

AIR COMMAND AND STAFF COLLEGE
AIR UNIVERSITY

BUILDING CREDIBLE CROSS DOMAIN OPERATORS

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A Research Report Submitted to the Faculty
In Partial Fulfillment of Graduation Requirements

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April 2010

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Contents

Disclaimer	ii
Contents	iii
List of Tables	iv
List of Figures	v
Abstract	vi
Introduction	1
What is Cross-Domain Operations?	4
Education and Training	10
Building Credible Cross-Domain Operators	15
Conclusion	22
End Notes	24
List of Abbreviations	26
Bibliography	27
Appendix	29

List of Tables

Table 1 – Air Corps Tactical School Instructors, June 1940	3
Table 2 – Present Day Air Force Senior Leadership	4

List of Figures

Figure 1 - Rated vs. Operators Past and Present	10
Figure 2 – ACSC Academic Calendar	14
Figure 3 – Cross-Domain Solutions	16
Figure 4 – Cross-Domain Operations Pyramid	21

Abstract

Today's Air Force officer corps continues to face tough challenges when enrolled in Professional Military Education. Due to the nature of the current conflicts, Air University (AU) continues to prepare officer's for today's fight, rather than preventing or winning tomorrow's conflicts. In order to prepare for tomorrow's battles, AU must look at the caliber of instructors teaching today's officer corps and develop the curriculum that prepares officers to fight in a cross-domain environment. To do so will require understanding what the Air Force considers an operator.

To prepare officers to meet tomorrow's conflicts, AU must adjust the curriculum the Squadron's Officer College and Air Command and Staff College. Company Grade Officers attending the Squadron's Officer College should be ready to articulate what the Air Force can bring to joint operations. Air Command and Staff College must review and update the curriculum to prepare today's Field Grade Officer's to be ready to transition to tomorrow's Senior Leaders. Integrating Cross-Domain Operations throughout all Joint warfare studies prepares all joint, allied, and coalition partners with a solid understanding of all the domains: air, space, cyber, sea, and land.

"The 20th Century represented the pinnacle of tactical airpower. The 21st will belong to those who excel at operational-level C2 and cross-domain integration"
505th Command and Control Wing¹

Introduction

A superb military education is an intrinsic force multiplier in effective military operations. In every conflict for the past 45 years, the United States Air Force (USAF) has had the freedom to attack at a time and place of its choosing. This ability stems from education and training at the tactical, operational, and strategic levels of warfare through cross-domain integration and operators. However, today's Airmen are being shortchanged the essential education to develop critical thinking skills necessary to facilitate the application and employment of aerospace concepts all levels. Air Education and Training Command (AETC), specifically Air University (AU) is failing to deliver essential education that will benefit future Air Force officers to advance and promote Air Force Operations, specifically Cross Domain Operations. Air Force officers are stove-piped by functional personnel managers to execute and conduct operations only within their respective Air Force Specialty Code (AFSC). The inherent stove piping of career fields will continue to fail the Air Force in building GCCs and Joint Staff leaders. Of the five warfighting GCCs, an Air Force General commands only one, US Southern Command. With the exception of the Assistant to the Chairman, Joint Chief of Staff, there are no Air Force General Officers serving in any of the Joint Staff.²

Following the end of World War I, Air Service leaders recognized the need to educate airmen in air doctrine and concepts of aviation. The first air-minded school was called the Air Service School located at Langley Field, Virginia. Less than a year after its inception, the school was renamed the Air Service Field Officers School to "reflect the school's primary mission of

‘preparing senior officers for higher Air Service command duty’”.³ Since the inception of the Air Service Field Officers School, doctrine was a focal point of instruction service schools. The first doctrinal manual at the Air Service Field Officers School, “Our Air Force, The Keystone of National Defense,” written by Brig Gen William Mitchell was prepared for instructional purposes at the school.⁴ In 1921, Maj William Sherman, an instructor at the Air Service Field Officers School wrote: “In deriving the doctrine that must underline all principles of employment of the air force, we must not be guided by conditions surrounding the use of ground troops, but must seek out our doctrine...in the elements in which the air force operates.”⁵

There are two distinct “classes” attending intermediate service schools: students and instructors. Students gain knowledge, apply experiences in a learning environment, and take the experience learned outside the classrooms in staff and operational assignments. Instructors return to operational and strategic leadership and warfare positions with in-depth knowledge gained by immersion in subjects instructed during the instructional years. Previous academic instructors are expected to teach and lead in the art of warfare and leadership in future assignments. “Perhaps that’s why 31 of 35 of the most successful corps commanders in World War II served at least one tour as an instructor in a service school,” stated Major General Robert Scales, U.S Army (retired) in his article “Too Busy to Learn.”⁶ To illustrate Major General Scales point, three instructors from the Air Corps Tactical School played pivotal roles in World War II and have left a tremendous impact on today’s Air Force. These iconic instructors include:

Capt. George C. Kenney, AC, Instructor, Air Corps Tactical School from 1927 – 1930. In July 1942, then Major General Keeney was assigned as commanding general, Allied Air Forces in the Southwest Pacific, and commanding general, Fifth Air Force, joining General Douglas MacArthur as his top air officer. General Kenney directed the successful air war against the enemy in the Southwest Pacific during the long haul from Australia to the Philippines over a period of more than three years.⁷

Capt. Claire L. Chennault, AC, Air Corps Tactical School Pursuit Instructor from 1932 – 1936. Chennault led the "1st American Volunteer Group" (AVG) famed Flying Tigers against the Japanese in [China](#) and [Burma](#) for six months after [Pearl Harbor](#). As the U.S. Army Air Forces absorbed the AVG in 1942, Chennault rejoined the Army. He became a Major General and commanded the AVG's successor, the 14th Air Force, until almost the end of the war.⁸

Capt. Hoyt S. Vandenberg, AC, Air Corps Tactical School Pursuit Section Instructor from 1936 – 1938. Following various assignments in operations and chief of staff for North Africa and European Theater, General Vandenberg assumed command of the Ninth Air Force in August 1944. General Vandenberg continued to rise to become the second Chief of Staff in April 1948.⁹

These iconic leaders applied the air power lessons, leadership, and critical thinking skills learned while instructing at the Air Corps Tactical School and practiced these ideals during World War II. Each leader was instrumental in leading Airmen to accomplish the mission and end the war, sometimes implementing ideas that were not in line with the leadership at that time. In the period between 1939 -1940, eight of the 16 instructors assigned to the School Staff or Department of Air Tactics and Strategy were promoted to at least the rank of Major General.¹⁰

Who	Position	Rank	Position
Col. Millard F. Harmon	Assistant Commandant	Lieutenant General	Dep Commander, 20th Air Force
Maj. Muir S. Fairchild, AC	Instructor	General	Vice Chief of Staff
Maj. Frederick M. Hopkins, Jr., AC	Instructor	Major General	Dep to Operations of Air Material Cmd
Maj. Byron E. Gates, AC	Instructor	Major General	ATRC Headquarters
Maj. Charles E. Thomas, Jr., AC	Instructor	Major General	Commander, 14th Air Force
Maj. Ralph F. Stearley, AC	Instructor	Major General	Commander, 20th Air Force
Maj. Earl E. Partridge, AC	Instructor	General	Commander, NORAD
Capt. Earl W. Barnes, AC	Instructor	Lieutenant General	Chief of Staff, Far East Command

Table 1 – Air Corps Tactical School Instructors, June 1940¹¹

Today’s Air Force senior leadership fails to emphasize instructing at Air University as a career path to becoming a General Officer. Instead, a majority of today’s successful senior officers either served as an Aide-de-Camp or Executive Officer to a General Officer. Table 2 illustrates that 10 of 18 senior leaders served either as Aide-de-Camp or as Executive Officers on their way to becoming today’s senior leaders. *Of note, General Mosley instructed at the National War College for two years after completing the course in-residence.

Rank	Leadership	Assignment	AU Instructor	Aide-de- Camp	Exec or Assistant	USAFWS Graduate
Gen	Schwartz	Chief of Staff	No	No	No	No
Gen	Chandler	Vice Chief of Staff	No	Yes	No	No
Gen	Mosley	Chief of Staff (ret)	No *	No	No	Yes
Gen	Fraser	CDR, USSOCOM	No	Yes	Yes	Yes
Gen	Fraser	CDR, ACC	No	No	Yes	No
Gen	North	CDR, PACAF	No	Yes	Yes	Yes
Gen	Lorenz	CDR, AETC	No	Yes	Yes	No
Gen	Chilton	CDR, USSTRATCOM	No	No	No	No
Gen	Brady	CDR, USAFE	No	No	Yes	No
Gen	Renuart	CDR, NORTHCOM	No	No	Yes	No
Lt Gen	Deptula	Dep Chief of Staff for ISR	No	No	No	Yes
Lt Gen	Hostage	CDR, USAF Central Command	No	Yes	Yes	Yes
Lt Gen	Remington	CDR, 7th Air Force	No	No	No	No
Lt Gen	James	CDR, 14th Air Force	No	No	Yes	No
Lt Gen	Rice	CDR, 5th Air Force	No	No	Yes	No
Lt Gen	Carlisle	CDR, 13 Air Force	No	No	No	No
Lt Gen	Darnell	Dep CDR, US PACOM	No	No	No	Yes
Lt Gen	Utterback	CDR, 13 Air Force (ret)	No	No	No	No

Table 2 – Present Day Air Force Senior Leadership¹²

As the Department of Defense and the USAF continue to divest more operations through cyber operations, operators must be able to communicate and operate in the air, space, and cyber domains. “Since the air, space, and cyber domains are increasingly interdependent, loss of dominance in any one could lead to loss of control in all,” stated General Mosley in the 2007 CSAF White Paper.¹³ This research paper will discuss and define cross-domain operators, suggestions for building and educating cross-domain operators, and future assignment for cross-domain graduates.

What is Cross-Domain Operations?

There is some confusion across the Air Force when discussing cross-domain operators. Air Force leaders constantly bring up different terms to discuss the same topic. Leaders have used the terms cross-domain operators, command and control career field, and future operators. This paper will use the term cross-domain operator to ensure that there is no further discussion on the topic and set a standard to Air Force terminology.

Senior Air Force leaders frequently discuss cross-domain dominance, not cross-domain operations when testifying before Congress or speaking outside the Pentagon. In General Moseley's 2007 White Paper, cross-domain dominance is defined as "the freedom to attack and the freedom from attack in and through the atmosphere, space, and electromagnetic spectrum."¹⁴ This terminology is controversial to other services since it fails to recognize land and sea domains and portrays the USAF as the supported service for cross-domain operations. The Lemay Center (Air Force Doctrine Working Group) recommends not using cross-domain dominance in any doctrine.¹⁵

Cross-Domain operators must provide the USAF with the ability to fly, fight, and win through air, space, and cyber domains. This is done by working with the joint forces to achieve global vigilance, global reach, and global power in and through the domains:

- Global vigilance is the persistent, worldwide capability to keep an unblinking eye on any entity – to provide warning on capabilities and intentions, as well as to identify needs and opportunities.
- Global reach is the ability to move, supply, or position assets – with unrivaled velocity and precision – anywhere on the planet.
- Global power is the ability to hold at risk, or strike, any target, anywhere in the world and project decisive, precise power.¹⁶

Using these terms and definitions, cross-domain operators have to have critical thinking capabilities and the wherewithal to communicate those concepts across the services. Service bias must not cloud their critical thinking and cross-domain operators must see the three-dimensional picture that is forming around them. Cross-domain operators must have a solid foundation of joint operations, force structure, and doctrine; be the service expert; a leader within their service and joint community; technical expert within their major weapons system; and pose the ability to communicate. In essence, cross-domain operators must use the operational art approach to the work that they will do.

Air Force leaders will say that cross-domain operators have existed since warfare expanded beyond a single domain. However, based on the understanding that operators must be the service expert and have joint awareness, this concept is difficult to argue for previous Army Air Forces (AAF) today's U.S. Air Force operators. During the years building up to World War II (WWII), AAF was the supporting component to ground forces and could be directed to support operations of an army with all or specific parts of aviation as deemed necessary by army commanders. AAF tactical operations in support of ground forces would always take a lower priority, even though the commander-in-chief in the field could prioritize operations to support ground forces in operations.¹⁷ In fighting for independence, AAF leaders failed to relish their heritage and embrace supporting the ground commander. Both Arnold and Spaatz both served in infantry units early in their careers. Yet in advancing air power during World War II (WWII), both Generals failed to see the cross-domain gains of applying air and land power together. One of the successful cross-domain thinkers during WWII, Lt General Quesada combined the air domain with land and naval domains to advance the allies dominance in North Africa and European campaigns.

Additionally, service senior leaders must have trust and confidence in each other and the ability to work together to make cross-domain operations work. During the Pacific campaign of WWII, Major General Keeney had a general distrust and dislike for the Navy. Tensions and bitter rivalry led Major General Keeney to blame the Navy for missed opportunities. AAF planes and Navy PT boats could not operate in the same area due to fratricide and friendly fire on each other.¹⁸ In order for cross-domain operators to have any impact outside the Air Force, all services must buy into the concept and develop operators.

Any definition of cross-domain operators must include all FIVE domains: sea, land, air, space, and cyber. Traditionally, Air Force leaders speak and write only about the service domains: air, space, and cyber. For this venture to gain traction in the joint community and throughout the Department of Defense, Air Force leaders need to remove the biases that cloud their judgment and prepare future Air Force leaders to take the roles and responsibilities of Joint Force Commanders (JFC) and GCC. To do this effectively, cross-domain operators must exist within the joint community, not just the Air Force. In order to communicate effectively, each service will need to educate and train select officers to become cross-domain operators.

What is a cross-domain operator? General Lorenz defined cross-domain operators at the 2009 Fall Corona as “At the operational level an AF Operator is a *credentialed* Airman possessing a tactical skill in air, space, or cyberspace. Operators are able to *advocate* cross-domain capabilities, create desired effects, and influence the Joint/Interagency environment through the integration or employment of a weapon system(s) across air, space, and cyberspace domains in support of a Joint warfighter’s objectives.”¹⁹ This definition creates service stovepipes that fail to address the joint capabilities that need to exist in order to have impact across the geographic or component commands. The following definition is recommended to remove the stovepipes and create a joint definition, “At the operational level, a credentialed joint operator possessing a tactical skill in land, air, sea, air, space, cyber. Operators are able to advocate, integrate, and synchronize not bound by the medium they operate within, creating desired effects and influence across, through, and around the Joint and Interagency environment through the employment of a weapons system(s) across the domains in support of a Joint warfighter’s objective.”²⁰ The effect and impact of cross-domain operators will be seen and heard when applying kinetic and non-kinetic force across multiple domains. Colonel Mark

Henkel, NORAD/USNORTHCOM Command Center Director, provided the best example of cross-domain operations in an e-mail discussion regarding the topic. Using the definition provided in this paragraph to achieve the desired effects, cross-domain operations could be tasked to “defeat public will to support the regime.” This effect may be achieved by a combination of tactical and strategic bombing, artillery fires, dropping of pamphlets, interrupting communications...and so on. To achieve the desired effects, cross-domain operators need to integrate and synchronize across different mediums and domains the employ weapons system(s) to achieve the JFC objectives.

The definition provided by Gen Lorenz addresses two more problems that require further study, the terms of credentialed and operator. In July 2009, AU conducted a symposium to define the term “Operator,” to determine operator competencies, and make recommendations to the Commander, AETC.²¹ The problem with the term “Operator” is the legacy definition attached to the term. Up until 2002, the term generally referred to pilot or navigator. Since 2002, the term has expanded to include air battle managers. This term needs to expand to include cyber, as well as logistics and communications officers. Specifically trained communication officers can deliver kinetic and non-kinetic effects and aid in the planning targeting the adversaries’ cyber nodes. Logistics experts (both officer and non-commissioned officers) can help ensure that friendly actions do not limit the logistics capabilities of deployed units. Additionally, logistic experts can identify enemy logistic centers of gravity during planning and execution.²² During the Future Operator Symposium, Major General Michael Worden (ACC/CV) provided the following as a starting point to define an “Operator:” as “An Air Force ‘Operator’ is part of an AF specialty that has demonstrated an ability to achieve direct warfighting effects in the battlespace for the JFC. Specifically the operator culture:

- Understands the context /potential threats (Enemy, Weather, etc)
- Understands Command and Control relationships
- Understands Commander's intent and the need for ALL operations to directly support that intent
- Understands Operational Standards, Special Instructions, Rules of Engagement and the importance they play in successful operations
- Builds and optimizes the capabilities an integrated team
- Briefs the mission for clear understanding by all participants (to include Standards, SPINS, and ROE), builds alternative courses of action to achieve the mission and establishes the appropriate mission priorities
- Executes the mission in a decentralized manner
- Debriefs the mission to capture activity against the standards and planned activities and captures lessons learned
- Promulgates those lessons learned for future operations²³

What is missing is the ability to apply critical thinking skills during stressful conditions.

With training and education, cross-domain operators will be able to apply the definition used by Maj Gen Worden, and then some. In essence, cross-domain operators must understand the best methodology for employing air, space and cyber without a thorough comprehension of air and sea domains was well. Figure 1 signifies the gap between rated operators and the rated community past and present.

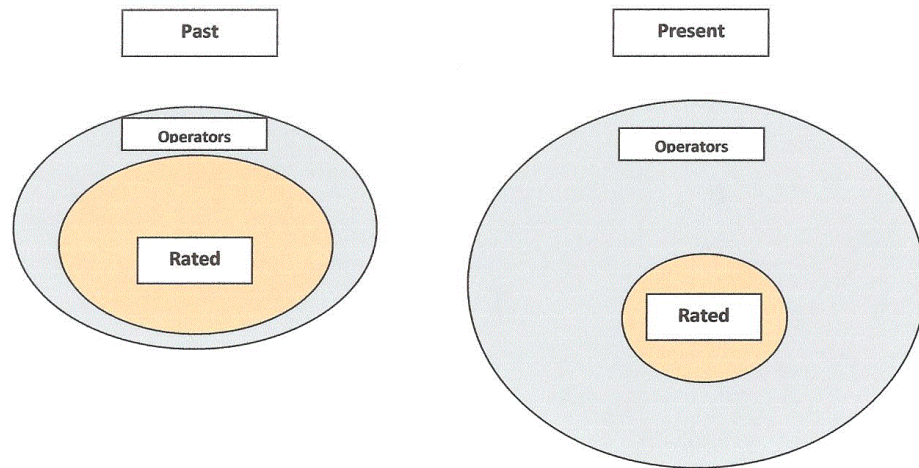


Figure 1 - Rated vs. Operators Past and Present²⁴

*“SOC's mission is to develop Company Grade Officers as leaders of integrity ready to fly, fight and win in air, space and cyberspace”.*²⁵

Education and Training

The disconnect in building a credible cross domain operators is that throughout an officers professional military education, Air Force doctrine is never presented as a need or requirement for career advancement or job knowledge. Only 11 weeks of an Air Force officer’s first nine years of service are devoted to formal education. This is in comparison to the 20 consecutive weeks that **all** U.S. Army and select U.S. Marine First Lieutenants and Captain’s will spend completing Professional Military Education (PME).²⁶

AFI 36-2301 defines PME as “that portion of military education that: (1) Provides the nation with military personnel skilled in the employment of aerospace power in the conduct of war and small scale contingencies (e.g., peacekeeping, humanitarian assistance); (2) Provides Air

Force personnel with the skills and knowledge to make sound decisions in progressively more demanding leadership positions within the national security environment; and (3) Develops strategic thinkers and warfighters.”²⁷ The foundation and the role of PME dates back to the Air Service School, established at Langley Field, Virginia in 1920. The school’s name changed to the Air Corps Tactical School (ACTS) in 1926 and moves to Maxwell Field, Alabama in 1931. ACTS prepared students with the concepts and doctrine of air power. Faculty and students who attended the Air Service School and ACTS were the same individuals that trained and led airmen into World War II.

PME is intended to provide educational opportunities during appropriate times in an officer’s, noncommissioned officers (NCO), or civilian’s career. Air Force doctrine, leadership, and the role of aerospace power in joint doctrine are the intended focus during all levels of PME. An understanding of doctrine is critical if aerospace power is to be effectively employed in operations and properly represented in the joint arena. Sequential levels of PME should continue to provide the student a broader doctrinal foundation with which to operate.

A major difference between service PMEs rests with who attends school. According to MAJOR Jeff Lucas, Army Personnel Officer and student at Air Command and Staff College, **all** Army Captains will attend some sort of Captain’s Course in residence before promotion to Major.²⁸ The a basic Captain’s Course is at least 20 weeks and focuses on preparing company grade officers for company command and staff assignments at the Battalion and Brigade level. In comparison, Air Force Squadron Officers School goal is to educate 80% of Line of the Air Force officers in-residence.²⁹

The Aerospace and Basic Course

Chartered in 1997, The Aerospace and Basic Course (ASBC) was intended to address the concerns of Air Force leaders to include the Chief of Staff of the Air Force (CSAF) and Secretary of the Air Force (SAF) to remedy five deficiencies observed within the Air Force:

- a lack of understanding of the Air Force core values
- a lack of appreciation of the Air Force core competencies
- the inability to advocate how 21st century aerospace power can contribute to success in joint military operations
- the existence of careerism among officers of different commissioning sources and air force specialty codes (AFSC)
- a misunderstanding of the importance of the teamwork concept within the American military³⁰

AU states that ASBC is a six-week course for newly commissioned lieutenants with less than 17 months commissioned service and selected civilians in the grade of GS-7. The course is broken down into modules of study from the core competencies, to air, space, and cyber power employment, to operations planning.³¹ The mission was to inspire new officers to articulate and advocate what air and space power brings to joint operations.

However, in 2007, then CSAF Gen Moseley directed ASBC to expand its curriculum to include expeditionary skills and a warrior ethos. This curriculum expansion is the direct result of the complex nature that Airmen are facing daily in deployed locations worldwide. As a result, over 65% of the ASBC course was revised.³² The intent of the expanded curriculum was to better prepare Airmen with the required skills needed every day in deployed locations fighting counterinsurgent operations in Iraq and Afghanistan. ASBC now provides new Lieutenant's with expeditionary skills that are essential in surviving inside and outside the fence in expeditionary environments. Some aspects of ASBC training now include: Self-Aid and Buddy Care; weapons handling and employment; base defense and small-unit tactics; troop leading;

chemical, biological, radiological, nuclear, and high-yield explosives procedures; and some limited hand-to-hand combat.

ASBC students apply knowledge learned during the course at simulated deployment locations. During the first week at ASBC, students will receive the afore mentioned instruction in a small “tent city” located on Maxwell AFB. During the fifth week of training, students will deploy to a simulated location away from Maxwell AFB to demonstrate what they have learned in order to successfully graduate. A typical six-week ASBC program is illustrated in Appendix 1.

Squadron Officers School

Squadron Officers School (SOS) was established in 1950 by Colonel Russell V. Ritchey to educate officers within the expertise of the profession of arms. Commissioned during the Korean War, the school focused on teaching captains the concepts of aerial warfare and command responsibilities in combat situations.³³ SOS can trace its roots back to the Air Tactical School at Tyndall AFB, Florida. SOS is the primary education opportunity for Air Force Captains, Department of the Air Force civilian equivalents, and select international officers. Originally designed to provide junior officers in developing war-fighting skills and essentials of military leadership, SOS has evolved through the years.³⁴

SOS students are “treated to a graduate-level executive leadership seminar”³⁵ to help the student discover their leadership traits and apply what they have learned in supervised situations. Students focus on their individual leadership strengths and weaknesses and design a program for growth while at school and at home. SOS emphasizes leadership and cross-cultural

competencies that are required in today’s counter insurgency operations. Appendix 2 illustrates a typical SOS course schedule.

Air Command and Staff College

Air Command and Staff College (ACSC) is an academic yearlong program that traces its heritage back to the Army Air Corps Tactical School founded in 1931.³⁶ Since its beginning, the mission of the school has evolved. Founded on the principles of educating officers on the principles of strategic bombing, the college now educates officers on counter insurgent operations. ACSC educates majors from all branches of service, international officer between captain and lieutenant colonel, and Department of Defense and State civilian equivalents in air, space, and cyberspace application at the operational level. Students are educated on the profession of arms, air power history, international security, the requisites of command, the nature of war and the application of air, space and cyberspace power at the operational level of war through nine major courses. ACSC focuses on warfighting within the joint operations arena, maintaining a balance of service centric, joint, interagency, and multinational planning and operations.

Orientation	International Security Studies 3 Semester Hours	Warfare Studies 3 Semester Hours	Holiday Break	Joint Planning 3 Semester Hours	Regional/Cultural Studies 3 Semester Hours	Practice of Command / 3 Semester Hours	GOE
	Joint Forces 3 Semester Hours	Leadership and Warfare 3 Semester Hours		Air, Space, & Cyberspace Power Studies 3 Semester Hours	Joint Air & Space Ops 3 Semester Hours		
	Electives & Research / 6 Semester Hours						

Figure 2 – ACSC Academic Calendar

Through lecture, guided seminar discussion, and various exercises throughout the academic year, ACSC graduates are prepared to conduct joint planning and execution to support the NAF or joint forces commander. As illustrated in Figure 2, over half of the curriculum is devoted to the application of forces in a joint environment. Students participate in four planning exercises during the last four months of the academic year, culminating in the capstone war-game event. Additionally, select students participate in an inter-service Joint Intermediate Planning Staff Exercise an inter-service ACSC - Command and General Staff College (CGSC) exercise emphasizing critical thinking skills and academics learned throughout the year.

Building Credible Cross-Domain Operators

Credibility is an issue with every new catchy phrase or buzzword that bounces around the Air Force. With increasing budget constraints, buzzwords have a way of appearing in keynote addresses to Congress and leadership forums today and disappearing tomorrow for various reasons. As demonstrated with the “Quality Air Force” initiative started by General McPeak, total quality initiatives were mandated funded, and all personnel trained. The same has to hold true to Cross Domain Operators. Building credible cross-domain operators will require funding to educate, train, and employ operators. If today’s leadership is unwilling to commit the funding required to build, train, and employ competent and credible cross-domain operators at the GCC and Numbered AF (NAF) level, then leadership should terminate the need for a new operator.

Development of new career paths requires the development and shaping of current training, education, and experience. To build credible cross-domain operators that can articulate air, space, land, sea, and cyber domains for air and joint operations, AU will need to revamp its thinking of the domains and develop doctrine that is taught early in an officer’s career and is

expounded upon throughout their education experiences. An example of blending all domains into a practical application is illustrated in Figure 3.

Following the July 2009 Operator’s Symposium, Air Force Research Institute merged the definitions obtained through workshops during the symposium to the following definition:

“An operator is a credentialed Airman able to advocate cross-domain capabilities, create desired effects, and influence the Joint environment through integration of employment of a weapons system(s) across air, space, and cyberspace domains in support of a Joint Forces Commander’s objectives.”³⁷

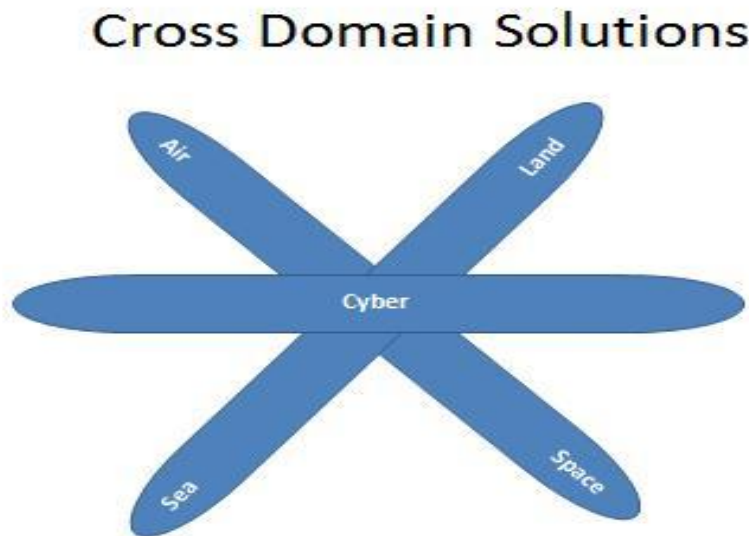


Figure 3 – Cross-Domain Solutions

This definition continues to short sight all domains that operators will employ in and stipulates that only Airmen are capable of performing and providing this capability. Cross-domain operators must be able to plan and integrate Air Force capabilities, both kinetic and non-kinetic effects, across all domains the Air Force operates. An Airman cannot advocate the complete air domain without considering Marine and Naval air and missile capabilities, Army

aviation and artillery capabilities. A credible cross-domain operator cannot discuss or employ close-air support without considering the land domain capabilities and limitations and who is operating in that environment, usually Army and Marine personnel.

Air University

The need to educate and train in air, space, and cyber domains is essential in building credible Air Force Officers and cross-domain operations. This will require a revamping of the entire curriculum at Squadron Officers College (SOS and ASBC) and ACSC to build the doctrinal base and historical background for operators to draw from. Since the 2010 Quadrennial Defense Review requires that commissioned and noncommissioned officers are prepared for a wide range of complex missions, revamping the curriculum will continue to meet the demands on the service.

ASBC curriculum focuses too much on preparing the new Lieutenant for their first deployment and not enough on leadership, Air Force capabilities, or doctrine. Instruction on CBRNE (Chemical, biological, radiological, nuclear, and high yield explosive), SABC (self-aid and buddy care), base defense, and M4 handling are all items covered in individual or unit pre-deployment spin-up. ASBC students receive over ten hours of unarmed combat techniques. The curriculum at ASBC provides Lt's with roughly eight hours of education and training on the subjects for success: team building (leadership) and communications (writing and verbal). These critical skills are essential early in an officer's career.

Instead of concentrating on pre-deployment academics and deployment to a simulated combat environment, ASBC curriculum should center on Air Force organization, functions,

capabilities, and doctrine would serve junior officers to meet the demand of daily job performance and better suit them later in their careers.³⁸ ASBC is the only PME institution at Air University that conducts unarmed combat skills. If the intent is to provide techniques in hand-to-hand combat, the Air Force needs to educate the entire force, ensure a cadre is ready to continue training at all bases, and provide units with the time and resources at all bases to continue training. Rather than unarmed combat skills, use the time to teach application of Air Force core competencies and the employment of air power to achieve joint military operations since 1990. The application of core competencies and employment will ensure that all lieutenants have a basic understanding of the unique capabilities that airpower brings to joint operations.

For most officers attending SOS, the topics covered occurs too late in career and leadership development.³⁹ The curriculum of SOS fails to specifically education mid-level Captain's in the functions, doctrine, service expertise, or capabilities of the Air Force. SOS provides a little more than eight hours, roughly one of 25 training days, preparing tomorrow's field grade officers with the knowledge needed to be successful in today's conflicts. Rather than an "executive leadership seminar," SOS should review the original concepts of Colonel Ritchey. Revamping the curriculum to educate mid-level officers on the concepts of air, space, and cyber domains would prepare mid-level captains for duties at the operational level of war and cross-domain operations.

SOS still needs to prepare students with the understanding and concepts of leadership, operations, and doctrine. SOS should facilitate less flicker ball and ultimate frisbee sporting events and develop officers with an understanding of current day issues, such as: nuclear, space,

and cyber operations and the beginning developing officers that understand joint operations and doctrine. Understanding these issues will build a better-rounded officer that is capable of conversing with Marine and Army counterparts. These skills are an inherent part of this rank. For some individuals, the skills learned during SOS will be applied as soon as they depart for the AOR, working in joint operations in COIN and IW.

One of the limitations of ACSC is the lack of military instructors available to meet the mandate by the Chairman in the Officer Professional Military Education Policy and to bring credibility to some of the curriculum. A 4:1 student-to-faculty ratio is the standard for intermediate-level college resident program accreditation.⁴⁰ ACSC must have sufficient blend of military and civilian instructors. As of June 2009, 31 civilian instructors were employed at ACSC to help meet the student-to-faculty ratio.⁴¹ In an accredited institution such as ACSC, military instructors need to have a blend of experience to draw from to include command, operations (rated and non-rated), and joint experience. To remedy some of the credibility voids, ACSC draws experience by bringing instructors from other services as well as international officers to bring a diverse command, operational, and deployment experience to the institution. However, International and Joint service officers are not enough, especially when dealing with Cross-Domain Operators. AU needs to bring the best and brightest officers back to ACSC to teach Cross-Domain Operations. Civilian instructors lacking military experience in recent years must not instruct joint force application or Cross Domain operations due to lack of credibility. If ACSC cannot provide military instructors to properly instruct Cross Domain operations, the institution should wait until it can obtain the required and properly trained facility.

ACSC must recall the words of the first AU commander, Major General Fairchild, who challenged ACSC to be a pre-war school that looks ahead to the next conflict instead of being a post war school looking backwards to past conflicts.⁴² ACSC needs to live up to the challenge set by Major General Fairchild and develop a course to that lives up to its name and prepare officers to command the air, space, and cyber domains through cross-domain operations and prepare graduates for future staff assignments at the Joint, Major Command, or NAF level. Doing so will require work by both the incoming students as well as the instructors.

Building a course that teaches command of the domains and preparation for future staff assignments will require revamping the entire ACSC curriculum. Integrating Cross-Domain Operations during Joint warfighting courses allows students and instructors to tie in the curriculum learned into the course throughout the academic year, cumulating in the Joint Air and Space practicum. Students would apply cross-domain operations principles to the joint planning and joint air and space exercises, demonstrating a mastery of the curriculum. ACSC cross-domain operations curriculum will educate officers on all aspects of the domains – air, land, space, sea, and cyber. Doctrine, employment, capabilities, limitations, lessons learned, and domain interdependencies are essential aspects that will enable students to employ cross-domain operations concepts outside the classroom.

Instructing Cross-Domain Operations during Joint warfighting courses will require an extensive shift in curriculum development and accreditation of ACSC. Instructing the entire ACSC student body is only a start for cross-domain operations. ACSC needs to develop an elective that can teach Cross-Domain Operations capabilities to selected students that will go on to various GCC (J33 or J53 billets) or warfighting NAF billets (A3 or A5). A Cross-Domain

Operations elective should fall into the yearlong JAWES programs, working with Operational Design and Air Operations Planning, Theory, & Practice. Working with these yearlong electives provides Cross-Domain Operations students to air, space, and cyber theory and application within the ACSC student body. The Cross-Domain Operations elective should introduce students to COAL WARFIGHTER and OPERATIONAL WARFIGHTER capabilities at the operational level. The intent is for students to learn tactical and operational employment of these systems to ensure their intended effects. To succeed in the elective, students need to master air, space, land, sea, and cyber doctrine, employment of each domain, capabilities and limitations of the domains, lessons learned, and domain interdependencies taught in the core course. Students should expect to demonstrate mastery of the subject by participating and observing a major joint exercise such as Exercise NORTHERN EDGE, Joint Task Force Exercise (JTFEX), or any FLAG event prior to graduation.

Student selection to the Cross-Domain Operations elective should not be open to anyone. Similar to the Political-Military elective, students interested in the Cross-Domain Operations program must have a Joint or NAF vector, current TS-SSBI, and no previous staff experience. Cross-Domain Operations graduates will fill staff billets at GCC or NAF levels following graduation. Figure 4 shows the career pyramid of Cross-Domain Operations graduates.

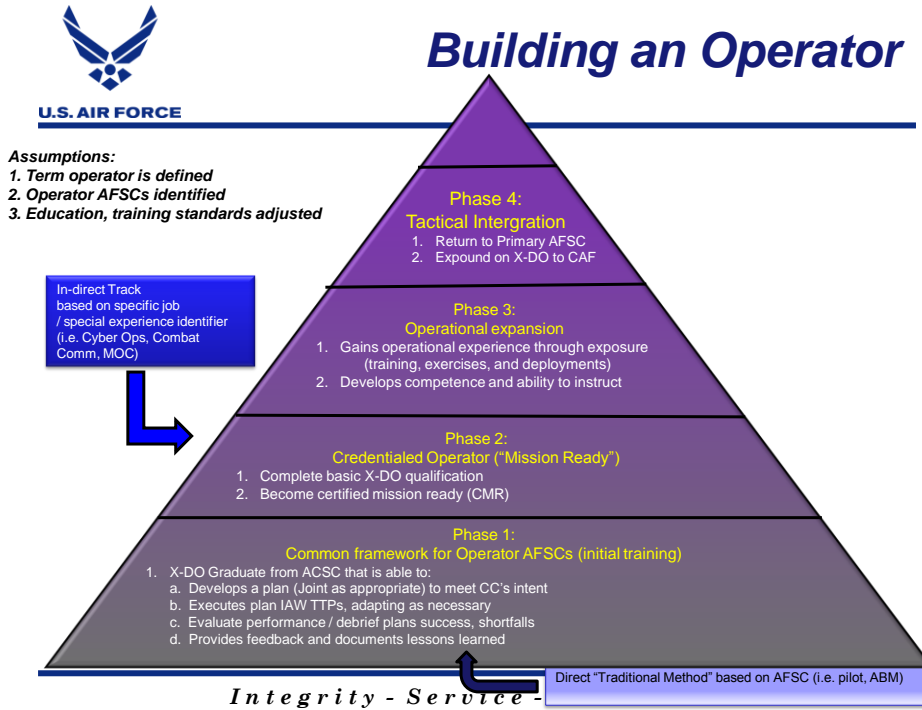


Figure 4 – Cross-Domain Operations Pyramid⁴³

ACSC faculty must ensure that this course is open to all services, not just Air Force students. This provides a gateway to ensuring cross-domain graduates have a pathway to the other services to handle joint planning or operational issues. Having students from other services allows students to learn the other domains from competent and capable professionals, not just another ACSC instructor reading from a course book guide. Each operator brings a unique expertise to the cross-domain course that the instructor needs to draw doctrinal experiences from and utilize.

Conclusion

To build credible Cross-Domain operators, AU must build an education and training system that builds upon an operator’s technical and service expertise; understand the operational

environment the operator is employing in, and provides a solid understanding of Joint operations and environment. AU needs to restructure officer PME to provide credible cross-domain operators capable of employing in the tactical, operational, and strategic level.

The foundation of AU was to educate airmen in air doctrine and concepts of aviation. Today's AU provides minimal instruction regarding the core competencies of the USAF, to deliver precise air, space and cyber power. AU has changed the curriculum of the schools to meet the need of the current fight. Doing so fails the student as well as the commander. Due to the time needed to validate the need and gather teaching material, train the instructors, and begin to education the students, anywhere between six months to one year have elapsed. This means that the newest materials taught by SOS or ASBC are aged and possibly out of date when the first group of students are being taught. AU needs to take a step back, prepare all students for tomorrow's conflict as well, and provide education that prepares students to work in the current insurgent fight.

This paper has highlighted how AU is failing to deliver the principles of educating officers in the aspects of air force operations, specifically how to build credible cross-domain operators. In order to prepare officers that are credible in the joint arena, AU must provide officers with the credibility to articulate what the Air Force can provide during joint operations.

End Notes

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- ⁵*Ibid*, 4.
- ⁶Major General Robert H. Scales, U.S. Army (retired), “Too Busy to Learn,” *U.S. Naval Institute* February 2010 Vol. 136: 2, http://www.usni.org/magazines/proceedings/story.asp?print=Y&STORY_ID=2195
- ⁷Thomas E. Griffith Jr., *MacArthur’s Airmen*, (University Press of Kansas) 204-205.
- ⁸Claire L. Chennault historical biography, <http://www.warbirdforum.com/clc.htm>
- ⁹Richard G. Davis, *Carl A. Spaatz and the War in Europe* (Center for Air Force History, Washington D.C) 597.
- ¹⁰Robert T. Finney, *History of the Air Corps Tactical School 1920 – 1940* (Research Studies Institute) 110-111
- ¹¹*Ibid*, 110-111
- ¹²U.S. Air Force Senior Officer Biographies, http://www.au.af.mil/au/history/history_intro.asp
- ¹³General, T. Michael Moseley, *The Nation’s Guardians, America’s 21st Century Air Force*, (CSAF White Paper) 29 December 2007, 2.
- ¹⁴*Ibid*, 2.
- ¹⁵Lt Col Gloystein, “Cross Domain Terminology,” Air Force Research Institute, 20 November 2009.
- ¹⁶General, T. Michael Moseley, *The Nation’s Guardians, America’s 21st Century Air Force*, 2.
- ¹⁷Richard G. Davis, *Carl A. Spaatz and the War in Europe* 130-134.
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- ¹⁹2009 Fall Corona Staff Summery Sheet and Briefing Slides, e-mailed to the author, October 2009.
- ²⁰Colonel Mark Henkel, NORAD/NORTHCOM Mission Director, Peterson AFB, CO, to the author, e-mail, 28 Nov 2009
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- ²²Colonel Mark Henkel, NORAD/NORTHCOM Mission Director, Peterson AFB, CO, to the author, e-mail, 28 Nov 2009
- ²³Maj Gen, Michael Worden, Future Operators Symposium, http://afri.au.af.mil/conferences/Future_Operator/readahead.html, July 2009
- ²⁴Future Operator Conference, Future Operator Symposium, http://www.au.af.mil/au/research/conferences/Future_Operator/index.html
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- ²⁶Army Captions Course http://www.almc.army.mil/ALU_COURSES/855C23PII.htm
- ²⁷Air Force Instruction 36-2301, Professional Military Education, 26 September 2007, 1.
- ²⁸MAJOR Jeff Lucas, student, Air Command and Staff College, Maxwell AFB, AL, to the author, 2 February 2010
- ²⁹Colonel Stephen M. Tanous, *Presentation to the Oversight and Investigation Subcommittee on Armed Services Subcommittee on Oversight and Investigations*, “Academics and Primary Level Professional Military Education,” June 2009, 4-5
- ³⁰Michael Robert Thirtle, *Seeing the Lighthouse – As Simple as the ASBC?*, RAND Graduate School Dissertation (Santa Monica, CA: RAND, 1999) iii.
- ³¹<http://www.au.af.mil/au/facts.asbc>

³²Colonel Stephen M. Tanous, *Presentation to the Oversight and Investigation Subcommittee on Armed Services Subcommittee on Oversight and Investigations*, “Academics and Primary Level Professional Military Education,” 2.

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³⁸Ibid, 11.

³⁹Ibid, 12.

⁴⁰Brigadier General Jimmie C Jackson Jr., *Presentation to the Committee on Armed Services Subcommittee on Oversight and Investigations*, “Intermediate-Level Professional Military Education Schools,” 25 June 2009, 3.

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⁴³505th Command and Control Wing, *Cross-Domain Operators*, November 2009.

List of Abbreviations

ACSC	Air Command and Staff College
AETC	Air Education and Training Command
ASBC	Air and Space Basic Course
AU	Air University
GCC	Geographic Combatant Command
NAF	Numbered Air Force
SOS	Squadron Officer School
WWII	World War II

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MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
ASBC/CV Welcome (POL)	RON	RON	RON	RON
A9030 Admin / AA-5110 Icebreaker	AA-5200 FIST	Breakfast	FIST Retest *as req'd	Breakfast
Transition	Breakfast	A1815 Intg'd Base Defense	Transition	A1817 Small Unit Tactics
Opening Ceremony (POL)	A1810 CBRNE	Lunch *break lesson as req'd	Breakfast	Lunch
Commander Welcome (POL)	Lunch *break lesson as req'd	Transition	A1805 SABC	A1818 Land Navigation
Transition	Transition	Dinner	Lunch *break lesson as req'd	Site Cleanup / Restore
A1812 BT Orientation	A1819 Troop Leading Procedures	RON / Personal	Transition	
Lunch	Transition		Dinner	
A1813 Field Health (POL)	Dinner		RON / Personal	
SQ/CC Call (varies by SQ); Transition	RON / Personal			
BT Deployment Line (varies)				
TBX				
A1809 M4 Familiarization				
18-22 Jan 10				
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
	ASBC Welcome (POL)	AL-5140 Team Success	AC-5110 Effect Writing, Argue	AL-5330 Team Challenge: Logic
FEDERAL HOLIDAY	Transition	Transition	Transition	Lunch
Martin Luther King	AA-5100 Intro to Aca & Questioning	AW-5110 USAF Funct's & Caps	AL-5400A Writing Assignment	AC-5120 Verbal Communication
	Transition	Lunch	Transition	Transition
	Flight Orient. / SQ/CC Calls	AP-5200 Foundation of Officership	A1620 Targets/Pckg	A4310 Legacy Briefing Assign
	Lunch	Transition	Lunch	Transition
	AL-5110 Vision & Goals	AW-5400A Intro to Icarus	Reflect / Prep	A2310 Foundies of CGO Leadership
	Transition	Transition	Transition	Transition
	AA-5300A FC Feedback	AP-E210 AF Combatives 1	AP-E210 AF Combatives 1	ASBC Flight Photos
	Prep-work for following day	AW-5400B Field intro / Icarus	AW-5400B Field intro / Icarus	Reflect / Prep
	Reflect / Prep			
25-29 Jan 10				
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
AL-5250 Lt Ldrshp Challenges	AC-5100 Active Listening	AL-5400B Writing Assign Due	AI-5220 Overcoming Difference	A3045 Airpower S/F (POL)
Transition	Transition	A1424 USAF Org	Transition	Transition
A5010 Conflict	Critical Thinking (POL)	Transition	A1250 Intro to Wrgm/AFEX	AL-5330 Team Challenge: Expeditionary
Lunch	Transition	AI-5200 Cultural Awareness (POL)	Lunch	Lunch/Transition
A3010 TDOS	A1410 Joint Org	Transition	A3040 Doctrinal Deb (POL)	A3050 ODS
Transition	Lunch	AW-5130 USAF Operations	Transition	Transition
A3020 Early Airpower (POL)	Reflect / Prep	Lunch	AP-E210 AF Combatives 2	AI-5210 Cultural Experiential
Reflect / Prep	Transition	A3030 Strat Bomb (POL)	AW-5400C Icarus Operation 1	Reflect / Prep
	AL-5130 Problem Solving / Process Impvt	Transition		SQ/CC Hall Call
	Transition	AP-E210 AF Combatives 2		
	UAFFT	AW-5400C Icarus Operation 1		
1-5 Feb 10				
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
AL-5120 Time Management	A3060 OEF	A4320 Legacy Briefings	AL-5400C Writing Assign Returned	In-Class Exam
Transition	Transition	Transition	A4320 Legacy Briefings	Transition
AP-E210 AF Combatives 3	AP-E210 AF Combatives 3	AP-E210 AF Combatives 4	Transition	Test Review
AW-5400C Icarus Operation 2	AW-5400C Icarus Operation 2	AW-5400C Icarus Operation 3	AP-E210 AF Combatives 4	Test Remediation
Lunch/Transition	Lunch/Transition	Lunch/Transition	AW-5400C Icarus Operation 3	Lunch
A1910 Hero/Core (POL)	Reflect / Prep	1380 Practice for AIRGAP	Lunch/Transition	Academic Advisment (HUS)
Transition	A3915 Nuclear Education (POL)	Reflect / Prep	A1380 AIRGAP	ASBC Field Day - IC Tourn
A3055 OAF	Transition			SQ/CC Hall Call
	A3065 OIF			
8-12 Feb 10				
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Warrior Run	CO Day 1	CO Day 2	CO Day 3	SQ/CC Hall Call
Transition	Lunch	Lunch	Lunch	Transition
A2630 The Enlisted Force (POL)				A1891 Vigilant Warrior Orient.
Transition				Transition
Inspirational - Dan Clark (POL)				AP-E290 C-IED Lecture (POL)
Lunch				Transition
AFA Guest Speaker (POL)				Tuskegee Airmen (POL)
Transition				Lunch
Combined Operations Week Orientation (POL)				Ldrshp Guest - Gen Peck (POL)
Transition				Transition
CO Week Flight Prep				AL-5001 Sr Officer Perspectives
				Transition
15-19 Feb 10				
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
	Trans to VW	RON	RON	AA-5300B FC Feedback
FEDERAL HOLIDAY	Site Brief / Stow Gear	Breakfast	Breakfast	EOC / Grad Practice
President's Day	ROE & Arm at Blue Gate	ROE / Site Brief at Red Gate	Arm at Blue/Black Gates	ASBC/CC Feedback Group
	Transition	AP-E290 C-IED Course	AP-E400 VW Capstone Event	Lunch
	AP-E300 Exped - IBD	AP-E300 Exped - Assault Course	Hotwash	Graduation
	Lunch	Lunch	Lunch	
	AP-E300 Exped - Lanes	AP-E285 Portraits of Courage	Site Restoration	
	Outbrief / Refill tanks	Site Restoration	Trans to MAFB	ECAC (as required)
	Dinner	Dinner	Equipment Turn-in	

Appendix 1 ASBC Course Layout

Monday, 22 February 2010	Tuesday, 23 February 2010	Wednesday, 24 February 2010	Thursday, 25 February 2010	Friday, 26 February 2010
SA-5101 - Opening Ceremony	SA-5150 - Fitness Initial Safety Test (FIST) (PT)	SL-5120 - Critical Thinking: Do You Have the Attitude?	SA-5150 - Make-Up FIST (PT)	PT
SA-5102 - Flight Room Admin	SC-5110 - Active Listening	SL-5125 - The Art & Science of Time Management	SL-5150A - FRLM: Leadership Discussion	SL-5160 - Followership
SA-5103 - Icebreaker	SC-5130A - Defining Success: Goal-Setting & Vision	SP-5140 - Wellness for Leaders	SL-5150B - FRLM: Explained	SC-5250 - Strategic Communication: The Airman & New Mex
Lunch	Lunch	Lunch	Lunch	Lunch
SC-5245A - My AF Story - Ass't	SC-5140 - The Write Way! Writing for Success	SL-5140 - Principles of Problem-Solving	SL-5150C1 - FRLM: Introspection & Development	SP-5320A - SOS/CC's Lecture Series - TBD
Sq/CC Time	SC-5150 - Speak Up! Speaking for Success	SC-5160 - Building the Perfect Argument	SC-5245B - My AF Story - Paper Due	SP-5210 - The Uniform Within
SL-5270A2 - DMAP Self-Assessment	Rep Meetings	SC-5488A - Arg & Critical Thinking Exercise - Ass't	SC-5488A - FRLM Ldrshp/Tm Case Study Essay - Ass't	
SL-5150C2 - Leadership Self Assessment		AU Library Intro	Student Council Meeting	
SL-5110 - The Analytical Toolbox ** Reading Only **				
Monday, 01 March 2010	Tuesday, 02 March 2010	Wednesday, 03 March 2010	Thursday, 04 March 2010	Friday, 05 March 2010
PT	PT	PT	SL-5190 - TLP #1: TBD	SL-5320 - Improving Processes
SC-5130B - Defining Success: Goal-Strg & Vision - Update #1	SL-5170A - Individual Decision Making & Goal Setting	SL-5180 - Teambuilding & Teambusting - Leader's Choice	Lunch	Lunch
SL-5188A - Project X - #1 - Prebrief	SP-5320B - SOS/CC's Lecture Series - TBD	Lunch	SC-5340A - Silver Bullets: Writing Effective Bullet Statements	SOS Field Day (PT)
Peer Initial Feedback Due	Lunch	SL-5240 - Coaching and Mentoring in Today's AF	SC-5340A - OPR - Ass't	Sq/CC Time
Lunch	SL-5170B - LDS Tutorial	SC-5310 - Improving People: Making Feedback Effective	SL-5310 - Resource Management	SOS/CC Time
SC-5245B - My AF Story - Briefings	SL-5170C - LDS #1 Simulation	SC-5245D - My AF Story - Paper Returned	SL-5380 - Accountable Ldrshp: Your Role in Org ORM & Safe	SC-5488B - FRLM Ldrshp/Team Case Study Essay - D
Flight Photos				
Monday, 08 March 2010	Tuesday, 09 March 2010	Wednesday, 10 March 2010	Thursday, 11 March 2010	Friday, 12 March 2010
PT	PT	SI-5120 - Cross-Cultural Negotiations	SL-5270A1 - Team Decision Making & Conflict Mgt	SI-5389 - Combat Leadership Exercise (CLX) (PT)
SC-5130C - Defining Success: Goal-Strg & Vision - Update #2	SI-5110 - Cross-Cultural Competence	SL-5401 - Midterm Feedback - Individual Interviews	SL-5270A3 - DMAP Feedback	Sq/CC Time
SL-5330 - Leading Change	Lunch	Lunch	SP-5320C - SOS/CC's Lecture Series - TBD	SOS/CC Time
Lunch	SL-5188B - Project X - #1	SL-5401 - Midterm Feedback - Individual Interviews	Lunch	Lunch
SL-5340A - The Officer Eval System - Inside the Boardroom		Elective Lectures	SL-5270B - LDS #2 Simulation	SC-5488C - FRLM Ldrshp/Team Case Study Paper - Return
SL-5340B - The Officer Eval System - Promotion Brd Exer		Elective Brown Bag Lunch	SL-5288A - Project X - #2 - Prebrief	
SP-5320C - SOS/CC's Lecture Series - AFPC		Elective Movie		
Peer Midterm Feedback Due		Elective Panel or Other Relevant Discussions		
Monday, 15 March 2010	Tuesday, 16 March 2010	Wednesday, 17 March 2010	Thursday, 18 March 2010	Friday, 19 March 2010
PT	SL-5288B - Project X - #2	SI-5220 - Interagency Processes	PT	SP-5390 - Warrior Challenge (PT)
SC-5130D - Defining Success: Goal-Strg & Vision - Update #3	Lunch	SW-5320 - Joint Warfare - Campaigning	SL-5370A - Team Structure & Culture	Sq/CC Time
SW-5110 - CGO Leadership in a Global Context	SI-5210 - The Instruments of Power	Lunch	SP-5320E - SOS/CC's Lecture Series - TBD	SOS/CC Time
SW-5120 - Theory: Thinking it Through	SW-5310 - Joint Warfare - Fundamentals	SW-5410 - The Range of Military Operations	Lunch	Lunch
Lunch		SP-5220 - The Officer & Mil Law: Understanding the UCMJ	SL-5370B - LDS #3: Simulation	SP-5370 - Civil Military Relations
SL-5290 - TLP #2: TBD				
SW-5130 - Doctrine: Starting Point for Action				
SW-5140 - The Family Business: USAF Roles & Missions				
Monday, 22 March 2010	Tuesday, 23 March 2010	Wednesday, 24 March 2010	Thursday, 25 March 2010	Friday, 26 March 2010
PT	PT	PT	SL-5402 - Final Feedback - Individual Interviews	SA-5402 - Graduation
SC-5130E - Defining Success: Goal-Strg & Vision - Update #4	SI-5390 - CGO Leadership & Security Challenges	SP-5420 - Warrior Symposium	Lunch	
SC-5489B - Argumentation & Critical Thinking Exercise	Lunch	Lunch	SL-5402 - Final Feedback - Individual Interviews	
Lunch	SI-5490 - Regional Issues Panel	SP-5350 - Senior Officers' Perspectives	SC-5340D - Final OPR - Return	
SC-5450 - Strategic Communication: The USAF in Society	Flight/CC Time	SP-5490 - What Now Commander?	Elective Lectures	
SC-5340C - Final OPR - Due		SA-5401 - Student EOC Feedback	Elective Brown Bag Lunch	
			Elective Movie	
			Elective Panel or Other Relevant Discussions	

Appendix 2 – Typical SOS Schedule