Standardized Space Trainer (SST)

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SMC/SN Chief Engineer
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**Report Documentation Page**

<table>
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Overview

• Training Challenges
• New Method
• Need for Standardized Space Trainer for 50 & 460 OSS IQT and Unit Training
• Current Status of Standardized Space Trainer (SST)
Stove-piped courses specialized knowledge for a single position, in one SOPS
TPR projections done 2-3 yrs previously are never accurate due to changes
Limits Manning flexibility to put new operators where they are needed
Vacant positions, positions that lack experience
New Space Operations Initial Qualification Training (IQT) course developed and planned for Oct 06 (CY) at VAFB

- SOPS Assignment executed 3/4 into training
  - Ensures manning balance throughout SOPS and mission readiness
- Intro to IQT BOPR course provided at the end of IQT training
  - Mission specific introduction with basic performance requirements
New Training Model

New Sat C2 IQT Course (“White Sat”)

• Develops new operators with in-depth, fundamental knowledge of overall satellite system vs. stove-piped, performance-centric, system-specific focus
  • Attitude Control Methods  • Thermal Control Systems
  • Electrical Power Subsystems  • Ground System Basics
  • Satellite Contact Procedures  • TT&C

• Uses examples from operational satellites and their control systems to reinforce understanding

• Includes basic hands-on simulator training to prepare students for UQT at Schriever (using “in-place” resources)

• Initial Qualification Training (IQT) will be modeled similar to Undergraduate Pilot Training

End Goal: Education Focus Leading to Flexibility and Adaptability in Follow-on Operational Training
What is a Standardized Space Trainer (SST)

COTS Hardware, Common Operating System and Network Capability

- Standardized Space Trainer provides the HW/SW platform from which Initial Qualification Training and System Specific Training can be launched – not a generic training system

- Software applications would be developed by SPOs to execute system specific space training missions -- GPS OCX, SBIRS, TSAT, etc, would have their own applications and operate on SST just like opening Word, Excel, Photoshop, etc on a desktop PC

- Capable of both Crew and Positional Training

- Reduces Operations & Maintenance (O&M) costs associated with having multiple stovepipe space system simulators at VAFB, SAFB and Buckley

- Standardized Space trainer used for training - not testing and development

- Distributed Mission Operations – Space (DMO-S) compatible
Future of Training

Standardized Space Trainer (SST)

- VISION: No need for individual, stovepipe and expensive training space systems -- Standardized Space Trainer (SST) could be used for:

  - AETC (533TRS) Initial Qualification Training (IQT)
    - The new Sat C2 Course: software developed to serve as “White Sat” (i.e. T-38 “white jet” trainer at UPT) to teach fundamentals of: behavior of common military satellites, sub-systems (common to all satellites--non-payload-specific), space flight, orbital mechanics, etc and satellite ops (contact procedures; ground system basics; TT&C)
    - Basic Operator Course (BOPR): Introduction to assigned Satellite System
  
  - 50 OSS Unit Training (Qualification and Proficiency Training)
    - Software developed to support 2, 3 and 4 SOPS training requirements
  
  - 460 OSS IQT and Unit Training (Qualification and Proficiency Training)
    - Software developed to support SBIRS C2 and Missile Warning training

Between the 533TRS, 50 OSS and 460 OSS eight different training systems are currently used for IQT and Unit Training - New Systems like OCX, TSAT and SBSS could add more
Future of Training

Current Status Standardized Space Trainer

- STAO, HQ AFSPC/A3 & A5, 50 OSS, 381TRG and HQ AETC have been working closely to make a standardize training system a reality for space.

- Lt Gen Hamel (SMC/CC) fully supports standardized space ops trainer and has assigned SMC/SN to lead acquisition effort for Standardized Space Trainer.
  - Request for Information (RFI) released to industry 12 Apr 06
    - Industry responses originally due back 24 May 06 - extended one week
  - Education and Training Technology Applications Program (ETTAP)
    - Submitting SST concept for ETTAP funds – expect $500K (FY06)
  - Early acquisition efforts being worked in parallel with AFSPC requirements process – requirements definition & CONOPS

- Space TAG has assigned action to HQ AFSPC/A3T to establish Standardized Space Trainer (SST) TPT
  - SST TPT will be responsible for STP and accomplishment of TSRA
Utilization/Summary

• Utilization Strategy
  • Acquisitions currently at draft RFP stage could include flexibility to include SST
  • Currently fielded programs could benefit from SST
    • Training systems considering mod/upgrade would cost compare SST option

• Summary
  • Paradigm changing to standardized space training system away from expensive, unique, stove-piped systems
  • RFI inputs now due 31 May 2006

For more information see: http://ax.losangeles.af.mil/axl/stao/standardized_trainer.html
Potential Operator Progression

How it all fits together at 50 OSS

SE
MC
Eng
OA
OSS – I or E
Payload
Expert
Vehicle
Expert
Line Instructor
Operator w/ Upgrade Tasks
SOPS Specific Operator
Ops Group Training/Basic Operator (BOPR) Certification/UQT
Satellite C2 Ops Course
Space 100
1 Set of Ops Group Requirements

Sat C2 Sim

Upgrade Modules

50 OSS

AETC