2008, pp. 843-859.
4. Miller, J.A., Minear, P.D., Neissner, A.F., DeLullo, A.M., Geiger, B.R., Long, L.N., and Horn, J.F., "Intelligent Unmanned Air Vehicle Flight Systems," *AIAA Journal of Computing, Information, and Communications*, Vol. 4, May 2007.
5. Sahani, N. A., Horn, J. F., Jeram, G. J., and Prasad, J. V. R., "A Hub Moment Limit Protection System Using Neural Network Prediction," *Journal of the American Helicopter Society*, Vol. 51, (4), October 2006, pp. 331-340.
6. Sahasrabudhe, V., Horn, J.F., Sahani, N., Faynberg, A., and Spaulding, R. "Simulation Investigation of a Comprehensive Collective-Axis Tactile Cueing System." *Journal of the American Helicopter Society*, Vol. 51, (3), July 2006, pp. 215-224.
7. Tolani, D.K., Ray, A., and Horn, J.F., "Integrated decision and control of human-engineered complex systems," *International Journal of General Systems*, Vol. 35, (3), June 2006.
8. Horn, J.F., Bridges, D.O., Wachspress, D.A, and Rani, S.L., "Implementation of a Free-Vortex Wake Model in Real-Time Simulation of Rotorcraft," *AIAA Journal of Computing, Information, and Communications*, Vol. 3, (3), March 2006.

9. Chen, H.N., Brentner, K.S., Lopes, L.V., and Horn, J.F., "An Initial Analysis of Transient Noise in Rotorcraft Maneuver Flight." *International Journal of Aeroacoustics*, Vol. 5, (2), April 2006.
10. Sahani, N. and Horn, J.F., "Adaptive Model Inversion Control of a Helicopter with Structural Load Limiting." *AIAA Journal of Guidance, Control, and Dynamics*, Vol. 29, (2), March-April 2006.
11. Lee, D. and Horn, J.F., "Simulation of Pilot Workload for a Helicopter Operating in a Turbulent Ship Airwake." *Journal of Aerospace Engineering – Proceedings of the Institute of Mechanical Engineers Part G*, Special issue on shipborne aviation, Vol. 219, (G5), October 2005, pp. 445-458.
12. Horn, J.F., Tolani, D.K., Lagoa, C.M., Wang, Q., and Ray, A., "Reliable Operation of Rotorcraft Using Probabilistic Robust Control." *IFAC Control Engineering Practice*, Vol. 12, (8), August 2005, pp. 1037-1046.
13. Horn, J.F., Bridges, D.O., Lopes, L.V., and Brentner, K.S., "Development of a Low-Cost Multi-Disciplinary Rotorcraft Simulation Facility." *AIAA Journal of Computing, Information, and Communications*, Vol. 2, (7), July 2005, pp.267-284.
14. Lee, D., Sezer-Uzol, N., Horn, J.F., and Long, L.N., "Simulation of Pilot Control Activity During Helicopter Shipboard Operations," *AIAA Journal of Aircraft*, Vol. 42, (2), March-April 2005, pp.448-461.
15. Brentner, K.S., Lopes, L.V., Chen, H.N., and Horn, J.F., "Near Real-Time Simulation of Rotorcraft Acoustics and Flight Dynamics," *AIAA Journal of Aircraft*, Vol. 42, (2), March-April 2005, pp. 347-355.
16. Sahani, N. and Horn, J.F., "Neural Network Based Algorithms for Comprehensive Collective Axis Limit Avoidance on Rotorcraft," *AIAA Journal of Computing, Information, and Communications*, Vol. 1, (11), November 2004, pp.432-451.
17. Horn, J.F. and Sahani, N., "Detection and Avoidance of Main Rotor Hub Moment Limits on Rotorcraft," *AIAA Journal of Aircraft*, Vol. 41, (2), March-April 2004, pp.372-379.
18. Horn, J.F., Calise, A.J., and Prasad, J.V.R., "Flight Envelope Limit Detection and Avoidance for Rotorcraft," *Journal of the American Helicopter Society*, Vol. 47, (4), October 2002, pp. 253-262.
19. Horn, J.F., Calise, A.J., and Prasad, J.V.R., "Flight Envelope Cueing on a Tilt-Rotor Aircraft Using Neural Network Limit Prediction," *Journal of the American Helicopter Society*, Vol. 46, (1), January 2001, pp. 23-31.

Publications in Conference Proceedings

1. Cooper, J.C., Horn, J.F., Schierman, J., Yomchinda, T. and O'Neill, E.P., "Handling Qualities Evaluation of an Adaptive Disturbance Compensation System for Ship-based Rotorcraft," Proceedings of the American Helicopter Society 67th Annual Forum, Virginia Beach, VA, May 3-5, 2011.
2. Keller, J.D., McKillip, R.M, Horn, J.F., and Yomchinda, T. "Active Flight Control and Appliqué Inceptor Concepts for Autorotation Performance Enhancement," Proceedings of the American Helicopter Society 67th Annual Forum, Virginia Beach, VA, May 3-5, 2011.
3. Geiger, B.R., Piasecki, F.W., Horn, J.F., Schifferle, P., and Lotterio, M., "Challenges of Flight Control in a Compound Helicopter," Proceedings of the International Powered Lift Conference, Philadelphia, PA, October 5-7, 2010.
4. Schmidt, E.M., Horn, J.F., Geiger, B.R., "Use of Neural Network Approximation for Trajectory Optimization of Unmanned Aerial Vehicles with Gimballed Cameras," Proceedings of the AIAA Guidance, Navigation, and Control Conference, Toronto, Canada, August 2-5, 2010.
5. Cooper, J.C., Schierman, J., and Horn, J.F., "Robust Adaptive Disturbance Compensation for Ship-based Rotorcraft," Proceedings of the AIAA Guidance, Navigation, and Control Conference, Toronto, Canada, August 2-5, 2010.
6. Horn, J.F., Guo, W., and Ozdemir, G.T., "Use of Rotor State Feedback to Improve Closed Loop Stability and Handling Qualities," Proceedings of the American Helicopter Society 66th Annual Forum, Phoenix, AZ, May 11-13, 2010.
7. Yomchinda, T. and Horn, J.F. "Handling Qualities Assessment of a Model Inversion Controller for a Tiltrotor Aircraft," Proceedings of the 3rd International Basic Research Conference on Rotorcraft Technology, Nanjing, China, October 14-16, 2009.
8. Horn, J.F., Guo, W., and Ozdemir, G. "Implementation of Variable RPM in Helicopter Flight Control Laws," Proceedings of the 3rd International Basic Research Conference on Rotorcraft Technology, Nanjing, China, October 14-16, 2009.
9. Geiger, B.R., Schmidt, E.M, and Horn, J.F., "Use of Neural Network Approximation in Multiple-Unmanned Aerial Vehicle Trajectory Optimization" Proceedings of the AIAA Guidance, Navigation, and Control Conference, Chicago, IL, August 10-13, 2009.
10. Ozdemir, G.T., and Horn, J.F. "Control of Ducted Fan Aircraft using Redundant Effectors," Proceedings of the AIAA Atmospheric Flight Mechanics Conference, Chicago, IL, August 10-13, 2009.
11. Guo, Wei and Horn, J.F., "Rotor State Feedback Control for Rotorcraft with Variable Rotor Speed," Proceedings of the AIAA Guidance, Navigation, and Control Conference, Chicago, IL, August 10-13, 2009.
12. Yomchinda, T., and Horn, J.F. "Integrated Flight Control Design and Handling Qualities Analysis for a Tilt Rotor Aircraft," Proceedings of the AIAA Atmospheric Flight Mechanics Conference, Chicago, IL, August 10-13, 2009.

13. Guo, Wei and Horn, J.F., "Helicopter Flight Control with Variable Rotor Speed and Torque Limiting," Proceedings of the American Helicopter Society 65th Annual Forum, Grapevine, Texas, May 27-29, 2009.
14. Horn, J.F., Sparbanie, S.M., Cooper J., and Schierman, J., "On-Line Identification of Ship Airwake Disturbances on Rotorcraft," Proceedings of the American Helicopter Society 65th Annual Forum, Grapevine, Texas, May 27-29, 2009.
15. Horn, J.F., Sparbanie, S.M., Geiger, D.H., and Sahasrabudhe, V. "A Stochastic Model of Unsteady Ship Airwake Disturbances on Rotorcraft," Proceedings of the American Helicopter Society 65th Annual Forum, Grapevine, Texas, May 27-29, 2009.
16. Horn, J.F., and Geiger, B.R. "Neural Network Based Trajectory Optimization for Unmanned Aerial Vehicles," Proceedings of the AIAA Aerospace Sciences Meeting, Orlando, FL, January 2009.
17. Tobias, E.L. and Horn, J.F., "Simulation Analysis of the Controllability of a Tandem Ducted Fan Aircraft," AIAA Atmospheric Flight Mechanics Conference, Honolulu, HI, United States, 2008.
18. Ross, J.A., Geiger, B.R., Sinsley, G.L., Horn, J.F., Long, L.N., and Niessner, A.F. "Vision-Based Target Geolocation and Optimal Surveillance on an Unmanned Aerial Vehicle," Proceedings of the AIAA Guidance, Navigation, and Control Conference, Honolulu, HI, August 2008.
19. Horn J.F., Sparbanie S.M., Cooper, J., and Schierman, J., "On-Line Identification of Ship Airwake Disturbances on Rotorcraft," Proceedings of the AIAA Guidance, Navigation, and Control Conference, Honolulu, HI, August 2008.
20. Horn, J. F., and Guo, Wei, "Flight Control Design for Rotorcraft with Variable Rotor Speed," American Helicopter Society 64th Annual Forum, Montréal, Canada, April 29 – May 1, 2008.
21. Geiger, D.H., Sahasrabudhe, V., Horn, J.F., Bridges, D.O., and Polsky, S. "Advanced Modeling and Flight Control Design for Gust Alleviation on Ship-Based Helicopters," Proceedings of the American Helicopter Society 64th Annual Forum, Monreal, Canada, April 29 – May 1, 2008.
22. Sinsley, G.L., Long, L.N., Niessner, A.F., and Horn, J.F., "Intelligent Systems Software for Unmanned Air Vehicles," AIAA Aerospace Science Meeting, Reno, Nevada, Jan. 2008.
23. Zhang, J., Smith, E.C., and Horn, J.F., "Dynamics of a Ducted Rotor in Forward Flight," American Helicopter Society Specialist's Conference on Aeromechanics, San Francisco, CA, January 2008.
24. Bridges, D.O., Horn, J.F., Alpman, E., and Long L.N., "Coupled Flight Dynamics and CFD Analysis of Pilot Workload in Ship Airwakes," Proceedings of the AIAA Atmospheric Flight Mechanics Conference, Hilton Head, SC, August 2007.
25. Geiger, B.R., Horn, J.F., Sinsley, G., Ross, J.A., and Long, L.N., "Flight Testing a Real Time Implementation of a UAV Path Planner Using Direct Collocation," Proceedings of the AIAA Guidance, Navigation, and Control Conference, Hilton Head, SC, August 2007.
26. Sinsley, G.L., Miller, J.A., Long, L.N., Geiger, B.R., Niessner, A.F., and Horn, J.F., "An Intelligent Controller for Collaborative Unmanned Air Vehicles," IEEE Symposium Series on Computational Intelligence (IEEE SSCI) 2007, Honolulu, HI, April 1-5, 2007.
27. Horn, J.F. and Bridges, D.O., "A Model Following Controller Optimized for Gust Rejection during Shipboard Operations," Proceedings of the American Helicopter Society 63rd Annual Forum, Virginia Beach VA, May 1-3, 2007.
28. Alpman, E., Long, L.N., Bridges, D.O., and Horn, J.F., "Fully Coupled Simulations of the Rotorcraft / Ship Dynamic Interface," Proceedings of the American Helicopter Society 63rd Annual Forum, Virginia Beach VA, May 1-3, 2007.
29. Geiger, B.R., Horn, J.F., Delullo, A., Long, L.N., and Niessner, A.F., "Optimal Path Planning of UAVs Using Direct Collocation with Nonlinear Programming," AIAA Guidance, Navigation, and Controls Conference, Keystone, CO, August, 2006.
30. Yasar, M., Bridges, D.O., Mallapragada, G., and Horn, J.F., "A Simulation Test Bed for Coordination of Unmanned Rotorcraft and Ground Vehicles," AIAA Modeling and Simulation Technology Conference, Keystone, CO, August, 2006.
31. Guo, W. and Horn, J.F., "Modeling and Simulation for the Development of a Quad-Rotor UAV Capable of Indoor Flight," AIAA Modeling and Simulation Technology Conference, Keystone, CO, August, 2006.
32. Yasar, M., Horn, J.F., and Ray, A., "Effects of Supervisory Decisions on Nonlinear Aircraft Dynamics," Proceedings of the American Control Conference, Minneapolis, MN, June, 2006.
33. Horn, J.F., Lee, D., and Bridges, D.O., "Flight Control Design for Alleviation of Pilot Workload during Helicopter Shipboard Operations," Proceedings of the American Helicopter Society 62nd Annual Forum, Phoenix, AZ, May 9-11, 2006.
34. Chen, H.N., Brentner, K.S., Shirey, J.S., Horn, J.F., Ananthan, S., and Leishman, J.G., "A Study of the Aerodynamics and Acoustics of Super-BVI," Proceedings of the American Helicopter Society 62nd Annual Forum, Phoenix, AZ, May 9-11, 2006.
35. Miller, J.A., Minear, P.D., Neissner, A.F., DeLullo, A.M., Geiger, B.R., Long, L.N., and Horn, J.F., "Intelligent Unmanned Air Vehicle Flight Systems," AIAA Paper No. 2005-7081, AIAA InfoTech@Aerospace Conference, Washington D.C., September, 2005.
36. Hanford, S.D., Long, L.N., and Horn, J.F., "A Small Semi-Autonomous Rotary-Wing Unmanned Air Vehicle," AIAA Paper No. 2005-7077, AIAA InfoTech@Aerospace Conference, Washington D.C., September, 2005.

37. Bridges, D.O., Horn, J.F., and Ray, A., "Model-Following Control of a Military Helicopter with Damage Mitigation", AIAA Guidance, Navigation, and Controls Conference, San Francisco, CA, August, 2005. AIAA Paper 2005-6347.
38. Sahani, N.A. and Horn, J.F. "Command Limiting for Full-Envelope Guidance and Control of Rotorcraft", AIAA Guidance, Navigation, and Controls Conference, San Francisco, CA, August, 2005. AIAA Paper 2005-6348.
39. Tolani, D.K., Horn, J.F., Yasar, M., and Ray, A., "Hierarchical Control of Rotorcraft for Enhanced Performance and Structural Durability", AIAA Guidance, Navigation, and Controls Conference, San Francisco, CA, August, 2005. AIAA Paper 2005-6349.
40. Chen, J., Lagoa, C.M., Horn, J.F., and Ray, A., "Output Bounded Switching Control for Future Generation Rotorcraft", AIAA Guidance, Navigation, and Controls Conference, San Francisco, CA, August, 2005. AIAA Paper 2005-6371.
41. Lee, D. and Horn, J.F., "Optimization of a helicopter Stability Augmentation System for Operation in a Ship Airwake," Proceedings of the American Helicopter Society 61st Annual Forum, Grapevine, TX, June 1-3, 2005.
42. Horn, J.F., Bridges, D.O., Wachspress, D.A., and Rani, S.L., "Implementation of a Free-Vortex Wake Model in Real-Time Simulation of Rotorcraft," Proceedings of the American Helicopter Society 61st Annual Forum, Grapevine, TX, June 1-3, 2005.
43. Jeram, G. J., Sahani, N. A., Prasad, J. V. R., and Horn, J. F., "Distributing Limit Protection between Autonomous Restraint and Voluntary Tactile Cues," AIAA Aerospace Science Meeting, Reno, Nevada, Jan. 2005.
44. Lee, D. and Horn, J.F., "Simulation of Pilot Workload for Helicopters Operating in a Turbulent Ship Airwake," AIAA Atmospheric Flight Mechanics Conference, Providence, RI, August 2004. AIAA Paper 2004-5360.
45. Sahani, N. and Horn, J.F., "Adaptive Model Inversion Control of a Helicopter with Structural Load Limiting," AIAA Guidance, Navigation, and Controls Conference, Providence, RI, August, 2004. AIAA Paper 2004-4753.
46. Horn, J.F., Bridges, D., Sharma, C., Lopes, L., and Brentner, K.S., "A Multi-Disciplinary Rotorcraft Simulation Facility Composed of Commodity Components and Open Source Software," Proceedings of the American Helicopter Society 60th Annual Forum, Baltimore, MD, June 7-10, 2004.
47. Sahani, N., Horn, J.F., Jeram, G., and Prasad, J.V.R., "Hub Moment Limit Protection Using Neural Network Prediction," Proceedings of the American Helicopter Society 60th Annual Forum, Baltimore, MD, June 7-10, 2004.
48. Geiger, B., Horn, J.F., Greenjack, A., and Piasecki, F.W., "Trim and Maneuver Optimization Methods for Compound Rotorcraft," American Helicopter Society 60th Annual Forum, Baltimore, MD, June 7-10, 2004.
49. Tolani, D.K., Horn, J.F., Ray, A., and Chen, J., "Hierarchical Control of Future Generation Rotorcraft," American Controls Conference, Boston, MA, June 30 – July 2, 2004.
50. Kothmann, B.D., Lu, Y., DeBrun, E., and Horn, J., "Prospective on Rotorcraft Aerodynamic Modeling for Flight Dynamics Applications," American Helicopter Society 4th Decennial Specialist's Conference on Aeromechanics, San Francisco, CA, January 21-23, 2004.
51. Chen, H., Brentner, K.S., Lopes, L., and Horn, J.F., "A Study of Rotorcraft Noise Prediction in Maneuvering Flight," Proceedings of the AIAA 42nd Aerospace Sciences Meeting and Exhibit, Reno, NV, January 2004.
52. Lee, D., Horn, J.F., Sezer-Uzol, N., and Long, L.N., "Simulation of Pilot Control Activity During Helicopter Shipboard Operations," Proceedings of the AIAA Atmospheric Flight Mechanics Conference, Austin, TX, August 2003, AIAA Paper 2003-5306.
53. Horn, J.F., Tolani, D.K., Lagoa, C.M., Wang, Q., and Ray, A., "Reliable Operation of Rotorcraft Using Probabilistic Robust Control," Proceedings of the 5th IFAC Symposium on Fault Detection, Supervision and Safety of Technical Processes, Washington, D.C., June 9-11, 2003, pp.181-186.
54. Bridges, D., Horn, J.F., and Ray, A., "Damage Mitigating Control of Rotorcraft," Proceedings of the American Helicopter Society 59th Annual Forum, Phoenix, AZ, May 2003.
55. Lee, D., Sezer-Uzol, N., Horn, J.F., and Long, L.N., "Simulation of Helicopter Shipboard Launch and Recovery Operations Using Time-Accurate Airwakes," Proceedings of the American Helicopter Society 59th Annual Forum, Phoenix, AZ, May 2003.
56. Brentner, K.S., Lopes, L., Chen, H., and Horn, J.F., "Near Real-Time Simulation of Rotorcraft Acoustics and Flight Dynamics," Proceedings of the American Helicopter Society 59th Annual Forum, Phoenix, AZ, May 2003.
57. Sahani, N. and Horn J.F., "Collective Axis Cueing and Limit Avoidance Algorithms for Carefree Maneuvering," Proceedings of the American Helicopter Society Flight Controls and Crew System Design Specialists' Meeting, Philadelphia, PA, October 2002, 12 pages.
58. Lee, D. and Horn J.F., "Simulation and Control of Helicopter Shipboard Launch and Recovery Operations," Proceedings of the American Helicopter Society Flight Controls and Crew System Design Specialists' Meeting, Philadelphia, PA, October 2002, 10 pages.

59. Horn, J.F., "Rotor State Feedback for High Bandwidth Control and Structural Load Limiting," Proceedings of the American Helicopter Society Flight Controls and Crew System Design Specialists' Meeting, Philadelphia, PA, October 2002, 13 pages.
60. Sahasrabudhe, V., Spaulding, R., Faynberg, A., Horn, J., and Sahani, N., "Simulation Investigation of a Comprehensive Collective-Axis Tactile Cueing System," Proceedings of the American Helicopter Society 58th Annual Forum, Montreal, Canada, June 2002, Vol. 1, pp. 559-568.
61. Horn, J., and Sahani, N., "Detection and Avoidance of Main Rotor Hub Moment Limits on Rotorcraft," Proceedings of the AIAA Atmospheric Flight Mechanics Conference, Montreal, Canada, August 2001, AIAA Paper 2001-4138, 10 pages.
62. Horn, J. F., Calise, A. C., and Prasad, J.V.R, "Flight Envelope Limit Detection and Avoidance for Rotorcraft," Proceedings of the 25th European Rotorcraft Forum, Rome, Italy, September 14-16 1999, 11 pages.
63. Horn, J. F., Calise, A. C., and Prasad, J.V.R, "Development of Envelope Protection Systems for Rotorcraft," Proceedings of the American Helicopter Society 55th Annual Forum, Montreal, Canada, May 25-27, 1999, Vol. 2, pp. 2025-2036.
64. Horn, J. F., Calise, A. C., and Prasad, J.V.R, "Flight Envelope Limiting Systems Using Neural Networks," Proceedings of the AIAA Atmospheric Flight Mechanics Conference, Boston, MA, August 10-12, 1998, pp. 741-751, AIAA Paper 98-4459, 12 pages.
65. Horn, J., Calise, A.C., Prasad, J.V.R, and O'Rourke, M., "Flight Envelope Cueing on a Tilt-Rotor Aircraft Using Neural Network Limit Prediction," Proceedings of the American Helicopter Society 55th Annual Forum, Washington, D.C., May 1998, Vol. 2, pp. 1093-1104.