Introduction to Gas Turbine Engine Mechanical Systems -- A Practical Perspective (Live Virtual Offering)

- **WHEN: Monday-Thursday, March 21-24, 2022. Class will be conducted in two sessions each of the four days from 10:00-1:00 and 2:00-4:00 pm using MS Teams--all times are Eastern. Computers with an operating microphone and webcam are required. Additional guidance, including instructions for accessing Teams and obtaining course materials (see below), will be provided.**

- **COURSE DESCRIPTION and MATERIALS:** The focus of this class is foundational understanding of gas turbine engine (GTE) "secondary" or "support" systems – bearings and lubrication, sealing, cooling, heating, controlling, gearing, fuel delivery, starting and engine-driven accessories. These systems are essential for overall engine/application operation yet are often not well understood or covered in college courses. While aviation applications provide the backdrop, most of the material is equally relevant to maritime and ground-based GTE applications. You will leave the class with a newfound, practical perspective of GTE mechanical systems to include improved vocabulary, the important physical principles governing system operation, and the challenging operating, maintenance, and integration environments. Case studies reinforce why these systems are often top drivers of engine readiness, maintenance, and safety issues. With clear learning objectives, the course follows the outline below:

  - Introduction, Thermodynamics and the Gas Turbine Engine
  - Engine Flowpaths and Components ⇨ Primary and Secondary

  } Day 1

  - Secondary Air Systems – Cooling, Heating, Controlling
  - Secondary Air Systems – Sealing

  } Day 2

  - Lubrication and Bearing Systems
  - Gear Systems and Engine-Driven Accessories

  } Day 3

  - Fuel Systems
  - Small Group Case Studies
  - Review Learning Objectives and Concluding Remarks

  } Day 4

  Course materials include a hard copy set of course notes and a copy of *Aircraft Gas Turbine Powerplants Textbook*, by Otis and Vosbury. 2.0 Continuing Education Units (CEUs) are awarded.

- **WHO SHOULD ATTEND:** This course is designed for anyone working with GTE applications who wants to gain a practical appreciation for and foundational understanding of these important GTE systems -- engineers, scientists, maintenance, repair and overhaul specialists, operational managers and administrative support personnel. 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:

  - *"Great mix of experiences (War Stories) that helped make the material real."* Dayton, Ohio
  - *"I will probably reference this binder a lot going forward. It is good to understand these systems because it is not taught in college much at all. Probably the most useful class yet."* Patuxent River, Maryland
  - *"Knowing how all the secondary systems fit in will better allow me to make informed decisions on making allowances and how they would affect the system as a whole."* Oklahoma City, Oklahoma

- **COST, REGISTRATION, and CANCELLATION POLICY:** $1450 ($1400 if registered by March 4th), $1375 for Federal Government employees -- Group discounts are available. For more information and to register, visit PracticalAero.com, contact JEllsworth@PracticalAero.com, or call (719) 659-7319. 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 and are responsible for returning course materials to PAI at your own expense. Refunds of the registration fee (only) are issued if the course is canceled. **NOTE:** This course is an "open enrollment" course and must meet a minimum student count for the offering to be held. If the minimum count is not met, the course will be cancelled not later than two weeks prior to the course start date. Practical Aeronautics will not be responsible for any costs incurred by the student if the course is cancelled.