**Short Course Offering: Introduction to Jet Engines -- A Practical Perspective**

- **WHEN and WHERE:** 8-10 December 2014 (8:00 – 4:30) at the Ohio Aerospace Institute (across from Glenn Research Center). We end around noon on the third day.

- **COURSE DESCRIPTION and MATERIALS:** This 2 ½ day course is all about Gas Turbine Engines (GTEs), how they operate, how they are used in various air-breathing propulsion systems, and their inherent challenges. From a very practical perspective, you will be introduced to the fundamentals of the engine core (compressor, combustor, and turbine) and the various GTE propulsion systems. With clear learning objectives, the course follows the outline below:

  - Introduction and Historical Perspective
  - Foundational Concepts  Blade Geometry, Aerodynamics, and Thrust Fundamentals
  - Applications  Propeller Aerodynamics, Inlets, and Exhaust Nozzles
  - The Gas Turbine Engine “Core”  Compressor, Combustor, and Turbine
  - Propulsion Systems  Turbojet, Turboprop, and Turboshift
  - Field Trip or In-Class Activity
  - Engine Performance and Operability
  - Airframe and Engine(s) Integration
  - Review Learning Objectives and Concluding Remarks

  You will be given a set of course notes and a copy of Klaus Hunecke’s text, Jet Engines -- Fundamentals of Theory, Design, and Operation. 2.0 Continuing Education Units (CEUs) are awarded.

- **WHO SHOULD ATTEND:** This course is designed for anyone working in the aviation field who wants to gain an appreciation for gas turbine engines -- program managers, engineers, scientists, aircraft/engine maintenance & operational personnel, and administrative support. A building-block approach is used -- no prior knowledge is assumed. Since 2002, we’ve taught thousands of “students” from audiences across the Air Force, Navy, NASA, FAA, and industry. Our instructors have earned a tremendous reputation for teaching fundamental aeronautics and propulsion -- in our classroom, theory and practical application come alive! Here are a few comments from recent offerings:

  - “Instructors have a wealth of complimentary experience to bring to [the] course – airframe versus power – maintenance versus operator – designer versus analysis. Very responsive to questions – nice!” Wright Brothers Institute, Ohio
  - “Working with instrumentation and controls for a jet engine will be easier knowing what is actually happening in the engine/how it operates.” Ohio Aerospace Institute

- **INSTRUCTOR:** Dr. Keith M. Boyer (USAF Colonel, Retired) is the Propulsion Director for Practical Aeronautics. Keith taught for ten years in the Air Force Academy’s Department of Aeronautics, serving in numerous positions including Director of Propulsion and Deputy Department Head. He was awarded Outstanding First Year Instructor, Outstanding Academy Educator, and the Class of 2007’s Outstanding Senior Faculty Educator. For seven years, he was adjunct faculty to the USAF Test Pilot School, where he twice earned the Flight Test Instructor of the Quarter award. From 1996-2009, Keith developed and taught jet engine short courses to over a thousand personnel in support of their professional development.

- **INSTRUCTOR:** Dr. Ken Van Treuren is a Professor and Associate Dean for Research and Faculty Development, School of Engineering and Computer Science at Baylor University. Ken is a 1977 USAF Academy Distinguished Graduate and retired USAF Lieutenant Colonel. With a DPhil from Oxford and over 80 technical papers, he is a renowned expert in gas turbine engines. He’s a Command Pilot with over 3500 hours, including trainers, fighters, and cargo aircraft. Ken taught at the USAF Academy and won their “Outstanding Military Educator Award.” He also taught for the USAF Test Pilot School and was a 2009 Boeing Welliver Faculty Fellow. Ken also earned Baylor’s 2010 Outstanding Teacher Award and the SAE International Teetor Educational Award.

- **COST, REGISTRATION, and CANCELLATION POLICY:** $1350. $1215 for Federal Government, OAI, and WBI employees -- this rate is also extended to OAI and WBI partners, as well as AIAA members. Group discounts are also available. For more information and to register visit PracticalAero.com, contact CHallgren@PracticalAero.com, or call (970) 887-3155. Substitutions may be made at any time. Cancellations must be received two weeks prior to course start date and are subject to a $50 fee. If you must cancel within the two-week period, and do not have a substitute, you may forfeit the entire fee. A total refund will be issued if the course is canceled.