Bare Base Conceptual Planning Overview

Welcome to the Air Force Civil Engineer Bare Base Conceptual Planning Course. This course is mandatory for Civil Engineer Officers and Non-commissioned Officers with a 7-skill level as outlined in Air Force Instruction 10-210.

This lesson will familiarize you with the process of developing Operation Plans and viable Courses of Action used to effectively plan a bare base for joint operations based on the standards established by the Joint Chiefs of Staff.

Engineer planning activities at the tactical level focus on supporting the Joint Force Commanders objectives. Tactical planning is conducted by each unit with a focus on combat engineering tasks and planning done within the organizations. With the support of the engineer, the subordinate Joint Force Commander ensures that the engineer capabilities are effectively integrated into the OPLANs and tasks are appropriately assigned. There are seven steps to this planning process. The development of these plans is outlined in Joint Publication 3-34.

In step one, the initial development of the OPLANS begin by the joint force engineer who receive planning tasks from the CJCS to initiate the planning process. During this time the joint force engineer develops a request for information required for mission analysis, and gathers a team of engineer experts to gather planning data that will be used in planning for engineer operations at a potential deployed location.

In step two, the engineers perform a mission analysis. This step establishes the concept of operations and takes into consideration the different factors related to the potential mission area. These factors include, but are not limited to terrain, climate, energy and water.

The third step is the course of action development. The engineer assesses all available information derived from the mission analysis process to provide the commander with input required to develop the initial COAs. During this step the OPLAN is completed.

Step four and five are the analysis of the Course of action. From this point, COAs are compared, and war gaming exercises are performed. The data is then analyzed and compared to available COAs to produce a comparison matrix.

In step six, the engineer ensures that all requirements developed during the mission analysis and staff estimate processes are accounted for in the COA and supportable from an engineering perspective.

In step seven, the engineer prepares appendices and annexes to the plan to ensure there is no significant impact to engineer operations. When these plans are completed, they are kept on file for later use when the need for a bare base beddown arises.

With the shift of world conflict, the military closed many overseas bases. With the reluctance of foreign nations to permit the United States to build permanent bases in their countries, we have lost many strategic platforms to support the current mission needs. This has increased the importance of bare base construction as a viable solution to war time basing.

A bare base is a site that has, or can be established into an area with a usable runway, taxiways and parking area capable of supporting the mission of any assigned aircraft. It must also have a source of water that can be made potable and the means to sustain logistical support, and infrastructure to house supporting personnel.

The bare base concept requires mobile facilities, utilities and equipment that can be rapidly deployed and erected in a short period of time, turning an undeveloped area into a fully functional base. These items have been developed and tested by the Air Force and are stored in War Reserve Material locations and Bare Base units worldwide.

When a military crisis erupts, and the United States military is called for support, we must be ready and able to deploy anywhere in the world. There is no way of knowing what conditions or resources will be available upon arrival, so the capability to establish a bare base regardless of available infrastructure is critical.

The concept of rapid mobility and establishment of a bare base is: the ability to deploy facilities, equipment and personnel capable of launching and supporting air operations with the same efficiency and independence as a permanent installation.

AFPAM 10-219 Volume 5 was developed as a guide for Engineers and Planners to provide a concept of employment and a sequence for bare base construction. This publication describes the types of shelters, utilities and support items available in the Bare Base kits. It also guides you through the bare base process, from airfield seizure to reconstitution.

Just as the base population is phased into a bare base, the facility and utility assets required to support the population and aircraft are also predetermined and incrementally flowed. Without this preplanning and asset sequencing, engineers would have plane loads of equipment sitting on the ramp waiting to be sorted before any meaningful beddown or support to combat sorties could be initiated. To meet this challenge, engineers and logisticians use asset management systems like Basic Expeditionary Airfield Resources or BEAR, and BEAR Order of Battle to manage these critical resources. Historically, beddown locations received equipment in entire “sets” even though each location had different needs. With BEAR order of battle priority sequencing, planners have a menu of capabilities to choose from because most or all BOB UTCs will be “playbook” options. When forces and assets are presented based on large modules, it usually creates the need for trimming or tailoring personnel and materiel to meet the actual need. Presentation of capabilities in this manner helps reduce the overall engineer and logistics footprint compared to previous legacy and BEAR sets. Commanders can now employ only those capabilities required to meet the mission. Dynamic Positioning involves planning that expedites placement and movement of assets to meet combatant commander requirements. Assets can be strategically and globally positioned to support not only AF requirements but international, joint service and coalition efforts. One of the major challenges for legacy assets is the heavy dependence on limited airlift resources. With BOB, planners have a flexible transportation configuration and assets are efficiently packaged, transported and delivered by a range of air, land and sea options. Modular/Scalable UTCs which do not require tailoring is an important order of battle feature. BOB builds the smallest viable structure of personnel and equipment to provide a baseline level of capability for all deployment locations. The baseline can then be incrementally increased to meet location or mission specific requirements.

When planning bare base construction, establishing your timeline is laid out as task priorities. Stage one priorities are referred to as the initial stage. In this stage, the first thing that should be considered is the airfield. At a minimum, it must have a serviceable aircraft arresting system, edge lights, approach lights and Navigational Aids. If these items do not exist at the airfield location, they will have to be planned for and installed by Civil Engineers. You will also need to plan for aircraft parking ramps, and if in a high threat area, aircraft revetments will need to be installed. It may also be necessary to perform emergency pavement repairs on the airfield surface.

The Initial construction stage will also require minimum utilities to support the base. You will need a reliable water source or a treatment plant such as a reverse osmosis water purification unit, ROWPU, to make potable water available. The base will also need generators to supply power to mission essential functions. These utilities will need distributions systems to support latrines, dining facilities, medical facilities, billeting and fire protection. You can reference chapter 2 of AFPAM 10-219 volume 5 for a detailed list of initial stage task priorities.

Stage two priority taskings are referred to as the intermediate stage. In this stage you have established the minimum needs to open your air base and are now focused on furthering the support function of the base. In this stage the focus is on establishing fuel storage areas, showers with wastewater treatment, engineer shops, revetments, enhanced security and airfield upgrades. You can reference chapter 2 of AFPAM 10-219 volume 5 for a detailed list of intermediate stage task priorities.

Even though you are in a deployed environment, constructions standards still apply. Standards of construction in theater are specified by the Combatant Commander in coordination with the service components and Force Support. These standards established the design factors for bare base assets. They also ensure that the equipment being delivered to your deployment location provides quality facilities that meet mission, safety and health requirements, and can be erected with minimal effort by Civil Engineers.

Contingency construction covers construction of facilities for initial bed down with a planned life expectancy of up to 2 years. The standards for contingency construction include organic, initial and temporary and enduring.

Organic construction uses host nation equipment, facilities and labor to support deployments intended to last up to 90 days, but may be used up to six months. The intent is to seek an alternative to new construction and use a minimal amount of labor and resources until the arrival of a full engineer capability. This could include minimal to no site work, tents and pit latrines.

Initial standards are also characterized by relatively austere facilities and utilities that require minimal engineer effort. This construction is intended for use during the first six months of a contingency. Expeditionary equipment assets associated with this standard are tents with flooring, latrines with sewage lift stations, tactical generators for electrical distribution and portable refrigeration.

Temporary construction is characterized by facilities and utilities of a more substantial nature. It is used to increase efficiency and sustain operations for at least 24 months and with upgrades for up to 5 years. Wood frame buildings, bathhouses, commercial electric power and paved roads are examples of the temporary standard.

Enduring construction covers design, award and management of construction for facilities with a life expectancy of more than two years. Planning for the enduring phase, if necessary, usually begins not later than 90 days into the deployment. Planning for the enduring phase should include early involvement of the servicing Contracting Officer, Finance Officer and Staff Judge Advocate. The standards for enduring construction include semi-permanent and permanent facilities.

Although the primary planning factors seem quite obvious, there are many factors that are commonly overlooked which must be taken into account for a successful beddown.

Climate and weather present unique problems to the bare base planner. In tropical areas, you will encounter heavy rains and high humidity as opposed to the desert areas where temperatures can soar to 130 degrees Fahrenheit and rain is rarely ever recorded. These factors as well as wind loads and natural drainage patterns will influence siting and layout of bare base facilities.

The number of civil engineers required to establish the base will not change radically at lower base populations, because the tasks of preparing the runways and taxiways, installing runway lights, constructing POL storage, ammunition areas and installing utility systems remain relatively constant regardless of base population.

Equipment such as diesel generators, which generate noise in excess of maximum allowable levels, should be placed sufficient distances away from facilities where people work or billet so as not to cause personal injury. If sufficient distances cannot be achieved, noise barriers or baffles should be installed. General and supplementary lighting should be provided for maintenance tasks. Portable lights should be provided for people performing visual tasks in areas where fixed illumination is not provided. Security lighting should also be taken into consideration.

Special and general-purpose vehicles will be required to erect BEAR assets and to improve and maintain the bare base site. Aerial port personnel will normally offload BEAR equipment brought into an installation by airlift onto a cargo-holding apron and to the point of use.

Another important factor is determining what level of aircraft maintenance is planned at the base. The number of aircraft and level of maintenance are key determinants of the number and type of operational support facilities. These include maintenance medical, dining and billeting facilities.

You should also contact the Wing Intelligence Office to determine if there are any anticipated types of attacks, their possible intensity, and probable types of weapons to be used. These details are critical in planning different types of pre-deployment training and facility configurations.

Engineers generally rely on security forces to defend the base. During the early stages of a deployment, availability of security forces may be limited. In such a situation, engineers must employ their individual weapons and defensive fighting positions for security. The bare base planner should anticipate construction of defensive fighting positions, entry control points, an armory and removal of foliage around critical resources to defend against enemy threats.

Camouflage and concealment refers to the capability to reduce the effectiveness of attacking air and ground forces and reconnaissance assets. The nature of the threat, the importance of the base mission and the vulnerability of the base all affect the requirements and priority for establishing camouflage and concealment measures.

As the base grows, place more emphasis on contingency training and planning to include base recovery. From a base recovery aspect, give serious thought to the equipment and material dispersal locations, access ways for response vehicles, personnel shelter locations, communication capability between facilities, utility system redundancy and facility dispersal and hardening.

With a master bare base plan, facility siting tends to follow the pattern of existing roads and facilities. This may work out fine in some situations, but an overall siting plan which zones the base into functional areas with room for expansion helps manage orderly growth, boosts operational efficiency and conserves scarce resources.

At the conclusion of a bare base deployment, the mobility assets used are normally placed back into storage to await future requirements. This part of the bare base operation often does not receive the proper degree of attention. A key step in this process is refurbishing and reconstituting worn out or damaged assets over the course of the deployment. The 49 MMG has primary responsibility for repair and maintenance of BEAR mobility assets, and should be consulted during the maintenance and reconstitution process.

Bare base planning is a very complex process. It starts with the Joint Chiefs of Staff, and leads to you. This overview is only a brief narration of the details that go in to bare base planning. For more information you should reference AFPAM 10-219 Volume 5 and AFI 10-404.