



Air and Space Basic Course



Learning USAF Doctrine Through Simulation

“Air & Space Warriors for the 21st Century”

Report Documentation Page

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OVERVIEW



Overview

Air and Space Basic Course Background

Expeditionary Airbase Simulation

Theater Airpower Visualization

Summary



Air & Space Basic Course



- Corona identified need to overcome “Tribes” (career-fields) mentality for an “Airman” identity
- Basic course for newly-commissioned 2nd Lieutenants: 5-6 weeks at Maxwell (1998)
- Common officer (USAFA, OTS, ROTC commissioning sources) PME: leadership, teamwork, problemsolving, and physical conditioning
- Heavy focus on airpower basic warfighting doctrine at application level (wargaming)



Squadron Officer College



- In 1999, Squadron Officer School (SOS) for Captains merged with Air and Space Basic Course (ASBC) for 2nd Lieutenants
- Squadron Officer College (SOC) provides administrative, curriculum development, and mission support to both schools
- Schools each have Commandants who focus on classroom instruction



Air and Space Basic Course



Expeditionary Airbase Simulation (EAS)

“Air & Space Warriors for the 21st Century”



Expeditionary Airbase Simulation



- Expeditionary airbase “citybuilder” simulation concept in SOC in 2002
- SOC submitted ETTAP proposal to AETC in Fall 1996; approved December 2006
- BreakAway Ltd and KMS Inc went on contract in Jan 2007 for 10 month project
- Final deliverable sim & doc in Nov 2007
- EAS will debut in ASBC classrooms during Class 08D (May-Jun 07)



EAS Concepts



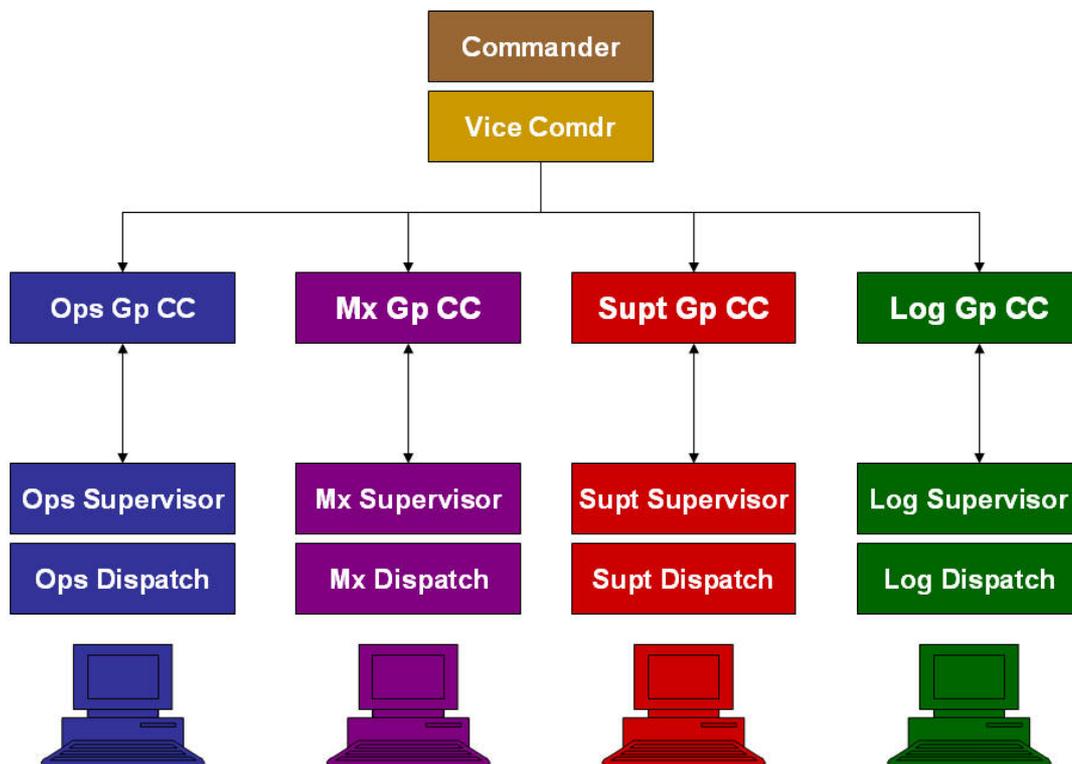
- First USAF simulation to focus on airbase or installation level (vs flight sim or AOC)
- Expeditionary airbase level helps show how each career field contributes to mission
- GWOT expeditionary airbases: 16 for OEF, 16 for OIF
- Students have better idea where they fit in and what their peers do
- Understand “moving parts” at airbase as groups and squadrons team together



EAX STRUCTURE



Divide the flight into 5 teams: a base command section (2) and four functional groups of 3 students each in the following roles:

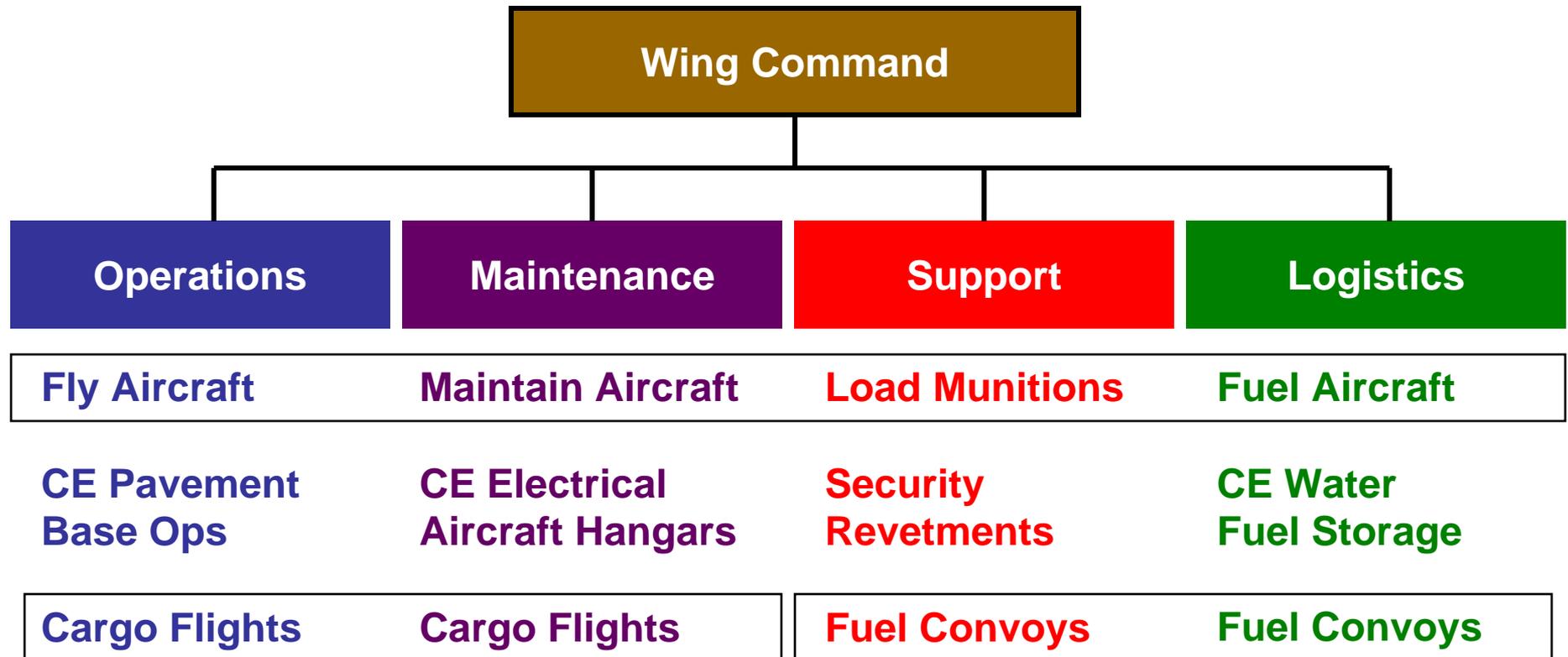




GROUP ROLES



Org structure is arbitrary and not representative; used to distribute workload and keep each student group engaged throughout





BASE CONFIGURATION



EAS

File Info Network Help Personnel 38 Const Supplies 100 Gasoline 2000 Water 3957 Food 2486 Power off Jet Fuel 0 Munitions 0 Spare Parts 0

Day 1 00:42

Task Summary

Current Phase: Runway Prep
 Next Phase: Open Air Base

Tasks
Unloading Area Paint (Unloading Area Upgrade)
Airfield Paint (Runway Upgrade)
Airfield Lights (Runway Upgrade)
Arresting Barrier (Runway Upgrade)
Mobile Control Tower (Runway Upgrade)

Day 1 00:00 Medium enemy threat in area



EAS INTERFACE



The screenshot shows the EAS (Earth and Space) interface. The window title is "EAS". The menu bar includes "File", "Info", "Network", "Help", "Personnel 36", "Const Supplies 100", "Gasoline 2000", "Water 3957", "Food 2486", "Power 611", "Jet Fuel 0", "Munitions 0", "Spares Parts 0". The main display area shows a 3-D World view of a desert landscape with a large, complex structure. A compass rose is visible in the bottom right corner of the 3-D World view. The interface is annotated with several callouts:

- Pull-Down Menus Display Buttons (5)**: Located in the top left corner of the main display area.
- Resource Display**: Located in the top right corner of the main display area.
- Mode Buttons (7)**: Located in the top right corner of the right-hand panel.
- Menu Display**: Located in the middle of the right-hand panel.
- Message Area**: Located in the bottom of the right-hand panel.
- 3-D World**: Located in the center of the main display area.
- Compass Rose**: Located in the bottom right corner of the main display area.



EAS Objectives



- Flight is evaluated as an airbase team
- Objectives for expeditionary airbase exercise developed from AFDD1-1

Organizational Leadership Competencies

- Supervise Airmen
- Accomplish Mission: Build up airbase and generate combat sorties
- Manage Resources



SUPERVISE AIRMEN



Scoring

Health/Welfare | Mission Readiness | Resource Expenditures

<u>Health</u>			<u>Morale</u>	
	Number	Penalty	Day	Morale
Sick Teams	2	-2	1	90.0
Injuries	0	0		
Deaths	0	0		
		Bonus		
Air Passenger Terminal		0		

Scoring			
Base Health Score	100	Average Morale	90.0
Adjustments	-2		
Health Score	98	Welfare Score	90.0

SCORES	Health/Welfare	94
	Mission Readiness	100
	Resource Expenditures	100
	OVERALL	98

Health/Welfare of Airmen is one of three evaluation areas for air base command. Morale is measured daily and averaged.

Sick, injured, or fatalities (terrorist attack) all count significantly against Health/Welfare score.

Medical, hygiene, and recreation facilities help improve health & welfare levels.



SUPERVISE AIRMEN



An expeditionary airbase is built up to support approximately 1100 Airmen for each fighter squadron-equivalent flying unit

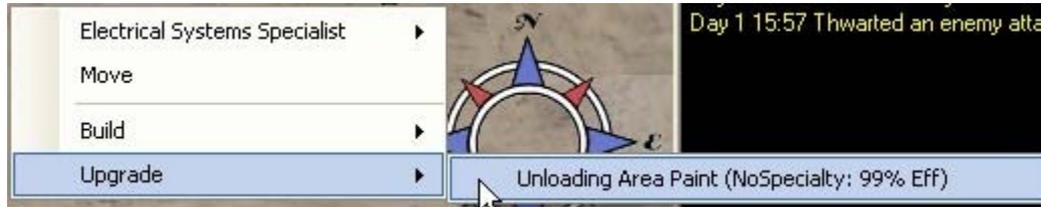
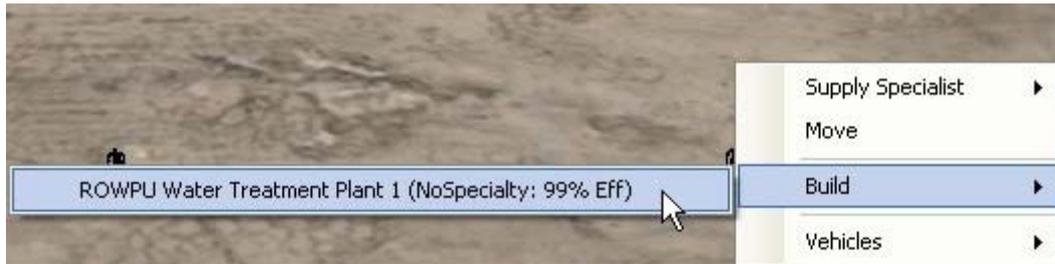
The lives and well-being of these Airmen are the responsibility of the airbase command staff

Simulated Airmen should be treated like real people -- care for basic needs, supervise work, and they will accomplish the mission

The EAX exercise: familiarize students with expeditionary airbases and practice LEADERSHIP and TEAMWORK



SUPERVISE AIRMEN



Airmen can build base facilities, upgrade structures, or drive vehicles

Personnel Summary

Type	Status	Stamina	Morale
	Ready	100%	81%
	Resting	93%	81%
	Resting	70%	81%
	Resting	86%	81%
	Ready	71%	81%
	Ready	100%	81%
	Resting	88%	81%
	At Work	85%	81%
	Ready	96%	81%
	Ready	100%	100%
	Ready	100%	100%
	Sick/Injured	65%	91%



SUPERVISE AIRMEN



Keep an eye on Stamina levels before Airmen get sick or injured (and not available for duty!)

Personnel Name:
Security Forces Personnel 1

Specialty: Security

Status: Sick/Injured

Morale:
[Progress bar]

Stamina:
[Progress bar]



Send Airmen to rest (need Billeting) before Stamina level drops below **75%**



Personnel Summary

Type	Status	Stamina	Morale
	Ready	100%	81%
	Resting	93%	81%
	Resting	70%	81%
	Resting	86%	81%
	Ready	71%	81%
	Ready	100%	81%
	Resting	88%	81%
	At Work	85%	81%
	Ready	96%	81%
	Ready	100%	100%
	Ready	100%	100%
	Sick/Injured	65%	81%



DEVELOP BASE



Scoring					
Health/Welfare		Mission Readiness		Resource Expenditures	
Event	Standard Completion	Actual Completion	Points		
Open Air Base	Day 4 00:00	not yet complete	20		
C2 Established	Day 9 00:00	not yet complete	20		
Establish Airbase	Day 16 00:00	not yet complete	20		
First Sortie	Day 20 00:00	not yet complete	20		
Sorties Flown	0		20		
Point Totals in RED are projected scores					
Simulation End Time:		Day 22 00:00			
Time Remaining:		19 Days 05:29			
SCORES		Health/Welfare	94		
		Mission Readiness	100		
		Resource Expenditures	100		
		OVERALL	98		

Mission Readiness is one of three evaluation areas for air base command.

Mission Readiness is measured by actual completion dates of force modules against tasked completion milestones.

Late completion of force modules loses mission points while early completion of force modules earns bonus points.

Sorties flown before scenario end also earn Mission Readiness points (more is better).



DEVELOP BASE



The ultimate mission of the expeditionary airbase is to develop and sustain the capability to generate operational airpower sorties.

The Task Summary for each force module outlines the minimum essential requirements that must be accomplished quickly before moving to the next force module milestone.

Once all force modules are completed, the base will focus on Sortie Generation.

Each task requires **TEAMWORK** between all groups!



DEVELOP BASE



Task Summary

- Current Phase: Runway Prep
- Next Phase: Open Air Base

Tasks
Unloading Area Paint (Unloading Area Upgrade)
Airfield Paint (Runway Upgrade)
Airfield Lights (Runway Upgrade)
Arresting Barrier (Runway Upgrade)
Mobile Control Tower (Runway Upgrade)



Day 1 15:57 Thwarted an enemy attack

- Electrical Systems Specialist
- Move
- Build
- Upgrade
 - Unloading Area Paint (NoSpecialty: 99% Eff)

Status: Functional

Upgrades Built:



Select an Upgrade:



Upgrade

- HeavyConstructionVehicle
- Move
- Debris
 - Repair Debris (Alert Area)
 - Repair Debris (Fueling Area)
 - Repair Debris (Runway Area)
 - Repair Debris (Runway Area)
 - Repair Debris (Unloading Area)
 - Repair Debris (Vehicle Parking Area)



Runway Upgrades



DEVELOP BASE



Build

- ROWPU (water)
- Billeting (one tent)

Upgrade

- Vehicle Parking



ROWPU Water Treatment Plant

Status: Under Construction

Maintenance Status:



CEPavementCrstr



CEWaterHVAC



CEWaterHVAC



CEElecPower



NoSpecialty



NoSpecialty



ROWPU Water Treatment Plant



Large Water Storage



Stabilization Lagoon



Landfill



Mobile Electrical Power System

The Task Summary only lists things you MUST do; some optional tasks will help preserve your force and improve your performance rating



MANAGE RESOURCES



Scoring				
Health/Welfare		Mission Readiness		Resource Expenditures
Cargo Flights		Number	Penalty	
C-130	0	0		
C-17	0	0		
C-5	0	0		
Base Power				
Days Offline (after Day 3)	0	0		
Fuel Convoy				
Occurrences	0	0		
Penalty occurs if fuel convoy arrives but can not unload all fuel due to storage limits				
Personnel Teams		On Base:	11	
	Number	Penalty		
Teams over 36:	0	0		
Teams over 44:	0	0		
		Administrative Facilities		
		Number	Bonus	
		GP Base Operations	0	0
		(no more than 3)		
		TEMPER Admin	0	0
		(no more than 10)		
		Air Freight Terminal	0	0
		Scoring		
		Base Resource Score	100	
		Penalties	0	
		Bonuses	0	
SCORES		Health/Welfare	94	
		Mission Readiness	100	
		Resource Expenditures	100	
OVERALL			98	

Expenditure of Resources is one of three evaluation areas for air base command.

Numerous resource areas are measured for scoring.

Resource Expenditures are measured by tasking of cargo flights and fuel convoys.

Maintaining constant base power and lifting in an economical number of teams helps maximize score.

Penalties are assessed for overuse of large airlifters, power outages, and too many teams.

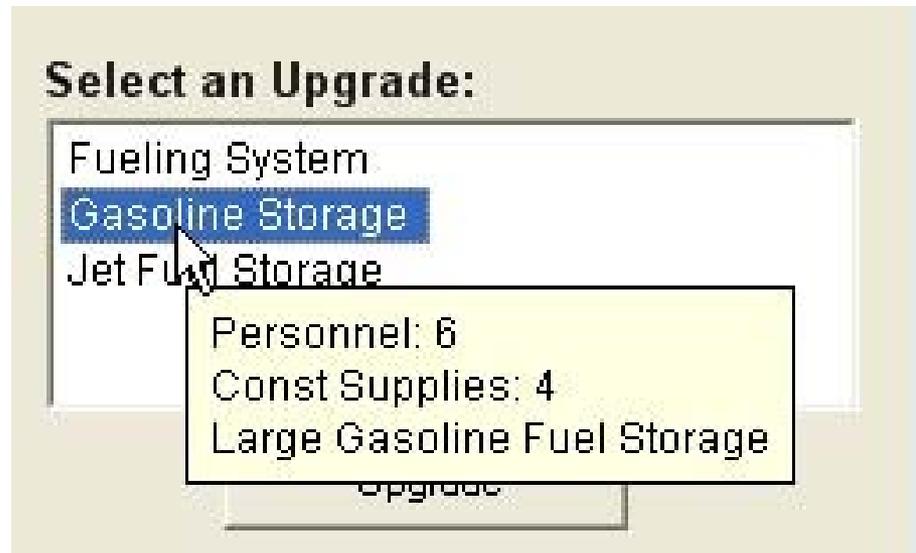


MANAGE RESOURCES



Every build or upgrade expends resources—maximize efficiency and economy

During the initial Runway Prep phase airlifters can't land yet to bring in more Personnel or Construction Supplies



Maintain sufficient resources to complete the Task Summary then quickly move to the next force module!

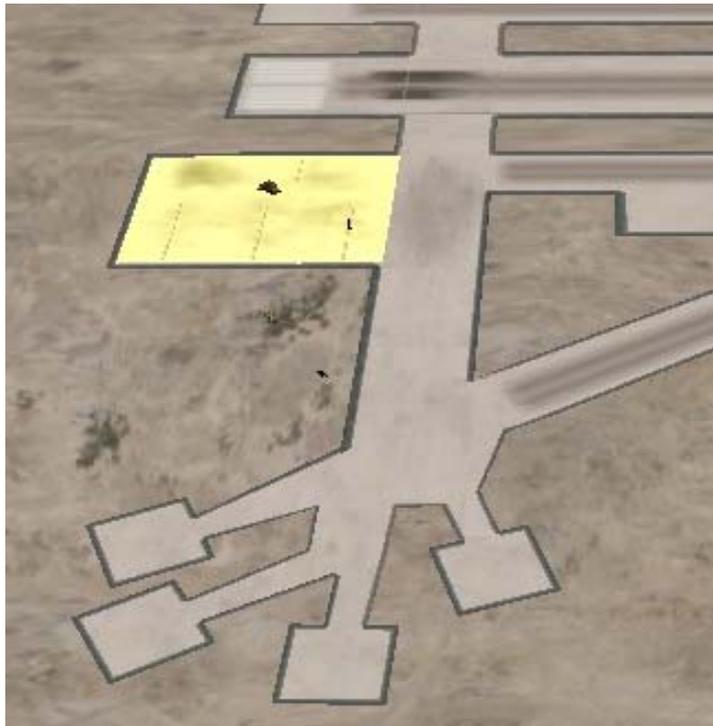


MANAGE RESOURCES



- Security Forces Personnel ▶
- Move
- Build ▶
- Vehicles ▶**

Humvee 1



Vehicle Summary

Type	Dvr.	Status	Maint.
	Empty	Empty	100%
		Ready	58%
	Empty	Under Repair	53%
	Empty	Empty	64%

Type	Dvr.	Status	Maint.
	Empty	Empty	100%
		HeavyConstructionVehicle ▶	
	Empty	Move	
	Empty	Go For Maintenance	
	Empty	Debris ▶	

RESOURCES:

Building Requirements

Construction Supplies	100	Personnel on Base	148
Available Personnel	38		

Basic Resources

	Units	Days Left	Capacity
Gasoline	2000	2.8	2000
Water	3950	1.8	4000
Food	2484	5.6	
Power	off		0

Advanced Resources

	Units/Loads	Capacity
Munitions	0	0
Jet Fuel	0	0
Spare Parts	0	



MANAGE RESOURCES



Supply Flight

PERSONNEL:	RESOURCES:	VEHICLES:
Specialty	Units/Loads	
CEPavementCnstr	Personnel	Heavy Construction
CEElecPower	Construction Supplies	Munition Truck
CEWaterHVAC	Food	Humvee
ACMaintenance	Munitions	Jet Fuel Truck
Munitions	Spare Parts	Gas Truck
Security	Water (Gallons)	
Supply		Weight: 82079/169000
Aviation		Personnel: 73/150

OK

Convoy Request

Request a Gas Convoy.

OK

Convoy Request

Request a Jet Fuel Convoy.

OK

When tasking airlifters, avoid using C-5s unless absolutely necessary. Don't bring in an excessive number of work teams (36 or less is ideal)



MISSION ACCOMPLISHED





EAS

Expeditionary Airbase Simulation

