

**Construction**

**Engineer Exercises  
in Latin America and  
the Caribbean**

**Headquarters  
U.S. Army South  
Fort Buchanan, Puerto Rico  
June 2001**

# ***SUMMARY of CHANGE***

## **USARSO Regulation 415-1**

Engineer Exercises in Latin America and the Caribbean

This revision–

- ?? Deletes references and procedures that were applicable when USARSO was based in Panama.
- ?? Provides more detailed Diplomatic Note and Implementing Agreement information (paragraph 2-3).
- ?? Emphasizes environmental considerations for military projects constructed abroad (Chapter 5).
- ?? Explains detailed planning guidance and procedures in appendices B,C,D&G.

**Construction**

**Engineer Exercises in Latin America and the Caribbean**

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**History Statement.** This printing publishes a revision of U.S. Army South (USARSO) Regulation 415-1.

**Summary.** This regulation describes policies, procedures, and planning information for U.S. military engineer exercises conducted in Latin America and the Caribbean.

**Applicability.** This regulation applies to all United States (U.S.) Army active and reserve component troop construction in Latin America and the Caribbean.

**Proponent and Exception Authority.** The proponent for this regulation is the USARSO Deputy Chief of Staff for Engineers (DCSENG). The proponent has the authority to approve exceptions to this publication that are consistent with controlling law and regulations.

**Supplementation.** Supplementation of this regulation is prohibited unless specifically approved by the proponent.

**Suggested Improvements.** Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Commander, ATTN: SOEN-ED, PO Box 34000, Ft. Buchanan, PR 00934-3400.

**Distribution.** Distribution of this publication is made in accordance with USARSO Pam 25-50, Command Distribution Scheme, and is intended for USARSO A1; B1: C1; D1; SOEN-ED – 5; SOIM-IT-RP – 2; AFSA-PS-HHD (MDC) – 5; AFSA-PS-HHD (PUBS) – 5; and the USARSO Intranet.

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\*This regulation supercedes USARSO Regulation 415-1, June 1994

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## Chapter 1 Introduction

### 1-1. Purpose

The purpose of this regulation is to establish standard procedures and policies for troop construction projects executed by military engineer units deployed to Latin America and the Caribbean. Intent is to ensure quality construction while providing realistic and challenging training opportunities for our service men and women.

### 1-2. References

Required and related publications are listed in Appendix A.

### 1-3. Explanation of abbreviations, brevity codes, acronyms, and terms

Abbreviations, brevity codes, acronyms, and terms used in this regulation are explained in the glossary.

### 1-4. Responsibilities

a. USSOUTHCOM is the supported Commander-in-Chief (CINC) for all Joint Chiefs of Staff (JCS) exercises conducted in the USSOUTHCOM Area of Responsibility (AOR). USSOUTHCOM:

- (1) Identifies requirements for engineer military construction training projects.
- (2) Coordinates with United States (U.S) Military Groups (MILGPs) and host nations to obtain scope, project approval, and execution guidance.
- (3) Coordinates with supporting service commands for selection of engineer troop units.
- (4) Coordinates approval of Humanitarian Civic Action (HCA) projects.
- (5) Program and manage HCA, engineer-related construction (ERC), and developing countries combined exercise program (DCCEP) funds.
- (6) Facilitates development and implementation of any necessary Diplomatic Note needed for the exercise.

b. Supporting Service Commands will:

- (1) Provide engineer and support units as per USSOUTHCOM exercise directive.
- (2) Ensure mission essential training list (METL) skills are identified and emphasized during pre-deployment training.
- (3) Coordinate deployment and redeployment of units provided to support the exercise.

c. Commander, USARSO will:

- (1) Serve as USSOUTHCOM's executive agent for JCS engineer exercises when directed by USSOUTHCOM.
- (2) Provide detailed planning and guidance for participating units.
- (3) Assume Operational Control (OPCON) of units deployed to the Caribbean and South America (Joint Task Force Bravo (JTF-B) assumes OPCON of units deployed to Central America).
- (4) Ensure exercises are executed safely, on time, and within budget.

d. The USARSO DCSENG will:

- (1) Provide engineer policy guidance.
- (2) Provide engineer technical support.
- (3) Review and approve engineer submittals as shown in Table 1-1 of this regulation. Table 1-1 is a USARSO engineer planning timetable established to ensure engineer project requirements are submitted, reviewed, and approved in a timely manner.
- (4) Provide Quality Assurance.
- (5) Conduct design reviews and approve design/construction changes and modifications.
- (6) Maintain USARSO standard designs for schools, clinics, and latrines. Units may adjust or change designs to site adapt with DCSENG approval.
- (7) Participate in site surveys.

e. The USARSO Deputy Chief of Staff for Operations (DCSOPS) will:

- (1) Provide overall operational direction and guidance to participating units.
- (2) Conduct detailed planning to include planning conferences, site surveys, exercise plans and operations orders (OPORD).
- (3) Establish exercise milestones.
- (4) Define and lock-in the exercise scope.

f. The USARSO Deputy Chief of Staff for Intelligence (DCSINT) will:

- (1) Provide threat assessment.
- (2) Provide terrain analysis to include geological mapping information.
- (3) Provide force protection recommendations.

- g. The USARSO Deputy Chief of Staff for Personnel (DCSPER) will:
  - (1) Provide personnel staffing and processing guidance.
  - (2) Review and approve the engineer Task Force (TF) Table of Distribution and Allowances (TDA).
  - (3) Establish rating schemes.
- h. The USARSO Deputy Chief of Staff for Logistics (DCSLOG) will:
  - (1) Provide logistical policy guidance.
  - (2) Establish critical logistics milestones.
  - (3) Monitor logistical operations during execution.
- i. The USARSO Deputy Chief of Staff for Resource Management (DCSRM) will:
  - (1) Provide funding guidance.
  - (2) Plan, program and budget funds in support of the engineer exercise.
  - (3) Monitor and control O&M exercise funds.
- j. The USARSO Deputy Chief of Staff for Civil Military Operations (DCSCMO) will:
  - (1) Provide Civil Affairs (CA) guidance and recommendations.
  - (2) Participate in site surveys to determine level of CA support.
- k. The Directorate of Contracting, United States Army Garrison, Fort Buchanan (USAG-FB), USARSO will:
  - (1) Provide contracting guidance and support for CONUS and OCONUS contracts.
  - (2) Conduct market surveys.
- l. The USARSO Staff Judge Advocate (SJA) will:
  - (1) Provide legal advice and guidance.
  - (2) Review exercise operation plans (OPLANs), agreements, and exercise related contracts to ensure compliance with international law, federal statutes and service regulations.
  - (3) Develop and coordinate exercise Implementation Agreements/Memorandums of Understanding as appropriate.
- m. The USARSO Provost Marshall will:
  - (1) Provide force protection guidance.
  - (2) Conduct force protection assessment surveys and inspections.
- n. The USARSO Command Surgeon will:
  - (1) Provide medical support guidance.
  - (2) Participate in site surveys as necessary.
- o. JTF-B will:
  - (1) On order, receive OPCON of forces executing construction exercises in Central America.
  - (2) Provide quality assurance in coordination with the USARSO DCSENG.
- p. The TF will:
  - (1) Prepare designs, quality control plans, bill of materials (BOM), manpower and equipment estimates, construction work schedules (CWS), critical path method (CPM) network diagrams, and complete the USSOUTHCOM environmental checklist, as required by the exercise OPORD, construction directives (CDs), or the internal construction SOP. Submit checklist through the DCSOPS to the DCSENG for approval IAW the mission milestone schedule outlined in the USARSO OPORD.
  - (2) Develop comprehensive construction site safety plans for all projects, and ensure enforcement.
  - (3) Comply with reporting procedures of the USARSO OPORD and Engineer Exercise Standard Operating Procedures (SOP).
  - (4) Comply with the recordkeeping requirements in para 3-12 of this regulation.
  - (5) Establish and maintain job site security from project initiation to project completion IAW force protection plans and provisions outlined in the exercise Implementing Agreement and USARSO OPORD.
  - (6) Conduct periodic project site inspections to ensure quality control, and adherence to construction plans, specifications, site security plans, safety procedures, and training.
  - (7) Ensure the optimum and safe use of personnel, equipment, and material in the construction effort.
  - (8) Ensure the completion of construction projects on schedule and within budget.

#### **1-5. Scope**

This document provides engineering management guidance for units deployed to Latin America and the Caribbean in support of USSOUTHCOM sponsored JCS engineer exercises. This regulation applies to all organizations and units assigned, attached, or OPCON to USARSO for the purpose of performing engineer construction and training missions. Engineer units involved in other training and construction in theater should also find this regulation useful.

**Table 1-1  
ENGINEER PLANNING TOOL (MILESTONES)**

PLANNING CYCLE	35% Planning Review Period				65% Planning Review Period				95% Planning Review Period			100%	
	D-365	D-305	D-270	D-245	D-238	D-225	D-210	D-180	D-105	D-90	D-60	D-30	D-15
1. SCOPE OF WORK (incls time/cost estimates)		Sub	App										
2. ERC CONSTRUCTION DESIGN PACKAGE		I											
A. CONSTRUCTION PLANS (Drawings)		N		Dft	Rev	Fnl				App	F		
B. CPM (Plan-PERT)	A	I			Dft	Rev			Fnl	App	I		
C. QUALITY CONTROL (Plan)	S	T				Dft	Rev	M	Fnl	App	N		
D. QUARRY/BLASTING PLAN	S	I	S			Dft	Rev	I	Fnl	App	A		
E. CWS (Const Work Sch/Resources)	I	A	I			Dft	Rev	D	Fnl	App	L		
F. DESIGN CALCULATIONS	G	L	T	Dft	Rev	Fnl	App						
3. BASECAMP DESIGN PACKAGE			E					P					P
A. BASECAMP DESIGNS (Drawings)	D	P		Dft	Rev	Fnl		L		App	L		L
B. CPM (Const Plan)		L	S				Rev	A	Fnl	App	A		A
C. BASECAMP BOM		A	U	Dft	Rev	Fnl	App	N	Fnl	App	N		N
D. CWS (Const Sch & Resources)	M	N	R				Dft	Rev	Fnl	App	N		N
4. HCA DESIGN PACKAGE		I	V					I					I
A. DESIGNS (Drawings)	S	N	E	Dft	Rev	Fnl	App	G					G
B. CPM (Const Plan)	I	G	(S)					Dft	Fnl	App			
C. CWS (Const Sch & Resources)	O							Dft	Fnl	App			
D. BOM (Materials & Cost)	N			Dft	Rev	Fnl	App	C					C
5. CONSTRUCTION BOM			O	Dft				N					N
6. SAFETY PLAN			N					F					F
7. REAL ESTATE REQUIREMENTS			F	Fnl	App		Rev		Fnl	App			
8. ENVIRONMENTAL CHECKLIST						Dft	Rev		Fnl	App			
9. QUALITY CONTROL PLAN						Dft	Rev		Fnl	App			

KEY: Dft = Draft, Rev = Review, Fnl = Final, App = Approved

## Chapter 2 Planning

### 2-1. General

a. Political realities. Each Latin American country and Caribbean Nation has its own unique factors in its constitution and cultural, social, and governmental or political structures that must be considered when planning an engineer construction exercise in the USSOUTHCOM AOR.

(1) Unit exercise planners should consult with appropriate area experts (MILGP, U.S. Embassy personnel, host nation representatives) for advice on potential issues that may delay or significantly reduce the scope of the training effort. These may include policies on memorandums of understanding, funding agreements, and interoperability training, to name a few.

(2) Each country in the USSOUTHCOM AOR that invites U.S. military forces in country to train, to include those requesting engineer forces for humanitarian or disaster relief effort, may have opposition elements who object to U.S. military presence within their country.

(3) Additionally, bureaucratic processes of some governments can be time consuming and burdensome. Some governments or constitutions require parliamentary level approval before such training activities can take place. Internal government negotiations, often causing delays on project approval and funding, may impact adversely on deployment decisions. MILGP interaction with the U.S. Embassy country team is crucial to obtaining host nation approval and cooperation.

b. MILGP staff relationships. The MILGP (or equivalent) is the primary point of contact for coordination of exercises and the resolution of exercise related problems affecting the host nation. These organizations provide interface with host nation government ministries, advice on political impacts, and assistance in internal U.S. Embassy coordination. They can also provide contact with the appropriate government agency having direct responsibility for the project. Each engineer exercise TF will have a staff coordination line to the MILGP, but not a command relationship.

c. Host country relationships. Government officials often at the minister or vice-minister level will be directly involved in the project planning process.

(1) Within established security framework, unit planners will consider the designated ministry's representatives as full partners in the exercise planning process.

(2) Positive working relationships will be emphasized from the very beginning. Ensure expectations are thoroughly discussed and understood.

(3) Unit representatives/exercise planners will not commit to requests not found in the USSOUTHCOM exercise directive or Implementing Agreement. When in doubt, make no commitments, obtain the correct response, and provide timely feedback.

### 2-2. Planning events

The key to successful execution is planning. Key elements to engineer exercise planning include planning conferences, site surveys, and design reviews. Planning conferences serve as an excellent forum to bring key exercise planners, at all levels, together to discuss various aspects of the exercise. Site surveys afford the TF and functional area staff planners an opportunity to gather vital information necessary to conduct detailed planning. Design reviews afford engineer planners, at all levels, an opportunity to conduct detailed analysis and evaluation of proposed designs and construction techniques. A thorough review leads to a better design, complete bill of materials, identification of essential engineer resources, improved construction management, efficient utilization of resources, and better end product.

a. Project tasking. Constructing units will receive project tasking through normal command channels either by:

(1) Construction Directive. Will be done for each project, both at the MACOM, USARSO, and executing TF level. Purpose of the constructive directive is to ensure project scope is clearly understood by all parties concerned. The USARSO constructive directive can be found in Appendix 1, "Scope Description", to Annex O, "Engineer" of the USARSO exercise OPORD (developed for each exercise).

(2) Exercise OPLAN/OPORD. The exercise OPLAN/OPORD defines command and support relations for both planning and execution phases of the exercise. Additionally, pertinent planning considerations and guidance are provided for various functional areas (logistics, medical, aviation, engineer, etc.,).

b. Planning conferences. Forums to bring exercise planners at all levels together to discuss the exercise and resolve problems. USARSO will conduct an Initial Planning Conference (IPC), Mid-Planning Staff Assistance Visit (MPSAV) and Final Planning Conference (FPC) for each exercise. TFs will typically conduct several in-house conferences/meetings throughout the planning phase to include synchronization meetings and exercise rehearsals.

(1) IPC. An IPC, chaired by the DCSOPS, will be held with the engineer TF and participating agencies. The IPC is the principle forum used by USARSO to initiate detailed planning and convey planning information to the TF. As a minimum, the following will be covered in the IPC:

(a) Exercise mission, scope, concept, and key planning milestones.

(b) An overview of the area of operations and proposed projects.

(c) Functional area planning considerations.

(d) Functional area break-out sessions to elaborate on topics, issues, and address concerns.

(e) Open forum discussion of issues and agreements. For issues, intent is to capture what the problem entails, who has responsibility to resolve, and by when. For agreements, intent is to capture what was agreed upon and by whom.

(f) A wrap-up message is assembled by DCSOP'S planners with input from the various USARSO staff and TF representatives. The wrap-up message summarizes the agreements and issues, by functional area, and serves as the minutes to the conference.

(g) Points of contact (POC) for future coordination (a memorandum will be written to document initial coordination).

(2) Mid Planning Staff Assistance Visit. The MPSAV is intended to be less formal by dispensing with much of the formalities of the IPC and focused to assist the TF. Emphasis is on small workgroup sessions. Specific USARSO functional area planners and other functional area experts may be called upon, by invitation, to assist the TF with the planning effort or to work specific issues or concerns. Format for the MPSAV begins with an update of issues identified at the IPC, discussion of new issues, and proceeds directly to functional area breakout sessions. The MPSAV concludes with an open forum discussion of agreements/issues. As with the IPC, DCSOP'S planners will publish a wrap-up message.

(3) FPC. The FPC is the forum where the TF briefs their concept of operations and support by functional staff area (J1, J2, J3, etc.,). As with the IPC and MPSAV, break out sessions are conducted and issues discussed in an open forum. An FPC wrap-up message will be prepared to serve as minutes to the conference.

c. Site survey. Site surveys enable the TF and functional area planners an opportunity to gather vital information about the area of operation.

(1) Exercise concept development survey. The exercise concept development survey occurs at the earliest stages of planning, typically 12-18 months out. It involves USSOUTHCOM Engineers, USARSO, the MILGP, and host nation representatives. Purpose of this survey is to evaluate the proposed projects submitted by the host nation for feasibility. Intent is to lock-in project scope by balancing needs of the host nation and capabilities of units expected to execute the mission. Planning considerations include:

(a) Minimize "drive time" from proposed base camp location to projects to no more than one hour.

(b) Select sites that are easily accessible and require minimal site preparation.

(c) Avoid remote sites that may require helicopter support or establishment of forward base camps.

(d) Select sites that will accommodate standard military construction designs.

(e) Select sites that satisfy the greatest needs of the host country or community and meet the other planning factors above.

(2) Initial Site Survey. The initial site survey is typically conducted before or just after the IPC. Purpose of this survey is to familiarize the TF Commander and primary staff with the area of operation and proposed construction projects. The initial site survey serves as the initial leader reconnaissance by which preliminary planning estimates can be made. It is imperative for the TF to determine if the proposed project scope can be accommodated with the given force structure and within the time allotted.

(3) Detailed site survey. The detailed site survey is normally conducted between the IPC and MPSAV. By this time the TF will have had an opportunity to digest what the exercise entails and assemble key members of the duration staff. As the name implies, this is intended to be a detailed survey whereby vital information is gathered, particularly in the engineering and logistics areas. As such, engineering survey and logistics teams should be assembled and dispatched under the careful supervision of the TF Commander. As a minimum the following data should be obtained:

(a) Engineering:

(1) Site measurements (dimensions and elevations).

(2) Site conditions (terrain, soil and foundation characteristics, drainage, availability of construction water and electricity, demolition of existing structures, staging area for material and equipment, location of utility lines, environmental considerations).

(3) Accessibility (road conditions, bridge capabilities, bypasses, traffic volume and control).

(4) Local information (rainy season, school year, holidays, availability of local skilled labor, sources of materials and equipment).

(b) Logistics:

- (1) Main Supply Route (MSR) reconnaissance to include bridge and stream crossings.
- (2) Evaluation of base camp location to support the mission.
- (3) Evaluation of sea and air ports to accommodate incoming and outgoing personnel, equipment, and materials.
- (4) Market survey for sources of materials, equipment, services, water, fresh fruits, and vegetables. *The TF should plan on providing an engineer representative (knowledgeable on construction materials) to accompany contracting when evaluating sources of materials and other engineer specific items.*

(c) Civil Affairs:

- (1) Coordinate with community leaders and authorities.
- (2) Ensure needs are valid and does not conflict with the community master plan.
- (3) Coordinate host nation responsibilities in accordance with the exercise Diplomatic Note and Implementing Agreement.
- (4) Coordinate land use agreements.
- (5) Coordinate host nation participation.

d. Design reviews. Design reviews will occur, as often as needed, however, the DCSENG will schedule a minimum of two: Concept (35% completion point) and Pre- Final (95%). The design reviews will be coordinated by the DCSENG and will involve engineer representatives from the TF and higher headquarters (if designs are worked by higher headquarters' engineer groups, brigades, or engineering commands (ENCOMS)). Design reviews will include HCA projects, road maintenance and repair projects, and base camp construction plans. *Water well designs are handled exclusively by the Mobile District Corps of Engineers.* Exact times and locations will be determined by the DCSENG. Construction management, quality assurance, and construction safety will also be addressed.

(1) Concept review (35%). Initial review of plans and specifications. Emphasis will be on working with TF engineer representatives to resolve any questions regarding common techniques and practices, site adaptability, changes/modifications, and material substitutions to the USARSO standard designs. The DCSENG will record and publish minutes of the review. The Concept Review will normally take place after the initial site survey and IPC.

(2) Pre-final review (95%). Final review of designs prior to actual materials procurement. Emphasis will be on finalizing any remaining technical issues and bringing the designs to closure. TF and USARSO representatives will "sign-off" on the designs and bill of materials indicating agreement and acceptance. During the final review, the TF will also discuss construction management, quality control, and safety. The TF will furnish the DCSENG a copy of the CPM, CWS, Quality Control Plan, and Construction Safety Plan.

### 2-3. Diplomatic note and implementing agreement

The Diplomatic Note is an agreement between the host nation and U.S. government that defines the legal status of U.S. troops while deployed in the host country. It covers certain responsibilities to include exoneration from customs and taxes, right to use air and seaports, right to bear arms, security, and other rights/privileges extended to the U.S. for the purpose of the exercise. The Diplomatic Note is normally signed by the U.S. Ambassador and host nation Foreign Minister (or equivalent). The Implementing Agreement (Memorandum of Understanding) is a document between Commander, USARSO and host nation Minister of Defense (or equivalent) that expounds upon responsibilities to include specific requirements, quantities, times, locations, and sketches or diagrams. Development of the Diplomatic Note is the responsibility of the Department of State with input from USSOUTHCOM and USARSO planning staffs, the TF and U.S. Embassy/MILGP. Development of the Implementing Agreement (Memorandum of Understanding) is the collective responsibility of the USARSO and USSOUTHCOM planning staffs. The TF should participate in the development of these documents to have full understanding of agreements and basic rights while deployed.

a. The Diplomatic Note follows a standard Department of State approved format that defines the status of U.S. forces while deployed in a foreign country that may include such items as:

- (1) Legal description of the exercise.
- (2) Specific entry and exit dates.
- (3) Estimated number of U.S. troops to be deployed.
- (4) Right to bear arms and control measures for storage and security of weapons brought into the host nation.
- (5) Property rights for staging areas, base camps, and Humanitarian Civic Action (HCA) construction projects (schools, clinics, and wells).
- (6) Exoneration from customs and taxes.
- (7) Passport and visa requirements.
- (8) Permission to treat patients upon proof of proper medical credentials.
- (9) Operation and maintenance responsibility of the host nation for projects once accepted.
- (10) Jurisdiction of U.S. personnel accused of a crime while deployed in the host country.

- b. The Implementing Agreement follows a standard USARSO format that details specific responsibilities for:
- (1) The standards of construction (construction plans and specifications).
  - (2) Detailed project scope of work, locations, and approvals.
  - (3) Base camp site approval.
  - (4) Right of way and easements required for all construction and when needed.
  - (5) Security coordination at base camps, work sites, ports, staging areas, and convoy routes.
  - (6) Host country engineer, medical and security forces participation (how many and when needed).
  - (7) Medical care and subsistence for host nation participants.
  - (8) Media coverage of the exercise.
  - (9) Emergency evacuation procedures of host nation personnel (civilians and military).
  - (10) Utility usage fees and reimbursement.
  - (11) Preparatory work to include debris removal from the site, relocation of utility lines, and demolition of existing structures.
  - (12) Site sketches and diagrams to provide greater clarity.

#### **2-4. Development of design submittal**

a. Designs are required for the HCA projects (schools and clinics), road work (if building to a specified class), and the base camp. Data obtained during site surveys should be adequate to finalize scope of work, adapt USARSO standard designs, develop preliminary designs for non-standard construction (if required), prepare initial bills of material, develop initial construction time estimates, and prepare cost estimates.

b. Preliminary project design considerations. Standard designs should be used to the extent possible. The Army Facilities Component System (AFCS) and Theater Construction Management System (TCMS) provides an array of military standard designs. Additionally, the USARSO DCSENG maintains standard designs for typical schools, clinics, and latrines. There are instances, however, where mission requirements may require non-standard designs. Non-standard engineering designs will be prepared by the engineer TF to Army Training and Evaluation Program (ARTEP) standards and in accordance with (IAW) sound engineering principles. Army references cited in ARTEP manuals provide the standards expected for designs and plans. TF designers should consider the following factors:

- (1) Objectives and function of desired structure.
- (2) On site survey and technical data.
- (3) Availability of utilities (water, electricity and sewage).
- (4) Ability of the site to accommodate a septic tank with leach field.
- (5) Consideration of host nation technical/environmental requirements and desires, where feasible.
- (6) Simplicity of construction.
- (7) Economy.
- (8) Availability of construction materials.
- (9) Capabilities of constructing unit.
- (10) Design guidance from higher headquarters.

c. Base camp design. Base camp design is a TF responsibility and will be based primarily on the size of the TF. Information on base camp design can be found in USARSO regulation 415-3 and AFCS/TCMS drawings.

d. Construction plans and specifications. The TF is primarily responsible for producing project plans and specifications. At least one degreed engineer (preferably registered) should review plans before they are submitted for final approval. All construction plans and specifications will be submitted through the DCSOPS (ATTN: SOOP-HCA-EN) to the DCSENG (ATTN: SOEN-EX) for approval (see Table 1-1).

(1) Design standards should adhere to U.S. Army technical manuals, unless different guidance is received from the host nation authorities (engineers) or has been placed in an approved memorandum of instruction/OPORD.

(2) The TF designer should keep all design notes in a notebook for review.

(3) The TF should develop plans in stages.

(4) Specifications must address each phase of work and clarify standards of construction expected in each type of work.

e. USARSO standard designs. The USARSO DCSENG maintains a set of standard designs for typical schools, clinics, and latrines built in Latin America and the Caribbean. These designs are updated periodically by the USARSO DCSENG and are available to the TF. The USARSO standard design package includes design drawings and bills of material for each type of facility. Constructing units are still required to site adapt and perform any changes/modifications with USARSO approval.

## **2-5. Bill of materials (BOM)**

a. Preparation of the BOM according to individual projects and identifiable subtasks. The BOM will be prepared listing quantities and costs and include 10% additional quantity for each item listed. Delivery charges will be estimated as an additional twenty-five percent of base costs. To facilitate updates, BOM information should be placed on a spreadsheet computer application. All BOM revisions will be numbered and dated to match construction phase - changes. The BOM must be reviewed in detail and approved internally before it is submitted for approval.

b. The purchase of construction materials takes time. The history of engineer troop construction projects is littered with shortages or late materials delivery causing construction delays. The planning sequence must allow for adequate acquisition time (procurement and delivery). Continuous follow-up is a necessity.

c. Early emphasis must be placed on those items identified as not available in country and must be procured in continental United States (CONUS) (i.e. treated woodpiles, Bailey bridge parts, well drilling materials, etc.).

## **2-6. Initial time estimates**

The following steps should be taken in arriving at the initial time estimate.

- a. Identify major construction activities.
- b. Determine a time estimate for each activity based on actual unit experience.
- c. Plan for six-day workweeks.
- d. Prepare an initial CPM and CWS to estimate total project duration.
- e. Include adequate time for deployment, base camp set up, and equipment mobilization.
- f. Include time for base camp breakdown and redeployment.

## **2-7. Initial cost estimates**

The USSOUTHCOM exercise directive will provide initial cost estimates for each project. These figures are adjusted based on actual cost data. It is imperative that costs that exceed these initial estimates be immediately reported to the USARSO DCSOPS so that reprogramming actions can be initiated.

## **2-8. Development of task organization**

List of forces are outlined in the USSOUTHCOM exercise directive to include command and control, engineers, logistics, medical, aviation, and an array of other support elements. What is not spelled out is the TF duration staff composition. Annex F to this regulation provides guidance on establishing a duration staff.

## **2-9. Identification of major resources outside TF control.**

Resources required to accomplish the mission should be identified early and coordinated throughout the planning process. After the concept plan is approved, a formal written request for assets beyond unit authorization should be prepared and forwarded through the TF's higher headquarters to the USARSO DCSOPS.

## **Chapter 3, Construction Execution**

### **3-1. Pre-construction phase**

A thorough effort during the pre-construction phase should ensure the sustainment of high quality construction standards throughout the exercise. Critical to this phase is the preparatory site work. An on-site reconnaissance prior to ground breaking will verify results of earlier surveys (layout and orientation of facility), identify changes in terrain features, and ensure removal/demolition of obstacles. Often, early entry units required to construct the base camp are also tasked to prepare project sites (clear, grub, and lay foundation).

a. The site reconnaissance should include the presence of all individuals who were a part of earlier reconnaissance (i.e., TF Commander, TF Engineer, TF J3, TF J4 ). The TF emphasis from beginning to end should be on quality work and adherence to plans and specifications. Actions should be taken to avoid undertaking any phase of work without first ensuring that the element scheduled to perform the construction is thoroughly familiar with the standards and scope of work required in that phase.

b. TF leaders at all levels should ensure that required resources (personnel, equipment and materials) are available to begin work IAW the project CPM and CWS.

### **3-2. Execution phase**

During this phase, construction plans are put into motion and intensely managed from start to finish. Leaders are involved with supervising each project to ensure work schedules are followed, quality control systems are in place, potential problem areas are identified early, and report status. The quality of execution is directly proportional to the quality of planning. The planning tools identified in Table 1–1 of this regulation will significantly aid overall management and improve project execution. Typical management tools and areas requiring emphasis are as follows:

a. The construction plan (Program Evaluation and Review Technique (PERT) or CPM). The CPM provides the logical sequence for construction event/activities to take place and when tied to resources will be used as the tool for tracking the progress of all construction projects (road, base camp, and HCA).

b. CWS. The CWS is developed from the CPM. It identifies and schedules events with resources (i.e. materials, transportation, personnel, and equipment) for each definable work activity. This process ensures that the correct resources are available when needed and minimizes potential resource conflicts.

c. Quality Control plan. Activities depicting when quality control measures outlined in the quality control plan are to take place will be included as activities in the CPM and the CWS. (See USARSO Reg 415-2)

d. Training. Training opportunities for engineer units abound. These training opportunities must be fully exploited and documented. The TF must document training accomplishments to include Mission Essential Task List (METL), Common Task Test (CTT), and skill qualification test (SQT) tasks trained. The process of documenting training must be an ongoing effort. Attempting to document training after the fact will not give an accurate portrayal of the status of training actually achieved during the exercise.

e. Construction safety. Safety is an area in which compromise is unacceptable. The unit's safety plan will include measures designed to deal with the types of risks normally associated with the type of training being performed. The TF safety plan will include safety planning considerations identified in the USARSO OPORD, lessons learned from previous exercises, and USARSO Safety Office guidance. Construction safety considerations that should be addressed are as follows.

(1) The TF will analyze each activity/event/work site to determine associated risks. Specific safety precautions designed to prevent accidental occurrence will be developed for each definable portion of work. This hazard analysis will be presented at the preparatory quality control (QC) meeting (see USARSO Reg 415-2).

(2) Safety briefings will be given at each work site before work begins. Safety briefings will also be given to correct safety shortfalls when detected. All accidents will be investigated to determine their cause and to devise necessary safety precautions that can be initiated in preventing reoccurrence.

### **3-3. Quality Control**

a. All project supervisors will be familiar with USARSO Regulation 415-2, Construction Quality Management Program, and the unit's QC plan.

b. USARSO is overall responsible for quality assurance (QA). The TF is responsible for QC. The TF has a professional obligation to produce a quality product that complies with standards and satisfies the host country's expectations. As a result, constructing units will develop a quality control plan IAW USARSO Regulation 415-2. Supervisors at every level will monitor compliance.

c. A quality control plan or extract will be maintained on site for each project.

d. The quality control plan will establish procedures for conducting technical inspections to ensure high quality construction and to ensure adherence to standards.

e. USARSO Quality Assurance Representatives will bring to the attention of the TF Commander any work not meeting published construction standards. These comments will be noted and recommendations provided in a report format. The construction unit will be provided a copy of all inspection reports for information and action. QARs will provide any assistance possible to facilitate timely, safe, and proper completion of projects in accordance with approved designs and specifications. The project officer in charge (OIC)/Noncommissioned officer in charge (NCOIC) will be briefed and provided a copy of the inspection report by the Quality Assurance Representative before departing the site.

### **3-4. Host nation participation**

The initial meeting with host nation representatives will establish the tone for the duration of the exercise. TF Civil Affairs (CA) representative will play a key role here. As a minimum the following should be adhered to:

a. Treat all host nation participants with utmost respect and courtesy. Emphasize the TF's position as invited guests and encourage the development of one-on-one relationships.

b. Request that host nation leaders meet with the TF Commander and J-3 to discuss the construction plans, general plan of operations, and the commander's concept of the role of the host nation in the exercise. Encourage open discussions to clarify and resolve any issue. Introduce key personnel and explain their functions. Discuss base camp organization and daily schedule of activities. Convey in meetings the impression that we are delighted to be invited to come to their country by the host government. Stress how important a combined work effort is to accomplishing the mission. Emphasize teamwork and the crucial role the host nation must play in supporting the mission.

c. Determine if host nation elements have special skills that can be integrated into the major project effort, civic action projects, or TF maintenance activity. Some countries can provide specialty skills such as welders, mechanics, and surveyors.

d. Ensure base camp accommodations for host nation personnel meet the same standards as those for United States (U.S.) personnel.

e. Coordinate with attached host nation military element for support of head count, kitchen police, and field sanitation details on an equal basis with U.S. elements.

f. Obtain approval from Army and Airforce Exchange Service (AAFES) to extend Army Post Exchange privileges to host nation personnel involved in the exercise.

g. Invite the key leader(s) from the host nation to attend daily command and staff meetings. Translate key information for them as required.

h. Invite host nation participation in sports activities as a part of a combined TF team effort.

### **3-5. Project reports**

Engineer information required from the TF includes a daily status on construction projects. The Commander's Situation Report (SITREP) addresses, on a daily basis, each on going project to include start time, status, percentage completion, and comments regarding problems with recommended solutions. Additionally, the Commanders SITREP addresses future projects to include site prep and availability of materials. Commanders SITREP format can be found in the USARSO Engineer Exercise SOP.

### **3-6. Funds accountability**

The TF has the responsibility to accurately account for all exercise funds. The TF should early on designate a Funds Control Officer to budget and account for exercise funds. Each fund expenditure will have an approval document or directive that authorizes and properly accounts for funds. Engineer areas requiring accountability emphasis are Class III (bulk petroleum, oils, and lubricants (POL), Class IV (HCA, Engineer Related Construction (ERC), and Operations and Maintenance (O&M) construction materials), and Class IX (repair parts). Failure to maintain accurate cost accounting can result in cost overruns or regulatory violations. USARSO DCSRM Mission Support Branch addresses funding at planning conferences and provides specific funding guidance in the USARSO OPOD and Engineer Exercise SOP.

a. Class I (rations). Developing Countries Combined Exercise Program (DCCEP). USC Title 10 allows payment of incremental expenses (rations, fuel, training ammunition and transportation) that are incurred by a developing country as a direct result of participation in a bilateral or multilateral exercise. For engineer exercises, DCCEP funds are primarily used for rations provided to host nation participants.

b. Class III (bulk POL). Fuel expenditures must be accounted for and reported on a daily basis by category, administrative or construction use.

(1) Administrative fuel. Administrative fuel is generally characterized as fuel consumed in the day-to-day operations of the exercise. Typical examples include daily supply runs, transportation of visitors to the construction sites, transportation of troops to and from project sites, and running of generators at the base camp to sustain operations.

(2) Construction fuel. Construction fuel is generally fuel consumed in work directly related to the construction project. Examples of direct fuel consumption would include a dozer used to clear a project site, a small equipment excavator used to dig the "footers" of a slab, a generator used on-site to power tools, etc.

c. Direct maintenance cost.

(1) U.S. Law requires that direct maintenance cost (Class IX) associated with the use of U.S. equipment be included as a project cost. These costs must be separately accounted for each project.

(2) The current approved method used by budget personnel to account for these costs is by the following formula:

$$\frac{\text{Construction POL}}{\text{Total POL}} \times \text{Total Class IX (from TUFMUS)} = \begin{matrix} \text{Direct} \\ \text{Maintenance} \\ \text{Cost} \end{matrix}$$

d. Class IV (construction materials). Construction materials are categorized as HCA, ERC, or O&M procured.

(1) HCA materials. USC Title 10 governs use of HCA funds. By law, HCA funds are approved for each separate HCA project by line item in the congressional budget, therefore, strict accountability is required. HCA materials cannot be moved between HCA projects and cannot be used for anything but the intended facility. USC Title 10 codes do not allow for the construction of furniture (desks, chairs, etc.) that are not a permanent fixture of the facility. Units should avoid this temptation. Non-government or charitable organizations should be sought to furnish/equip facilities upon completion.

(2) ERC materials. Congress appropriates ERC funds as a special sub category of the Unspecified Minor Military Construction (UMMC) program to support JCS exercises. ERC expenditures are under intense oversight and, therefore, warrant detailed consultation with the USARSO DCSOPS and SJA regarding use. ERC funds are used primarily for access road work, renovation of existing facilities used for base camp purposes, or base camps built from the ground up that will be used over multiple years in support of U.S. deployments.

(3) O&M materials. Materials used to construct the base camp are typically O&M funded (with the exceptions noted above for ERC). O&M funded materials are tracked via a separate funding source. Although the TF Commander has greater flexibility with O&M funds, the following general rules should be observed:

(a) O&M funding limitations for new construction (currently not to exceed \$500K for any one project).

(b) Should have its requisitions placed, using a separate funding code, in order to accurately account for costs.

(c) Will have its acquisition recorded in project record files for the base camp. Records must be kept to capture the quantities of materials actually used. Procedures must be established to properly account for and turn-in unused materials at the completion of the project. O&M funded projects cannot be left in place without proper authorization from USARSO.

### 3-7. Accounting procedures

a. AR 415-32, Engineer Troop Construction in Connection with Training Activities, mandates that strict accountability of military construction expenditures outside the continental United States (OCONUS) be maintained by the TF to include:

(1) Record of expenditures charged to the project. This category of expenditures will include quantities and cost of POL consumed, materials used (to include equipment installed), and cost to the U.S. for service contracts or other contracts for the project, if any.

(2) Record of expenditures not charged to the project. A record of expenditures charged to training will include man-hours by grade and equipment hours by type.

b. All records and cost accounting data will be recorded separately under the construction directive number or mission name and suffixed with the appropriate work category code; "L" for new work, "K" for maintenance and repair and "U" if unfunded.

c. USARSO Form 26-R-E (Project Record/Report - Troop Construction). USARSO Form 26-R-E provides a convenient method to track and record exercise expenditures and serves as a daily expenditure report with a separate "cumulative total" column to capture weekly and end of project cost data. USARSO Form 26-R-E is available from within the "Forms" folder on the USARSO "P" drive and will be provided at planning conferences. (See para 3-12 on recordkeeping.)

(1) Recording of expenditures should begin at the job site level with the daily progress record prepared by the project supervisor. Daily records should reflect accurate military man-hours and equipment hours and have all hand receipts attached for materials issued for that day. Equipment logbooks should be used to cross check equipment hours. The daily progress record will be kept by the TF for two years after project completion and then destroyed. Supporting documents (hand receipts, etc.) will be kept as a permanent part of the project folder.

(2) If more than one unit is working on the same project, the unit maintaining the project folder will receive daily records from the other units prior to preparation of USARSO Form 26-R-E. This form and supporting documents will be prepared for each project except when two different USARSO Form 26's are needed to differentiate new work projects from maintenance and repair projects.

(3) All data from the daily progress report should be checked prior to being transferred onto USARSO Form 26-R-E, which serves as the weekly progress report. To ensure accuracy, the TF should check cost totals carried forward against the previous week's total to date.

d. The constructing unit will maintain a record of all materials issued/used on the project, the source, and the quoted price in order to expedite processing of DD Form 1354 (Transfer and Acceptance of Military Real Property) at turnover. The issuing agency price will be quoted for material costs. The unit will also document monthly reconciliation of materials with the issuing agency. Strict procedures for issue and accountability of materials will be maintained throughout the exercise.

e. The DCSENG will periodically perform audits of the project folders/records during technical assistance visits.

### **3-8. Disposal of excess materials**

Guidance on disposal procedures for excess materials at the completion of the project will be provided by the USARSO DCSLOG during planning conferences or in the USARSO Exercise OPORD or USARSO Engineer Exercise SOP.

### **3-9. Photographic coverage**

Pictorial coverage is required on all construction projects. 3x5 black and white photographs or 35mm colored slides will be taken at the start (before any work has commenced), at the fifty percent completion point, and at 100 percent of project completion. Photographs will also be taken of unique construction methods or results, of accidents, and to substantiate or deny liability for damages, etc. Negatives will be retained for future reproduction. Pictorial coverage will be kept on file at TF level. All photographs/slides will be identified with:

- a. Date taken
- b. Project name and number
- c. Unit employed on the job
- d. Brief description of the operation shown
- e. Names of individuals clearly depicted in the picture

### **3-10. Base camp construction**

In most cases the TF/unit will be required to design and build a base camp. The base camp layout should be complete with bill of materials and cost estimate. Construction of the camp will be a major project and should be planned and executed accordingly. See USARSO Regulation 415-3 for detailed guidance on base camp requirements.

### **3-11. Project documentation**

a. The constructing unit, USARSO DCSENG, and JTF-B (for exercises in Central America) will maintain project files. A project file is a complete historical record of the project from inception to completion. Correspondence and other documentation pertinent to the project will be included in the constructing unit and DCSENG project files.

b. Project folders should include the following:

- (1) Designs
- (2) BOM
- (3) QC inspection reports and field test results
- (4) Memorandums for record pertaining to design changes/modifications request and approval
- (5) Pictorial coverage before construction, at fifty percent completion, and at 100 percent of project completion
- (6) DD Form 1354, transfer and acceptance document for military real property, signed by the country team
- (7) USARSO Form 26-R-E (Project Record/Report -Troop Construction), weekly and end of project expenditure reports.
- (8) Construction safety plans
- (9) Quality control plans/inspections
- (10) Construction schedule (PERT chart and CPM) and other construction management documents pertinent to the project.
- (11) As built drawings

### **3-12. Recordkeeping**

a. Official records include all books, papers, maps, photographs, machine readable materials, or other documentary materials, regardless of physical form or characteristics, made or received by an agency of the U.S. Government under Federal law or in connection with the transaction of public business and preserved or appropriate for preservation by that agency or its legitimate successor as evidence of the organization, functions, policies, decisions, procedures, operations, or other activities of the government or because of the informational value in them. (Taken from 44 U.S.C., Chapter 33, Sec. 3301)

b. Documents (whether paper or electronic), essential to recording the command's history, traditions, and accomplishments are Federal records and the property of the U.S. Government. These records must be properly identified with a file disposition schedule number and retained in accordance with AR 25-400-2, The Modern Army Recordkeeping System, until time for destruction or transfer to a Federal Records Center for preservation. **No** documents should be destroyed until verification has been made that they are not official records. The willful and unlawful destruction, damage, removal, or alienation of Federal records carries a penalty of up to a \$2,000 fine, 3 years in prison, or both (18 USC 2071).

c. Nonofficial (Personal papers) are defined as documentary materials belonging to an individual that are not used to conduct agency records. Categories are:

(1) Files or records accumulated by an individual before entering Government service.

(2) Documents brought into or accumulated in the office that relate to family and personal correspondence, outside business pursuits, professional activities, or private political associations. Examples include family and personal correspondence, volunteer and community service records, literature from professional organizations, and manuscripts and drafts of articles and books.

(3) Work-related materials, such as diaries, journals, notes, personal calendars, and appointment schedules **not** prepared, received, or used in the process of conducting agency business.

d. Personal papers maintained in your office should be filed separately and clearly designated as such.

e. Unofficial personal papers become official government owned papers when both private matters and agency business appear in the same document. When this occurs, extract or copy the part relating to agency business and treat that extraction or copy as a Federal record.

## **Chapter 4**

### **Post Construction**

#### **4-1. Inspections and turnovers**

A pre-final and final inspection will be conducted on all projects prior to turnover.

a. The pre-final inspection will be conducted two weeks prior to project's estimated completion date or at 95 percent completion. The purpose of this inspection is to prepare a written list ("punch list") of all work remaining, if any, prior to turnover and to establish dates for the final inspection and actual turnover of the facility.

b. The final inspection will be conducted to ensure all deficiencies noted during the pre-final inspection have been corrected. Turnover or project acceptance will take place only after all deficiencies have been corrected. If possible, projects should be subdivided into sections to ease acceptance and turnover.

c. Beneficial occupancy of a facility can occur when a customer elects to use a facility that is partially complete. On occasions, the constructing unit may be directed to allow use of all, or a portion of, a facility while it is under construction. Once this occurs, a letter will be prepared by the unit and signed by the host country, officially signifying acceptance of that portion of the facility in use. All parties involved in troop construction will attempt to minimize cases of early beneficial occupancy.

d. DD Form 1354 will be prepared after the final inspection and maintained as a permanent record in the project folder.

e. It is customary to conduct some type of ribbon cutting ceremony to officially transfer ownership of the facility. These ceremonies serve to strengthen ties with the host country. They typically involve members of the TF and community. Arrangements should be made through TF CA personnel in concert with the MILGP.

#### **4-2. As-built drawings**

a. As-built drawings are required for every major project and all other completed troop labor projects when the work performed alters or adds to buildings, grounds or facilities. These drawings are prepared to show what has actually been constructed and are generally drawn as changes to the original plans.

b. The requirement for the unit to provide as-built drawings will be stated in the construction directive, memorandum of instruction, or exercise OPORD. One set of reproducible drawings will be submitted with the project completion report to the DCSENG, one set will be retained in the construction unit's project folder, and one set will be provided to the host country at turnover. As-built drawings will include (but are not limited to) the following:

(1) Site plan. Give the location and final orientation of the structure and/or facility.

(2) Grading and drainage. Provide grading and drainage layout with final grade elevations, slope direction of surface water flow, all drainage structures (size and type of pipe, location of manholes, distance between manholes, invert and surface elevations, and percent of slope). Depict typical culverts, headwalls, and ditches referencing elevations and dimensions to benchmarks.

(3) General layout. Show the general layout of the entire project.

(4) Typical layouts. Provide detailed drawings when more than one like item exists.

(5) Utility layout:

(a) Water distribution. Show size, type of pipe, location of valves and pressure control devices. Reference elevations and dimensions to bench marks. Show changes in direction and depth below ground level.

(b) Sanitary system and storm sewer. Show the size and type of pipe, location of manholes and clean-outs, direction of flow, and other installation facilities in the area. Dimensions and elevations will be referenced to benchmarks. Provide detail sheets of typical manhole clean-outs and pipe arrangements. Provide record of profile, depth of lines, and slopes.

(c) Electrical distribution. Give the location of poles, distance between poles, wire size, source of power, and the number of phases, volts and cycles. Provide detail sheets of typical connection arrangements, tie-ins to circuit breakers, foundation plans for transformers, switching cubicles, and junction boxes. Show outside street lighting, flood lights, runway lights and distances from runway, and branch lines from permanent facilities.

(6) Structures. Reference locations to permanent object on the installation (i.e. bench marks). Specify all dimensions. Include views and details. Provide site plans, sectional details of foundations and floors, plans for partitions and installed property, and utility layouts.

(7) Flexible pavements or graveled areas. Locate pavements and graveled areas on the general layout. Give detailed cross section, types of material, alignment, elevation, and structures (conduit, demolition ducts under the pavement).

(8) Authentication. The title block of as-built drawings will show the following headings filled in:

(a) Submitted by (constructing unit commanding officer)

(b) Recommended by (J-3 officer)

(c) Approved by (Task Commander)

(d) Submission to (CDR USARSO ATTN: SOEN)

(9) Distribution:

(a) One set of reproducible prints submitted with the project completion report.

(b) One set filed with the project folder.

(c) One set provided to the host country.

#### **4-3. Redeployment**

a. The TF should prepare a plan well ahead of time for final transfer of remaining projects, scheduled unit departures and phasing-out of the base camp. The main body should be responsible for breaking down the base camp and getting equipment to port. After the main body has left, a trail party should remain behind to finalize base camp shut down, ensure the base camp property is restored to its original condition, and complete redeployment operations.

Redeployment milestones should provide dates for the following activities:

(1) Time-Phased Force Deployment Data (TPFDD) redeployment for air and sea movement

(2) Redeployment Conference

(3) Breakdown of each major tent area

(4) Disassembly of plywood floors (start date)

(5) Last hot meal in mess hall

(6) Last shower hours

(7) Closure of S-4 yard

(8) Availability of commercial vans/military vans for load up

(9) Phase-out of base camp support contract(s)

(10) Closure of burn pits

(11) Removal of security wire

(12) Electrical system removal

(13) Closure of post exchange

(14) Last mail delivery

(15) Last resupply delivery

(16) Turn in of leased equipment (if applicable).

(17) Final turn-in of salvageable and waste Class IV

b. Ground movement. Plan phasing equipment to the port as soon as items are no longer required for construction or needed at the basecamp. Plan to have security forces at the port and to accompany all convoys.

c. Air movement. Personnel redeployment plans should allow for the return of all non-mission essential personnel as soon as their services are no longer needed. Plan to fly the trail party element out after port operations have been completed. The TF Liaison Officer/contracting team should redeploy when all contractual actions are completed and all bills paid. Allot sufficient time for processing vehicles and personnel through customs. Changes to the redeployment schedule should be kept to a minimum. All air movement TPFDD changes that are made after T-60 will require validation by a General Officer.

d. Sea movement. Coordinate for an assembly area and a security force to be provided by host government authorities at the port IAW provisions in the Implementing Agreement. Clean all equipment at or near the port. Plan for extensive clean up in order to pass U.S. Customs inspections. The TF will provide communications and medical support to the port throughout redeployment operations. As with the air movement, changes to the redeployment schedule should be kept to a minimum. All sea movement TPFDD changes that are made after T-100 will require validation by a General Officer.

e. The following close out measures will also be accomplished:

- (1) A reconciliation with the USARSO DCSENG (ATTN: SOEN) and DCSR must be made of all material costs incurred.
- (2) Submit all as-built drawings to USARSO DCSENG (SOEN).

f. All engineer related close-out actions will be finalized as per exercise milestones found in the OPORD. The DCSENG will be immediately notified if milestone dates can not be met.

g. Redeployment Conference. The USARSO ODCSLOG will host a redeployment conference prior to redeployment. Representatives from Military Traffic Management Command - Puerto Rico, Military Sealift Command, Defense Reutilization and Marketing Office, U.S. Department of Agriculture, JTF-Bravo, USARSO contracting, and key USARSO staff will attend. All redeployment issues and concerns will be addressed and the DCSLOG will assist the TF with any TPFDD changes.

#### **4-4. Post construction assessment**

USARSO, in conjunction with JTF-B (for exercises in Central America), will conduct a post construction assessment of projects built. These assessment surveys will occur six months to a year after ENDEX. Objectives of the post construction assessment include:

- a. Gauging the effectiveness of standard designs and make changes based on actual evidence.
- b. Noting "wear and tear" (foundation cracks, exposed rebar, etc.,) and actual usage to modify standard designs.
- c. Documenting findings with photographs to share with other units designated for future exercises.

### **Chapter 5**

#### **Environmental Considerations**

##### **5-1. Goal**

USARSO's environmental goal is to ensure participating units plan, initiate, and carry-out all actions and activities in a manner that will minimize adverse effects on the environment without impairment to the USARSO mission.

##### **5-2. Objectives**

- a. The USARSO DCSENG will:
  - (1) Provide environmental guide-lines pertaining to OCONUS military construction.
  - (2) Ensure units are knowledgeable of applicable environmental regulations, directives, and policies.
  - (3) Monitor conformance during execution.
- b. TF:
  - (1) Manage the discharge of pollutants produced.
  - (2) Conserve and protect those natural and material resources provided for use during exercises.
  - (3) Maintain, restore, and enhance the natural and man-made environment in terms of its visual attractiveness and productivity.
  - (4) Dispose of hazardous and potentially environmentally harmful materials as per appropriate Army regulations and USARSO Hazardous Materials (HAZMAT) handbook.
  - (5) Complete the USSOUTHCOM environmental check list and submit to the USARSO DCSENG as per exercise milestones.

##### **5-3. Policies**

- a. The environmental consequences of any proposed action must be assessed during the planning process and will be evaluated along with the technical and economic factors in the decision-making process.
- b. Insofar as essential mission constraints permit, all programs and actions will be planned, initiated, and carried out in a manner to minimize polluting or degrading the environment.
- c. All material and energy resources will be procured and used in a manner that will minimize the production of waste.
- d. Commanders will cooperate, to the extent practicable, in beneficial community environmental action programs.

## **Appendix A References**

### **Section I Required Publications**

#### **AR 415-32**

Engineer Troop Construction in Connection with Training Activities (Cited in para 3-7.)

#### **USARSO REG 415-2**

Construction Quality Management Program (Cited in paras 3-2 and 3-3.)

#### **USARSO REG 415-3**

Base Camp Guidance for Latin America and Caribbean (Cited in paras 2-4 and 3-10.)

**USARSO ENGINEER EXERCISE SOP** (Cited in paras 3-5 and 3-8.)

### **Section II Related Publications**

A related publication is a source of additional information. The user doesn't have to read it to understand this publication.

#### **FM 5-333**

Construction Management

#### **AR 200-1**

Environmental Protection and Enhancement

#### **AR 200-2**

Environmental Effects of Army Actions

### **Engineer ARTEPs**

Army Training and Evaluation Program (ARTEP).

#### **ER 415-1-11**

Bidability, Constructability and Operability

#### **ER 415-1-302**

Construction Inspection and Work Records

#### **ER 1180-1-6**

Contract, Construction Quality Management.

#### **R 1110-2-1200**

Engineering and Design, Plans and Specifications

#### **USARSO REG 415-4**

Design Criteria and General Construction Specifications

### **Section III Prescribed Forms**

#### **USARSO Form 26-R-E**

Project Record/Report Troop Construction

### **Section IV Referenced Forms**

#### **DD Form 1354**

Transfer and Acceptance of Military Real Property

#### **DA Form 2028**

Recommended Changes to Publications and Blank Forms

#### **DD Form 3953**

Purchase Request and Commitment

## **Appendix B**

### **Concept Development Planning**

#### **B-1. General**

Concept development planning occurs at the USSOUTHCOM/USARSO level, 18 to 24 months from STARTEX. The host country is identified in the USSOUTHCOM directive, along with the proposed scope, exercise cost estimates, and designates USARSO as the executive agent for planning. Various HCA projects are listed, to include schools, clinics, and water wells. Additionally, ERC projects are mentioned, such as road maintenance and repair. These requirements originate from the host nation government through the USMILGP to USSOUTHCOM. The concept development survey is a USSOUTHCOM Engineer survey that seeks to validate the proposed requirements against the capabilities of U.S. military engineer units. The "end state" of the concept development survey is the development of an exercise scope that falls within the purview of U.S. military units, and within the programmed budget for the exercise, reduces the need for remote/forward base camps, and satisfies the needs of the host country.

#### **B-2. Concept development survey team composition.**

The concept development survey team will typically be composed of members from the USSOUTHCOM Engineers, USARSO, USMILGP, and JTF-B (if in Central America).

#### **B-3. Concept development survey objectives.**

- a. Meet with USMILGP commander/ representative and other key embassy personnel to verify the proposed project scope and discuss objectives of the exercise.
- b. Identify key government officials who will be involved in project development and approval.
- c. Identify local government organizations and officials who must be consulted for detailed project requirements.
- d. Inform host country government officials of the USSOUTHCOM policy that projects will be undertaken only with their approval and their active participation.
- e. Obtain the host government's priority ranking of the proposed projects.

## **Appendix C**

### **Site Survey**

#### **C-1. General.**

The site survey is an integral part of the overall planning process. It allows planners to gather pertinent data to validate or disqualify assumptions and fill gaps in the initial plan. A successful site survey is one that permits expeditious completion of designs, resource estimates, and bills of material. Survey participants should deploy on temporary duty (TDY) orders with full per diem and vehicle rental authorized (a four-wheel-drive is strongly recommended). Additionally, survey participants must obtain their travel documentation (passports, visas, and country clearances) and prescribed immunizations prior to departure.

#### **C-2. Survey objectives.**

Objectives of the site survey should be determined beforehand to ensure the right personnel and equipment are identified and participate. The objectives of the survey should also be conveyed to the MILGP to ensure coordination with host country military and government officials. Clear definable objectives, coupled with the right personnel, will ensure the desired data is obtained, minimize the number of surveys required, and facilitate planning. The following are site survey objectives to be considered:

- a. Engineering:
  - (1) Validation of projects proposed by the host country.
  - (2) Identification of the base camp location and land lease arrangements (if required).
  - (3) Determine location of gravel sources, either natural river run or commercial/host country quarries.
  - (4) Determine location of borrow and spoil areas and rights-of-way / easements required for the project.
  - (5) Determine location of water sources for construction water.
  - (6) Thorough survey of the actual project sites to include:
    - (a) Elevations, dimensions, and stations. Ensure permanent benchmark elevations and locations are identified and recorded.
    - (b) Conduct analysis of all soils expected to be excavated or used in construction.
    - (c) Note fences, structures or other obstacles which may affect the construction.
    - (d) Verify any existing underground utilities if excavation is expected.
    - (e) Request copies of any related construction survey data the host country may have.
    - (f) Request copies of soil boring data sheets, if available, to determine subsurface conditions. If not, ascertain whether borings can be taken by the host country at specified locations.
    - (g) Request copies of any hydrologic studies for rivers that may be bridged.
    - (h) Coordinate directly with the local populace on the behavior of rivers and streams in the exercise area during the rainy season. Ask about high water levels, water velocities, frequency of high water and types of debris normally found during flood periods.
- b. Logistics.
  - (1) Bridge classifications along supply routes to the base camp and project sites and the main supply route (MSR).
  - (2) Class IV items available locally (primarily bulk items such as concrete masonry unit block, sand and gravel).
  - (3) Contracting support required.
  - (4) Utilities (electricity and water) at base camp and project sites and arrangements for payment.
  - (5) Rail systems available.
  - (6) Landfills / construction waste disposal.
  - (7) Potable / non-potable (construction) water source.
  - (8) Obtain availability of sources and cost estimates for construction equipment that may require leasing. Again, it should be made clear that an "obligation" is not being made.

c. Contracting.

(1) Identify sources of supply and services. The TF should have a tentative list of requirements prior to conducting this survey.

(2) The TF's DD Forms 3953 (Purchase Request and Commitment) should clearly define contracting performance measures to include quantities, delivery times and cost estimates.

(3) If engineer equipment is to be leased due to MTOE shortage, arrange for a qualified equipment inspector to accompany the survey team to ensure equipment condition is acceptable and/or to identify technical deficiencies the contractor must correct prior to contract signing.

(4) The following construction supplies and service should be considered for contracting:

(a) Construction equipment leases. Authorized only if specific items of equipment necessary to accomplish the mission are not on hand, MTOE authorized, or are not available with an augmentation to the TF. If equipment can not be leased in country, the item may be leased in CONUS and shipped with the TF's equipment. Leases in CONUS require a longer lead-time (180 days) due to the fund approval process.

(b) Base camp materials. Requisitions will commence after exercise approval has been granted and authority to commit funds has been received. Also, include the purchase of electrical supplies if required for the base camp.

(c) Heavy haul of equipment. May be required for movement of equipment from port to base camp, or from base camp to construction site. Recommend leasing the service of a specified capacity for a period of several days (2-4) depending on the scope of the requirements.

(d) Oxygen and acetylene. Plan to local purchase service for refilling bottles. Some countries do not use certified bottles, so ensure bottles provided by the TF are returned.

(e) Class IX repair parts. Local purchase of commercially made repair parts for construction equipment through Caterpillar, Case, John Deere, etc. dealerships is often possible.

(f) Assess host country contractors capability to support procurement and delivery of typical materials required for construction. Obtain in-country cost estimates, but do not obligate nor imply obligation.

(g) Determine availability, costs and sources of supply for key base camp construction items like plywood, 2 X 4 lumber, 4 X 4 lumber, and typical electrical items.

### **C-3. Survey team leader responsibilities**

The survey team leader will:

a. Conduct an in briefing with the MILGP (or JTF-B if in Honduras) to clarify coordination requirements and scope of the survey.

b. Meet with host country representatives to get acquainted, discuss the survey plan, and to clarify project scope and type of construction expected. During early coordination phases, emphasis should be placed on developing positive relationships and integrated actions with engineering representatives from the host nation.

c. Coordinate requirements of all participants, as each will vary.

d. Conduct and facilitate the site survey.

e. Host end of day after action reviews to ensure objectives are being met and to plan the next days activities.

f. Out-brief the MILGP and pertinent host nation personnel at conclusion of the survey.

### **C-4. Survey team composition.**

The survey team should include the following, however, requirements will vary depending on objectives of the survey:

a. Designated TF Commander or appointed representative

b. TF Operations Officer, Construction Officer, Logistics Officer, Communications Officer, Force Protection, and CA Officer

c. NCOs experienced in the type of construction expected

d. Surveyors and draftsman with necessary equipment

e. Appropriate host country representatives (Health, Education, Water Authority)

f. MILGP representative

g. Contracting officer

h. Appropriate USARSO staff planners

## **Appendix D**

### **Detailed TF Level Planning**

#### **D-1. General.**

The success of the exercise depends largely on the amount of detailed planning that goes into it. Key to the planning process is having a TF Commander and immediate staff identified and in-place at the earliest possible date. The TF Commander, J3, J4, Transportation Control Officer, Funds Control Officer, and Engineer should be on hand at least a year prior to the commencement of planning. The TF Commander provides focus and direction. The TF J3 (Operations Officer) translates the Commander's focus into an overall concept of operation. The TF J4 (Logistics Officer) develops the overall logistical support plan for the operation. The Funds Control Officer develops and manages the budget. The Transportation Control Officer coordinates all unit movement and oversees development of the TPFDD. The TF engineer formulates construction time estimates, develops engineering drawings, and makes recommendations on appropriate engineer forces. The Commander's focus, coupled with a sound concept of operations and logistical support, will facilitate planning and ensure smooth execution. Deliberate planning performed up front negates many of the problems encountered during execution.

#### **D-2. Planning considerations.**

Each TF will have a different approach to planning, however, using mission, enemy, terrain, troops and time available (METT-T) is usually a good starting point:

- a. M – Mission. A thorough analysis of the mission is essential. The USARSO exercise OPORD provides the broad MACOM level mission statement. The TF should be prepared to further dissect this mission statement, based on actual reconnaissance information, known capabilities, and resource constraints, to develop an executing unit level mission statement.
- b. E – Enemy. In this situation weather may be considered a potential foe depending in which country the exercise is to take place and time of year. Additional down days should be allowed if the exercise takes place in a region known for heavy rainfall.
- c. T - Troops. Capabilities and levels of preparedness of participating units will certainly impact planning. Execution duration times may have to be shortened or lengthened accordingly.
- d. T – Terrain. Terrain becomes a critical planning factor when project sites are remote or difficult to access. Generally, projects are strategically located to be no more than an hour drive from the base camp. However, there are those situations where projects may be located further away or require more time to get to due to terrain.
- e. T – Time. Time certainly plays a factor in terms of what can be reasonably accomplished with the resources provided. Based on the number and complexity of the projects and unit level of expertise, time may ultimately dictate what can or cannot be accomplished. Planning the use of available time also ensures that critical planning milestones will be met.
  - (1) It is imperative that realistic project duration estimates be made based on executing unit capabilities and level of readiness. These estimated times should then be integrated into the TF construction CPM to get an idea for the overall construction duration. The TF may have to request additional resources or time, based on the estimated exercise duration.
  - (2) Backward planning based on a known STARTEX date helps the TF identify critical tasks that must be accomplished. The USARSO OPORD provides several key-planning milestones upon which the TF can expound upon.

## **Appendix E**

### **Commander, USARSO Pre-Deployment Brief**

#### **E-1. CG, USARSO Pre-Exercise Brief**

The pre-exercise brief is designed to provide the USARSO Commander a clear understanding of the exercise, level of preparedness, and any issues or concerns the TF may have. The pre-deployment brief normally occurs 4-8 weeks before actual deployment. As a minimum, the briefing should include the following:

- a. Mission Overview
- b. Intelligence Summary to include threat, weather, and terrain.
- c. Operations:
  - (1) Brief concept of operations
  - (2) Discuss what has or will take place during the different phases of the exercise:
    - (a) Pre-deployment
    - (b) Deployment
    - (c) Execution
    - (d) Redeployment
    - (e) Reconstitution
  - (3) Provide exercise scope overview to include engineer projects and medical exercises.
  - (4) Discuss duration staff composition, participating units, and rotation schedule.
  - (5) Discuss timelines and key milestones.
  - (6) Discuss alternate/contingency plans.
  - (7) Address training and key METL skills to be trained as a result of the exercise.
  - (8) Discuss force protection.
  - (9) Discuss Civil Affairs/psychological operations (PSYOP) integration.
  - (10) Discuss aviation support.
- d. Logistics:
  - (1) Brief concept of support.
  - (2) Discuss what has or will take place during the different phases of the exercise from a logistical support perspective.
  - (3) Go over the different classes of supply and services.
  - (4) Discuss sustainment and resupply.
- e. Engineer:
  - (1) Discuss engineer projects to include vertical and horizontal construction.
  - (2) Address any environmental concerns.
  - (3) Discuss quality control.
  - (4) Discuss construction safety.
- f. Communications. Brief the communications support plan.
- g. Budget:
  - (1) Address all funding categories (HCA, OMA, ERC, etc.,).
  - (2) Address any funding shortfalls.
  - (3) Discuss fund control measures.
- h. Medical:
  - (1) Discuss medical support plan.
  - (2) Discuss medical resupply.
  - (3) Brief the Medical Readiness Training Exercise (MEDRETES) to include number, scope, and locations.
- i. Safety.
- j. Issues/Concerns.

## **Appendix F**

### **Task Organization**

The Task Organization is established in the USSOUTHCOM directive, however, the TF duration staff composition is not. Actual duration staff make-up will vary depending on many factors to include the mission, scope of the exercise, availability of personnel, funds, guidance from higher headquarters, and time available to recruit a staff. It is highly encouraged that TF Commanders consider representatives from sister services for key staff positions to enhance the "jointness" of the exercise. Furthermore, TF Commanders should consider requesting host country military representatives to serve on the TF staff. A typical duration staff composition, based on historical data from previous exercises, is as follows:

- Commander
- Deputy Commander/XO
- Command Sergeant Major
- J1 (Personnel Officer)
- J1 PSNCO
- J1 Distinguished Visitors Bureau Coordinator
- J2 (Intelligence Officer)
- J2 Assistant
- J3 (Operations Officer)
- J3 Assistant
- J3 Operations NCO
- J4 (Logistics Officer)
- J4 Assistant
- J4 Log Operations NCO
- J5 (Civil Military Operations Officer)
- J5 Assistant
- J6 (Communications Officer)
- J6 Assistant
- J7 (Civil Engineer Officer)
- J7 Quality Control Officer/NCO
- J7 Quality Control Specialist
- J7 Survey/Testing Specialist
- J7 Draftsperson/AutoCAD Operator
- J8 (Funds Control Officer)
- J8 Assistant
- Logistics Support Element (LSE) Commander
- LSE Transportation Specialist
- LSE Water Purification Specialist
- LSE Procurement Specialist
- LSE Materials Management Specialist
- LSE Fuels Specialist
- Aviation Operations Officer
- Aviation Flight Planner
- Aviation Safety Officer
- Medical Officer
- MEDRETE Officer/NCO
- HQ Commandant
- Claims Officer
- Safety Officer
- Chaplain
- Provost Marshall
- Force Protection Officer
- Legal Officer
- Liaison Officer – MILGP
- Liaison Officer - USARSO

## **Glossary**

### **Section I Abbreviations**

#### **AFCS**

Army facilities components system

#### **ARTEP**

Army Training and Evaluation Program

#### **CINC**

Commander in Chief

#### **CMO**

Civil Military Operations

#### **CONUS**

continental United States

#### **DOD**

Department of Defense

#### **FMS**

Foreign Military Sales

#### **JCS**

Joint Chiefs of Staff

#### **IAW**

in accordance with

#### **MCA**

Military Construction Army

#### **METT-T**

mission, enemy, terrain, troops and time available

#### **MOU**

Memorandum of Understanding

#### **MSR**

main supply route

#### **MTOE**

modified table of organization and equipment

#### **NCOIC**

Noncommissioned officer in charge

#### **OCONUS**

outside continental United States

#### **OIC**

officer in charge

#### **O&M**

operations & maintenance

#### **OMA**

operation and maintenance, Army

#### **OPCON**

operational control

#### **OPORD**

operation order

#### **OPLAN**

operation plan

#### **PERT**

Program Evaluation and Review Technique

#### **POC**

point of contact

#### **POL**

petroleum, oils and lubricants

#### **PSYOP**

psychological operations

#### **QA**

quality assurance

#### **QC**

quality control

#### **SITREP**

situation report

#### **SQT**

skill qualification test

#### **SOP**

standard operating procedure

#### **TDA**

tables of distribution and allowances

#### **TDY**

temporary duty

#### **TF**

Task Force (Constructing Unit)

#### **TPFDD**

Time-Phased Force Deployment Data

#### **U.S.**

United States

## **Section II**

### **Terms**

This section contains no entries.

## **Section III**

### **Special Abbreviations, Brevity Codes, and Acronyms**

This publication uses the following abbreviations, brevity codes, and acronyms not contained in AR 310-50.

#### **AAFES**

Army and Airforce Exchange Service

#### **BOM**

bill of materials

#### **CPM**

critical path method

#### **CTT**

common task test

#### **CWS**

construction work schedule

#### **DCCEP**

Developing Countries Combined Exercise Program

#### **DCSCMO**

USARSO Deputy Chief of Staff for Civil-Military Operations

#### **DCSENG**

USARSO Deputy Chief of Staff for Engineers

#### **DCSINT**

USARSO Deputy Chief of Staff for Intelligence

#### **DCSLOG**

USARSO Deputy Chief of Staff for Logistics

#### **DCSOPS**

USARSO Deputy Chief of Staff for Operations

#### **DCSPER**

USARSO Deputy Chief of Staff for Personnel

#### **DCSRM**

USARSO Deputy Chief of Staff for Resource Management

#### **ENCOM**

Engineer Command (USAR)

#### **ENDEX**

End of Exercise

#### **ERC**

exercise related construction

#### **FPC**

final planning conference

#### **HAZMAT**

hazardous materials

#### **HCA**

humanitarian civic action

#### **IPC**

initial planning conference

#### **JTF-B**

Joint Task Force Bravo

#### **LATAM**

Latin America

#### **LSE**

logistics support element

#### **MEDRETES**

Medical Readiness Training Exercises

#### **METL**

mission essential task list

#### **MPSAV**

mid-planning staff assistance visit

#### **MILGP**

Military Group, U.S. Embassy in the Host Nation

#### **MMCA**

Minor Military Construction Army

#### **QAR**

quality assurance representative

#### **STARTEX**

Start of Exercise

#### **TCMS**

Theater Construction Management System

#### **UMMCA**

Unspecified Minor Military Construction Army

#### **USARSO**

United States Army South

#### **USSOUTHCOM**

United States Southern Command (Miami, Florida)

#### **SJA**

USARSO Staff Judge Advocate