

Headquarters U.S. Air Force

Integrity - Service - Excellence

Leveraging Synthetic Training to Enable an Operationally Ready Air Force



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AF/A3T
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Introduction



Breaking Barriers ... Since 1947



The Readiness Imperative

SecAF / CSAF #1 Priority: Restore Readiness . . . to win any fight, anytime!



World War II
US produced 6000 planes in 1939
Production in 1944 was 96,300

Vietnam
US Kill Ratio was 2:1
1:1 vs Mig-21

Post Desert Storm
Adversaries narrow the technology gap;
Try to surpass American innovation



**Defense Industrial Base
Decisive Victory**

**Red Flag
Gulf War Success ♦ Air Dominance**

Is this our Moody Suter Moment

USAF technological advantage has eroded...we must be better trained



Air Force Readiness Path

- Readiness is a combination of properly trained Airmen employing high quality equipment.
- The Air Force needs to invest in Airmen, their equipment and their training environments.
 - Airmen - Continue to grow the force to meet future strategic requirements
 - Solve the rated manning crisis
 - Solve the aircraft maintainer crisis (numbers and experience balance)
 - Training - Improve the operational training infrastructure (OTI)
 - Create synthetic venues for sets of reps and full up employment
 - Live training still important (fog & friction, high G, true risk, exercise support functions)
 - Equipment – F-15E, AC-130W, UH-1, F-35, B-21, Directed Energy Weapons
 - Ensuring smart acquisition...it's not just about the iron



Operational Training Infrastructure Defined

Live

- Ranges
- Interface devices
- **Aggressors**
- **Threat generators**
- Embedded training

Blended

Synthetic

- Simulators
- **Ranges**
- **Aggressors**
- **Threat generators**
- Secure networks

OTI = The framework needed for full-spectrum operational training to regain readiness



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The Uncertain Future of Operational Training





OTI Challenges

- **Live Challenges**
 - Geographically constrained ranges
 - Competition for airspace and spectrum
 - Operational security concerns
 - High Cost of replicating high-fidelity threats/targets
 - Increased flying-hour cost for 5th Gen systems
- **Synthetic Challenges**
 - Expensive to develop – Slow to procure – Difficult to keep concurrent
 - Cybersecurity
 - Interoperability Fidelity
 - Harvesting synergies between DT/OT and Operational Training (e.g. JSE-AF)
- **SCARS**
 - USAF needs cyber secure readiness
 - Open standards

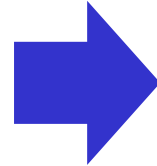


Synthetic History

Historical



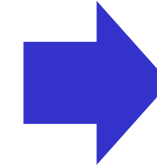
- Checklist training
- Emergency procedures
- Basic instrument training



Recently



- Sims connected when able
- Opportunity vs requirement
- Ad hoc MAJCOM efforts



Now



- Mandatory for high-end training

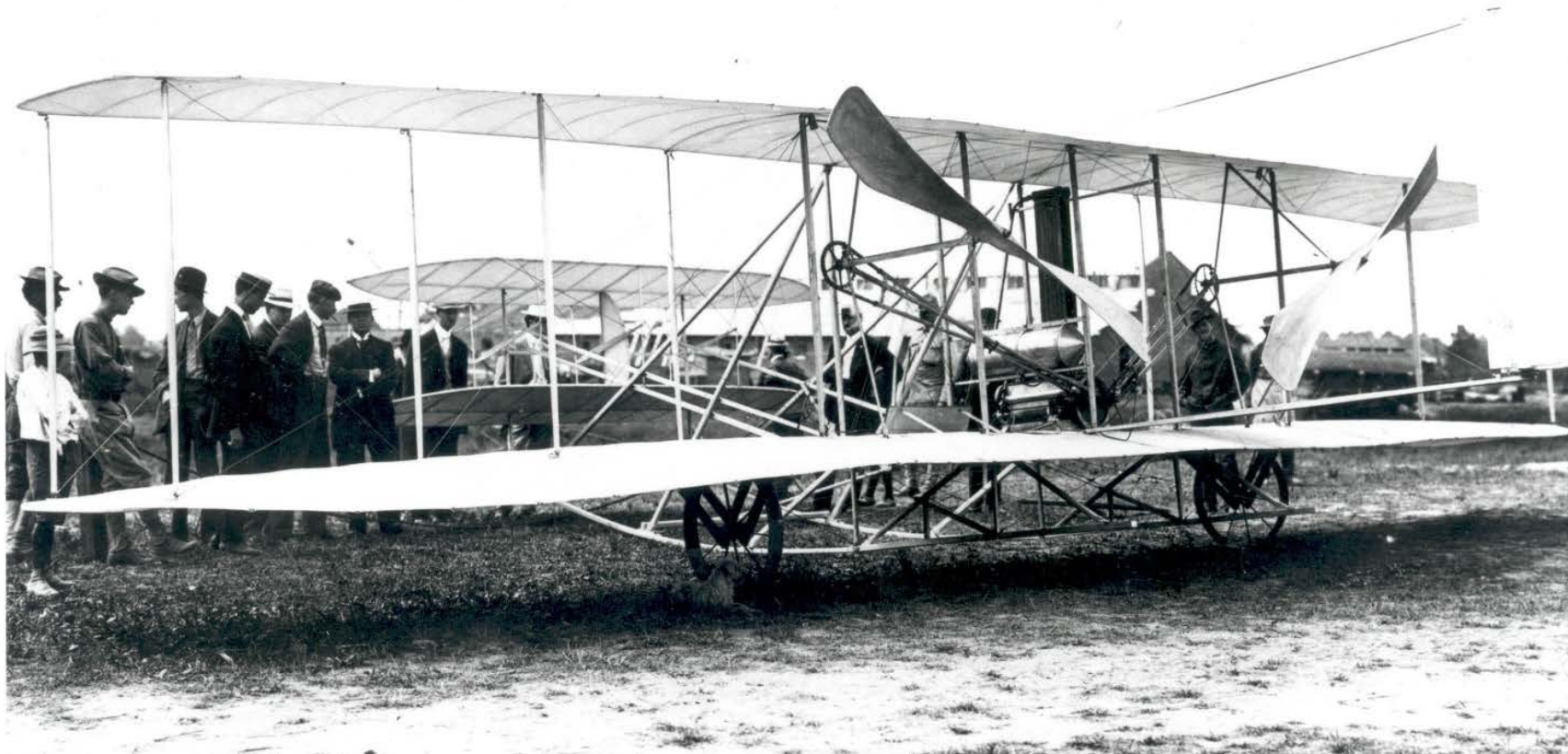
Relevant – Realistic – Interoperable – Secure

Breaking Barriers ... Since 1947



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Wright Flyer at Ft Meyer



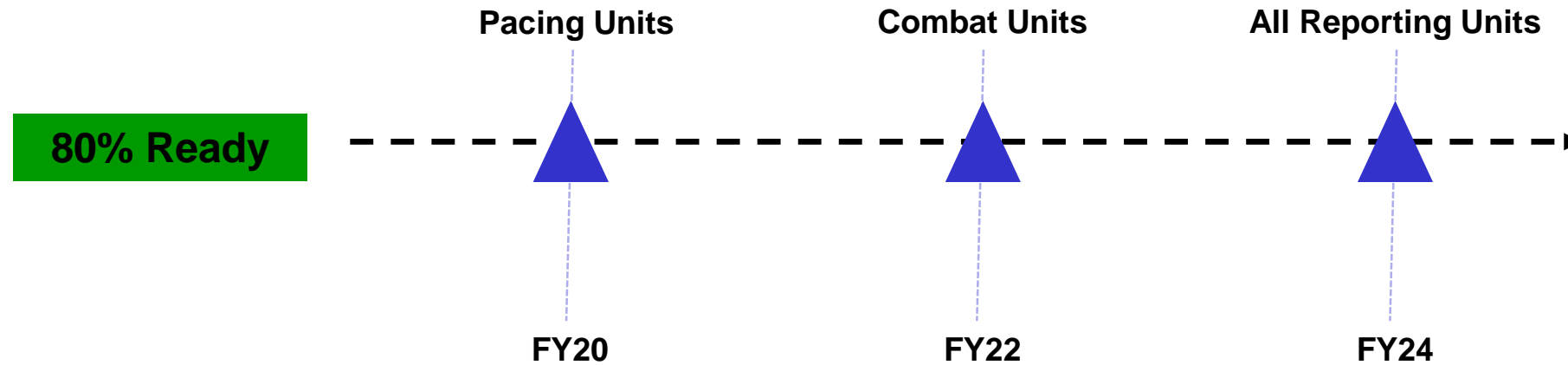
Training Infrastructure... an afterthought since 1907

Breaking Barriers ... Since 1947



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Recovery Goals & Milestones



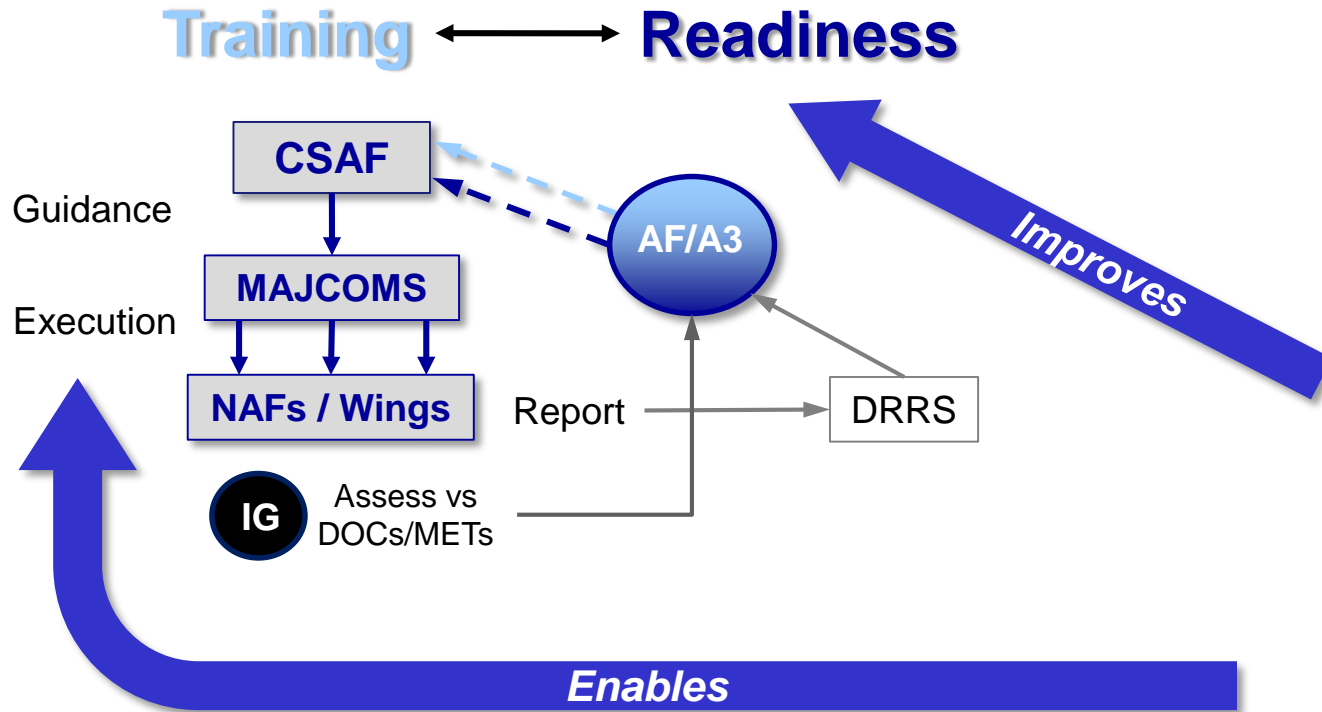
Pacing units are Air Force squadrons required by the 2018 National Defense Strategy

Prioritize Pacing Unit Readiness...Then Combat Coded Units...Then Whole Air Force

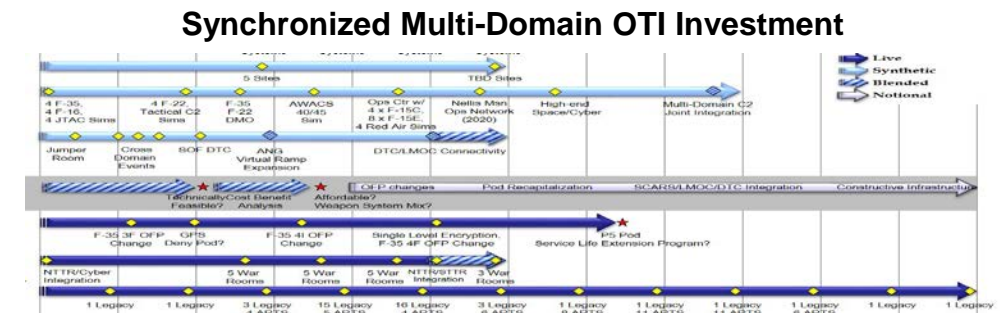
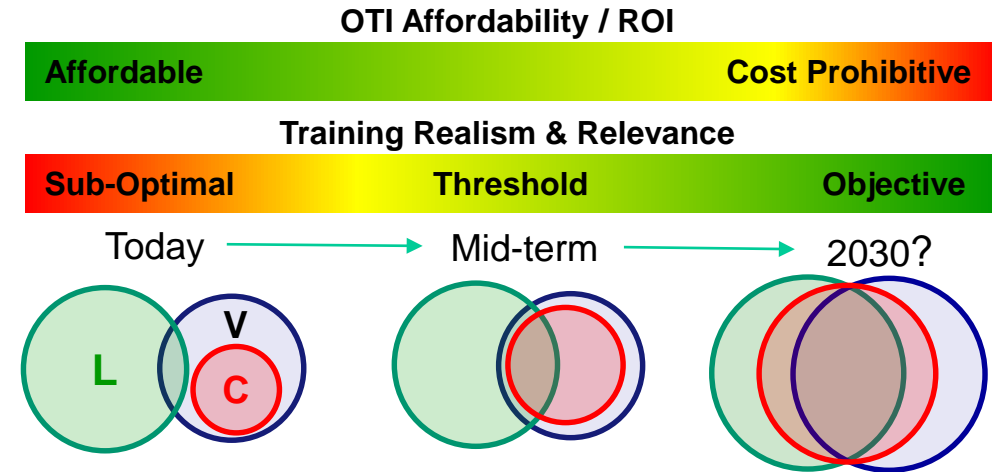


Training and Readiness

Restore Readiness: Ready for what?



Restore Readiness: How? With What?



Focused Training, Improved Readiness Metrics...Steadily Enhanced as OTI Advances



Discussion