

Squadron Officer College

Developing Aerospace Leaders, Shaping the Air Force Future



THEATER AIRPOWER
VISUALIZATION

U.S. AIR FORCE

Today's Young Warriors – Tomorrow's Warrior Leaders

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 11 MAR 2008		2. REPORT TYPE N/A		3. DATES COVERED -	
4. TITLE AND SUBTITLE Theater Airpower Visualization				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Air Force				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited					
13. SUPPLEMENTARY NOTES 2008 DoD M&S (Modeling and Simulation) Conference, presentations held in Orlando, Florida on March 10 - 14, 2008, The original document contains color images.					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT UU	18. NUMBER OF PAGES 22	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			



Squadron Officer College



A1230 Force Packaging (TAV Package Q Replay)

Today's Young Warriors – Tomorrow's Warrior Leaders



Squadron Officer College



A1250 AFEX AIR FORCE EMPLOYMENT EXERCISE

Today's Young Warriors – Tomorrow's Warrior Leaders



A1250 AFEX



- Primary emphasis: students learn to use TAV user interface to plan and control air missions
- Students explore and apply academic lesson material taught in first week: *A1210 Air and Space Systems and Capabilities*, *A1220 Air and Space Power Functions*, *A1230 Force Packaging*
- Orients students to AOR (prep for A1380 AIRGAP) through combat execution
- Experiential learning and decisionmaking
- Stimulates student questions and discussion about initial academics – use the opportunities to TEACH



A1250 AFEX



- Classroom is divided into four WOC teams plus a central AOC cell to plan and coordinate operations
- Each WOC is assigned a combat wing with flights of F-15/F-16 aircraft loaded to perform various roles
- AOC develops an informal mission plan and WOCs command force packages to achieve air dominance through SWEEP/SEAD/STRIKE
- Two WOCs on each coast work as a team against an assigned coastal target area
- Team East attacks 3 enemy airbases on east coast
Team West attacks 3 enemy airbases on west coast



A1370 Team Forces



- Each student WOC team commands a Coalition F-15 or F-16 wing at an airbase:
 - Primary mission aircraft loaded with bombs: BSU-50 2,000# and BSU-49 500#
 - Sweep/Escort aircraft loaded with counterair and SEAD loads



Detached Support



- Each WOC has a dedicated tanker track and tankers. Tankers fly to the tracks but may be retasked anywhere
- Each WOC owns either an E-3 AWACS or RC-135 Rivet Joint. Assets fly to their track but may be retasked
 - AWACS detects airborne enemy aircraft but doesn't identify types
 - Rivet Joint identifies airborne enemy aircraft as well as enemy search radars





A1250 AFEX



- Only six airbases with MiGs are displayed on AOR map
- Three target airbases on each coast
- JIPTL prioritizes targets based on aircraft type at enemy airbase





A1250 Teaching Tips



- Take time to play the scenario yourself so you know it well
- Focus your students on **winning air superiority** and **attacking their target airbases** with fighter-bombers
- Point out weapon differences (missile types and bomb types) to better prepare for AIRGAP
- Let students have fun playing TAV and learning the interface
- The more students play, the more they learn about airpower!



Squadron Officer College



A1380 AIRGAP DISTINCTIVE CAPABILITIES EXERCISE

Today's Young Warriors – Tomorrow's Warrior Leaders



A1380 AIRGAP



- Primary emphasis of block is exploring and reinforcing the six USAF **Distinctive Capabilities**
- Exercise also highlights many of the USAF **Air and Space Power Functions**
- Emphasizes **teamwork** between 4 discrete forces and integration/synchronization of diverse operations. Builds on AFEX basic teamwork
- Prepares students for Joint Air Estimate Process (JAEP) module of lessons
- Prepares students for Blue Thunder III capstone wargame



A1380 AIRGAP



Objectives for each AIRGAP team:

- **Information Superiority**
Maintain situational awareness over AOR
Find strategic targets for Global Attack team
- **Air Superiority**
Neutralize enemy MiG and SAM forces
Protect forces from other teams
- **Rapid Global Mobility & Agile Combat Support**
NEO US civilians, deliver Patriot battery, and sustain
Coalition air operations
- **Global Attack & Precision Engagement**
Neutralize enemy C3 and WMD
- **Counterland (Artificial Intelligence Player)**
Repel enemy ground invasion



Threat Environment



- Threats cued by early warning search radars, and controlled by command nodes for effects-based targeting
- MiGs with radar and IR air-to-air missiles are aggressively patrolling enemy airspace:
 - Su-30 Flanker (AA-12 Adder) **AIRGAP ONLY**
 - MiG-29A Fulcrum (AA-10 Alamo)
 - MiG-23ML Flogger (AA-7 Apex)
 - MiG-21MF Fishbed (AA-2 Atoll)
- Airspace is defended by dense IADS surface-to-air missile (SAM) network of SA-2, SA-3, and SA-5 (no SA-5 in A1370) plus MiG interceptors, and anti-aircraft artillery (AAA)
- Threats are similar to those seen in Blue Thunder III





Squadron Officer College



A1380 AIRGAP Debrief

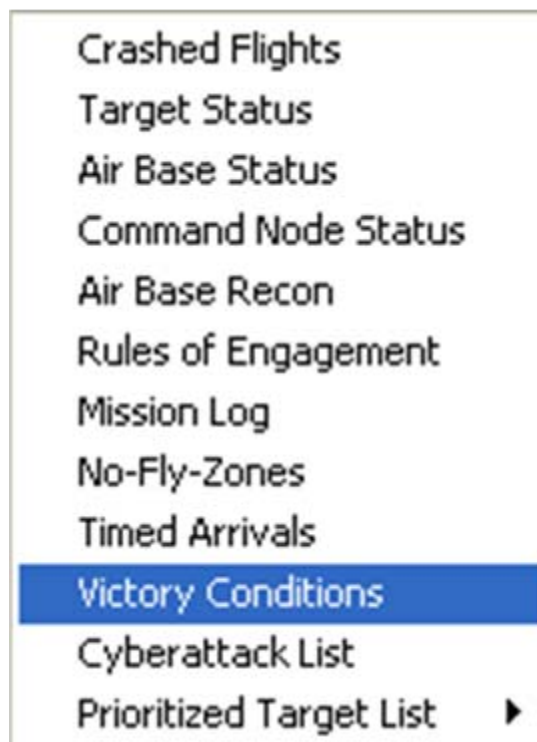
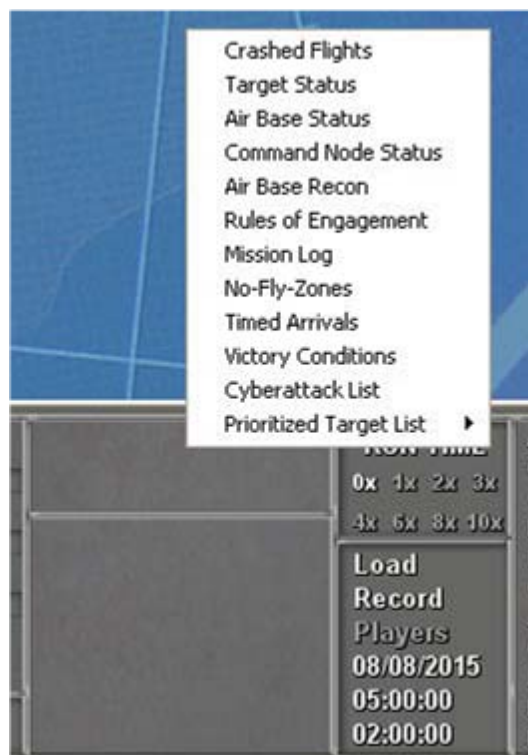
Today's Young Warriors – Tomorrow's Warrior Leaders



Debriefing Resources



- To the extent TAV software permits, AIRGAP is scored to match EXORD objectives ([Centralized Control, Decentralized Execution](#)).
- Right-click in the second box from the lower left on the interface for debrief menu





Victory Conditions



SOC

A1380 AIRGAP Execution - Class 07B

Victory Dialog

Coalition Losses and Points

Airplane Losses	22	Airplane Points	50800
Helicopter Losses	5	Helicopter Points	6800
Ground Losses	20	Ground Points	200
SAM Site Losses	0	SAM Site Points	0
Recon Points	0	Rescue Points	500000
No-Fly-Zone Points	0		

North Korea Losses and Points

Airplane Losses	151	Airplane Points	25480
Helicopter Losses	41	Helicopter Points	2660
Ground Losses	1979	Ground Points	1509
SAM Site Losses	0	SAM Site Points	2400
Recon Points	0	Rescue Points	0
No-Fly-Zone Points	0		

Victory Values

Major Defeat	200000	Minor Defeat	400000
Minor Victory	600000	Major Victory	800000

Total Points: 474249 Outcome: Draw

OK Help

Record Players: 08/08/2015 07:00:00 00:00:00

Ground Map: All Orders, Generic Orders, Missions, No-Fly-Zones, Last Crash or Hit

315 420 480

Bingo Winchester Refueling 5859 nm

CRU LOW



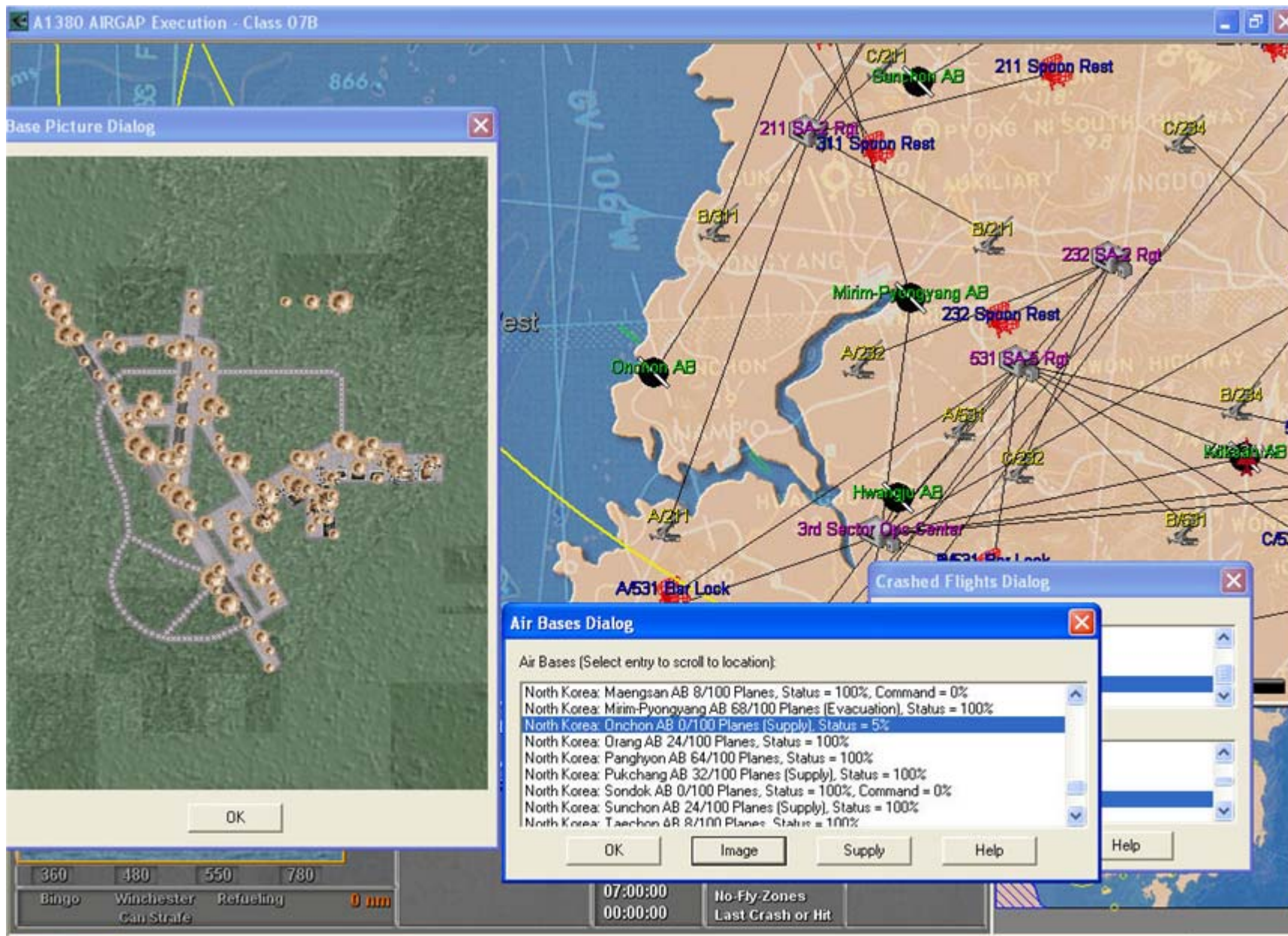




Airbase Results



SOC





Prioritized Target List



SOC

Prioritized Target Dialog

Prioritized Target List: Coalition

Target	Status	Attacks	Est Damage
Kilchli No Dong SSM Site (...)	??	??	??
Kangye WMD Site (Target)	??	??	??
620 Arty Corps (Target)	??	??	??
Kangdong Arty Corps (Target)	??	??	??
1st Sector Ops Center (Com...	??	??	??
Onchon AB (Air Base)	??	0	0%
511 SA-5 Rgt (Command N...	??	0	0%
Pukchang AB (Air Base)	??	0	0%
3rd Sector Ops Center (Com...	??	??	??
211 SA-2 Rgt (Command N...	??	??	??
311 SA-3 Rgt (Command N...	??	??	??
531 SA-5 Rgt (Command N...	??	0	0%
2nd Sector Ops Center (Co...	??	??	??
321 SA-3 Rgt (Command N...	??	??	??
Sunchon AB (Air Base)	??	0	0%
231 SA-2 Rgt (Command N...	??	??	??
233 SA-2 Rgt (Command N...	??	??	??
235 SA-2 Rgt (Command N...	??	??	??
232 SA-2 Rgt (Command N...	??	??	??
234 SA-2 Rgt (Command N...	??	??	??
224 SA-2 Rgt (Command N...	??	??	??
521 SA-5 Rgt (Command N...	??	0	0%

OK Attacks Help



Developing Aerospace Leaders, Shaping the Air Force Future



Questions?



Today's Young Warriors -- Tomorrows Chiefs



SUMMARY



- Overview
- Air and Space Basic Course Background
- Expeditionary Airbase Simulation
- Theater Airpower Visualization
- Summary