

Air Education and Training Command

Sustaining the Combat Capability of America's Air Force



High Fidelity Maintenance Trainers

U.S. AIR FORCE

Colonel Jim Silva

28 Oct 2003

Integrity - Service - Excellence



High Fidelity Maintenance Trainers



AETC

- Benefits of High Fidelity Trainers
- Examples of Maintenance Trainers
 - Fighter... F-15, F-16, F-117
 - Airlift... C-17, C-130
- Building Maintenance Trainers... Hard Trainers
- Future Development... faster, cheaper
- Classroom 2005 Initiatives... Soft Trainers



Benefits of High Fidelity Trainers



AETC

- Training in a Controlled Environment
- Decrease Need for Operational Aircraft
- Enable the Students to Rehearse Procedures
- Actual Duplication of Aircraft Systems
- Decreases Student Certification Time
- Utilized by Maintenance and Aircrew Personnel



Fighter Aircraft Trainers



AETC

- Perform Objectives
 - Remove Seat/Canopy
 - Remove/Install LRUs
- Multiple Students at a Time
- Gain System Theory
- Visualize System Ops
- Troubleshoot Faults
- Perform Inspections





Airlift Trainers



AETC

- State-of-the-Art Trainers
 - C-130J Cockpit/Avionics
 - C-17 Engine Trainer
 - C-17 Main Gear Trainer
- Combined Hard/Soft Task Accomplishments Trained to Certified Level
- Controlled Classroom Environment
- Mirrors Actual Airframes





AMOC Edge Development



AETC

- AF Chief of Staff Directed Overhaul of Basic Course
 - Focus: Fleet Health and AFI 21-101
 - Back to Basics Maintenance Concept
 - Emphasis on Air Expeditionary Forces - Total Force Mindset
- Increase Professional Officer Development
 - Professional Readings
 - Mentorship from Senior AF Leaders
- State-of-the-Art Classrooms
 - New \$800K Flight Line Simulator
 - First Major Upgrade in Over 30 Years
 - 60+ Computer Animations
 - Enhanced by “Hands-on” MX Exercises





Building Trainers



AETC

- 982 MXS builds and supports trainers for SAFB and 46 world wide locations
- Challenge – rebuild crashed assets into trainers
 - One example is MQ-1 Predator UAV
 - Build F-15E weapons load trainer (TFE-24)
 - Reclaim crash damaged F-117 aircraft





MQ-1 Predator Hellfire Missile



AETC

- Air Force first live fire test Feb 03... Totally Successful
 - New combat capability for the war fighter
- Developed MQ-1 Predator load trainer for Hellfire missiles
 - Students load and inspect missiles
 - Load trainer is deployable
- 100% realistic training
- Reduced impact on operational UAVs
- Accomplish 94% of training objectives on trainer



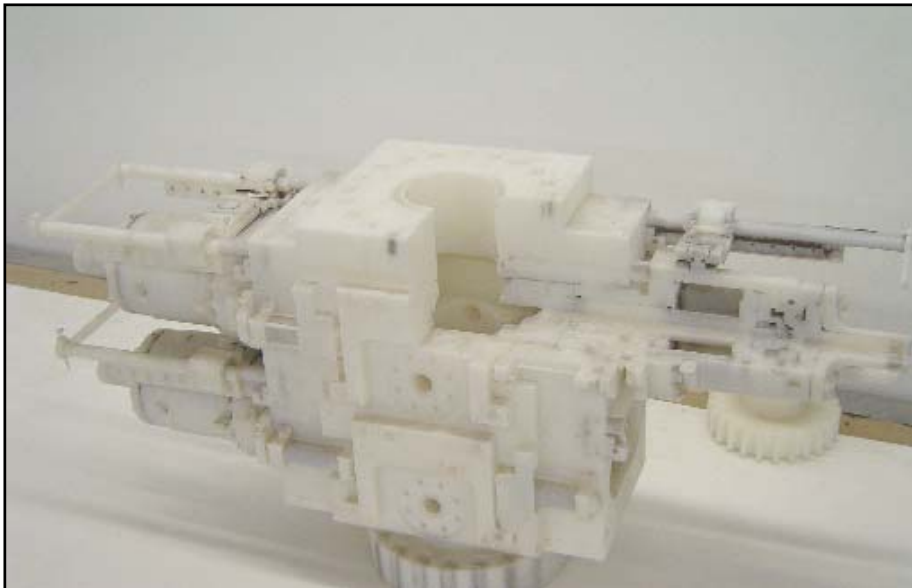


Future Trainer Development



AETC

- Use new technology to build trainers faster, cheaper
 - Powder coating—reduces metal paint time 50%, less hazardous
 - Rapid prototyping—fused deposition modeling uses plastics to build 3D trainers; 70% savings achievable





Classroom 2005

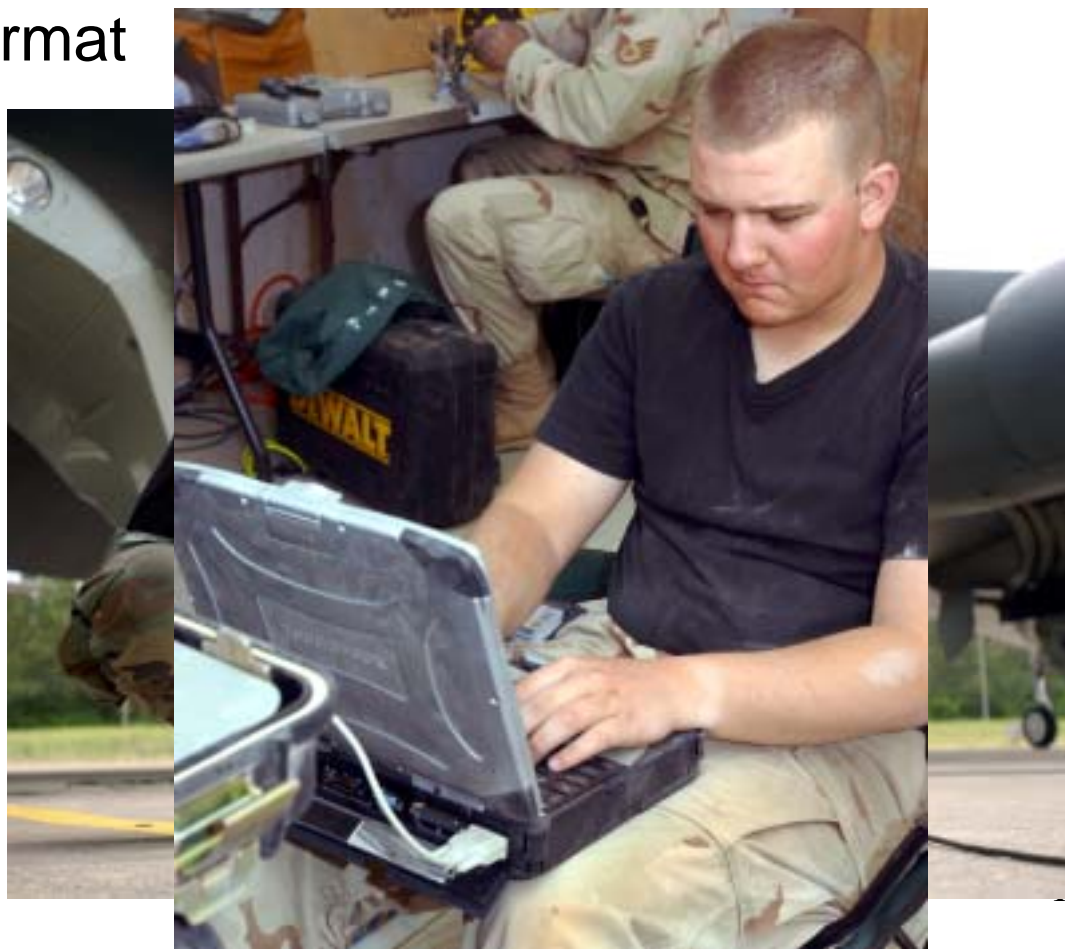


AETC

- **Technology insertion into academic classrooms**
 - Enhance course presentations - from antiquated overhead transparencies to **interactive digital courseware**
 - Support digitized technical orders – ease transformation from paper TOs to digital format

- **Equipment**

- SMART Boards
- LCD Projectors
- ELMO Projectors
- Instructor Computers
- Student Computers



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Sustaining the Combat Capability of America's Air Force



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**Delivering Training
at the Point of Need
(Field Training DETs)**

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Delivering Training at the Point of Need



AETC

- FTD... Direct Operational Support to EAF
- Advanced Training... anytime, anyplace
- Missions Supported
 - New Weapon Systems Training
 - AFSC Awarding Courses
 - Circuit Card Repair
 - AEF Taskings
 - Depot Training



Field Training Detachments



AETC

- Compliments the Host War Fighters
- Provides Advanced Maintenance Training
 - System Troubleshooting
 - Advanced System Theory/Operation
 - Differences Courses
 - Enroute Training for Overseas Locations
- Numerous Customers... Vast Spectrum
 - Guard and Reserve Units
 - AF Security Assistance Training
- Worldwide Reach... Mobile Training Teams



Field Training



AETC

- Training Detachments at 44 world wide locations
 - 637 classrooms for advanced maintenance training
 - Hands-on instruction and training
- Maintenance Courses Provided
 - 673 courses
 - MAJCOM Master Course Listing
- Erase the bath tub experience level in maintenance
 - 35,000 student graduates FY03
 - Graduates support AEF
 - 643,000 instructional hours FY03
 - 569K hours/31.7K students FY02
 - 542K hours/29.9K students FY01





Field Training



- Highly qualified/motivated instructors
 - 730 instructors assigned
 - All journeymen or craftsmen
 - 99% awarded associates degree
 - Average grade E-5/E-6
- Aircraft trainers at each location
 - State-of-the-art trainers
 - Soft trainer computer simulations
 - Actual operational aircraft
- On the spot training delivery
 - Training sessions
 - Partial courses
 - Formal courses





F/A-22 Maintenance Training



AETC

- First aircraft delivery, Nellis AFB Jan 03
 - Eight instructor authorizations
 - TOD in validation/verification
 - Developed 29 maintenance courses
- First aircraft delivery, Tyndall AFB Oct 03
 - Eight instructor authorizations
 - Accepted first seat/canopy trainer
- State-of-the-art classrooms both stations
 - Eight students to one instructor
 - Two classified/eight teaching rooms
- Instructors assisting with TOD Val/Ver
 - 1,000 tasks validated
 - Close working relationship with contractor





Next Generation Missile



AETC

- Training for the world's most advanced short-range missile
 - Partnership with Raytheon & Air Force
 - Fielded and IOC at four locations
 - Training consists of inspection and testing
 - Technicians remove/replace LRUs
 - High reliability & kill rate
 - Compatible on F/A-22, F-15, and F-16





Mission Ready Airmen



AETC

- Hands-on training at 16 locations
 - Students inspect aircraft
 - Accomplish servicing
 - Launch/recover actual sorties
- Maintenance apprentice-levels
 - Graduate 3,500 crew chiefs
 - Specific weapon system training C-130, C-17, F-15...
- Future breakout locations
 - F-15E training at SJ AFB
 - Block 40 F-16 at Hill AFB
 - Block 50 F-16 at Shaw AFB
- Producing 15% of host sorties





Circuit Card Repair Training



AETC

- Miniature/Micro-miniature electronic repair training
 - Air Force training locations... Davis-Monthan, Spangdahlem
 - Supports AFREP Programs in all MAJCOMs
 - Increases base self-sufficiency... LRU and SRU repairs
- Six qualified instructors... certified by USN
 - State-of-the-art classroom/lab
 - Eight six-week classes annually
 - 151 student graduates FY03
- Incorporating troubleshooting
 - Huntron Tracker/Protrak
- Big savings... ACC cost avoidance \$19M since FY99





Train like we fight!



AETC

- AEF deployment support
 - Eliminate training backlogs
 - Participate in aircraft generations
 - Prior to “deployment” airmen find they have all the skills to succeed
 - Deploy with the war fighter





Instructor Flexibility



AETC

- Up to 60% of AFMC workforce eligible to retire in 5 yrs
 - Aircraft systems training received low priority
- AFMC transferred 19 civilian positions to AETC
 - WR-ALC – 8 positions, 42 courses
 - OO-ALC – 5 positions, 35 courses
 - OC-ALC – 6 positions, 42 courses
- Meeting the training needs:
 - Space A training continues at DETs
 - 545 trained in FY01
 - 1,887 trained in FY02
 - 2,024 trained in FY03
 - Jun 03 - Instructors in place at ALCs





We Create Combat Capability



AETC

By addressing each area of maintenance training,
82d Training Wing has sustained combat capability:



Global training to sustain warfighter capability.

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