

Automation in Aviation and Automobiles: From Boeing 737 Max to Autonomous Vehicles

A Lecture and Discussion Led by:

The Honorable Christopher A. Hart

Ex-Chairman of the National Transportation Safety Board (NTSB) &
Chairman of the Joint Authorities Technical Review (JATR)



Hosted by Students and Professor of:

Human Factors in Work Design (ISE 370L)
Daniel J. Epstein Department of Industrial & Systems Engineering

**Thursday November 7, 2019
2:00-3:30 pm**

Venue:

USC [Seeley G. Mudd Building \(SGM\)](#) Auditorium # 123
Venue's street address: 3620 McClintock Ave, Los Angeles, CA 90089

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Automation can significantly increase productivity, efficiency, reliability, throughput, and safety. However, there are downsides, not only when the automation malfunctions but also when it works as designed. When the automation malfunctions, increasing complexity increases the likelihood that pilots may not respond appropriately because they may not completely understand the system; and increasing reliability increases likelihood that if a malfunction occurs in actual operations, pilots may not respond appropriately because they may not have ever seen that malfunction before, even in training. When the automation works as designed, it can generate complacency and result in the degradation of pilot skills, as well as masking the problem of less proficient pilots until something goes wrong. This presentation will be about some of the automation issues that have been encountered in aviation, including most recently in the Boeing 737 MAX, as well as in autonomous vehicles as they are being developed for our streets and highways.

The Honorable Christopher A. Hart

Christopher A. Hart is the founder of Hart Solutions LLP, which specializes in improving safety in a variety of contexts, including the safety of automation in motor vehicles, workplace safety, and process safety in potentially hazardous industries.

He was asked by the Federal Aviation Administration in April 2019 to lead the Joint Authorities Technical Review (JATR) that was created bring together the FAA and nine other certification authorities from around the world, as well as NASA, to review the robustness of the FAA certification of the flight control systems of the Boeing 737 MAX and make recommendations as needed to improve the certification process. Mr. Hart is also Chairman of the Washington Metrorail Safety Commission, a three-jurisdictional agency (MD, VA, DC) that was created to oversee the safety of the Washington, D.C., area mass transit subway system.

From 2009 until February 2018 Mr. Hart was a Member, Vice Chairman, and Chairman of the National Transportation Safety Board (NTSB). Mr. Hart joined the NTSB after being Federal Aviation Administration Assistant Administrator for System Safety, and Deputy Director for Air Traffic Safety Oversight. Before the FAA he served as Deputy Administrator of the National Highway Traffic Safety Administration, and before that he was an NTSB Member from 1990 to 1993.

From 1973 until first joining the Board in 1990, Mr. Hart held a series of legal positions, mostly in the private sector. He holds a law degree from Harvard University and Master's and Bachelor's degrees in Aerospace Engineering from Princeton University. He is a member of the District of Columbia Bar and the Lawyer-Pilots Bar Association. Mr. Hart is a licensed pilot with commercial, multi-engine and instrument ratings.

Mr. Hart's family has a tradition of accomplishment in the field of aviation. His great uncle, James Herman Banning, was the first African-American to receive a pilot's license issued by the United States Government in 1926.