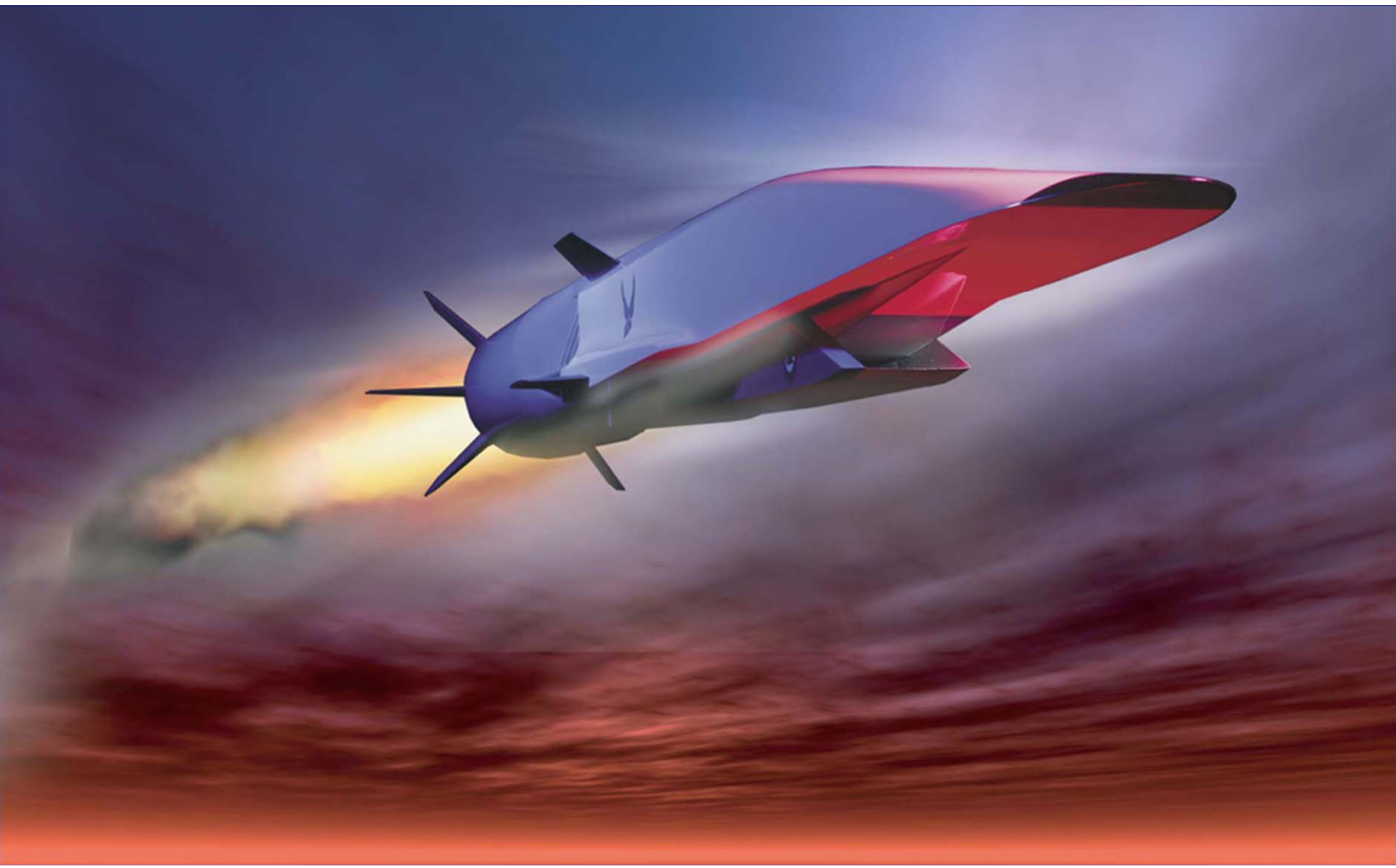


Fundamentals of HYPERSONICS

Professional Short Course



Course Brochure - September 26th - 29th 2011

Sponsored by the **UT Space Institute**

UTSI Continuing Education Program

www.utsi.edu/ContEd

White Eagle Aerospace, LLC

Make Your Career SOAR

Fundamentals of HYPERSONICS

Fellow Aerospace Professional,

Thank you for your interest in White Eagle Aerospace! We are pleased to present you with this brochure which describes our highly acclaimed *Fundamentals of Hypersonics (FOH)* professional short course. FOH will provide you with an intense training experience in basic hypersonics technologies. FOH also places a special emphasis on the history of hypersonic flight and the application of critical lessons-learned.

Each FOH participant receives a text book, a bound set of course lectures, and a CD-ROM containing course notes, homework solutions, and technical references.

I invite you to personally examine this brochure and learn more about the *Fundamentals of Hypersonics (FOH)* professional short course. Then visit our web site at www.WhiteEagleAerospace.com or contact us by e-mail or telephone to determine the date and location of our next FOH offering. Enroll today and let White Eagle Aerospace help Make Your Career Soar!

Best Regards,

John Terry White, President/CEO
White Eagle Aerospace, LLC
Training@WhiteEagleAerospace.com
520-219-0526 Office
520-390-9157 Mobile



White Eagle Aerospace Short Course

Fundamentals of HYPERSONICS

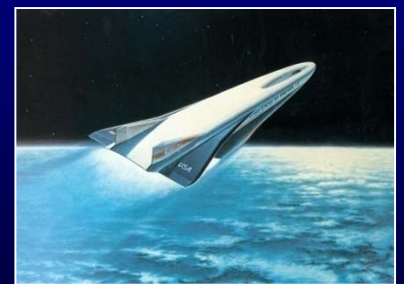
Target Audience

The *Fundamentals of Hypersonics (FOH)* short course is intended for anyone seeking instruction in rudimentary hypersonic aerodynamics, gas dynamics and aerothermodynamics. This knowledge and its application is essential to successful aerospace vehicle design, analysis, and testing. Whether you are a practicing engineer, technical analyst, test conductor, researcher, or program manager, FOH will enhance your understanding of and help to improve your competency in this key discipline. Among those who will benefit from attending the FOH short course are:

- ✓ **aerodynamics engineers**
- ✓ **flight test engineers**
- ✓ **airframe designers**
- ✓ **launch vehicle designers**
- ✓ **aircraft systems engineers**
- ✓ **missile systems engineers**
- ✓ **aircraft flight crew**
- ✓ **operations research analysts**
- ✓ **flight controls specialists**
- ✓ **fluid dynamics specialists**
- ✓ **CFD specialists**
- ✓ **program managers**

Questions Regarding the FOH Course?

Contact WEA at 520-219-0526 or Training@WhiteEagleAerospace.com



White Eagle Aerospace Short Course

Fundamentals of HYPERSONICS

What You Will Learn

The *Fundamentals of Hypersonics (FOH)* short course will provide you with a comprehensive training experience in the basic principles, technologies, and methodologies of hypersonics. Key technical topics covered include hypersonic aerodynamics, hypersonic flow physics, high temperature gas dynamics, aerodynamic heating, plasma effects, aeroacoustics, and flight vehicle force and moment characteristics. However, the FOH course of instruction will also introduce you to a myriad of other multi-disciplinary topics that are intimately related to hypersonic flight. Chief among these topics are airbreathing propulsion systems, flight instrumentation, ground testing, thermal protection systems, aerothermoelastic effects, planetary entry, stage separation, and atmospheric models. A representative list of FOH subject matter is included below:

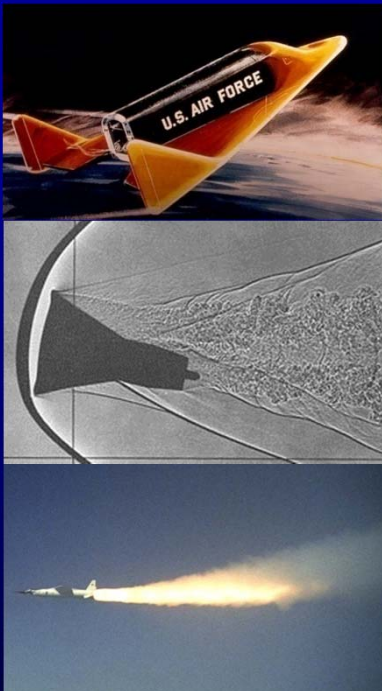
- **Hypersonic Gas Dynamics**
- **Aerodynamic Heating**
- **Aeroacoustic Effects**
- **Plasma Effects**
- **Airbreathing Propulsion**
- **Continuum Flow Aerodynamics**
- **Rarefied Flow Aerodynamics**
- **Pressure Measurement**
- **Temperature Measurement**
- **Heat Flux Measurement**
- **Wind Tunnel Testing**
- **Thermal Protection Systems**
- **Hypersonic Vehicle Design**
- **Waverider Aerodynamics**
- **Planetary Entry Vehicles**
- **Atmospheric Models**
- **Jet Interaction Effects**
- **Force Accounting Systems**
- **Aerothermoelasticity**
- **Historical Flight Programs**
- **Stage Separation**
- **Rail Gun Technology**



Fundamentals of HYPERSONICS

Aviation History

Much has transpired during the 100-plus years of powered flight. We are both the beneficiaries and stewards of the technological progress that previous generations have bequeathed to us. However, the truth is that a great many in today's aerospace workforce have little knowledge of the key people, events, and innovations that comprise the history of their own profession. While we cannot live in the past, we must learn from it if we are to be successful now and in the future. Further, like our predecessors, we must protect and preserve this legacy knowledge for succeeding generations. It is for these reasons that White Eagle Aerospace strongly emphasizes aerospace history in the technical courses that it offers. This is done through the mediums of special presentations, videos, and field trips. Programs addressed in the *Fundamentals of Hypersonics* course include:



- ✓ **X-43A**
- ✓ **X-20A**
- ✓ **X-15A-2**
- ✓ **Project FIRE**
- ✓ **SPRINT**
- ✓ **Space Shuttle Orbiter**
- ✓ **Project PRIME**
- ✓ **RAM**
- ✓ **Galileo Probe**
- ✓ **ASSET**
- ✓ **X-17**
- ✓ **Apollo**



Fundamentals of HYPERSONICS

Your Instructor

John Terry White is your instructor for all White Eagle Aerospace short courses. His 35 years of professional aerospace engineering experience includes the NASA Space Shuttle, NASA X-43A, and United States Navy STANDARD Missile Programs. During his extensive career, Terry has served on the engineering technical staff of Rockwell International, General Dynamics Corporation, Hughes Missile Systems Company, NASA Dryden Flight Research Center, and Raytheon Missile Systems. He most recently completed a 2-year tour as manager of the Aerodynamics Department in the Guidance, Navigation and Control Center at Raytheon Missile Systems in Tucson, Arizona. In this capacity, Terry was responsible for all aerodynamics work performed at the world's largest tactical missile producer. Terry is now President and CEO of White Eagle Aerospace, LLC, located in Oro Valley, Arizona. WEA is a leading provider of consulting, training, history of flight lectures, and technical publications to the American aerospace community.

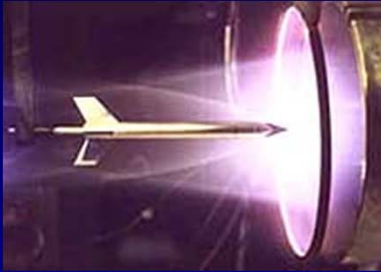
Terry's teaching credentials include 15 years on the faculty of the Aerospace Department of the California State Polytechnic University, Pomona and 15 years as a technical instructor for Hughes, Raytheon, Society of Flight Test Engineers and WEA. Terry has lectured extensively on the history of flight for key technical organizations such as the USAF Test Pilot School, NASA, AIAA, SETP, academia and industry. He has also authored more than 180 technical papers on a variety of aerodynamics and flight science subjects. His professional affiliations include the AIAA, SFTE, ITEA, NAA, SAE, AAHS, FTHF, and NSS.



White Eagle Aerospace Short Course

Fundamentals of *HYPERSONICS*

Key Information at a Glance



Duration

4 Days; 32 instructional hours



Text

“Hypersonic and High Temperature Gas Dynamics”, 2nd Edition
AIAA Education Series, 2006.
John D. Anderson, Jr.



Materials

Lectures and Homework Solutions
in Bound Form and on CD-ROM



Instructor

John Terry White, President/CEO
White Eagle Aerospace, LLC
Sponsored by UT Space Institute



Course Fee

Single-Seat; \$1,760
Single-Seat AIAA Member; \$1,600

Web Site

www.utsi.edu/ContEd

Contact US

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