

HYPERSONIC AERODYNAMICS

For Flight Testers

Course Description

The testing of aerospace vehicles in the hypersonic flight regime is an enterprise that is technically demanding, monetarily expensive, and particularly unforgiving of errors made in test planning and/or execution. The hypersonic flight environment is harsh; with the vehicle being exposed to extremes in time-varying aerodynamic, aeroacoustical, and aero heating loads. Very tight tolerances are placed on vehicle kinematic and flight control performance. Efficient operation of airbreathing propulsion systems relies upon an accurate knowledge of the vehicle air data state. In light of these and other considerations, it is imperative that all flight test personnel have a thorough working knowledge regarding the aerodynamic characteristics and principles of hypersonic flight.

Sample Topics

- Hypersonic Aerophysics
- Hypersonic Vehicle Design
- Flight Test Planning
- Flight Test Maneuvers
- Flush Air Data Sensing
- Pressure Measurement
- Temperature Measurement
- High-Temperature Gas Dynamics
- Airbreathing Propulsion Systems
- Aero-Propulsion Force Accounting
- Hypersonic Flight Test Programs
- Best Estimated Trajectory
- Atmospheric Models
- Vehicle Flight Control
- Aeroacoustics
- Aero Heating
- Rarefied Flows
- Stage Separation
- Entry Vehicles
- Jet Interaction
- Vehicle Airloads

Course Information

Dates: 01-05 October, 5 Days, Monday-Friday

Location: The AERO Institute, 38256 Sierra Highway, Palmdale, CA

Instructor: J. T. White, White Eagle Aerospace, LLC (SFTE Member)

Cost: \$1200 – Members; \$1255 – Nonmembers (Includes 1 Year Membership)

Material: Each participant shall receive a complete set of course notes both in bound and electronic (i.e., CD-ROM) form



Society of Flight Test Engineers Short Course

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Here's What Past Participants Say About the Course!

"The class gives a wonderful overview of hypersonics and the notes are extremely valuable reference material." M. D., NASA Dryden FRC

"Very good engineering level basic understanding of key parameters and processes and useful correlations." V. A., Orbital Sciences Corporation

"It gives a very good broad understanding of the flight test issues we face in the hypersonic regime." A. B., ATK

"Great introduction to hypersonics for engineers." Lt. B. B., USAF, Kirtland AFB

"Case studies provided insight into why previous programs were executed, what was gained, and how engineering principles were applied." Lt. Col. D. M., USAF, AFFTC, Edwards Air Force Base

"Very useful information and well presented." G. W., ATK

"Wow! Terry has an amazing level of experience and knowledge about hypersonics." T. B., NASA Dryden FRC

"The professor did an outstanding job of presenting this material." A. A., NASA DFRC

"Terry White is a great instructor and inter-mixes the technical stuff with programmatic war stories well. It was just the right technical depth to give a feel for the unique problems without overwhelming one with details – a very difficult thing to accomplish – but Terry did it well. I would definitely recommend the class!" F. W., AFFTC, Edwards Air Force Base





Society of Flight Test Engineers

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FAX (661) 949-2096
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Hypersonic Aerodynamics For Flight Testers

01-05 October 2007

The AERO Institute
38256 Sierra Highway, Palmdale, CA 93550

- Dates:** 01-05 October 2007
- Location:** AERO Institute, 38256 Sierra Highway, Palmdale, CA 93550 (661)-276-2376
- Cost:** \$1200 for SFTE members; \$1255 for nonmembers (includes 1 yr membership fee)
- Duration:** 5 Days, Monday – Friday
- Material:** Each student will receive a complete set of course notes both in bound and electronic (i.e., CD-ROM) form.
- Instructor:** John Terry White, White Eagle Aerospace LLC, Oro Valley, Arizona (SFTE Member)

Course Limit: 20 students maximum

NOTE: Continental Breakfast and Snacks will be served

Payment Information:

- Registration should be received by 15 September 2007 or late fee of \$25 will be added.
- You may make payment upon arrival.
- Payment may be made with your Master Card, Visa, American Express or check.
- Please make your check payable in U.S. dollars to: SFTE.
- No refunds after 15 September 2007.

NOTE: SFTE Reserves the right to cancel the course two weeks prior to course start date based on the number of prepaid registered participants (minimum of 10 required).

Hypersonic Aerodynamics For Flight Testers

REGISTRATION FORM

Please complete this form and mail or fax to:

SFTE, 44814 N. Elm Ave., Lancaster, CA 93534; Fax 661-949-2096

Last Name: _____ First Name: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____ Country: _____

Phone: _____ Email Address: _____

SFTE Member: Yes ___ No ___ (check one) SFTE Chapter: _____

CHECK OR CREDIT CARD INFORMATION

Name (as it appears on the card) _____ Phone: _____

Billing Address: _____

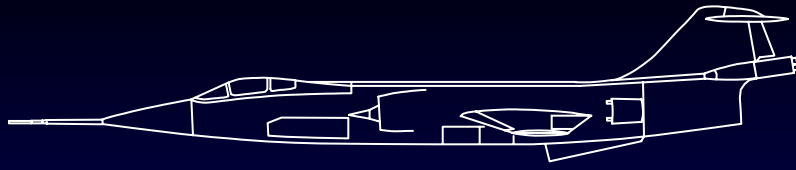
Credit Card: ___ Master Card ___ Visa ___ American Express or **Check No.:** _____

Card Number _____ Expiration Date _____ Amount: \$ _____

Signature: _____ Today's Date: _____

No charges will be billed to your credit card until 15 September 2007

Class Begins at 7:30 am (Continental Breakfast Served at 7:00 am)



White Eagle Aerospace, LLC

email@whiteeagleaerospace.com

520-219-0526

