

THE PATH TO SUCCESS FOR DELIVERING WAR WINNING CAPABILITIES!

*Teaching the Way We Test at the
Air Force Flight Test Center*



*Presentation to the Royal Aeronautical Society, Hamburg Branch
March 16th, 2006*

John L. Minor

***Technical Director, USAF Test Pilot School
President – Society of Flight Test Engineers***







THE AFFTC



For More Than 50 years....

*Testing the Future Today
Toward the Unexplored!*





In Those 50+ Years...





USAF MISSION

Delivers sovereign options for the defense of the United States of America and its global interests – to fly and fight in Air, Space, and Cyberspace.

AFMC MISSION

Delivers expeditionary capabilities to the warfighter through its core competencies of providing the best technology, acquisition support and sustainment.



AFFLW MISSION
AFFTC Maxim

We Conduct and Support
We are THE path to success
Research, Development, Test and Evaluation
for delivering war-winning capabilities
of Aerospace Systems

From Concept To Combat



Edwards Layout



149 NM

166 NM

R-2508 COMPLEX

Fresno

Las Vegas

Bakersfield

Nevada
California

Lancaster

Barstow

R-2508

R-2505

R-2506

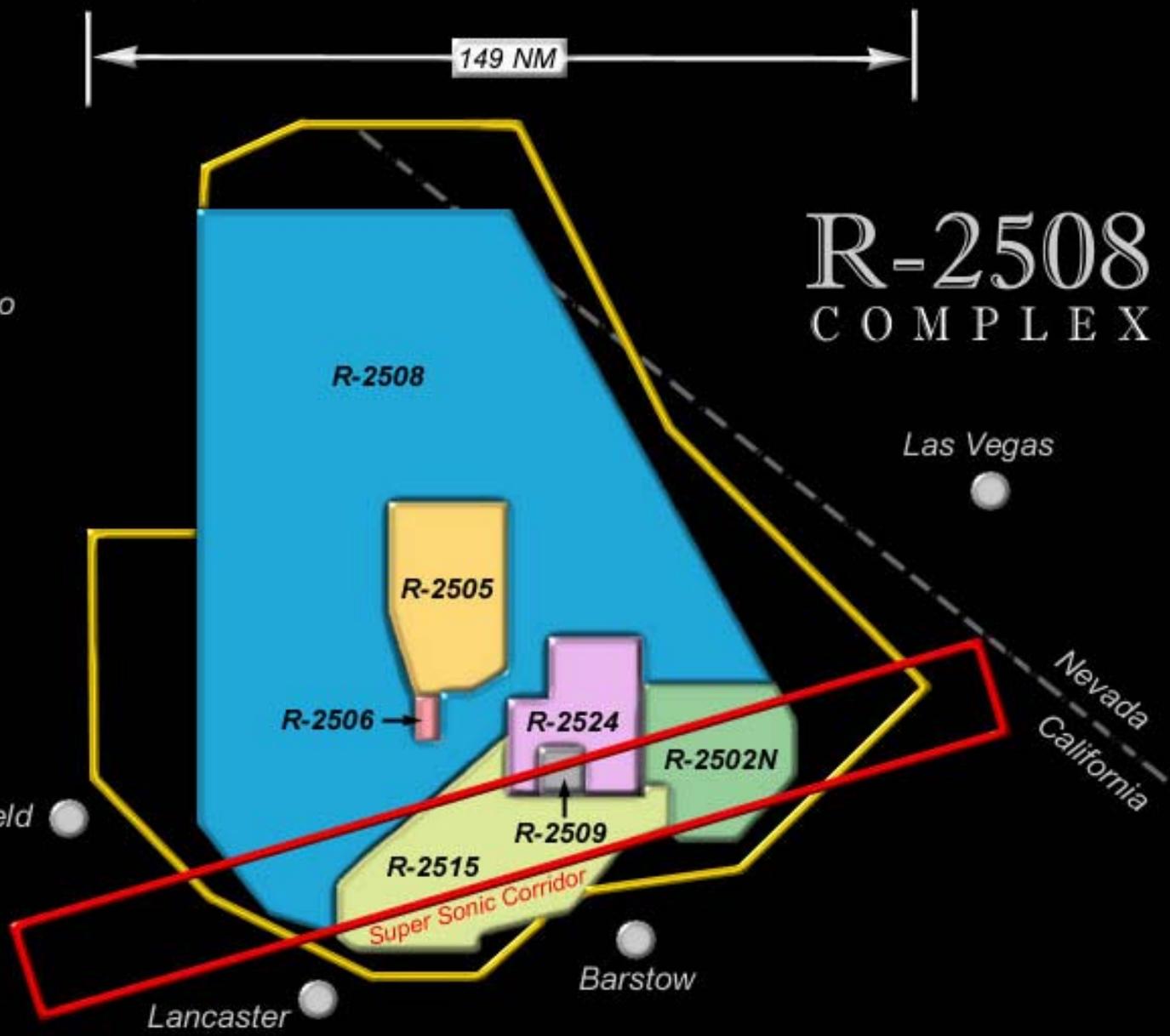
R-2524

R-2502N

R-2509

R-2515

Super Sonic Corridor





AFFTC TEST & EVALUATION MISSION AREAS



Airframe



Propulsion



Avionics



Electronic Warfare





AFFTC Organization



AFFTC COMMANDER
GENERAL BEDKE

412TH TEST WING
COMMANDER
COLONEL BUNCH

412TH TEST WING
TECHNICAL DIRECTOR
MR. ROTH

**Project Management
Training Occurs Here**

USAF TEST PILOT SCHOOL
COMMANDER
COLONEL GERNER

PROJECT MANAGEMENT
DIRECTORATE
MS. ERDMAN

412TH OPERATIONS GROUP
COMMANDER
COLONEL COOK

412TH MAINTENANCE GROUP
COMMANDER
COLONEL HOFFMAN

ELECTRONIC WARFARE
DIRECTORATE
COLONEL NICHOLS

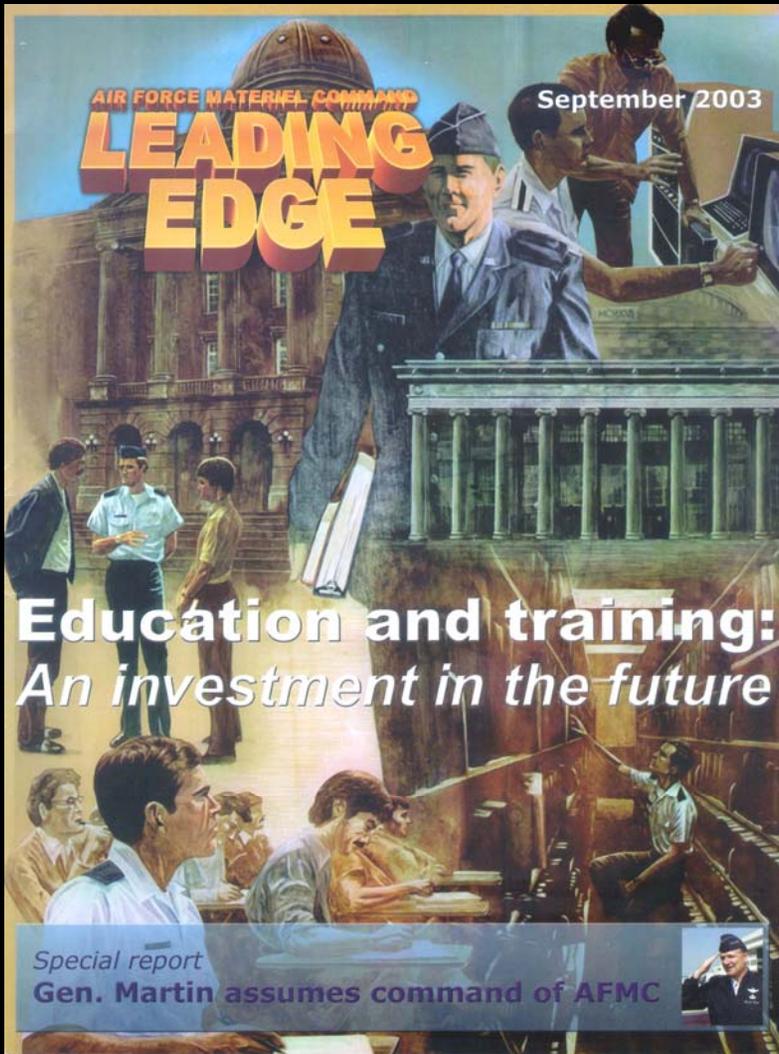
RESOURCE MANAGEMENT
DIRECTORATE
MR. ADAMS

ENGINEERING
DIRECTORATE
MR. GARLAND

Flight Test Engineering Education & Training Occurs Here



HOW THE AF VIEWS CAREER DEVELOPMENT



“The time, money, and energy we invest in training, education, and experience will continue to pay us back many times over with mission success”

*General John Jumper
Former Chief of Staff
United States Air Force*



Importance of Career Development to Retention

2005 Drivers of retention based on worker generation					
	WT Overall 23-64 yrs	Gen Y < 23 yrs	Gen X 24-39 yrs	Baby Boomers 40-58 yrs	Mature Workers 59-64 yrs
1	Career development opportunity	Career development opportunity	Career development opportunity	Job security	Career development opportunity
2	Sense of accomplishment	Pay	Confidence in future	Career development opportunity	Tools, tech, equip to do job
3	Job security		Sense of accomplishment	Sense of accomplishment	Confidence in future
4	Confidence in future		Pay	Job performance evaluated fairly	Recognition
5	Pay			Confidence in future	
6				Pay	



AFFTC Career Development Training



- *USAF Test Pilot School*
 - *Advanced Flight Test Engineering Training*
 - *Professional Development Short Courses*
 - *Design of Experiments*



- *EW Test & Evaluation University*
 - *EW Threat Systems Training*
 - *EW CM/CCM Training*
 - *Advanced EW Test & Evaluation Training*



- *Engineering Directorate*
 - *New Engineer Training*
 - *Professional Development Courses*
 - *Design of Experiments*



AFFTC Career Development Training (continued)



- *Design of Experiments (DOE)*
 - *Statistical Rigor in DT&E*



- *Project Management Directorate*
 - *Theory of Constraints*
 - *Multiple Courses*
 - *Varying Length & Detail*
 - *Senior Managers to Technical Expert*



USAF Test Pilot School



Scientia est Virtus



The United States Air Force Test Pilot School
"Knowledge is Power"



John L. Minor

Technical Director, USAF Test Pilot School



ENGINEERING DIRECTORATE



Engineer Development Office



ENGINEER DEVELOPMENT OFFICE (EDO)

412th TW/ENT

*Engaging, Enriching & Inspiring Engineers
through Education, Development & Outreach*

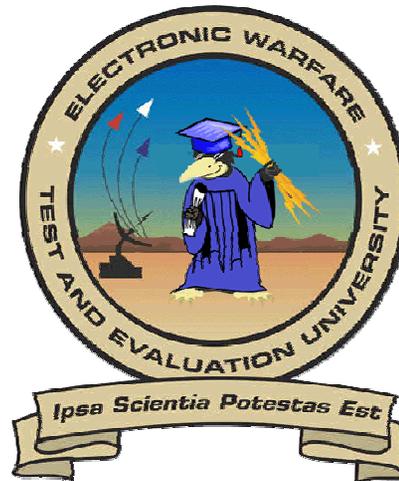
March 2006



EW T&E UNIVERSITY



EW Test & Evaluation University



412th Test Wing Electronic Warfare Directorate
Edwards Air Force Base, CA 93524

<http://www.edwards.af.mil/ewte-university>



DESIGN OF EXPERIMENTS





PROJECT MANAGEMENT DIRECTORATE



Theory of Constraints Project Management

at the

Air Force Flight Test Center



AFFTC FLIGHT TEST UNIVERSITY



One Stop Web Shopping for AFFTC T&E Courses
www.edwards.af.mil/afttcuniversity



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Air Force Flight Test Center Flight Test University
Flight Test and Evaluation Training

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The AFFTC Flight Test University is a central area for you to find out about flight test and evaluation training at Edwards Air Force Base, California. The four organizations represented here are the USAF Test Pilot School, the Electronic Warfare Test and Evaluation University, the 412 Test Wing Engineering Directorate and the 412 Test Wing Project Management Directorate.

[Upcoming Courses...](#)

COURSES *what we offer* **CALENDAR** *when it's offered* **CONTACTS** *who to talk to*

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Courses

Please select from the following to view a listing of courses:

- [412th Test Wing Engineering Directorate](#)
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- [412th Test Wing Project Management Directorate](#)
- [USAF Test Pilot School](#)

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Flight Test and Evaluation Training



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Engineering Directorate Course Listing

- [MATLAB Basics for Flight Testers](#)
- [New Engineer Training Overview](#)
- [New Engineer Training Week 1](#)
- [New Engineer Training Week 2](#)
- [New Engineer Training Week 3](#)
- [New Engineer Training Week 4](#)
- [Leadership-101](#)
- [Leadership-201](#)
- [Leadership-301](#)
- [Leadership-401](#)
- [Electro-Optical and Infrared Systems Basics for Flight Testers](#)



MATLAB Basics for Flight Testers [[Back to top](#)]

This course is targeted for beginning MATLAB users. No prior knowledge of MATLAB is required. All examples and demonstrations are structured around how to use MATLAB for flight test and evaluation, so more experienced users are also welcome. The course is designed for engineers and other personnel who are already performing flight test data analysis, or will be soon.

Students learn the basics of MATLAB including how to read flight test data into MATLAB, perform operations such as data synchronization and searching, write functions to process data, interact with the data using plotting and other functions, and how to write results to an output product. Students also learn how to navigate through the MATLAB environment and how to use the MATLAB Graphical User Interface (GUI) tools.

Topics covered include basic matrix operations and array usage, string manipulation, and structure and cell array use. Built-in mathematical functions, relational/logical operators and details of programming in the MATLAB scripting language are discussed. Students learn file input/output and plotting.

Done

Internet

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March 2006	
6-10	New Engineer Training - Week 1
14-17	Integrated Air Defense Systems (IADS)
April 2006	
3-7	New Engineer Training - Week 2
11-13	Technical Writing for Scientists & Engineers
24 Apr-19 May	Aerospace Vehicle Test Course
May 2006	
1-5	New Engineer Training - Week 3
June 2006	
5-9	New Engineer Training - Week 4
July 2006	
10-14	New Engineer Training - Week 1
August 2006	
7-11	New Engineer Training - Week 2
28-31	Test Management Course
September 2006	
11-15	New Engineer Training - Week 3
11-15	Propulsion Academic Course
25-29	Equations of Motion
October 2006	
2-6	New Engineer Training - Week 4
16 Oct-3 Nov	Unmanned Aerial Vehicle Course

Done

Internet



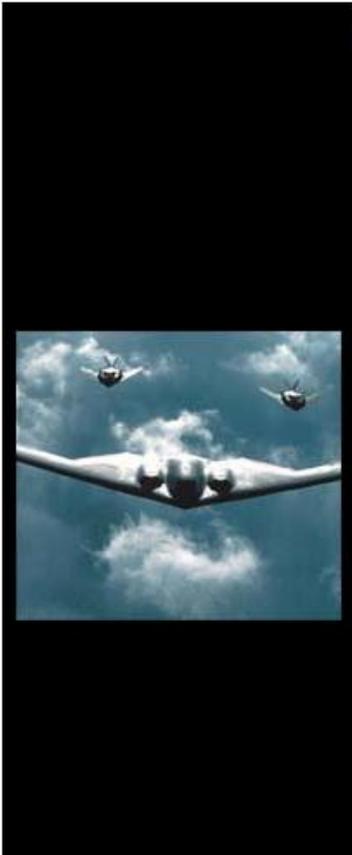
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Contacts

You can reach us using the following e-mail addresses. A staff member will reply to you shortly.

- General AFFTC Education Questions** FTUAdmissions@edwards.af.mil
- EW Test and Evaluation University**
 - EWAdmissions@edwards.af.mil
 - Melisa Ybarra** - (661) 277-5716 melisa.ybarra@edwards.af.mil
 - Martin Welch** - (661) 277-7461 martin.welch@edwards.af.mil
- Engineering Directorate**
 - ENAdmissions@edwards.af.mil
 - Lorene Garrett** - (661) 277-3525 lorene.garrett@edwards.af.mil
- Project Management Directorate**
 - DRAdmissions@edwards.af.mil
 - Theory of Constraints
 - Gay Bessette** - (661) 275-9390 gay.bessette@edwards.af.mil
 - Joe Dale** - (661) 277-5716 larry.dale@edwards.af.mil
- USAF Test Pilot School**
 - TPSAdmissions@edwards.af.mil
 - Lt Col Dale Parsons** - (661)277-9867 dale.parsons@edwards.af.mil

WHY DO WE CONTINUOUSLY DEVELOP AND TRAIN OUR WORKFORCE?

So we can accomplish the AFFTC Mission:

**”We conduct and support
research, development, test and
evaluation of aerospace systems
from concept to combat.”**



SUMMARY



- The AFFTC – It's a Very Special Place***
- The Golden Age of Flight Test***
- The History of Modern Military Aviation***
- Our Workforce – Truly A National Asset***
- We Take Professional Development Seriously***
- Continuous Improvement of Training Programs***
- AFFTC's Value to the Nation and to the World***

Final Thought:

“Those who expect to reap the blessings of freedom must undergo the fatigue of supporting it.”

Thomas Paine, 1777



Questions?



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