2006 CCRTS
The State of The Art and the State of the Practice

The USAF Installation Control Center (ICC)

Topics: C2 Concepts and Organizations
Policy
C2 Experimentation

Lt Col Calvin J. Romrell
705th Training Squadron
243 Hartson St., Bldg 90062
Hurlburt Field, FL 32544-5251
COMM 850-884-5810, DSN 579-5810
Fax 850-884-7908

Lt Col Carl Zimmerman
Air Force Command and Control &
Intelligence, Surveillance, and
Reconnaissance Center
Langley AFB VA
COMM 757-225-2919, DSN 575-2919
Fax 757-225-4016

The USAF Installation Control Center (ICC)

Topics C2 Concepts and Organizations
Policy
Lessons Learned
C2 Experimentation

Lt Col Calvin J. Romrell
705th Training Squadron
243 Hartson St., Bldg 90062
Hurlburt Field, FL 32544-5251
COMM 850-884-5810, DSN 579-5810
Fax 850-884-7908

Lt Col Carl Zimmerman
Air Force Command and Control &
Intelligence, Surveillance, and
Reconnaissance Center
Langley AFB VA
COMM 757-225-2919, DSN 575-2919
Fax 757-225-4016

Abstract

The USAF Installation Control Center (ICC) Enabling Concept establishes a standardized, functional organization for all installations; facilitating installation–level C2 across the full spectrum of military operations. The ICC provides an Air Force installation commander, or senior Air Force member, a single, consolidated C2 center from which they can monitor and execute the installation's varied missions--including tenant; joint; and combined missions for which the commander bears collateral supporting responsibility. The ICC concept is a functional architecture that includes the processes, people, and equipment required to provide C2 support a fixed installation or deployed AEW/AEG. Installations may include fixed locations, such as a main operating base (MOB) both in the United States and overseas, or deployed which include forward operating locations (FOL), a collocated operating base (COB), a limited base (LB), or a bare base (BB). This concept has matured through experimentation (*Expeditionary Force Experiment 98, Joint Expeditionary Force Experiment 99, 2000, 2002 and the Air Expeditionary Force Battlelab Integrated Flight Operations Initiative in 2002*); implementation (*combat and mobility operations at Al Udeid and Al Jabar*); and subsequent validation efforts (*Operational Readiness Inspections in USAFE and PACAF*).

INTRODUCTION

Vision. The purpose of this paper is to describe a standardized United States Air Force (USAF) installation command and control capability for both fixed and expeditionary operational environments. This represents an evolution of Headquarters Air Combat Command's Expeditionary Operations Center's Enabling Concept, which focused on improving deployed/expeditionary Command and Control (C2) through standardization of processes, people, organization, and equipment. The Installation Control Center (ICC) expands the focus by including fixed and home station operational C2 environments, and incorporates new warfighter requirements and homeland security directives. The ICC provides the commander with a single, consolidated command and control center from which to monitor, assess, plan, and execute the full range of installation activities. An ICC will be established at all operating locations regardless of whether another Service owns the installation. These activities include, but are not limited to, the ability to respond and process emergencies and Emergency Action Messages (EAMs); force protection and incident response coordination; providing civil support and assisting with deployment, employment and redeployment operations as required, in support of the operational mission. The ICC concept presents an architecture that includes the processes, people, and equipment required to support a fixed installation or deployed AEW/AEG. Installations may include fixed locations such as a main operating base (MOB) in the United States and overseas, or deployed locations, which include forward operating locations (FOL), a collocated operating base (COB), a limited base (LB), or a bare base (BB). This concept applies to USAF installations regardless of location or mission. Applicability of this concept for USAF organizations on non-USAF installations will be at the discretion of the appropriate COMAFFOR.

Challenges. Effective C2 is a basic requirement for the successful conduct of military missions and service functions in the entire spectrum of military operations. An essential enabler for a rapid and effective application of C2 is a functional organization that is coherent and recognizable, thus facilitating military operations. This organization must be scaleable to account for varying missions and operating environments, and structured to facilitate operational familiarity. The ICC must be flexible to account for manning, training, and the range of military operations from routine peacetime operations through increased operations tempo like emergencies, incident response, civil support, and varying levels of military conflict.

Proposed Solutions. As the USAF standard for installation-level C2 (both home-station and deployed environments), the ICC provides commanders the foresight to train their staff to a common USAF standard, while affording them the ability to identify and resolve problem areas prior to an actual contingency. As the C2 node for a fixed base installation commander, the ICC is expandable to accommodate routine operations as well as the increased requirements of emergencies, incident response, and civil support. As the installation commander of an expeditionary base, an AEW or AEG Commander requires standardized C2 designed to harness the capabilities presented by diverse, possibly geographically separated units assigned or attached to the AEW or AEG. As the C2 node for the AEW or AEG commander, the ICC is deployable, configurable, and scaleable. The ICC harnesses the capabilities of experienced operations, maintenance, mission support, and medical oversight personnel into a cohesive team able to support the

overarching mission regardless of the operating location. The ICC supports the family of USAF CONOPS, the tenets of the National Response Plan (NRP), National Incident Management System (NIMS), the Air Force Incident Management System (AFIMS), and the *America's Air Force Vision 2020* methodology – "AEFs provide joint force commanders with ready and complete [air and space] force packages that can be tailored to meet the spectrum of contingencies…[and that] fit into established theater-based command and control structures, when such are available, or bring their own command and control when needed." The teams within this ICC concept reflect the USAF Combat Wing structure in AFI 38-101, *Air Force Organization,* as supplemented by Program Action Directive 02-05, 20 Jun 02.

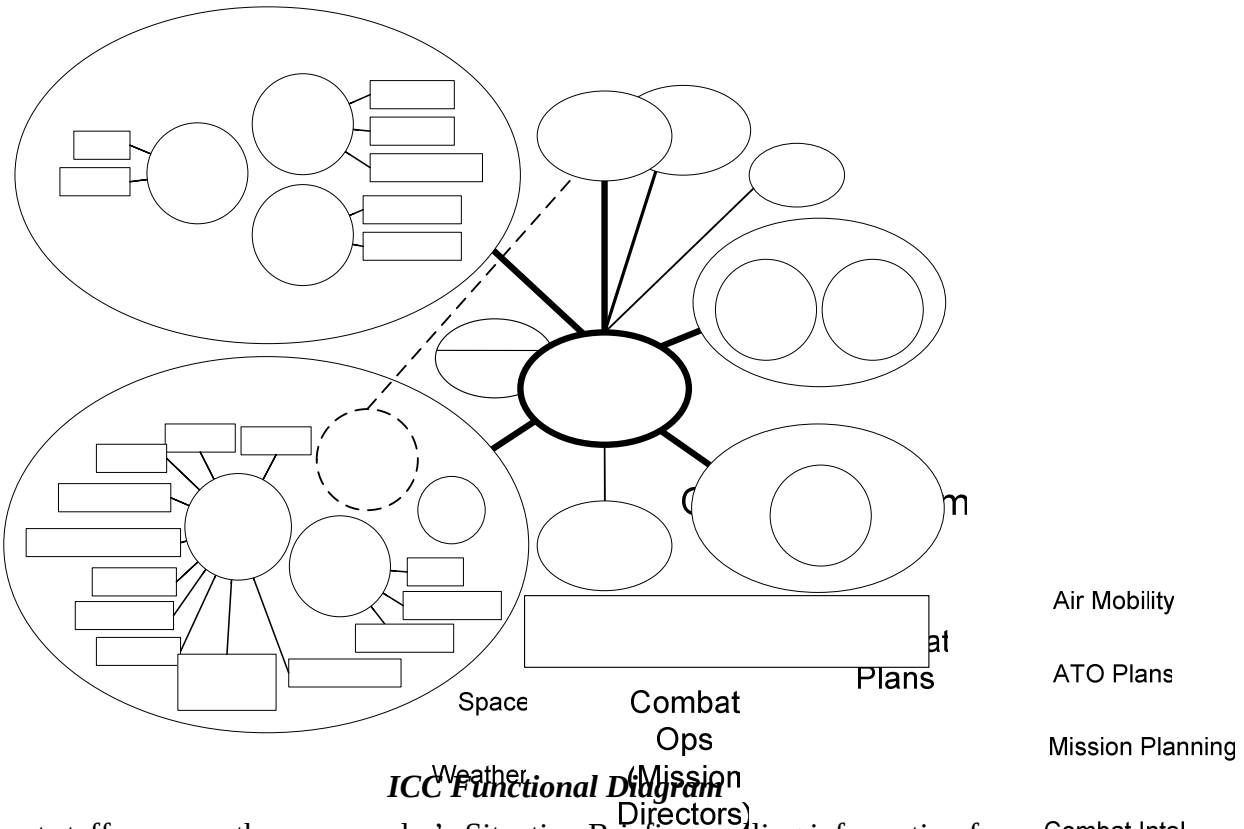
Process Engineering. ICC will serve as the initial standard organization, people, and processes to which Lean Six Sigma process engineering efforts will be applied to develop a comprehensive horizontal and vertical integrated information technology capability that will help commanders command their installation. Lean Six Sigma (LSS) concepts focus on engineering processes (such as C2 processes) to eliminate waste. LSS provides a rigorous methodology for evaluating existing processes as well as designing future processes in terms of the resources required to execute a process. Aligning LSS with the development of future C2 systems would eliminate the need for unstructured alternation of expensive capital investments in information technology.

Experimentation. ICC's information technology counterpart notionally referred to as Unit Command and Control (UC2) will be experimented with during JEFX 2008. Alignment of the development of the initial UC2 capability with Lean Six Sigma (LSS) process engineering will establish a new paradigm for C2 system development and deployment providing a rigorous methodology for optimizing enterprise-wide processes. LSS will provide a recognized and rigorous methodology for developing future development of ICC processes while streamlining the development of capital intensive information technology capabilities.

ICC Construct

General. The ICC provides the installation commander a single, consolidated C2 center from which to monitor and execute the installation's missions, to include specific tenant, joint and combined missions for which the installation commander bears supporting responsibility. ICC team members and supporting functions maintain situational awareness of installation activities and communicate operational requirements, mission priorities, and related information to achieve installation-level unity of effort and maximize operational mission effectiveness. During fixed station operations, the ICC will enable the installation commander or senior USAF member to rapidly transition from normal to emergency operations to save lives, minimize the loss or degradation of resources and continue, sustain, and restore combat and combat support operational capability. During expeditionary operations, the ICC will enable the installation commander the ability to transition from open the base, to beddown the force, to generate and execute the mission, to sustain the force, and ultimately redeploy the force. An ICC, like other staff elements, is provided to assist commanders to perform their duties. The on-duty ICC Director is the direct representative of the installation commander for rapid response to time-sensitive issues affecting all installation operations. During expeditionary operations, the ICC Director rapidly responds to issues affecting beddown, force protection, contingency, and mission-critical decisions. The ICC Director will be provided a small staff to help manage information, interface with communications and information systems support organizations, and perform other functions as required. The ICC will employ personnel and equipment from across the installation at home, or expeditionary base when deployed. As the contingency comes to a close, the ICC will be one of the last entities to disassemble and redeploy. The functional organization of the ICC is depicted below. The functions of the ICC teams are described in subsequent paragraphs. Note: The ICC Functional Diagram is generic in nature; the makeup and size of any ICC is contingent upon installation size, mission, location, specific types of units assigned, and threat level.

ICC Director. The ICC Director is delegated the responsibility for orchestrating the macro C2 functions in the ICC. The ICC Director becomes the conduit for presenting actionable information to the commanders. The ICC Director should have a small staff to help manage information, interface with communications and information systems support organizations and perform other functions as required. The ICC Director and



ICC Functional Diagram

support staffs prepare the commander's Situation Briefing, pulling information from across the installation to provide senior leadership with a comprehensive sight picture of past, present, and future operations.

Operations Team. The Operations Team focuses on executing Air Tasking Order (ATO) missions assigned to the installation. As used in this concept, the ATO is a blanket term that includes all guidance from higher authority to include the Air Operations Directive, Airspace Control Order, Air Mobility Taskings (AMT), Special Instructions, Fire Support Measures, Airspace Control Measures, daily flying schedules, and other information as appropriate. The Operations Team consists of Combat Plans (ATO Plans, Mission Planning, and Air Mobility), Combat Operations (Mission Directors [Combat and Mobility, as required], Weather, and Space) and Intelligence Operations (Combat Intelligence and Targets Intelligence). Operations Team members interface with the WFHQ, elements of the Theater Air Control System (TACS)/ACSS, Headquarters Air Force (HAF) and Management Headquarters as appropriate. Operations Team members receive air tasks, schedule aircraft to satisfy tasks, oversee tactical execution, and satisfy operational reporting requirements. Intelligence, Weather,

and Space support the operations effort, while also supporting maintenance, medical, and mission support functions.

Combat Plans. Combat Plans leads the near-term air operations planning function of the ICC. Combat Plans develops the schedules to meet ATO tasking based on guidance from the Air and Space Operations Center (AOC) and the Operations Group commander. Combat Plans receives the ATO from the AOC and disseminates it throughout the ICC for planning and execution. Combat Plans may consist of ATO Plans, Mission Planning, and Air Mobility. Combat Plans may assist Combat Operations with changes to the current day's ATO.

ATO Plans. ATO Plans receives, disseminates, and coordinates ATO changes with the AOC. ATO Plans is the primary source of direct communication to the AOC on all ATO changes. ATO Plans is also the central liaison for Mission Planning functions when no dedicated planning team is needed or employed. ATO Plans schedules all wing continuation training sorties.

Mission Planning. Mission Planning leads the mission planning process. Mission Planning blends daily commander's guidance, ATO tasked missions, and asset availability to produce a complete, composite mission package. Mission Planning works closely with ATO Plans and Air Mobility to obtain the most current ATO changes. Space, Intelligence, and Weather coordination is critical to Mission Planning success. If no dedicated Mission Planning organization is employed, individual squadrons and mission commanders are responsible for mission planning. In this case, ATO Plans coordinates with mission commanders and assists them with mission planning.

Air Mobility. Air Mobility is the primary source of direct communication with the AMD. Air Mobility receives, disseminates, and coordinates airlift and aerial refueling changes to the ATO with the Air Mobility Division (AMD) in the AOC. Air Mobility is also the central liaison with Mission Planning for mobility functions if no dedicated planning team is employed. At home station, Air Mobility processes, and responds accordingly to AMT directed mission requirements and locally planned daily flying schedules.

Combat Operations. Combat Operations executes the ATO and notifies the AOC or other tasking authority of mission results. Combat Operations includes Mission Directors to manage alert and scramble activities and coordinate with subordinate flying units and C2 controllers to monitor and report aircraft status. Expertise for each weapons system should be available in Combat Operations or shared between Combat Operations and Combat Plans.

Weather. Weather is comprised of personnel from the Operations Support Squadron's Weather Flight. Weather provides the weather expertise to support various weapon systems. The size and qualifications of Weather depends on the number and type of flying units operating from the installation. Weather may require additional augmentation from flying units not permanently assigned to the installation. Weather at an

installation will operate as a single entity to collect, analyze, predict, tailor, and disseminate weather information to the command staff, all ICC teams, and assigned and transient aircrews.

Space. At expeditionary installations, a Space representative may be available to provide space-related information and advice to all teams in the ICC. If a Space representative is not available, the ICC may access space expertise via the AOC Space personnel.

Intelligence Operations. Intelligence Operations leads the intelligence efforts to support execution of the ATO. Intelligence Operations provides intelligence tailored to specific aircrew and weapon system requirements, threat assessments, and assistance to combat and mobility aircrews in applying intelligence to successfully accomplish combat or mobility missions. Additionally, Intelligence Operations facilitates the full mission reporting process; ensures collection results from ISR sensors on strike aircraft are reported in a timely and accurate manner; and provides accurate and timely intelligence to the installation commander and senior staff, operations, mission support, medical and maintenance teams.

Combat Intelligence. Combat Intelligence provides tailored intelligence briefings and products that incorporate up-to-date intelligence and force protection information in support of mission objectives. Combat Intelligence accesses and maintains Intelligence Preparation of the Battlespace (IPB) products that reflect the latest adversary orders of battle or austere operating environment intelligence for mobility missions. Combat Intelligence ensures that the latest available intelligence information is passed to aircrews executing the ATO and to the ICC leadership, operations, mission support, medical, and maintenance teams. Combat Intelligence ensures that all aircrews are debriefed; that perishable, critical information of intelligence value is disseminated rapidly; and that reports are filed in accordance with local intelligence reporting directives. Combat Intelligence will manage and submit all intelligence Requests for Information (RFIs), GI&S (Geospatial Intelligence and Systems) Requirements, and Production Requirements (PRs). Combat Intelligence will coordinate with Combat Operations and Combat Plans to ensure Evasion and Recovery requirements and materials (e.g., ISOPREPs and EPAs) are disseminated and maintained in accordance with theater Combat Search and Rescue procedures.

Targets Intelligence. Targets Intelligence provides direct support to Mission Planning by developing platform-specific, tailored target materials to include up-to-date target imagery and graphics from online targeting and imagery databases. Target Intelligence also ensures Mission Planning maintains full situational awareness on enemy threats, capabilities, and courses of action that could impact future missions.

C2 Controllers. C2 Controllers perform the traditional Command Post function. They are the 24-hour central point of contact for installation alerting, warning, and operational reporting. C2 Controllers receive, validate, process, and respond to Emergency Action Messages (EAMs); and initiate emergency response

checklists for the commander, to include personnel recall, in-flight emergencies, major accidents, attack response, natural disasters, heat index, lightning, aircraft accident, fuel spills, and other possible emergency responses. C2 Controllers work closely with all teams to facilitate information to the ICC Director and report time critical information directly to the Installation Commander when required. During ATO execution, C2 Controllers will work closely with Combat Air Forces and Mobility Air Forces Mission Directors and therefore, should be collocated. They will closely monitor flight operations to include flight following assigned and transient aircraft. C2 Controllers will update the AOC on the status of tasked aircraft. Other basic duties include, but are not limited to: performing operational reporting; processing and responding to, warning, alert, and launch orders; issuing base control procedures, alarm conditions, and force protection conditions; and testing installation warning system operation and performing installation warnings and other pertinent installation announcements via GIANT VOICE.

Maintenance Team. The Maintenance Team directs and controls all maintenance actions to ensure aircraft are available to meet mission requirements.

Maintenance Operations Center. The MOC monitors overall aircraft generation and status. The MOC is the central point of contact regarding aircraft maintenance for the Maintenance Group commander, installation commander, higher headquarters, and all base agencies.

Munitions. Provides munitions status and interfaces with Operations Team planners and schedulers coordinating munitions support feasibility. Communicates projected fragmentary order requirements to Munitions Maintenance to upload munitions on the aircraft.

Mission Support Team. Mission Support consists of two main centers: the Logistics Readiness Center (LRC) and the Emergency Operations Center (EOC). Additionally, the Mission Support Team monitors information flow beween the Commander and the Base Defense Operations Center. While functions cross the boundary between sustaining and operating, the LRC is primarily concerned with deployment, beddown, generation, execution, sustainment, and redeployment, while the EOC specializes in base incident and emergency management, survival, and recovery operations.

Logistics Readiness Center. Elements from the Logistics Readiness Squadron Group will comprise the LRC. The LRC provides a single point of contact for visibility into deployment and redeployment, beddown, wartime host nation support, material management, transportation, and fuel information to the Logistics Readiness Squadron commander, Mission Support Group commander, ICC Director, and installation commander. The LRC will be responsible for monitoring all issues affecting Material Management, Distribution, Vehicle Management, Fuels, and Logistics Readiness. The LRC will monitor activities of Air Terminal Operations Center (ATOC) or the Cargo Deployment Function (CDF).

Materiel Management. Monitors the activities of installation material management functions to identify and correct negative trends in tracking stocks and stores; issuing weapons system spares and consumables;

accounting for equipment assets; and controlling and evacuating retrograde assets to authorized repair facilities.

Deployment Control Center (DCC). In accordance with AFI 10-403, Deployment Planning and Execution, the DCC is the installation focal point for identifying, verifying, and distributing tasking information before and during deployment execution. In addition, the DCC is responsible for coordinating all transportation actions required to deploy passengers, equipment, and cargo, including coordinating on-base transportation requirements to support deployment activities.

Vehicle Management. Monitors the efficient and economical operation of the base vehicle fleet. Tracks vehicle use data and mission requirements. Liaises with local and host nation authorities for vehicle matters. Ensures sufficient resources are available to support Priority Delivery and Time Definite Delivery of supplies, equipment, and cargo.

Fuels. Assists in developing and validating base fuels contingency support plans. Tracks the status of personnel and equipment to ensure fuels support to aircraft weapons systems. Analyzes fuel consumption data, forecasts and identifies potential problems with resupply, and recommend courses of action to resolve fuel resupply, storage, quality control, and dispensing problems.

Air Terminal Operations Center (ATOC). The LRC will monitor activities of Air Terminal Operations Center (ATOC) or the Cargo Deployment Function (CDF). The ATOC exercises C2 over all air terminal work centers. The ATOC provides terminal work centers with information to manage available resources to receive, document, and move passengers, cargo, and mail. It is the focal point through which all information relating to airlift traffic flow is received, processed, and dispatched to each functional area. The ATOC controls all space allocated on each assigned airlift mission and is responsible for obtaining maximum utilization on each mission. The missions of the ATOC include information control, ramp control, load planning, and capability forecasting.

Emergency Operations Center. The EOC is the central Emergency Management C2 element for expanded emergency or contingency response operations that require additional support beyond the Incident Command Staff capabilities; including major accidents, natural disasters, enemy attack, and terrorist use of CBRNE materials. The EOC is organized into 15 Emergency Support Functions (ESF) as identified in AFI 10-2501. An ESF is a grouping of functional capabilities into a structure to organize the support activities, resource allocation, incident management, and critical services. Critical services are those actions most likely to be required to support the incident commander, installation response activities and base recovery operations. Depending on the complexity and size of an incident/accident, the EOC may be activated and conduct operations needed to support operations and contingencies. The EOC may be collocated with the ICC to facilitate situational awareness and incident management support activities for the wing leadership. The EOC coordinates with other organizations including, but not limited to: The Incident Commander,

Civil EOCs, Deployment Control Center (DCC), CBRNE Control Center, Explosive Ordnance Disposal, Fire and Emergency Services, Communications Centers, Medical, Services, and Base Defense Operations Center (BDOC). The EOC also processes information from group or squadron-level Unit Control Centers (UCC), coordinates response activities, and keeps the Installation Commander and Commanders Senior Staff informed of base status changes.[1] A shared common operating picture (COP) is essential to effective coordination between all control centers.

Emergency Communications Center. The ECC, also known as the Emergency Services Dispatch Center, is the installation's emergency call center and includes a central dispatch capability for fire, security, medical and other emergency services. If a central dispatch facility is not feasible, the ECC function must share a COP between the installation's emergency dispatch centers and C2 Controllers to track incidents, direct responses and make appropriate notifications and reports.

Base Defense Operations Center. The BDOC is the installation commander's scalable command and control function for security operations and integrated base defense. Depending on the threat, the BDOC must be capable of employing joint fires, coordinating with adjacent battalion tactical operations centers (TOCs) and host nation army or police C2 centers, and executing persistent combat operations in the base security zone. In non-expeditionary environments, the BDOC may be scaled to the threat, but at a minimum must have the capability to recall and employ sufficient forces to defeat the baseline postulated threat to USAF resources and personnel to include employing joint, coalition, and local government police and land component forces. The Defense Force Commander (DFC) leads the BDOC. The DFC is delegated the operational authority to conduct air base defense operations on behalf of the senior USAF commander responsible for the airbase in accordance with AFPD 31-1.

Medical Team. The Medical Team is responsible for monitoring Medical Group activities and providing a conduit between the ICC and basic medical activities. The scope of medical operations depends on the scale of the installation. During base operability operations, full time medical representation in the ICC may be required.

NECESSARY CAPABILITIES

General. "Command and Control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander to plan, direct, coordinate, and control forces and operations to accomplish a mission."[2] The ICC staff will perform each of these C2 functions via the necessary capabilities outlined below.

Trained People. The ICC incorporates teams of functional experts who focus on providing coordinated C2 for an installation. C2 support for an installation includes emergency actions (EA), protecting the force, emergency management,

[1] AFI 10-2501 *Air Force Emergency Management Planning and Operations* governs the organization and training of the EOC.
[2] Joint Publication 1-02, *DOD Dictionary of Military and Associated Terms,* 12 April 2001, as Amended through December 2003

bedding down the force, generating the mission, sustaining the force, and redeploying the force. The ICC is staffed with personnel from a broad spectrum of USAF specialties and duty positions that require individual, team, and organizational-level training. Training must provide familiarity with ICC processes and information exchange requirements with HAF, Management Headquarters, WFHQ, and other Air and Space Expeditionary Task Force (AETF) and Joint Task Force C2 elements and with local, state, federal and host-nation organizations. ICCs must also satisfy host/tenant support and reporting requirements. Personnel requirements will be defined and identified within a matrix of Unit Type Codes (UTC), an installation's Comprehensive Emergency Management Plan (or equivalent), or the Installation Commander's required capabilities. For expeditionary operations, this construct will also link the associated UTCs with the Expeditionary Force Module construct.

Senior Leadership. Senior leadership includes the commander and the senior staff that helps command air and space power, support base operability, and interact with HAF, Management Headquarters, WFHQ's A-Staff and AOC. The senior staff includes the vice commander and the operations, maintenance, medical, and mission support group commanders. The ICC is designed to allow the installation and subordinate commanders the ability to carry on with day-to-day command responsibilities. Bases should also take into consideration the roles and responsibilities for supporting tenant units or headquarters. The ICC Director is delegated the responsibility for orchestrating the macro C2 functions in the ICC and becomes the primary conduit for presenting actionable information to the commanders. This does not preclude pre-identified agencies (e.g. C2 Controllers, BDOC, etc.) from communicating directly with the installation commander during time-critical situations nor does it preclude commanders from receiving and acting on information relative to their respective responsibilities.

Equipment. Equipment must be scalable and modular so it can be tailored for any mission requirement. Equipment must enable the ICC to effectively integrate into the warfighting commander's C2 structure and should communicate with local, state, federal, and host-nation C2 elements. It must also be reliable, easy to operate, and require minimal logistic support (e.g., common spare parts, support personnel). These characteristics will reduce airlift requirements and forward footprint. Expeditionary equipment requirements will be defined and identified within the UTC construct.

Communications and Information Systems. Baseline interoperable C2 systems will be standardized within the Air Force for ICC use. C4ISR capabilities must transform information to operational advantage so that people can share awareness, create knowledge, support collaboration, and facilitate decision-making. As an integral part of the USAF C2 Enterprise, the ICC is an essential element in Network Centric Warfare. Accordingly, all information systems within the ICC must comply with the Net-Centric Operations and Warfare

Reference Model (NCOW RM) and Net-Ready Key Performance Parameter (NR-KPP).[3]

External Communications. Installation communications must be redundant and possess the capacity (bandwidth) to exchange information with Management Headquarters and the WFHQ. At an expeditionary location the communications capability required to integrate with the theater communications, information, and C2 architecture may be provided by existing base infrastructure or theater deployable communications systems. External communications must provide access to data networks such as Non-secure Internet Protocol Router Network (NIPRNET), Secure Internet Protocol Router Network (SIPRNET), Joint Worldwide Intelligence Communications System (JWICS), Milstar, AACE (Alerting Aircrew Equipment) (or its follow-on), satellite voice capability, coalition networks (as required); secure and non-secure telephone services, Giant Voice and video services. Other required capabilities include but are not limited to Ultra High Frequency (UHF) and Very High Frequency (VHF) line-of-sight radios, UHF Satellite Communications (SATCOM) radios, Land Mobile Radios (LMR), and direct telephone lines to key host base facilities. Maintenance and operation of the external communications facilities are not organic to the ICC and will be a function of the communications and intelligence units tasked to provide communications service to the installation.

Information Systems. Like C2 nodes at every level, the ICC must have automated information systems and mission planning systems to provide situational awareness, decision support, asset tracking, and management of aircraft employment, expeditionary combat support, and maintenance. The information systems required to operate the ICC will be established in a subsequent baseline document. ICC information systems must be networked internally and externally to support integration with the theater C2, communications, intelligence and information systems architectures. Systems must be compatible horizontally (between work centers on the base) and vertically (between subordinate and superior headquarters) to enable effective centralized control and decentralized execution. A multi-level, secure infosphere environment will facilitate information access with coalition and multi-agency partners. Dedicated communications personnel should be tasked to provide administration and maintenance of these capabilities. These personnel will constitute the ICC Support Staff.

Facilities. The ICC includes specific operations, maintenance, medical, and mission support C2 functions. Although these functions are not typically performed in the same physical location, significant advantages may be gained through collocation. A centralized location improves unity of effort, unity of command and information flow. It also simplifies security, system support and communications requirements. A physically consolidated C2 facility is the overarching goal, but depending on the situation may not be feasible. Under these circumstances, ICC functional alignment and processes will remain consistent

[3] CJCSI 6212.01C, *Interoperability and Supportability of Information Technology and National Security Systems*, 20 November 2003

with those outlined within this concept. If collocated, access to the ICC will be controlled based upon the nature and scope of the activities being performed. If additional facilities are required, such as a Sensitive Compartmented Information Facility (SCIF) or Tactical SCIF, these should be established near the ICC. Force protection and facility hardening measures for ICC facilities will be in accordance with applicable instructions and plans for an alternate / backup facility will be developed.

Procedures. The processes performed within the ICC environment are complex. Tactics, techniques, and procedures (TTP) must be developed and documented to standardize all aspects of the ICC— people, processes, and systems. Once this concept has been implemented throughout the USAF, "best practices" will be identified and standardized in USAF Instructions (AFI), TTPs, and training materials. Applying LSS to ICC's procedures will eliminate waste and optimize processes and procedures based on the requirements of the enterprise. Previous efforts have restricted their focus to sub-enterprise processes and often resulted in the development of rather extensive and impressive capabilities, which sub-optimize the execution of an enterprise process. LSS concepts will provide the rigorous methodology for managing ICC processes and should provide a more fiscally efficient process for development of information technology capabilities.

COMMAND RELATIONSHIPS

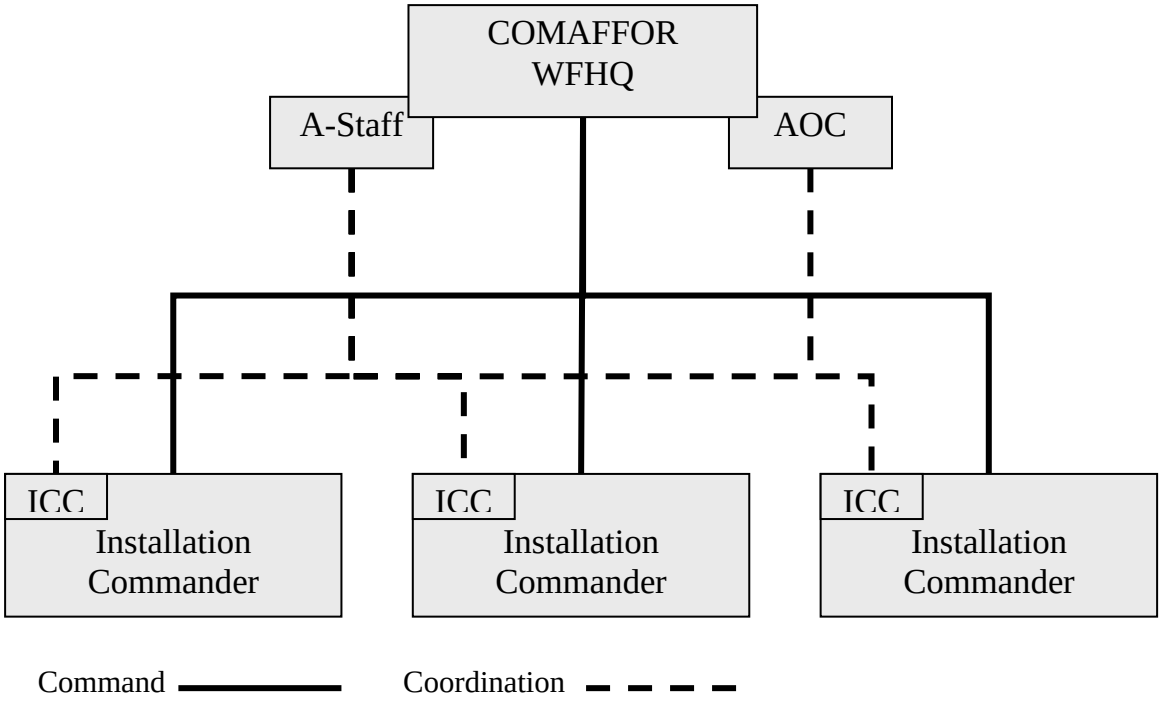
General. The ICC is the installation commander's C2 center and provides the commander the ability to manage and execute all operations. An ICC will assist the installation commander and subordinate commanders to perform their duties. The ICC has no command authority and is not a link in the chain of command; it is a functionally aligned organization serving as a C2 focal point for all installation subordinate commanders. Subordinate commanders still work for the installation commander; and their staffs, including the ICC, provide support to them at the appropriate command level. During expeditionary operations, the USAF presents forces through the COMAFFOR's WFHQ to the combatant commander as an AETF comprised of AEWs, AEGs, and squadrons (AES). An AETF may consist of a single AEG or AEW or may be a numbered Expeditionary Air Force consisting of multiple AEWs and AEGs.[4] An expeditionary unit (AEW, AEG, AES) is designated because a standing wing, group, or squadron does not normally deploy intact (i.e., UTCs from multiple units are deployed to create an expeditionary unit).

Command and Control. The ICC Director is the commander's personal representative for monitoring the installation's day-to-day operations. The ICC is composed of functional teams or, in instances where teams are not located in the ICC, representatives who can maintain situational awareness and provide a conduit for effective information flow. The ICC will respond to tasks from the installation commander in the conduct of day-to-day operations. When supporting expeditionary operations, the ICC will respond to taskings from the WFHQ's A-Staff and AOC. (The *Command and Staff Relationships* diagram below depicts this relationship.) Integrating liaison officers from joint, coalition,

[4] AFPD 10-4, *Operations Planning: Air & Space Expeditionary Force Presence Policy*, 16 June 2004

and tenant units into the ICC will be critical to the success of installation operations. The requirement for vertical and horizontal information exchange emphasizes the importance of interoperable systems and established coordination processes with the WFHQ.

Organization. The ICC will be formally recognized in USAF doctrine as the installation commander's C2 center. This concept describes the ICC as the key C2 center for fixed and expeditionary installations. During expeditionary operations, the ICC bridges the C2 gap between operational planning (AOC) and tactical execution (AEW). The teams in this ICC concept reflect the generic organizational structure for an objective wing in AFI 38-101, *Air Force Organization*, as supplemented by Program Action Directive 02-05, 20 Jun 02. When more than one wing or major unit is located at an installation, an overall installation commander is normally designated as being ultimately responsible for ensuring safe and efficient execution of the installation's mission. When Air Force units are tenant on another service or host-nation installation, the senior Air Force commander is responsible for establishing an ICC. The ICC should be scaled to support the overall installation C2 structure and to ensure safe and efficient execution of the Air Force unit's mission.



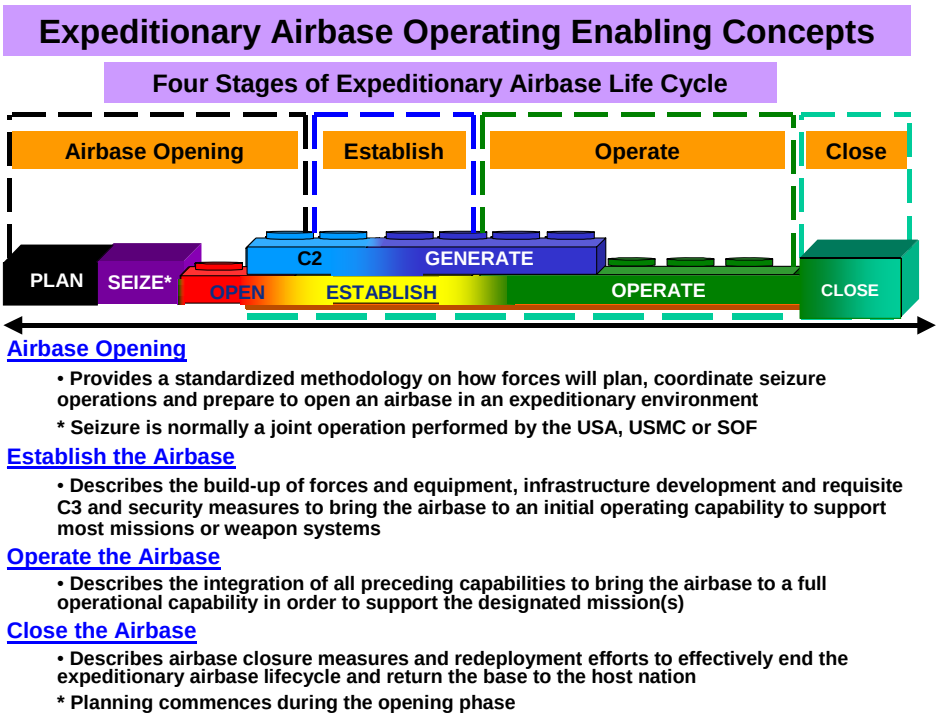
Command and Staff Relationships

SEQUENCED ACTIONS

General. Installation C2 is a full time function but some areas of the ICC will be active only when required. Planned and unplanned events will require actions to be taken, either in anticipation of a planned event or in reaction to an unplanned event. Such actions may include changing the readiness posture of the ICC and the installation as a whole. Actions required for conceivable events must be pre-planned and documented in

local operating procedures and checklists. Such procedures constitute the lowest level of sequenced actions required to employ the ICC. Higher levels of sequenced actions, primarily related to expeditionary installations, are discussed in the following paragraphs.

Expeditionary Operations. During expeditionary operations, the USAF presents forces to the combatant commander as an AETF comprised of AEWs, AEGs, and AESs. Each of these can be further subdivided into Force Modules. The force module construct consists of the Open the Base, Command and Control, Establish the Base, Generate the Mission and Operate the Base force modules. These force modules are mentioned here to establish a common understanding of the terms and processes used extensively in the discussion below. The following actions are event driven rather than time dependent.



Expeditionary Airbase Life Cycle

Transition from Airbase Opening Forces to Airbase Establishment. Once the JFC directs theater forces to open a location, an Airman's focus is on preparing the base to meet its specified mission. Airbase Opening operations are designed to mitigate the inherent process seams between adaptive planning, seizure operations, and the actual act of airbase opening in order to facilitate follow on operations. Airbase Opening forces represent the initial deploying USAF elements to the airbase after airfield seizure operations occur (if required) and the airfield is secure. Seizure operations are usually accomplished by the U.S. Marine Corps, U.S. Army or Special Operations Forces. Airbase Opening forces will provide initial airfield operations support, airfield assessment, command and control, *limited force protection*, reach-back communications, timely intelligence, and *limited mobility operations support.* Key members from the incoming AEW or AEG are embedded within the Airbase Opening force construct, providing the

AEW or AEG commander with the opportunity to provide input into the survey and layout of critical C2, expeditionary combat support, maintenance, medical, and operations facilities. The AEW or AEG commander will normally be designated as the Senior Airfield Authority (SAA) and installation commander for that airbase (the initial airbase opening force commander will be the acting SAA until arrival of the AEW or AEG commander). Upon arrival, the AEW or AEG commander will establish the ICC as the primary installation – level C2 center for airbase operations and will scale the ICC to support units from other services, Special Operations Forces or coalition partners, as required.

Airbase Opening Operations Handoff. To reinforce the ability to deploy quickly and initiate operations in minimal time at any base or location around the globe, the composition of initial Airbase Opening forces (Contingency Response Group [CRG] or Open the Base Force Module forces) and their equipment is purposely light and lean. This organic construct reduces their ability to perform long-term Airbase Opening operations (greater than 45 days). Therefore, Airbase Opening operations handoff or the transfer of mission essential tasks and responsibilities will occur between commanders when like capabilities are in place to assume control of airfield operations. Airbase Opening operations handoff will occur in three stages outlined below. These specifics must be addressed during the adaptive planning process to further alleviate potential friction.

SAA Responsibilities. SAA responsibilities will transfer from the initial Airbase Opening forces commander to the AEW or AEG commander upon arrival.

Airfield Operations C2 Responsibilities. Airfield operations C2 capabilities and responsibilities will transfer from the Airbase Opening forces to the ICC once it is deemed fully operational by the installation commander. Early Air Mobility representation within the ICC will facilitate the ITV necessary to execute beddown, generation, and sustainment operations for follow-on forces.

Functional Airbase Opening Operations Responsibilities. Functional Airbase Opening capabilities and responsibilities will transfer from the Airbase Opening forces to the AEW or AEG when like forces are in place to replace the CRG or Open the Base Force Module forces. Successful handoff will signal completion of Airbase Opening and initiation of Airbase Establishment operations.

1.1. Transition from Airbase Establishment to Airbase Operations. As forces and associated equipment begin to build up on the airbase, rapid and efficient force beddown and accountability become a primary concern for the installation commander. Beddown is generally divided into three types—aircraft, personnel, and infrastructure support. The LRC within the ICC is the C2 entity for tracking the status of all three types of beddown. Beddown locations are usually determined in advance by the expeditionary site survey process and the base support plans and verified during the airfield assessment process accomplished by the Airbase Opening forces. Functional expertise including Transportation, Force Protection, Civil

Engineering, Services, Medical, Communications and Information resources, Contracting and Comptroller Teams are utilized to develop plans and construct the minimum base infrastructure. The ICC is able to communicate with a decision maker 24-hours a day for rapid response to time-sensitive beddown, force protection, contingency, and mission-critical decisions. The ICC provides a central point of contact for the AOC and AFFOR staffs, as well as a clear C2 entity for the entire expeditionary base. This arrangement is especially effective when working with host nation, tenants and coalition forces. The ICC is the centralized C2 center for all airfield operations, base survivability, and personnel support issues—"One Base, One Boss." [5]

Airbase Operations. Airbase operations integrate all of the preceding deployed capabilities to bring the airbase to a full operational capability in order to support the designated mission(s). Forces are completely prepared to execute the ATO. The ICC provides functional experts to direct and monitor every phase of employment. Combat Planners receive the ATO from the AOC and collaboratively schedule and mission plan for execution. Combat Operations directs the execution of the current day's assigned missions, providing time-critical information to the AOC, installation commander, and aircrew. Intelligence Operations lead the intelligence efforts to support execution of the ATO MOC controllers monitor the overall generation and status, centralizing issues concerning the status of the aircraft fleet. During execution, the MOC directly supports aircraft sortie production efforts by working with production supervisors and expediters. Combat Support responsibilities are integral to mission preparation and execution. The LRC monitors launch and recovery functions, including debriefs, to aid in regenerating aircraft for subsequent missions. The BDOC enables an installation commander to rapidly and effectively respond to an airbase attack, while maximizing mission execution. The EOC enables an installation commander to focus on continuing the mission while maintaining situational awareness of emergency incidents being managed through the EOC. ICC team composition provides the installation commander with a cross-functional core of expertise required to effectively run a base under expeditionary conditions. The information exchange requirements reach every headquarters element and every unit control center.

Sustaining the Force. Sustainment operations begin on day one and continue throughout the expeditionary airbase lifecycle. Sustainment capabilities mature as the airbase matures in the areas of air operations, communications, and information. ICC Combat Support personnel closely monitor and provide reports on critical asset consumption. Sustainment responsibilities are coordinated through the WFHQ before and during execution. Sustainment reporting may be required to both the WFHQs AFFOR and AOC staffs to ensure broad and consistent visibility on the overall status of the installation. Depending on the duration or nature of the contingency, additional support responsibilities may be levied on the ICC.

[5] *Operation ENDURING FREEDOM Preliminary Lessons*, Task Force ENDURING LOOK - AF/CVAX

Transition from Airbase Operations to Airbase Closure. The ICC will be one of the last workcenters to redeploy. Careful consideration must be given to security issues, manning, and equipment disposition in the redeployment plan. Effective redeployment and reconstitution ensures aerospace resources can be reused. The ICC will maintain control and accountability of resources and ensure recovery and redeployment of assets consistent with time and transportation limitations. The installation commander, through the ICC, will direct a coordinated withdrawal while maintaining base integrity. Under the most demanding withdrawal scenario, the installation may be under attack. Under these circumstances, the ICC and BDOC will concentrate on airbase defense, minimizing loss of life and saving mission-critical combat resources. Advanced planning is key. Airbase closure and redeployment may encompass more than deployment in reverse. Reconstitution and possibly redeployment to another location must be anticipated and planned for in advance. During redeployment, coordination with the regional WFHQ is key to a smooth transition. Air Mobility elements within the ICC are the installation commander's link to airlift and tanker support and will provide requisite ITV to effectively redeploy the force and close the base.

SUMMARY

Organization is the key to C2 integration. The United States Air Force Installation Control Center Enabling Concept establishes a standardized functional organization consisting of teams of people with specific roles and responsibilities. These teams will assist the installation commander in executing C2 of any USAF installation, regardless of the location. While installation commanders will have the flexibility to scale their ICC to specific local requirements, ad hoc installation C2 will become the exception rather than the norm.

This document describes the ICC as the standard installation – level C2 center for all installation commanders. This installation C2 standard will facilitate integration and interoperability of systems and processes associated with operational level C2 nodes (WFHQ AOC and A-Staff), ensuring the rapid and reliable exchange of essential command information. The ICC baseline will also enable standardized training programs and exercises to be developed for personnel assigned ICC duties. The resulting pool of personnel with portable skills in ICC operations will enhance the professionalism and capabilities of installation-level C2 worldwide. It also provides a standard means to facilitate communication and interoperability to local, state, federal and host-nation civil authorities and organizations.

The objective is for the ICC to become a common term understood by all Airmen to denote a standard arrangement of people, processes, capabilities, and equipment employed to provide installation-level C2 throughout the full range of installation activities.