HARVEY MUDD
COLLEGE

Department of Engineering
Seminar Program
Wednesday, October 17, 2012
Galileo McAlister, 4:10pm

"The Art and Science of Aviation Accident Reconstruction" by Dr. Ken Orloff, HMC '66

"The Art and Science of Aviation Accident Reconstruction" is a presentation that will include examples of actual accidents involving both airplanes and helicopters. The "Science" is the application of physics, aeronautical engineering, and computer science using what is known about the accident, and the "Art" comes in when the aviation expert must bridge the gap between what is known about the accident and what is not. Hopefully, time will allow for a review of four different accidents that I believe can be appropriately named 1) The Flying Flight Attendant, 2) The Accident That Wasn't, 3) You Want Me To Do WHAT? and 4) A Wisconsin Midair Collision.

Bio:

Dr. Orloff graduated from Harvey Mudd College is 1966 with a degree in Physics. At the University of California Santa Barbara, he was awarded a Master's degree in Physics. After one year working in the field of experimental physics towards a Doctorate, he decided would rather be an engineer than a physicist. He changed departments and two years later received a Ph.D. degree in Mechanical and Aeronautical Engineering from the University of California. From 1971 until 1984 he worked as a research scientist for the National Aeronautics and Space Administration at the Ames Research Center where he was involved in the application of laser optical measurement instruments to airplane and helicopter aerodynamics research. Under NASA sponsorship, he has taught physics, engineering, aerodynamics, and aeronautics courses at the university level, including a year at HMC on loan from NASA. A graduate of the Bates Aeronautics Program at HMC, he holds an Airline Transport Pilot Certificate and has accumulated in excess of 8000 hours of flight time. He is a Certified Flight Instructor for both Airplanes and Helicopters. He is also a licensed Airframe and Powerplant Mechanic and he holds FAA Inspection Authorization.

For the past 28 years, Ken and his staff have provided consulting services to plaintiffs and defendants in litigation resulting from aircraft accidents. They have analyzed and reconstructed hundreds of fixed-wing and rotary-wing accidents. Typical areas in which Ken has been asked to conduct forensic investigation and render expert opinions are:

- Midair Collisions
- Aircraft Wire Strikes
- Analysis of Recorded Radar Data and Flight Path Analysis
- Aircraft Wake Turbulence Encounters
- Aircraft Maintenance, Inspection, Alteration and Repair

- Aircraft structures and structural failure
- Aircraft stability and control
- Aircraft Piloting and Pilot Error
- Integration and Correlation of GPS information, Flight Data Recorder, and Cockpit Voice Recorder with Flight Path Analysis

Ken has testified in Federal and State courts in the Continental US, Alaska, Hawaii, Canada, Puerto Rico, as far-reaching as Guam, and has just recently returned from Brisbane, Australia where he testified on behalf of Robinson Helicopter Company.

He frequently uses multi-media graphics; computer simulation and animation to simplify complex subjects and to help judges and juries understand the foundations of his opinions.