



# Aerospace Control and Guidance Systems Committee Short Course *Modeling the Human Pilot – A Brief History with Application Examples*

**Date:** 15 March 2016

**Time:** 9:00 AM - 4:00 PM  
(with a 1-hour lunch break)

**Location:** Embassy Suites Napa Valley  
1075 California Blvd.  
Napa, CA 94559  
(707) 253-9540

**Cost:** \$300  
(includes morning beverages and a box lunch)



Orville Wright in the Wright Flyer

**How to Register:** Go to [www.acgsc.org](http://www.acgsc.org) where there are links for the Meeting 117 and the Short Course registrations  
(If you have trouble registering or for any questions please email [secretary@acgsc.org](mailto:secretary@acgsc.org))

**Registration Deadline:** March 8, 2016

**Lecturer:** Professor Ron Hess  
University of California, Davis

## **Course Synopsis:**

The short course will emphasize the history of pilot model development and discuss related applications with particular emphasis upon handling qualities research. The pilot models to be discussed will include: (1) The crossover model; (2) the extended crossover model; (3) the optimal control model; (4) the structural model(s); and (5) the simplified pursuit model including the latter's use in modeling pilot adaptive behavior. Multi-axis extensions of the single-axis models will be presented. A pair of non-aerospace applications will be included as will a control system design technique which may minimize the necessity of pilot adaptation to flight control system failures.

## **Speaker Background:**

Ron Hess was introduced to the subject of manual control in 1965 as part of a thesis requirement for the B.S. degree in Aerospace Engineering at the University of Cincinnati. The thesis dealt with an investigation of the human operator controlling a system with time-varying dynamics. The experimental work for the thesis was completed while he was a cooperative engineering student at

the Air Force Flight Dynamics Lab at Wright Patterson AFB, Dayton, Ohio. The intervening 50 years has seen his continuous involvement in the investigation and modeling of the human operator/pilot while at the Naval Postgraduate School, NASA Ames Research Center, and UC Davis.