

**STP 11-31W4-SM-TG**

HEADQUARTERS  
DEPARTMENT OF THE ARMY

## **Soldier's Manual and Trainer's Guide**

# **MOS 31W**

## **TELECOMMUNICATIONS OPERATIONS CHIEF**

**SKILL LEVELS 4 AND 5**

**APRIL 2004**

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# SOLDIER'S MANUAL AND TRAINER'S GUIDE

## MOS 31W

### TELECOMMUNICATIONS OPERATIONS CHIEF

#### Skill Levels 4 and 5

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**This publication supersedes STP 11-31W4-SM-TG, 3 August 2000.**

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## **PREFACE**

This publication is for skill level (SL) 4 Soldiers holding military occupational specialty (MOS) 31W and for trainers and first-line supervisors. It contains standardized training objectives, in the form of task summaries and an MOS training plan (MTP) to train and evaluate Soldiers on critical tasks which support unit missions during wartime. Trainers and first-line supervisors should ensure Soldiers holding MOS 31W SL4 have access to this publication. When applicable, a chapter is devoted to listing duty specific tasks or those tasks and skill which are not common to all Soldiers in MOS 31W SL4. This publication should be made available in the Soldier's work area, unit-learning center, and unit libraries.

This manual applies to both Active and Reserve Component Soldiers.

The proponent of this publication is the US Army Signal Center and Fort Gordon. Send comments and recommendations for changes on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Commander, US Army Signal Center and Fort Gordon, ATTN: ATZH-DTM, Fort Gordon, Georgia 30905-5735.

This manual is available on the World Wide Web (WWW) for viewing and downloading. The WWW address is <http://www.gordon.army.mil/stt/31W4>.

**Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.**

**NOTE: Information contained in this publication is subject to change as new equipment is added to the Army inventory and revisions in policy and doctrine are made.**



## CHAPTER 1

### Introduction

1-1. **GENERAL.** The Soldier training publication (STP) identifies the individual military occupational specialty (MOS) and training requirements for Soldiers in various specialties. Another source of STP task data is the General Dennis J. Reimer Training and Doctrine Digital Library at <http://www.adtdl.army.mil/atdls.htm>. Commanders, trainers, and Soldiers should use the STP to plan, conduct, and evaluate individual training in units. The STP is the primary MOS reference to support the self-development and training of every Soldier in the unit. It is used with the Soldier's Manual of Common Tasks, Army training and evaluation programs (ARTEPs), and FM 7-0, *Training the Force*, to establish effective training plans and programs that integrate Soldier, leader, and collective tasks. This chapter explains how to use the STP in establishing an effective individual training program. It includes doctrinal principles and implications outlined in FM 7-0. Based on these guidelines, commanders and unit trainers must tailor the information to meet the requirements for their specific unit.

1-2. **TRAINING REQUIREMENT.** Every Soldier, noncommissioned officer (NCO), warrant officer, and officer has one primary mission—to be trained and ready to fight and win our nation's wars. Success in battle does not happen by accident; it is a direct result of tough, realistic, and challenging training.

#### a. Operational Environment.

(1) Commanders and leaders at all levels must conduct training with respect to a wide variety of operational missions across the full spectrum of operations; these operations may include combined arms, joint, multinational, and interagency considerations, and span the entire breadth of terrain and environmental possibilities. Commanders must strive to set the daily training conditions as closely as possible to those expected for actual operations.

(2) The operational missions of the Army include not only war, but also military operations other than war (MOOTW). Operations may be conducted as major combat operations, a small-scale contingency, or a peacetime military engagement. Offensive and defensive operations normally dominate military operations in war along with some small-scale contingencies. Stability operations and support operations dominate in MOOTW. Commanders at all echelons may combine different types of operations simultaneously and sequentially to accomplish missions in war and MOOTW. These missions require training since future conflict will likely involve a mix of combat and MOOTW, often concurrently. The range of possible missions complicates training. Army forces cannot train for every possible mission; they train for war and prepare for specific missions as time and circumstances permit.

(3) Our forces today use a train-alert-deploy sequence. We cannot count on the time or opportunity to correct or make up training deficiencies after deployment. Maintaining forces that are ready now, places increased emphasis on training and the priority of training. This concept is a key link between operational and training doctrine.

(4) Units train to be ready for war based on the requirements of a precise and specific mission; in the process they develop a foundation of combat skills that can be refined based on the requirements of the assigned mission. Upon alert, commanders assess and refine from this foundation of skills. In the train-alert-deploy process, commanders use whatever time the alert cycle provides to continue refinement of mission-focused training. Training continues during time available between alert notification and deployment, between deployment and employment, and even during employment as units adapt to the specific battlefield environment and assimilate combat replacements.

#### b. How the Army Trains the Army.

(1) Training is a team effort and the entire Army—Department of the Army (DA), major Army commands (MACOMs), the institutional training base, units, the combat training centers (CTCs), each individual Soldier and the civilian workforce—has a role that contributes to force readiness. DA and

MACOMs are responsible for resourcing the Army to train. The Institutional Army, including schools, training centers, and NCO academies, for example, train Soldiers and leaders to take their place in units in the Army by teaching the doctrine and tactics, techniques, and procedures (TTP). Units, leaders, and individuals train to standard on their assigned critical individual tasks. The unit trains first as an organic unit and then as an integrated component of a team. Before the unit can be trained to function as a team, each Soldier must be trained to perform their individual supporting tasks to standard. Operational deployments and major training opportunities, such as major training exercises, CTCs, and ARTEPs provide rigorous, realistic, and stressful training and operational experience under actual or simulated combat and operational conditions to enhance unit readiness and produce bold, innovative leaders. The result of this Armywide team effort is a training and leader development system that is unrivaled in the world. Effective training produces the force—Soldiers, leaders, and units—that can successfully execute any assigned mission.

(2) The Army Training and Leader Development Model (Figure 1-1) centers on developing trained and ready units led by competent and confident leaders. The model depicts an important dynamic that creates a lifelong learning process. The three core domains that shape the critical learning experiences throughout a Soldiers and leaders time span are the operational, institutional, and self-development domains. Together, these domains interact using feedback and assessment from various sources and methods to maximize warfighting readiness. Each domain has specific, measurable actions that must occur to develop our leaders.



Figure 1-1. Army Training and Leader Development Model

(3) The operational domain includes home station training, CTC rotations, and joint training exercises and deployments that satisfy national objectives. Each of these actions provides foundational experiences for Soldier, leader, and unit development. The institutional domain focuses on educating and training Soldiers and leaders on the key knowledge, skills, and attributes required to operate in any environment. It includes individual, unit and joint schools, and advanced education. The self-development domain, both structured and informal, focuses on taking those actions necessary to reduce or eliminate the gap between operational and institutional experiences.



(4) Throughout this lifelong learning and experience process, there is formal and informal assessment and feedback of performance to prepare leaders and Soldiers for their next level of responsibility. Assessment is the method used to determine the proficiency and potential of leaders against a known standard. Feedback must be clear, formative guidance directly related to the outcome of training events measured against standards.

c. Leader Training and Leader Development.

(1) Competent and confident leaders are a prerequisite to the successful training of units. It is important to understand that leader training and leader development are integral parts of unit readiness. Leaders are inherently Soldiers first and should be technically and tactically proficient in basic Soldier skills. They are also adaptive, capable of sensing their environment, adjusting the plan when appropriate, and properly applying the proficiency acquired through training.

(2) Leader training is an expansion of these skills that qualifies them to lead other Soldiers. As such, doctrine and principles of training require the same level of attention of senior commanders. Leader training occurs in the Institutional Army, the unit, the CTCs, and through self-development. Leader training is just one portion of leader development.

(3) Leader development is the deliberate, continuous, sequential, and progressive process, grounded in Army values, that grows Soldiers and civilians into competent and confident leaders capable of decisive action. Leader development is achieved through the lifelong synthesis of the knowledge, skills, and experiences gained through institutional training and education, organizational training, operational experience, and self-development. Commanders play the key roll in leader development that ideally produces tactically and technically competent, confident, and adaptive leaders who act with boldness and initiative in dynamic, complex situations to execute mission-type orders achieving the commander's intent.

d. Training Responsibility. Soldier and leader training and development continue in the unit. Using the institutional foundation, training in organizations and units focuses and hones individual and team skills and knowledge.

(1) **Commander Responsibility.**

(a) The unit commander is responsible for the wartime readiness of all elements in the formation. The commander is, therefore, the primary trainer of the organization and is responsible for ensuring that all training is conducted in accordance with the STP to the Army standard.

(b) Commanders ensure STP standards are met during all training. If a Soldier fails to meet established standards for identified MOS tasks, the Soldier must retrain until the tasks are performed to standard. Training to standard on MOS tasks is more important than completion of a unit-training event such as an ARTEP. The objective is to focus on sustaining MOS proficiency—this is the critical factor commanders must adhere to when training individual Soldiers units.

(2) **NCO Responsibility.**

(a) A great strength of the US Army is its professional NCO Corps who takes pride in being responsible for the individual training of Soldiers, crews, and small teams. The NCO support channel parallels and complements the chain of command. It is a channel of communication and supervision from the Command Sergeant Major (CSM) to the First Sergeants (1SGs) and then to other NCOs and enlisted personnel. NCOs train Soldiers to the non-negotiable standards published in STPs. Commanders delegate authority to NCOs in the support channel as the primary trainers of individual, crew, and small team training. Commanders hold NCOs responsible for conducting standards-based, performance-oriented, battle-focused training and providing feedback on individual, crew, and team proficiency. Commanders define responsibilities and authority of their NCOs to their staffs and subordinates.

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(b) NCOs continue the Soldierization process of newly assigned enlisted Soldiers, and begin their professional development. NCOs are responsible for conducting standards-based, performance-oriented, battle-focused training. They identify specific individual, crew, and small team tasks that support the unit's collective mission essential tasks; plan, prepare, rehearse, and execute training; and evaluate training and conduct after action reviews (AARs) to provide feedback to the commander on individual, crew, and small team proficiency. Senior NCOs coach junior NCOs to master a wide range of individual tasks.

(3) **Soldier Responsibility.** Each Soldier is responsible for performing individual tasks identified by the first-line supervisor based on the unit's mission essential task list (METL). Soldiers must perform tasks to the standards included in the task summary. If Soldiers have questions about tasks or which tasks in this manual they must perform, they are responsible for asking their first-line supervisor for clarification, assistance, and guidance. First-line supervisors know how to perform each task or can direct Soldiers to appropriate training materials, including current field manuals, technical manuals, and Army regulations. Soldiers are responsible for using these materials to maintain performance. They are also responsible for maintaining standard performance levels of all Soldier's Manual of Common Tasks at their current skill level and below. Periodically, Soldiers should ask their supervisor or another Soldier to check their performance to ensure that they can perform the tasks.

1-3. **BATTLE-FOCUSED TRAINING.** Battle focus is a concept used to derive peacetime training requirements from assigned and anticipated missions. The priority of training in units is to train to standard on the wartime mission. Battle focus guides the planning, preparation, execution, and assessment of each organization's training program to ensure its members train as they are going to fight. Battle focus is critical throughout the entire training process and is used by commanders to allocate resources for training based on wartime and operational mission requirements. Battle focus enables commanders and staffs at all echelons to structure a training program that copes with nonmission-related requirements while focusing on mission essential training activities. It is recognized that a unit cannot attain proficiency to standard on every task whether due to time or other resource constraints. However, unit commanders can achieve a successful training program by consciously focusing on a reduced number of METL tasks that are essential to mission accomplishment.

a. **Linkage Between METL and STP.** A critical aspect of the battle focus concept is to understand the responsibility for and the linkage between the collective mission essential tasks and the individual tasks that support them. For example, the commander and the CSM/1SG must jointly coordinate the collective mission essential tasks and supporting individual tasks on which the unit will concentrate its efforts during a given period. This task hierarchy is provided in the task database at the Reimer Digital Library. The CSM/1SG must select the specific individual tasks that support each collective task to be trained. Although NCOs have the primary role in training and sustaining individual Soldier skills, officers at every echelon remain responsible for training to established standards during both individual and collective training. Battle focus is applied to all missions across the full spectrum of operations.

b. **Relationship of STPs to Battle-Focused Training.** The two key components of any STP are the Soldier's manual (SM) and trainer's guide (TG). Each gives leaders important information to help implement the battle-focused training process. The training guide relates Soldier and leader tasks in the MOS and skill level to duty positions and equipment. It states where the task is trained, how often training should occur to sustain proficiency, and who in the unit should be trained. As leaders assess and plan training, they should rely on the training guide to help identify training needs.

(1) Leaders conduct and evaluate training based on Armywide training objectives and on the task standards published in the Soldier's manual task summaries or in the Reimer Digital Library. The task summaries ensure that trainers in every unit and location define task standards the same way and trainers evaluate all Soldiers to the same standards.

(2) Figure 1-2 shows how battle-focused training relates to the training guide and Soldier's manual. The left column shows the steps involved in training Soldiers and the right column shows how the STP supports each of these steps.

BATTLE-FOCUS PROCESS	STP SUPPORT PROCESS
Select supporting Soldier tasks	Use TG to relate tasks to METL
Conduct training assessment	Use TG to define what Soldier tasks to assess
Determine training objectives	Use TG to set objectives
Determine strategy; plan for training	Use TG to relate Soldier tasks to strategy
Conduct pre-execution checks	Use SM task summary as source for task performance
Execute training; conduct after action review	Use SM task summary as source for task performance
Evaluate training against established standards	Use SM task summary as standard for evaluation

**Figure 1-2. Relationship of Battle-Focused Training and STP**

1-4. **TASK SUMMARY FORMAT.** Task summaries outline the wartime performance requirements of each critical task in the SM. They provide the Soldier and the trainer with the information necessary to prepare, conduct, and evaluate critical task training. As a minimum, task summaries include information the Soldier must know and the skills that he must perform to standards for each task. The format of the task summaries included in this SM is as follows:

- a. **Task Number.** A 10-digit number identifies each task or skill. This task number, along with the task title, must be included in any correspondence pertaining to the task.
- b. **Task Title.** The task title identifies the action to be performed.
- c. **Conditions.** The task conditions identify all the equipment, tools, references, job aids, and supporting personnel that the Soldier needs to use to perform the task in wartime. This section identifies any environmental conditions that can alter task performance, such as visibility, temperature, or wind. This section also identifies any specific cues or events that trigger task performance, such as a chemical attack or identification of a threat vehicle.
- d. **Standards.** The task standards describe how well and to what level the task must be performed under wartime conditions. Standards are typically described in terms of accuracy, completeness, and speed.
- e. **Training and Evaluation.** The training evaluation section identifies specific actions, known as performance steps, that the Soldier must do to successfully complete the task. These actions are in the evaluation guide section of the task summary and are listed in a GO/NO GO format for easy evaluation. For some tasks, the training and evaluation section may also include detailed training information in a training information outline and an evaluation preparation section. The evaluation preparation section indicates necessary modifications to task performance in order to train and evaluate a task that cannot be trained to the wartime conditions. It may also include special training and evaluation preparation instructions to accommodate these modifications, and any instructions that should be given to the Soldier before evaluation.
- f. **References.** This section identifies references that provide more detailed and thorough explanations of task performance requirements than those given in the task summary description.

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g. Warnings. Warnings alert users to the possibility of immediate personal injury or damage to equipment.

h. Notes. Notes provide a supportive explanation or hint that relates to the performance standards.

**1-5. TRAINING EXECUTION.** All good training, regardless of the specific collective, leader, and individual tasks being executed, must comply with certain common requirements. These include adequate preparation, effective presentation and practice, and thorough evaluation. The execution of training includes preparation for training, conduct of training, and recovery from training.

a. Preparation for Training. Formal near-term planning for training culminates with the publication of the unit-training schedule. Informal planning, detailed coordination, and preparation for executing the training continue until the training is performed. Commanders and other trainers use training meetings to assign responsibility for preparation of all scheduled training. Preparation for training includes selecting tasks to be trained, planning the conduct of the training, training the trainers, reconnaissance of the site, issuing the training execution plan, and conducting rehearsals and pre-execution checks. Pre-execution checks are preliminary actions commanders and trainers use to identify responsibility for these and other training support tasks. They are used to monitor preparation activities and to follow up to ensure planned training is conducted to standard. Pre-execution checks are a critical portion of any training meeting. During preparation for training, battalion and company commanders identify and eliminate potential training distracters that develop within their own organizations. They also stress personnel accountability to ensure maximum attendance at training.

(1) Subordinate leaders, as a result of the bottom-up feed from internal training meetings, identify and select the individual tasks necessary to support the identified training objectives. Commanders develop the tentative plan to include requirements for preparatory training, concurrent training, and training resources. At a minimum, the training plan should include confirmation of training areas and locations, training ammunition allocations, training simulations and simulators availability, transportation requirements, Soldier support items, a risk management analysis, assignment of responsibility for the training, designation of trainers responsible for approved training, and final coordination. The time and other necessary resources for retraining must also be an integral part of the original training plan.

(2) Leaders, trainers, and evaluators are identified, trained to standard, and rehearsed prior to the conduct of the training. Leaders and trainers are coached on how to train, given time to prepare, and rehearsed so that training will be challenging and doctrinally correct. Commanders ensure that trainers and evaluators are not only tactically and technically competent on their training tasks, but also understand how the training relates to the organization's METL. Properly prepared trainers, evaluators, and leaders project confidence and enthusiasm to those being trained. Trainer and leader training is a critical event in the preparation phase of training. These individuals must demonstrate proficiency on the selected tasks prior to the conduct of training.

(3) Commanders, with their subordinate leaders and trainers, conduct site reconnaissance, identify additional training support requirements, and refine and issue the training execution plan. The training plan should identify all those elements necessary to ensure the conduct of training to standard. Rehearsals are essential to the execution of good training. Realistic, standards-based, performance-oriented training requires rehearsals for trainers, support personnel, and evaluators. Preparing for training in Reserve Component (RC) organizations can require complex pre-execution checks. RC trainers must often conduct detailed coordination to obtain equipment, training support system products, and ammunition from distant locations. In addition, RC pre-execution checks may be required to coordinate Active Component (AC) assistance from the numbered Armies in the continental United States (CONUSA), training support divisions, and directed training affiliations.

b. Conduct of Training. Ideally, training is executed using the crawl-walk-run approach. This allows and promotes an objective, standards-based approach to training. Training starts at the basic level. Crawl events are relatively simple to conduct and require minimum support from the unit. After the

crawl stage, training becomes incrementally more difficult, requiring more resources from the unit and home station, and increasing the level of realism. At the run stage, the level of difficulty for the training event intensifies. Run stage training requires optimum resources and ideally approaches the level of realism expected in combat. Progression from the walk to the run stage for a particular task may occur during a one-day training exercise or may require a succession of training periods over time. Achievement of the Army standard determines progression between stages.

(1) In crawl-walk-run training, the tasks and the standards remain the same; however, the conditions under which they are trained change. Commanders may change the conditions, for example, by increasing the difficulty of the conditions under which the task is being performed, increasing the tempo of the task training, increasing the number of tasks being trained, or by increasing the number of personnel involved in the training. Whichever approach is used, it is important that all leaders and Soldiers involved understand in which stage they are currently training and understand the Army standard.

(2) An AAR is immediately conducted and may result in the need for additional training. Any task that was not conducted to standard should be retrained. Retraining should be conducted at the earliest opportunity. Commanders should program time and other resources for retraining as an integral part of their training plan. Training is incomplete until the task is trained to standard. Soldiers will remember the standard enforced, not the one discussed.

c. Recovery from Training. The recovery process is an extension of training, and once completed, it signifies the end of the training event. At a minimum, recovery includes conduct of maintenance training, turn-in of training support items, and the conduct of AARs that review the overall effectiveness of the training just completed.

(1) Maintenance training is the conduct of post-operations preventive maintenance checks and services (PMCS), accountability of organizational and individual equipment, and final inspections. Class IV, Class V, Training Aids, Devices, Simulators, and Simulations (TADSS) and other support items are maintained, accounted for, and turned-in, and training sites and facilities are closed out.

(2) AARs conducted during recovery focus on collective, leader, and individual task performance, and on the planning, preparation, and conduct of the training just completed. Unit AARs focus on individual and collective task performance, and identify shortcomings and the training required to correct deficiencies. AARs with leaders focus on tactical judgment. These AARs contribute to leader learning and provide opportunities for leader development. AARs with trainers and evaluators provide additional opportunities for leader development.

1-6. **TRAINING ASSESSMENT.** Assessment is the commander's responsibility. It is the commander's judgment of the organization's ability to accomplish its wartime operational mission. Assessment is a continuous process that includes evaluating individual training, conducting an organizational assessment, and preparing a training assessment. The commander uses his experience, feedback from training evaluations, and other evaluations and reports to arrive at his assessment. Assessment is both the end and the beginning of the training management process. Training assessment is more than just training evaluation, and encompasses a wide variety of inputs. Assessments include such diverse systems as training, force integration, logistics, and personnel, and provide the link between the unit's performance and the Army standard. Evaluation of training is, however, a major component of assessment. Training evaluations provide the commander with feedback on the demonstrated training proficiency of Soldiers, leaders, battle staffs, and units. Commanders cannot personally observe all training in their organization and, therefore, gather feedback from their senior staff officers and NCOs.

a. Evaluation of Training. Training evaluations are a critical component of any training assessment. Evaluation measures the demonstrated ability of Soldiers, commanders, leaders, battle staffs, and units against the Army standard. Evaluation of training is integral to standards-based training and is the cornerstone of leader training and leader development. STPs describe standards that must be met for each Soldier task.

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(1) All training must be evaluated to measure performance levels against the established Army standard. The evaluation can be as fundamental as an informal, internal evaluation performed by the leader conducting the training. Evaluation is conducted specifically to enable the individual undergoing the training to know whether the training standard has been achieved. Commanders must establish a climate that encourages candid and accurate feedback for the purpose of developing leaders and trained Soldiers.

(2) Evaluation of training is not a test; it is not used to find reasons to punish leaders and Soldiers. Evaluation tells Soldiers whether or not they achieved the Army standard and, therefore, assists them in determining the overall effectiveness of their training plans. Evaluation produces disciplined Soldiers, leaders, and units. Training without evaluation is a waste of time and resources.

(3) Leaders use evaluations as an opportunity to coach and mentor Soldiers. A key element in developing leaders is immediate, positive feedback that coaches and leads subordinate leaders to achieve the Army standard. This is a tested and proven path to develop competent, confident adaptive leaders.

b. Evaluators. Commanders must plan for formal evaluation and must ensure the evaluators are trained. These evaluators must also be trained as facilitators to conduct AARs that elicit maximum participation from those being trained. External evaluators will be certified in the tasks they are evaluating and normally will not be dual-hatted as a participant in the training being executed.

c. Role of Commanders and Leaders. Commanders ensure that evaluations take place at each echelon in the organization. Commanders use this feedback to teach, coach, and mentor their subordinates. They ensure that every training event is evaluated as part of training execution and that every trainer conducts evaluations. Commanders use evaluations to focus command attention by requiring evaluation of specific mission essential and battle tasks. They also take advantage of evaluation information to develop appropriate lessons learned for distribution throughout their commands.

d. After Action Review. The AAR, whether formal or informal, provides feedback for all training. It is a structured review process that allows participating Soldiers, leaders, and units to discover for themselves what happened during the training, why it happened, and how it can be done better. The AAR is a professional discussion that requires the active participation of those being trained. FM 7-0 provides detailed instructions for conducting an AAR and detailed guidance on coaching and critiquing during training.

### 1-7. NCO SELF-DEVELOPMENT AND THE SOLDIER'S MANUAL

a. Self-development is one of the key components of the leader development program. It is a planned progressive and sequential program followed by leaders to enhance and sustain their military competencies. It consists of individual study, research, professional reading, practice, and self-assessment. Under the self-development concept, the NCO, as an Army professional, has the responsibility to remain current in all phases of the MOS. The SM is the primary source for the NCO to use in maintaining MOS proficiency.

b. Another important resource for NCO self-development is the Army Correspondence Course Program (ACCP). Soldiers should refer to DA Pamphlet 350-59, *Army Correspondence Course Program Catalog*, for a list of courses and information on enrolling in this program, or contact ACCP Student Support at DSN 826-2127/3322, COML (757) 878-2127/3322, or E-mail at [Sectiona@atsc.army.mil](mailto:Sectiona@atsc.army.mil). Soldiers can also access the Army Correspondence Course Program on-line at <http://www.atsc.army.mil/accp/aipdnew.asp>.

c. General Dennis J. Reimer Training and Doctrine Digital Library is an additional resource for NCO self-development. This electronic library is the single repository of approved Army training and doctrine information.

d. Unit learning centers are valuable resources for planning self-development programs. They can help access enlisted career maps, training support products, and extension training materials, such as field manuals (FMs) and technical manuals (TMs). It is the soldier's responsibility to use these materials to maintain performance.

#### **1-8. TRAINING SUPPORT**

This manual includes the following appendixes and information that provide additional training support information.

(a) Appendix A, DA Form 5164-R (Hands-On Evaluation). This appendix contains the instructions for using DA Form 5164-R and a sample completed form for NCOs to use during evaluation of soldiers' manual tasks.

(b) Appendix B, DA Form 5165-R (Field Expedient Squad Book). This appendix contains the instructions for using DA Form 5165-R and a sample completed form for NCOs to use during evaluation of soldiers' manual tasks.

(c) Glossary. The glossary is a single comprehensive list of acronyms, abbreviations, definitions, and letter symbols.

(d) References. This section contains two lists of references, required and related, which support training of all tasks in this SM. Required references are listed in the conditions statement and are required for the soldier to do the task. Related references are materials that provide more detailed information and a more thorough explanation of task performance.

**1-9. FEEDBACK.** Recommendations for improvement of this STP are requested. Feedback will help to ensure that this STP answers the training needs of units in the field.





CHAPTER 2

Trainer's Guide

2-1. General. The MOS Training Plan (MTP) identifies the essential components of a unit-training plan for individual training. Units have different training needs and requirements based on differences in environment, location, equipment, dispersion, and similar factors. Therefore, the MTP should be used as a guide for conducting unit training and not a rigid standard. The MTP shows the relationship of an MOS SL between duty position and critical tasks. These critical tasks are grouped by task commonality into subject areas.

The MTP's Subject Area Codes list subject area numbers and titles used throughout the MTP. These subject areas are used to define the training requirements for each duty position within an MOS.

The Duty Position Training Requirements table identifies the total training requirement for each duty position within an MOS and provides a recommendation for cross training and train-up/merger training.

- **Duty Position column.** This column lists the duty positions of the MOS, by skill level, which have different training requirements.
- **Subject Area column.** This column lists, by numerical key, the subject areas a soldier must be proficient in to perform in that duty position.
- **Cross Train column.** This column lists the recommended duty position for which soldiers should be cross trained.
- **Train-up/Merger column.** This column lists the corresponding duty position for the next higher skill level or MOSC the soldier will merge into on promotion.

The Critical Task List table lists, by general subject areas, the critical tasks to be trained in an MOS and the type of training required (resident, integration, or sustainment).

- **Subject Area column.** This column lists the subject area number and title.
- **Task Number column.** This column lists the task numbers for all tasks included in the subject area.
- **Title column.** This column lists the task title for each task in the subject area.
- **Training Location column.** This column identifies the training location where the task is first trained to soldier training publications standards. If the task is first trained to standard in the unit, the word "Unit" will be in this column. If the task is first trained to standard in the training base, it will identify, by brevity code (ANCOC, BNCOC, etc.), the resident course where the task was taught. Figure 2-1 contains a list of training locations and their corresponding brevity codes.

<b>ANCOC</b>	Advanced NCO Course
<b>UNIT</b>	Trained in the Unit
<b>SNCOC</b>	Senior NCO Course

Figure 2-1. Training Locations

- **Sustainment Training Frequency column.** This column indicates the recommended frequency at which the tasks should be trained to ensure soldiers maintain task proficiency. Figure 2-2 identifies the frequency codes used in this column.

<b>BA</b>	- Biannually
<b>AN</b>	- Annually
<b>SA</b>	- Semiannually
<b>QT</b>	- Quarterly
<b>MO</b>	- Monthly
<b>BW</b>	- Bi-weekly
<b>WK</b>	- Weekly

**Figure 2-2. Sustainment Training Frequency Codes**

- **Sustainment Training Skill Level column.** This column lists the skill levels of the MOS for which soldiers must receive sustainment training to ensure they maintain proficiency to soldier's manual standards.

2-2. Subject Area Codes.

**Skill Level 4**

- 1 Communications Security (COMSEC)
- 2 Signal System/Network Planning
- 3 Signal System/Network Engineering
- 4 Signal System/Installation Operations
- 5 Signal Network/Site Management

2-3. Duty Position Training Requirements.

<b>MOS TRAINING PLAN MOS 31W</b>				
<b>SL</b>	<b>DUTY POSITION</b>	<b>SUBJECT AREAS</b>	<b>CROSS TRAIN</b>	<b>TRAIN-UP MERGER</b>
4	Platoon Sergeant	1-5	Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M First Sergeant (1SG)
4	Transmission System Chief	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4	Section Chief	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4	Network Control Chief	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4	Network Operations Chief	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4/5	Detachment Sergeant	1-5	Platoon Sergeant (4) Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG 31Z SGM/CSM
4	Switch Systems Chief	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4	Plans/Operations NCO	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4	Battlefield Spectrum Manager (ASI D9)	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4	Deception NCO	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
5	First Sergeant	1-5	Operations Sergeant	31Z SGM/CSM
4	Intelligence Sergeant	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG

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<b>SL</b>	<b>DUTY POSITION</b>	<b>SUBJECT AREAS</b>	<b>CROSS TRAIN</b>	<b>TRAIN-UP MERGER</b>
4	Information Management Supervisor	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4	Inspection NCO	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4	Telecommunications Staff NCO	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4	Senior Telecommunications Operations NCO	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4	Senior Telecommunications Plans NCO	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4	Senior Network Operations NCO	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4	Senior Network Plans NCO	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4	White House Communications Agency (WHCA) Console Operations Supervisor	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4	WHCA Plans/ Operations NCO	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4	WHCA Emergency/ Action NCO	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4	WHCA Section Chief	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4	Senior Signal Maintenance NCO	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG

SL	DUTY POSITION	SUBJECT AREAS	CROSS-TRAIN	TRAIN-UP MERGER
4/5	Senior Signal Center Operations NCO	1-5	Platoon Sergeant (4) Operations Sergeant (5)	31W5M 1SG 31Z SGM/CSM
4	Career Advisor	1-5	Platoon Sergeant Assistant Operations Sergeant	31W50 Operations Sergeant, 31W5M 1SG
4/5	Senior Career Advisor	1-5	Platoon Sergeant (4) Operations Sergeant (5)	31W5M 1SG 31Z SGM/CSM
4/5	Spectrum Management Chief	1-5	Platoon Sergeant (4) Operations Sergeant (5)	31W5M 1SG 31Z SGM/CSM
4/5	Signal Staff NCO	1-5	Platoon Sergeant (4) Operations Sergeant (5)	31W5M 1SG 31Z SGM/CSM
4/5	Inspector General NCO	1-5	Platoon Sergeant (4) Operations Sergeant (5)	31W5M 1SG 31Z SGM/CSM

2-4. Critical Tasks List.

**MOS TRAINING PLAN  
31W4  
CRITICAL TASKS**

Subject Area	Task Number	Title	Training Location	Sust Tng Freq	Sust Tng SL
<b>Skill Level 4</b>					
1. Communications Security (COMSEC)	113-573-0001	Check Signal Security (SIGSEC) Procedures	ANCOC	SA	4-5
	113-573-5002	Check Implementation of Electronic Counter-Countermeasures (ECCM) Procedures	UNIT	SA	4-5
2. Signal System/Network Planning	113-611-1013	Perform Site Reconnaissance	ANCOC	AN	4-5
	113-611-6111	Plan an Echelons Above Corps (EAC) Network	ANCOC	AN	4-5
	113-611-6116	Plan an Echelons Corps and Below (ECB) or Echelons Above Corps (EAC) Network Using the Network Planning Terminal	ANCOC	AN	4-5
	113-611-6117	Perform Network Planning and Engineering Operations Using the Integrated System Control (ISYSCON) AN/TYQ-76A( )	ANCOC	AN	4-5
3. Signal System/Network Engineering	113-611-5014	Prepare the Signal Annex to the Operations Order (OPORD)	ANCOC	SA	4-5
	113-613-5006	Engineer an EAC Network	ANCOC	AN	4-5
	113-613-5008	Engineer an Echelons Corps and Below (ECB) or Echelons Above Corps (EAC) Network Using the Network Planning Terminal (NPT)	ANCOC	AN	4-5
4. Signal System/Installation Operations	113-583-7103	Supervise Router Configuration of a Network	ANCOC	AN	4-5
	113-589-7131	Verify the installation of the Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T) AN/TSC-154	ANCOC	AN	4-5
	113-603-7042	Verify the Installation of a Single Shelter Switch (SSS) AN/TCC-56	ANCOC	AN	4-5
	113-606-2051	Check the Establishment of a Secure Digital Group Multiplexing Radio Assemblage	ANCOC	AN	4-5

## CRITICAL TASKS

Subject Area	Task Number	Title	Training Location	Sust Tng Freq	Sust Tng SL
	113-609-6003	Distribute Communications Security (COMSEC) Keys	UNIT	AN	4-5
	113-611-5016	Direct the Establishment of a Signal Site Defense	ANCOC	SA	4-5
	113-616-8005	Direct the Installation of the Integrated System Control (ISYSCON) AN/TYQ-76A( )	ANCOC	SA	4-5
	113-625-7004	Direct the Establishment of a Node Center at ECB	ANCOC	SA	4-5
	113-625-7010	Verify the Establishment of a Radio Access Unit (RAU)	ANCOC	AN	4-5
5. Signal Network/Site Management	113-608-6001	Present an Informal Signal Situation Briefing	ANCOC	SA	4-5
	113-616-7044	Manage an Echelons Above Corps (EAC) Network using Communications System Control Element (CSCE)	ANCOC	SA	4-5
	113-616-7045	Perform Wide Area Network Management Operations Using Integrated System Control (ISYSCON) AN/TYQ-76A( )	ANCOC	SA	4-5
	113-623-7119	Direct Preventive Maintenance Checks and Services (PMCS)	ANCOC	AN	4-5
	113-625-6001	Manage the Tactical Packet Network (TPN)	SNCOC	AN	4-5





## CHAPTER 3

### MOS/Skill Level Tasks

#### Skill Level 4

#### Subject Area 1: Communications Security (COMSEC)

### Check Implementation of Electronic Counter-Countermeasures (ECCM) Procedures 113-573-5002

**Conditions:** Given the requirement to check the implementation of electronic counter-countermeasures (ECCM) procedures; an active communications site/node; a meaconing, intrusion, jamming, interference (MIJI) source; and FM 24-33.

**Standards:** Checked for the implementation of ECCM procedures IAW FM 24-33.

#### **Performance Steps**

(Refer to FM 24-33 for all performance steps.)

1. Ensure radio operators minimize transmissions.
  - a. Ensure all transmissions are necessary.
  - b. Plan all messages before transmitting them.
  - c. Transmit messages quickly and precisely.
  - d. Select equipment capable of data burst transmission.
  - e. Establish an alternate means of communication, when possible.
2. Ensure operators protect transmissions from enemy interception.
  - a. Engage low power.
  - b. Select proper antenna.
    - (1) Select antenna with shortest feasible range.
    - (2) Select directional antennas.
    - (3) Select mobile antennas.
    - (4) Select decoy antennas.
    - (5) Select steerable null antenna processors.
  - c. Select a site that masks transmitted signals from enemy interception.
3. Ensure radio operators practice proper authentication procedures.
  - a. Reduce operator-distinguishing characteristics.
  - b. Operate on a random schedule when using nonsecure communications means.
  - c. Encrypt all essential elements of friendly information (EEFI) category data when using nonsecure communications.
  - d. Make use of procedure words (PROWORDS).
4. Ensure radio operators overcome jamming/interference.
  - a. Determine whether the interference is internal or external to the radio.
  - b. Determine whether the interference is jamming or unintentional.
  - c. Report jamming/interference incidents.
5. Ensure radio operators.
  - a. Continue to operate.
  - b. Make improvements in the signal-to-jamming ratio.
  - c. Adjust the receiver.
  - d. Turn up the transmitter power output.
  - e. Adjust or change the antenna.
  - f. Establish a retransmission station.
  - g. Relocate the antenna.

**Performance Steps**

- h. Select an alternate route of communications.
- i. Change frequencies.
- j. Obtain another satellite (if required).

**Evaluation Preparation:** Setup: Requires a radio set operating in a radio net with interference applied to the system. Brief Soldier: As the supervisor of an operator, you must ensure that the operator is applying proper tactics to a jammed system.

**Performance Measures**

(Refer to FM 24-33 for all PMs).

**GO      NO GO**

<ul style="list-style-type: none"> <li>1. Ensured radio operators are minimized transmissions.                             <ul style="list-style-type: none"> <li>a. Ensured necessity of all transmissions.</li> <li>b. Planned all messages before transmitting them.</li> <li>c. Transmitted quickly and precisely.</li> <li>d. Selected equipment capable of data burst transmission.</li> <li>e. Established an alternate means of communications, when possible.</li> </ul> </li> <li>2. Ensured radio operators protected transmissions from enemy interception.                             <ul style="list-style-type: none"> <li>a. Engaged low power.</li> <li>b. Selected proper antenna.                                     <ul style="list-style-type: none"> <li>(1) Selected antenna with the shortest feasible range.</li> <li>(2) Selected directional antennas.</li> <li>(3) Selected mobile antennas.</li> <li>(4) Selected decoy antennas.</li> <li>(5) Selected steerable null antenna processors.</li> </ul> </li> <li>c. Selected a site that masked transmitted signals from enemy interception.</li> </ul> </li> <li>3. Ensured radio operators practiced proper authentication procedures.                             <ul style="list-style-type: none"> <li>a. Reduced operator-distinguishing characteristics.</li> <li>b. Operated on a random schedule during use of nonsecure communications means.</li> <li>c. Encrypted all EEFI category data during use of nonsecure communications.</li> <li>d. Made use of PROWORDS.</li> </ul> </li> </ul>	<p>_____</p> <p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p>
<p>NOTE: Ensured that operators submitted a MIJI report.</p>		
<ul style="list-style-type: none"> <li>4. Ensured radio operators overcame jamming/interference.                             <ul style="list-style-type: none"> <li>a. Determined whether the interference was internal or external to the radio.</li> <li>b. Determined whether the interference was jamming or unintentional.</li> <li>c. Reported jamming/interference incidents. (MIJI).</li> </ul> </li> <li>5. Ensured radio operators.                             <ul style="list-style-type: none"> <li>a. Continued to operate.</li> <li>b. Improved the signal-to-jamming ratio.</li> <li>c. Adjusted the receiver.</li> <li>d. Increased the transmitter power output.</li> <li>e. Adjusted or changed the antenna.</li> <li>f. Established a retransmission station.</li> <li>g. Relocated the antenna.</li> <li>h. Used an alternate route of communications.</li> <li>i. Changed frequencies.</li> <li>j. Obtained another satellite (if required).</li> </ul> </li> </ul>	<p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p>

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

**References**

**Required**  
FM 24-33

**Related**  
FM 34-60

**Check Signal Security (SIGSEC) Procedures**

**113-573-0001**

**Conditions:** Given a requirement to check SIGSEC procedures of an established signal node with organic cryptosystems, AR 380-40, and the unit operation order/operation plan (OPORD/OPLAN).

NOTE: Different types of signal operational requirements will be in effect for this task.

**Standards:** Checked emission, physical, crypto, transmission, and electronics requirements of security, and took corrective action for any discrepancy noted.

**Performance Steps**

1. Review the mission OPORD/OPLAN and AR 380-40 to determine specific SIGSEC policies before inspecting the signal node.
2. Check emission security.
3. Check physical security including:
  - a. Signal node area of operation.
  - b. Area where a cryptosystem is employed.
  - c. Emergency evacuation and destruction plans.
  - d. Handling of classified material waste.
  - e. Control of access and crypto safeguards.
4. Identify physical insecurities.
5. Identify personnel insecurities.
6. Check cryptographic security including:
  - a. Proper use of cryptosystems.
  - b. Encryption of all classified information.
  - c. Competent operation of cryptosystems.
7. Identify crypto insecurities.
8. Check transmission security (TRANSEC) including:
  - a. Radio communications.
  - b. Conventional telephone communications.
9. Implement appropriate corrective action for any discrepancy noted.

**Evaluation Preparation:** Setup: Different types of signal operational requirements will be in effect for this task. Brief Soldier: You are required to check SIGSEC at the signal area node and make the necessary corrections.

**Performance Measures**

	<u>GO</u>	<u>NO GO</u>
1. Reviewed the mission OPORD/OPLAN and AR 380-40 to determine specific SIGSEC policies before inspecting the signal node.	—	—
2. Checked emission security.	—	—
3. Checked physical security including: <ol style="list-style-type: none"><li>a. Signal node area of operation.</li><li>b. Area where a cryptosystem is employed.</li><li>c. Emergency evacuation and destruction plans.</li><li>d. Handling of classified material waste.</li><li>e. Control of access and crypto safeguards.</li></ol>	—	—

<b>Performance Measures</b>	<u>GO</u>	<u>NO GO</u>
4. Identified physical insecurities.	_____	_____
5. Identified personnel insecurities.	_____	_____
6. Checked cryptographic security including:	_____	_____
a. Proper use of cryptosystems.		
b. Encryption of all classified information.		
c. Competent operation of cryptosystems.		
7. Identified crypto insecurities.	_____	_____
8. Checked TRANSEC including:	_____	_____
a. Radio communications.		
b. Conventional telephone communications.		
9. Implemented appropriate corrective action for any discrepancy noted.	_____	_____

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

**References**

**Required**  
 AR 380-40  
 UNIT OPLAN  
 UNIT OPORD

**Related**  
 AR 380-5  
 AR 530-1  
 FM 24-18  
 FM 3-19.30

Subject Area 2: Signal System/Network Planning

**Perform Site Reconnaissance**

**113-611-1013**

**Conditions:** Given unit standing operating procedure (SOP), unit OPORD/OPLAN, and appropriate map(s) with areas marked to indicate equipment location.

**Standards:** Selected Signal site, which met requirements specified in the unit OPORD/OPLAN, placed stakes to indicate equipment location, and prepared the site layout and strip maps.

**Performance Steps**

1. Determine specific site requirements.
  - a. Logistics.
  - b. Equipment.
  - c. Personnel.
2. Conduct preliminary site selection using map.
3. Determine site suitability.
  - a. Accessibility (i.e., Can the site be reached regardless of the weather or time of year? What must travel the roads/paths? What is the condition of those roads/paths?).
  - b. Terrain (i.e., Is the relatively flat and well drained?).
  - c. Camouflage/concealment (i.e., Does the potential site provide overhead camouflage and concealment?).
  - d. Technical suitability (i.e., Is the site location within the range, capabilities, and limitations of equipment to be deployed?).
  - e. Dependability.
4. Stake equipment locations, time permitting.
5. Prepare strip maps to indicate route of travel to site.

**Evaluation Preparation:** Setup: The unit OPORD/OPLAN, appropriate maps, and transportation will be provided. Brief Soldier: You will select a site, drive and mark stakes to indicate equipment locations at the site, and prepare strip maps.

<b>Performance Measures</b>	<b><u>GO</u></b>	<b><u>NO GO</u></b>
1. Determined specific site requirements. <ol style="list-style-type: none"> <li>a. Logistics.</li> <li>b. Equipment.</li> <li>c. Personnel.</li> </ol>	—	—
2. Conducted preliminary site selection using maps.	—	—
3. Determined site suitability. <ol style="list-style-type: none"> <li>a. Accessibility.</li> <li>b. Relative flatness.</li> <li>c. Natural cover/concealment.</li> <li>d. Within equipment range.</li> <li>e. Dependability.</li> </ol>	—	—
4. Staked equipment locations, time permitting (optional).	—	—
5. Prepared strip maps to indicate route of travel to site.	—	—

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

**References**

**Required**  
UNIT OPLAN  
UNIT OPORD  
UNIT SOP

**Related**  
FM 11-55  
TM 11-5895-1544-13&P

**Plan an Echelons Corps and Below (ECB) or Echelons Above Corps (EAC) Network Using the Network Planning Terminal**

**113-611-6116**

**Conditions:** Given the requirement to plan the deployment of an ECB or EAC network to support an Army mission, mission statement/commander's battle plan, defined area of operation, radios to be used, available assets and unit information, frequency resources, electronic warfare (EW) threats, desired link reliabilities, environmental parameters, defined planning factors, correct datum for your area of operation found on paper maps, NPT terminal with supporting software, TB 11-5895-1544-10-1, and TB 11-5895-1544-10-2.

**Standards:** Planned an ECB/EAC network to meet the requirements of the mission statement/commander's battle plan IAW TB 11-5895-1544-10-1 and TB 11-5895-1544-10-2, and obtained approval of network from battalion/brigade S3.

**Performance Steps**

NOTE 1: Before using the NPT to plan a network, you must gather certain information and use that information to initialize certain database and data files.

NOTE 2: Performance steps 3 through 12 do not have to be completed in the order shown.

1. Perform NPT system power-up procedures.
2. Perform initialization of the NPT software.
3. Create a topographic data file of the mission area from a National Imagery and Mapping Agency (NIMA) source using the WOTL application.
4. Create an aerial observation post (AOP) from Map Products and Interfaces (MPI) application.
5. Create a subset of the equipment characteristics database using the Radio/Antenna Files (DWNLOD) application.
6. Perform automatic asset placement (AAP) functions to specify available assets and unit information.
  - a. Set the number of switch assemblages, radio assemblages, and remote RAUs.
  - b. Specify a force lay down by:
    - (1) Name.
    - (2) Size.
    - (3) Type.
    - (4) Location.
    - (5) Number of mobile subscriber radiotelephone terminals (MSRTs).
    - (6) Stand-alone digital subscriber voice terminals (DSVTs).
    - (7) Digital nonsecure voice terminals (DNVTs).
  - c. Identify which assets are active in the network using the Team Information application.
7. Inspect the on-hand frequency list to ensure the availability of appropriate frequencies to support the radios to be used during the mission.
8. Define EW threats by querying the battalion/brigade/division S2 for known and projected EW threat emitter locations within the AOP.
9. Define the desired link reliability factors as stated by the mission statement/commander's battle plan. NOTE: The default value is 90 percent. Higher values are usually specified in more critical links, such as single thread extension links.
10. Set the default environmental parameters to be used during the mission using the Environmental Parameters (ENVPAR) application.
11. Set planning factors to be used for the mission using the AAP application.



**Performance Steps**

- 12. Input the correct datum from the paper maps used for network identification.
- 13. Input the information into the Datum Selection (SELDTM) application.
- 14. Obtain approval for the planned ECB/EAC network from the S3 Officer in Charge (OIC)/Noncommissioned Officer in Charge (NCOIC).

**Performance Measures**

NOTE: PMs 3 through 12 do not have to be completed in the order shown.

	<u>GO</u>	<u>NO GO</u>
1. Performed NPT system power-up procedures.	—	—
2. Performed initialization of the NPT software.	—	—
3. Created a topographic data file of the mission area from a NIMA source using the WOTL application.	—	—
4. Created an AOP from MPI application.	—	—
5. Created a subset of the equipment characteristics database using the Radio/Antenna Files (DWNLOD) application.	—	—
6. Performed AAP functions to specify available assets and unit information. <ul style="list-style-type: none"> <li>a. Set the number of switch assemblages, radio assemblages, and remote RAUs.</li> <li>b. Specified a force lay down by:               <ul style="list-style-type: none"> <li>(1) Name.</li> <li>(2) Size.</li> <li>(3) Type.</li> <li>(4) Location.</li> <li>(5) Number of MSRTs.</li> <li>(6) Stand-alone DSVTs.</li> <li>(7) Digital DNVTs.</li> </ul> </li> <li>c. Identified which assets were active in the network using the Team Information application.</li> </ul>	—	—
7. Inspected the on-hand frequency list to ensure the availability of appropriate frequencies to support the radios to be used during the mission.	—	—
8. Defined EW threats by querying the battalion/brigade/division S2 for known and projected EW threat emitter locations within the AOP.	—	—
9. Defined the desired link reliability factors as stated by the mission statement/commander's battle plan.	—	—
10. Set the default environmental parameters to be used during the mission using the ENVPAR application.	—	—
11. Set planning factors to be used for the mission using the AAP application.	—	—
12. Input the correct datum from the paper maps used for network identification.	—	—
13. Input the information into the Datum Selection (SELDTM) application.	—	—
14. Obtained approval for the planned ECB/EAC network from the S3 OIC/NCOIC.	—	—

## **STP 11-31W4-SM-TG**

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

### **References**

#### **Required**

TB 11-5895-1544-10-1

TB 11-5895-1544-10-2

#### **Related**

FM 11-55

TM 11-5895-1544-13&P

## Plan an Echelons Above Corps (EAC) Network

113-611-6111

**Conditions:** Given assignment as a plans/operations NCO in a Signal battalion/brigade operations center, mission statement/commander's battle plan, user service requests, subscriber requirements analysis, signal site allocation, resource definition printouts from the Communications System Control Element (CSCE), CJCSM 6231.04A, and maps.

**Standards:** Planned an EAC network to meet the requirements of the mission statement/commander's battle plan IAW CJCSM 6231.04, and obtained approval of EAC network from the S3 OIC/NCOIC.

### Performance Steps

1. Determine user/friendly forces requirements.
  - a. Read the mission statement/commander's battle plan.
  - b. Identify those units and personnel that are attached/detached during operation.
2. Determine/evaluate the threat impact on mission based on:
  - a. Intelligence reports.
  - b. Nuclear, biological, chemical (NBC) reports.
  - c. Enemy size/movement.
  - d. Any other situation that proves to be a threat.

3. Determine the availability of equipment and interoperability of sources.

4. Identify shortfalls.

NOTE: Performance steps 5 and 6 are normally performed simultaneously but may be performed separately.

5. Allocate resources including:
  - a. DGM Antenna Mast Program (DAMP) assets.
  - b. Super high frequency (SHF) radio assets.
  - c. Satellite assets.
  - d. Tropospheric scatter (TROPO) assets.
  - e. Ultra high frequency (UHF) radio assets.
6. Identify overlay requirements for plotting:
  - a. Army/corps boundaries.
  - b. Node centers (AN/TTC-39A, AN/TTC-56(V), 39D, or 39D P/S).
7. Coordinate operational requirements for the following classmark database assignments.
  - a. Automatic digital network (AUTODIN) access.
  - b. Commercial access.
  - c. Gateway for ECB access.
  - d. Satellite access.
8. Prioritize link activation.
9. Identify equipment for standby/reserve.
10. Determine line-of-sight (LOS) frequency plan requirements.
11. Determine very high frequency (VHF) plan requirements for MSRT and frequency modulation (FM) net.
12. Determine internodal link requirements.
13. Determine essential user bypass (EUB) requirements.

**Performance Steps**

14. Determine preaffiliation subscriber list (PAL) requirements.
15. Identify project/assignment worksheet requirements to be prepared for the AN/TYQ-30(V)1, ANTYQ-30(V)2 operator input into the system control center (SCC) database.
16. Identify modifications to each node switch (NS) standard database.
17. Identify order messages to change/modify the NS database.
18. Identify modification to each large extension node (LEN) standard database.
19. Identify order message to change/modify the LEN database.
20. Identify (specify) ring codes for the communications modem (CM) and orderwire control units (OCUs) 1 through 4.
21. Determine communications security (COMSEC) control and preposition requirements.
  - a. COMSEC bulk transfer requirements and procedures.
  - b. Designate the primary NS.
  - c. Designate the personnel to be issued the preposition keys.
22. Determine the placement of extension links.
23. Determine NS configuration time line.
24. Determine RAU coverage and layout.
25. Review network plan and make necessary changes prior to final approval.

**Performance Measures**

	<u>GO</u>	<u>NO GO</u>
1. Determined user/friendly forces requirements. <ol style="list-style-type: none"> <li>a. Read the mission statement/commander's battle plan.</li> <li>b. Identified those units and personnel that were attached/detached during operation.</li> </ol>	—	—
2. Determined/evaluated the threat impact on the mission based on: <ol style="list-style-type: none"> <li>a. Intelligence reports.</li> <li>b. NBC reports.</li> <li>c. Enemy size/movement.</li> <li>d. Any other situation that proves to be a threat.</li> </ol>	—	—
3. Determined the availability of equipment and interoperability of sources.	—	—
4. Identified shortfalls.	—	—
NOTE: Performance measures 5 and 6 are normally performed simultaneously but may be performed separately.		
5. Allocated resources including: <ol style="list-style-type: none"> <li>a. DGM DAMP Assets.</li> <li>b. SHF radio assets.</li> <li>c. Satellite assets.</li> <li>d. TROPO assets.</li> <li>e. UHF radio assets.</li> </ol>	—	—
6. Identified overlay requirements for plotting: <ol style="list-style-type: none"> <li>a. Army/corps boundaries.</li> <li>b. Node centers (AN/TTC-39A, AN/TTC-56(V), 39D, or 39D P/S).</li> </ol>	—	—

<b>Performance Measures</b>	<b><u>GO</u></b>	<b><u>NO GO</u></b>
7. Coordinated operational requirements for the following classmark database assignments. a. AUTODIN access. b. Commercial access. c. Gateway for ECB access. d. Satellite access.	—	—
8. Prioritized link activation.	—	—
9. Identified equipment for standby/reserve.	—	—
10. Determined LOS frequency plan requirements.	—	—
11. Determined VHF plan requirements for MSRT and FM net.	—	—
12. Determined internodal link requirements.	—	—
13. Determined EUB requirements.	—	—
14. Determined PAL requirements.	—	—
15. Identified project/assignment worksheet requirements to be prepared for the AN/TYQ-30(V)1, AN/TYQ-30(V)2 operator to input into the CSCE database.	—	—
16. Identified modifications to each NS standard database.	—	—
17. Identified order messages to change/modify the NS database.	—	—
18. Identified modification to each LEN standard database.	—	—
19. Identified order message to change/modify the LEN database.	—	—
20. Identified (specified) ring codes for the CM and OCUs 1 through 4.	—	—
21. Determined COMSEC control and preposition requirements to include: a. COMSEC bulk transfer requirements and procedures. b. Designate the primary NS. c. Designate the personnel to be issued the preposition keys.	—	—
22. Determined the placement of extension links.	—	—
23. Determined NS configuration time line.	—	—
24. Determined RAU coverage and layout.	—	—
25. Reviewed network plan and made necessary changes before final approval.	—	—

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

#### References

**Required**  
CJCSM 6231.04A

**Related**  
FM 101-5-1

**Perform Network Planning and Engineering Operations Using the Integrated System Control (ISYSCON) AN/TYQ-76A( )**

**113-611-6117**

**Conditions:** Given an approved, planned, and engineered OPORD to manage a network for deployment of a corps/division signal brigade, mission statement/commander's battle plan, SOP, predeployment software support (PDSS), data for the corps/division network preplanning management, mission/plan management, Network Planning and Engineering (NPE), Battlefield Spectrum Management (BSM) using the Integrated System Control (ISYSCON) AN/TYQ-76B(V)1 and TB 11-7010-308-10-1.

**NOTE:** If time permits, the ISYSCON operator will enter or configure the ISYSCON database before actual deployment. (Refer to TB 11-7010-308-10-1.)

**Standards:** Planned and engineered network to meet the requirements of the unit OPORD.

**Performance Steps**

**PART I: PREPLANNING MANAGEMENT**

**NOTE:** Preplanning allows you to establish reference data to support the NPE required for a mission. Reference data includes items such as units, equipment components, communications assemblages, task organizations, personnel, sites, frequency resources, and RAU/MSRT plans needed to support the mission. Preplanning Management allows you to perform the following tasks.

1. Perform domain management.
  - a. Create domain.
  - b. Modify domain.
  - c. Delete domain.
  - d. Archive domain.
  - e. Restore domain.
2. Manage versions.
  - a. Create a child version.
  - b. Duplicate version "initial."
  - c. Modify a version.
  - d. Freeze a version.
3. Perform unit, equipment collection, subscriber, and personnel planning data management.
  - a. Create a unit.
  - b. Define unit communications service requirements.
  - c. Define unit team attributes.
  - d. Manage unit equipment collections.
  - e. Add equipment collection.
  - f. Modify equipment collection.
  - g. Modify equipment collection capacity.
  - h. Add a component to a collection.
    - i. Modify existing components from a collection.
    - j. Delete existing components from a collection.
  - k. Delete and view equipment collection.
  - l. Manage unit subscribers.
  - m. Create new subscriber.
  - n. Modify, view, delete, print, and sort unit subscriber data.
  - o. Assign unit subscribers to a sublist.
  - p. Manage unit personnel.
  - q. Add personnel to a unit.
  - r. Delete personnel from a unit.

## Performance Steps

4. Perform task organization data management.
  - a. Create task organization.
  - b. Create new unit in the target tree.
  - c. Add units to the target tree from the unit tree.
  - d. Add units to the target tree from an existing tree.
  - e. Modify unit associations within the target tree.
  - f. Find a unit in the target tree.
  - g. Alter the view of a new task organization.
  - h. View unit information.
    - i. View unit communications service requirements.
    - j. View unit team attributes.
  - k. View unit equipment assignments.
  - l. View unit personnel.
  - m. Delete unit associations within the target tree.
  
5. Manage site information.
  - a. Create site.
  - b. Manage, create, modify, and delete equipment component types.
  - c. View equipment component data.
  - d. Perform site data management.
  - e. Delete, modify, archive, restore, and view site.
  - f. Manage, create, modify, view, and delete personnel.
  
6. Manage SWIDUPs, PCL, CDLs, and ZRLs.
  - a. Manage SWIDUPs.
  - b. Manage PCLs.
  - c. Create PCL.
  - d. Add existing subscriber to PCL.
  - e. Create new PCL subscriber.
  - f. Modify and delete PCL subscriber.
  - g. View, delete, archive, and restore PCL.
  - h. Manage ZRLs.
    - i. Create ZRL.
    - j. Add, modify, and delete ZRL calling zone.
  - k. Modify, view, delete, archive, and restore ZRL.
  - l. Manage CDLs.
  - m. Add CDL subscriber.
  - n. Create new CDL subscriber.
  - o. Modify and delete CDL subscriber.
  - p. Modify, view, delete, archive, and restore CDL.
  
7. Perform PAL sublists data management.
  - a. Manage PALs.
  - b. Create PAL.
  - c. Create switch floppy.
  - d. Create switch PAL file.
  - e. Delete PAL.
  - f. Load PAL subscriber data.
  - g. Modify PAL.
  - h. View PAL.
    - i. Manage PAL sublists.
    - j. Create, view, and delete sublist.
    - k. Verify TPN host name.
    - l. Modify PAL sublist.
  - m. Add subscribers to a PAL sublist.

**Performance Steps**

n. Modify, view, and delete a PAL sublist subscriber.

8. Manage RF characteristics data.
  - a. Define radio characteristics.
  - b. Define receiver characteristics.
  - c. Assign antenna to radio.
  - d. Define transmitter characteristics.
  - e. Define RF criteria.
  - f. Define RF range.
  - g. Define antenna patterns.
  - h. Define antenna beam widths.
    - i. Add frequency range to radio component type.
    - j. Modify frequency range for radio component type.
    - k. Delete frequency range from radio component type.

**PART II: MISSION/PLAN MANAGEMENT**

NOTE: The ISYSCON node will be an autonomous facility capable of stand-alone operation and/or participation in an ISYSCON node hierarchy. Each ISYSCON node will have the capability to be interchangeably deployed and support any echelon of operations. All possess identical functional capabilities. ISYSCON-generated networks configurations (plans) are distributed throughout the ISYSCON node hierarchy for coordination purposes. ISYSCON nodes and the personnel are physically responsible for placement and operation of the signal assets. These messages are, under various circumstances, known as communication service orders (CSOs), and mobile subscriber equipment (MSE) team orders. Mission/Plan Management allows you to perform the following tasks.

9. Perform mission management.
  - a. Create mission.
  - b. Archive a mission.
  - c. Restore a mission.
  - d. Manage mission.
  - e. Modify mission.
  - f. Delete mission.
  - g. View mission documents.
10. Manage mission distribution list.
  - a. Manage mission pull list.
  - b. Add node to the mission pull list.
  - c. Delete node from the mission pull list.
  - d. Add node to the mission distribution list.
  - e. Delete node from the mission distribution list.
  - f. Create initial plan.
  - g. Modify effectivity details.
11. Perform CSOs management.
  - a. Create mission initial CSO.
  - b. Release mission initial CSO.
  - c. Verify mission initial CSO received.
  - d. Create plan activation CSO.
  - e. Release plan activation CSO.
  - f. Create mission change CSO.
  - g. Generate mission CSO report.
  - h. Print mission change CSO.
  - i. Print plan activation CSO.
  - j. Receive mission initial CSO.
  - k. Receive mission change CSO.



**Performance Steps**

- l. Receive plan activation CSO.
  - m. Review mission initial CSO.
  - n. Review mission change CSO
  - o. Review plan activation CSO.
  - p. Release mission change CSO.
  - q. Send mission CSO report.
12. Perform area of responsibility (AOR) role management.
- a. View AOR roles.
13. Perform plan publishing.
- a. Publish plan.
  - b. Manage initial plans.
  - c. Delete a plan.
  - d. Modify initial plan.
  - e. Manage plans.
  - f. Create sibling plan.
  - g. Find a plan.
  - h. Modify a plan.
  - i. Upgrade a child plan to a new version.
14. Perform transfer of authority (TOA) management.
- a. Generate TOA.
  - b. Release TOA.
  - c. Verify TOA received.
  - d. Print TOA.
  - e. Receive TOA.
  - f. Review TOA.
  - g. Delete TOA.
  - h. Generate change alternate TOA.
15. Perform orders management.
- a. Generate MSE team orders.
  - b. Release RAUFP team orders.
  - c. Release RAU/MSRT team orders.
  - d. Print MSE team orders
  - e. Modify execution time of MSE team orders.
16. Determine RAU download effectiveness.
- a. Verify RAU download.
  - b. Copy RAU frequency plan to floppy disk.
17. Perform message management.
- a. Open message manager.
  - b. Send open link message.
18. Perform duplication list management.
- a. Generate activation duplication list.
19. Perform node jump management.
- a. Plan a jump.
  - b. Create child plan.
  - c. Load plan.
  - d. Modify effectivity details
  - e. Adjust Epoch slider.
  - f. Create node.
  - g. Create link.

**Performance Steps**

20. Perform Battlefield Functional Area Control System (BFACS) procedures.
  - a. Compose a BFACS message.
  - b. Print BFACS overlays.
  - c. Receive BFACS message alerts.
  - d. Generate battlefield functional area (BFA) reports.
  - e. Delete BFA data.

**PART III: NETWORK PLANNING AND ENGINEERING**

NOTE: Network planning is performed for those signal assets for which an ISYSCON node is responsible. Plans are developed for a designated geographical AOR within a specified effectivity (period of time). The ISYSCON system NPE capabilities optimize the placement of network resources by providing automated support for node and link planning and evaluation. NPE is a multiuser environment that allows multiple planners to concurrently update and manipulate the information in a plan; any changes are simultaneously displayed for all planners in the ISYSCON. Network planning and engineering allows you to perform the following tasks.

21. Perform AOR area management.
  - a. Manage AOR.
  - b. Load plan.
  - c. Create AOR.
  - d. Modify AOR.
  - e. Modify AOR attributes.
  - f. Assign RAU/MSRT frequency plan.
  - g. Assign RFL to AOR.
  - h. Assign SWIDUPs.
  - i. Assign CDL to AOR.
  - j. Assign ZRL to AOR.
  - k. Verify AOR SWIDUP assignments.
  - l. Assign teams/units to an AOR.
  - m. View existing node placements in AOR.
  - n. Assign frequency resources to AOR.
  - o. Verify AOR frequency plan assignments.
  - p. Verify AOR PAL sublist activation.
  - q. View AOR.
  - r. Remove an assignment from an AOR.
  - s. Delete AOR.
  - t. Set working assignments.
22. Perform network planning graphic's display data manipulation.
  - a. Create radio network.
  - b. Create node.
  - c. Delete node.
  - d. Create link.
  - e. Modify link.
  - f. View LOS profile.
  - g. Optimize node location.
  - h. Delete link.
  - i. Create link relay.
  - j. Delete link relay.
  - k. Create gateway link.
  - l. Reassign a link.
  - m. Exchange nodes.
  - n. Manage nodes.
  - o. Modify nodes.

**Performance Steps**

- p. View node.
  - q. View node diagram.
  - r. View component utilization data.
  - s. View equipment collections.
  - t. View port utilization data.
  - u. Find objects in node diagram.
  - v. View unit details.
  - w. Set terrain display manager options.
  - x. Set tactical display manager options.
  - y. Set high points.
  - z. Manage RAU coverage area.
  - aa. Adjust Epoch slider bar.
  - ab. Reposition node (terrain walk).
23. Perform emitters data management.
- a. Manage other emitter.
  - b. Create other emitter.
  - c. Modify other emitter.
  - d. View other emitter.
  - e. Delete other emitter.
24. Perform Area Common User System (ACUS) parameters management.
- a. Set parameters for ACUS network.
  - b. Initiate ACUS network generation.
25. Perform plan pulling from another ISYSCON.
- a. Pull plan.
  - b. Perform reports data management.
  - c. Create frequency resource report.
  - d. Generate NPE reports.
  - e. Generate nonsignal emitter report.
  - f. Generate RAU/MSRT frequency plan report.
  - g. Generate network asset utilization report.
  - h. Generate configuration report.
  - i. Generate site report.
  - j. Generate subscribers report.
  - k. Generate team packets report.
  - l. Generate unit report.
  - m. Generate area coverage plot.
  - n. Generate high-resolution plot.
  - o. Generate an approximation plot.
  - p. View area coverage plot data.
26. Modify high frequency (HF) network.
- a. View HF network.
  - b. Delete HF network.
  - c. Add HF network unit/station.
  - d. Modify HF network unit/station type.
  - e. Modify HF network unit/station details.
  - f. Delete HF network unit/station.
27. Manage workstation display views.
- a. Set NPE preferences.
  - b. View elevation contour bands.
  - c. Generate ACUS network.
  - d. Download RAU/MSRT frequency plan.

**Performance Steps**

- e. Manage symbols.
- f. Create a symbol.
- g. Navigate NPE map display.
- h. Refresh the base map view.
- i. Change the pan step value.
- j. Pan the map view.
- k. Change the zoom level.
- l. Change the map scale.
- m. Change the map contrast value.
- n. Center the base view.
- o. View AOR logical.
- p. View network logical.
- q. View circuit details.
- r. Delete a symbol.

28. Perform orders manipulation.

- a. Manage orders.
- b. Generate "Activate PAL Sublist" order.
- c. Generate "Activate Gateway Key" order.
- d. Generate "Activate Gateway Key List" order.
- e. Generate "Preaffiliate Directory Number" order.
- f. Generate "Generate Key" order.
- g. Generate "Generate Key List" order.
- h. Generate "Activation Key" order.
- i. Generate "Activate Key List" order.
- j. Generate "Transfer Key" order.
- k. Generate "Transfer Key List" order.
- l. Generate "Transfer Current Key" order.
- m. Generate "Transfer Bulk Key" order.
- n. Generate "Modify Classmark Profile" order.
- o. Generate "Duplication Activation" order.

29. Perform location pair management.

- a. Manage location pairs.
- b. Create location pairs.
- c. Delete location pairs.
- d. Set location pairs defaults.
- e. View location pairs data.
- f. Perform location pairs LOS profile calculation.

NOTE: The ISYSCON system provides integrated BSM functions to minimize adverse collateral effects of cosite and adjacent frequency interference in Army, Joint, US/Allied operations. ISYSCON also allows you to store and to use information regarding nonsignal corps and noncommunication emitters in managing the spectrum.

30. Perform band segmentation data management.

- a. Create band segmentation.
- b. Manage band segmentation.
- c. Delete band segmentation.
- d. Modify band segmentation.

31. Perform RF lists data management.

- a. Create frequency resource list.
- b. Add frequency from frequency resource list.
- c. Delete frequency from frequency resource list.
- d. Archive frequency resource list.
- e. Restore frequency resource list.

**Performance Steps**

- f. View frequency resource list.
  - g. Modify frequency resource list.
  - h. Delete frequency resource list.
32. Perform MSRT radio frequency plan data management.
- a. Create MSRT frequency plan.
  - b. Load MSRT frequency plan.
33. Perform restricted frequency list (RFL) data management.
- a. Create RFL.
  - b. Perform RFL deconfliction.
  - c. Add frequency to RFL.
  - d. Delete frequency to RFL.
  - e. Merge existing RFL.
34. Perform RF assignments.
- a. Perform multichannel analysis data management.
  - b. Assign HF frequencies.
  - c. Assign sky wave frequencies.
  - d. Assign ground wave frequencies.
35. Perform RF analysis data management.
- a. Perform multichannel analysis.
  - b. Perform overshoot analysis.
  - c. Perform cosite analysis.
  - d. Set BSM parameters.
  - e. Perform HF analysis.
  - f. Perform signal-to-noise plus jammer analysis.
  - g. Perform area coverage analysis.
  - h. Perform auroral oval analysis.
  - i. Perform diurnal prediction analysis.
  - j. Perform field strength analysis.
  - k. Perform signal-to-noise analysis.
  - l. Perform flight path analysis.
  - m. Manage, create, delete, modify, and view flight path.
  - n. Create, modify, and delete a way point.
  - o. Perform ground wave analysis.
  - p. Perform linear antenna analysis.
  - q. Manage, create, delete, modify, view, and linear antenna.
  - r. Perform net analysis.
  - s. Perform ray trace analysis.
  - t. Perform secure band analysis.
  - u. Perform sky wave analysis.
  - v. Perform track analysis.
  - w. One site overshoot analysis.
  - x. Perform all sites overshoot analysis.
  - y. Perform one link overshoot analysis.
  - z. Perform one site cosite analysis.
  - aa. Perform all sites cosite analysis.
  - ab. Perform gain pattern analysis.
  - ac. Perform rank antenna analysis.
  - ad. Perform link reliability analysis.
  - ae. Perform signal-to-interference analysis.
36. Perform ionospheric sounder data entry.
- a. Manage sounders.

**Performance Steps**

- b. Create, delete, modify, and view sounder.
- c. Manage, create, delete, modify, and view sounder reading.

**Performance Measures**

**GO    NO GO**

**PART I: PREPLANNING MANAGEMENT**

NOTE: Preplanning allows you to establish reference data to support the NPE required for a mission. Reference data includes items such as units, equipment components, communications assemblages, task organizations, personnel, sites, frequency resources, and RAU/MSRT plans needed to support the mission. Preplanning Management allows you to perform the following tasks.

- |   |   |   |
|---|---|---|
| <ul style="list-style-type: none"> <li>1. Performed domain management.                             <ul style="list-style-type: none"> <li>a. Created domain.</li> <li>b. Modified domain.</li> <li>c. Deleted domain.</li> <li>d. Archived domain.</li> <li>e. Restored domain.</li> </ul> </li> <li>2. Managed versions.                             <ul style="list-style-type: none"> <li>a. Created a child version.</li> <li>b. Duplicated version "initial."</li> <li>c. Modified a version.</li> <li>d. Froze a version.</li> </ul> </li> <li>3. Performed unit, equipment collection, subscriber, and personnel planning data management.                             <ul style="list-style-type: none"> <li>a. Created a unit.</li> <li>b. Defined unit communications service requirements.</li> <li>c. Defined unit team attributes.</li> <li>d. Managed unit equipment collections.</li> <li>e. Added equipment collection.</li> <li>f. Modified equipment collection.</li> <li>g. Modified equipment collection capacity.</li> <li>h. Added a component to a collection.</li> <li>i. Modified existing components from a collection.</li> <li>j. Deleted existing components from a collection.</li> <li>k. Deleted and viewed equipment collection.</li> <li>l. Managed unit subscribers.</li> <li>m. Created new subscriber.</li> <li>n. Modified, viewed, deleted, printed, and sorted unit subscriber data.</li> <li>o. Assigned unit subscribers to a sublist.</li> <li>p. Managed unit personnel.</li> <li>q. Added personnel to a unit.</li> <li>r. Deleted personnel from a unit.</li> </ul> </li> <li>4. Performed task organization data management.                             <ul style="list-style-type: none"> <li>a. Created task organization.</li> <li>b. Created new unit in the target tree.</li> <li>c. Added units to the target tree from the unit tree.</li> <li>d. Added units to the target tree from an existing tree.</li> <li>e. Modified unit associations within the target tree.</li> <li>f. Found a unit in the target tree.</li> <li>g. Altered the view of a new task organization.</li> <li>h. Viewed unit information.</li> </ul> </li> </ul> | <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> | <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |
|---|---|---|

<b>Performance Measures</b>	<b><u>GO</u></b>	<b><u>NO GO</u></b>
<ul style="list-style-type: none"> <li>i. Viewed unit communications service requirements.</li> <li>j. Viewed unit team attributes.</li> <li>k. Viewed unit equipment assignments.</li> <li>l. Viewed unit personnel.</li> <li>m. Deleted unit associations within the target tree.</li> </ul>		
<p>5. Managed site information.</p> <ul style="list-style-type: none"> <li>a. Created site.</li> <li>b. Managed, created, modified, and deleted equipment component types.</li> <li>c. Viewed equipment component data.</li> <li>d. Performed site data management.</li> <li>e. Deleted, modified, archived, restored, and viewed site.</li> <li>f. Managed, created, modified, viewed, and deleted personnel.</li> </ul>	—	—
<p>6. Managed SWIDUPs, PCL, CDLs, and ZRLs.</p> <ul style="list-style-type: none"> <li>a. Managed SWIDUPs.</li> <li>b. Managed PCLs.</li> <li>c. Created PCL.</li> <li>d. Added existing subscriber to PCL.</li> <li>e. Created new PCL subscriber.</li> <li>f. Modified and deleted PCL subscriber.</li> <li>g. Viewed, deleted, archived, and restored PCL.</li> <li>h. Managed ZRLs.</li> <li>i. Created ZRL.</li> <li>j. Added, modified, and deleted ZRL calling zone.</li> <li>k. Modified, viewed, deleted, archived, and restored ZRL.</li> <li>l. Managed CDLs.</li> <li>m. Added CDL subscriber.</li> <li>n. Created new CDL subscriber.</li> <li>o. Modified and deleted CDL subscriber</li> <li>p. Modified, viewed, deleted, archived, and restored CDL.</li> </ul>	—	—
<p>7. Performed PAL sublists data management.</p> <ul style="list-style-type: none"> <li>a. Managed PALs.</li> <li>b. Created PAL.</li> <li>c. Created switch floppy.</li> <li>d. Created switch PAL file.</li> <li>e. Deleted PAL.</li> <li>f. Loaded PAL subscriber data.</li> <li>g. Modified PAL.</li> <li>h. Viewed PAL.</li> <li>i. Managed PAL sublists.</li> <li>j. Created, viewed, and deleted sublist.</li> <li>k. Verified TPN host name.</li> <li>l. Modified PAL sublist.</li> <li>m. Added subscribers to A PAL sublist.</li> <li>n. Modified, viewed, and deleted a PAL sublist subscriber.</li> </ul>	—	—
<p>8. Managed RF characteristics data.</p> <ul style="list-style-type: none"> <li>a. Defined radio characteristics.</li> <li>b. Defined receiver characteristics.</li> <li>c. Assigned antenna to radio.</li> <li>d. Defined transmitter characteristics.</li> <li>e. Defined RF criteria.</li> <li>f. Defined RF range.</li> <li>g. Defined antenna patterns.</li> </ul>	—	—





<b>Performance Measures</b>	<u>GO</u>	<u>NO GO</u>
13. Performed plan publishing.	—	—
a. Published plan.		
b. Managed initial plans.		
c. Deleted a plan.		
d. Modified initial plan.		
e. Managed plans.		
f. Created sibling plan.		
g. Found a plan.		
h. Modified a plan.		
i. Upgraded a child plan to a new version.		
14. Performed TOA management.	—	—
a. Generated TOA.		
b. Released TOA.		
c. Verified TOA received.		
d. Printed TOA.		
e. Received TOA.		
f. Reviewed TOA.		
g. Deleted TOA.		
h. Generated change alternate TOA.		
15. Performed orders management.	—	—
a. Generated MSE team orders.		
b. Released RAUFP team orders.		
c. Released RAU/MSRT team orders.		
d. Printed MSE team orders		
e. Modified execution time of MSE team orders.		
16. Determined RAU download effectiveness.	—	—
a. Verified RAU download.		
b. Copied RAU frequency plan to floppy disk.		
17. Performed message management.	—	—
a. Opened message manager.		
b. Sent open link message.		
18. Performed duplication list management.	—	—
a. Generated activation duplication list.		
19. Performed node jump management.	—	—
a. Planned a jump.		
b. Created child plan.		
c. Loaded plan.		
d. Modified effectivity details		
e. Adjusted Epoch slider.		
f. Created node.		
g. Created link.		
20. Performed BFACS procedures.	—	—
a. Composed a BFACS message.		
b. Printed BFACS overlays.		
c. Received BFACS message alerts.		
d. Generated BFA reports.		
e. Deleted BFA data.		

**Performance Measures**

GO    NO GO

PART III: NETWORK PLANNING AND ENGINEERING

NOTE: Network planning is performed for those signal assets for which an ISYSCON node is responsible. Plans are developed for a designated geographical AOR within a specified effectivity (period of time). The ISYSCON system NPE capabilities optimize the placement of network resources by providing automated support for node and link planning and evaluation. NPE is a multiuser environment that allows multiple planners to concurrently update and manipulate the information in a plan; any changes are simultaneously displayed for all planners in the ISYSCON. Network planning and engineering allows you to perform the following tasks.

- 21. Performed AOR area management. \_\_\_\_\_
  - a. Managed AOR.
  - b. Loaded plan.
  - c. Created AOR.
  - d. Modified AOR.
  - e. Modified AOR attributes.
  - f. Assigned RAU/MSRT frequency plan.
  - g. Assigned RFL to AOR.
  - h. Assigned SWIDUPs.
  - i. Assigned CDL to AOR.
  - j. Assigned ZRL to AOR.
  - k. Verified AOR SWIDUP assignments.
  - l. Assigned teams/units to an AOR.
  - m. Viewed existing node placements in AOR.
  - n. Assigned frequency resources to AOR.
  - o. Verified AOR frequency plan assignments.
  - p. Verified AOR PAL sublist activation.
  - q. Viewed AOR.
  - r. Removed an assignment from an AOR.
  - s. Deleted AOR.
  - t. Set working assignments.
  
- 22. Performed network planning graphic's display data manipulation. \_\_\_\_\_
  - a. Created radio network.
  - b. Created node.
  - c. Deleted node.
  - d. Created link.
  - e. Modified link.
  - f. Viewed LOS profile.
  - g. Optimized node location.
  - h. Deleted link.
  - i. Created link relay.
  - j. Deleted link relay.
  - k. Created gateway link.
  - l. Reassigned a link.
  - m. Exchanged nodes.
  - n. Managed nodes.
  - o. Modified nodes.
  - p. Viewed node.
  - q. Viewed node diagram.
  - r. Viewed component utilization data.
  - s. Viewed equipment collections.
  - t. Viewed port utilization data.

<b>Performance Measures</b>	<b><u>GO</u></b>	<b><u>NO GO</u></b>
u. Found objects in node diagram.		
v. Viewed unit details.		
w. Set terrain display manager options.		
x. Set tactical display manager options.		
y. Set high points.		
z. Managed RAU coverage area.		
aa. Adjusted Epoch slider bar.		
ab. Repositioned node (terrain walk).		
23. Performed emitters data management.	—	—
a. Managed other emitter.		
b. Created other emitter.		
c. Modified other emitter.		
d. Viewed other emitter.		
e. Deleted other emitter.		
24. Performed ACUS parameters management.	—	—
a. Set parameters for ACUS network.		
b. Initiated ACUS network generation.		
25. Performed plan pulling from another ISYSCON.	—	—
a. Pulled plan.		
b. Performed reports data management.		
c. Created frequency resource report.		
d. Generated NPE reports.		
e. Generated nonsignal emitter report.		
f. Generated RAU/MSRT frequency plan report.		
g. Generated network asset utilization report.		
h. Generated configuration report.		
i. Generated site report.		
j. Generated subscribers report.		
k. Generated team packets report		
l. Generated unit report.		
m. Generated area coverage plot.		
n. Generated high-resolution plot.		
o. Generated an approximation plot.		
p. Viewed area coverage plot data.		
26. Modified HF network.	—	—
a. Viewed HF network.		
b. Deleted HF network.		
c. Added HF network unit/station.		
d. Modified HF network unit/station type		
e. Modified HF network unit/station details		
f. Deleted HF network unit/station.		
27. Managed workstation display views.	—	—
a. Set NPE preferences.		
b. Viewed elevation contour bands.		
c. Generated ACUS network.		
d. Downloaded RAU/MSRT frequency plan.		
e. Managed symbols.		
f. Created a symbol.		
g. Navigated NPE map display.		
h. Refreshed the base map view.		
i. Changed the pan step value.		

<b>Performance Measures</b>	<b><u>GO</u></b>	<b><u>NO GO</u></b>
j. Panned the map view.		
k. Changed the zoom level.		
l. Changed the map scale.		
m. Changed the map contrast value.		
n. Centered the base view.		
o. Viewed AOR logical.		
p. Viewed network logical.		
q. Viewed circuit details.		
r. Deleted a symbol.		
28. Performed orders manipulation.	—	—
a. Managed orders.		
b. Generated "Activate PAL Sublist" order.		
c. Generated "Activate Gateway Key" order.		
d. Generated "Activate Gateway Key List" order.		
e. Generated "Preaffiliate Directory Number" order.		
f. Generated "Generate Key" order.		
g. Generated "Generate Key List" order.		
h. Generated " Activation Key" order.		
i. Generated "Activate Key List" order.		
j. Generated "Transfer Key" order.		
k. Generated "Transfer Key List" order.		
l. Generated "Transfer Current Key" order.		
m. Generated "Transfer Bulk Key" order.		
n. Generated "Modify Classmark Profile" order.		
o. Generated "Duplication Activation" order.		
29. Performed location pair management.	—	—
a. Managed location pairs.		
b. Created location pairs.		
c. Deleted location pairs.		
d. Set location pairs defaults.		
e. Viewed location pairs data.		
f. Performed location pairs LOS profile calculation.		
NOTE: The ISYSCON system provides integrated BSM functions to minimize adverse collateral effects of cosite and adjacent frequency interference in Army, Joint, US/Allied operations. ISYSCON also allows you to store and to use information regarding nonsignal corps and noncommunication emitters in managing the spectrum.		
30. Performed band segmentation data management.	—	—
a. Created band segmentation.		
b. Managed band segmentation.		
c. Deleted band segmentation.		
d. Modified band segmentation.		
31. Performed RF lists data management.	—	—
a. Created frequency resource list.		
b. Added frequency from frequency resource list.		
c. Deleted frequency from frequency resource list.		
d. Archived frequency resource list.		
e. Restored frequency resource list.		
f. Viewed frequency resource list.		
g. Modified frequency resource list.		
h. Deleted frequency resource list.		
32. Performed MSRT RF plan data management.	—	—

<b>Performance Measures</b>	<u>GO</u>	<u>NO GO</u>
<ul style="list-style-type: none"> <li>a. Created MSRT frequency plan.</li> <li>b. Loaded MSRT frequency plan.</li> </ul>	—	—
33. Performed RFL data management. <ul style="list-style-type: none"> <li>a. Created RFL.</li> <li>b. Performed RFL deconfliction.</li> <li>c. Added frequency to RFL.</li> <li>d. Deleted frequency to RFL.</li> <li>e. Merged existing RFL.</li> </ul>	—	—
34. Performed RF assignments. <ul style="list-style-type: none"> <li>a. Performed multichannel analysis data management.</li> <li>b. Assigned HF frequencies.</li> <li>c. Assigned sky wave frequencies.</li> <li>d. Assigned ground wave frequencies.</li> </ul>	—	—
35. Performed RF analysis data management. <ul style="list-style-type: none"> <li>a. Performed multichannel analysis.</li> <li>b. Performed overshoot analysis.</li> <li>c. Performed cosite analysis.</li> <li>d. Set BSM parameters.</li> <li>e. Performed HF analysis.</li> <li>f. Performed signal-to-noise plus jammer analysis.</li> <li>g. Performed area coverage analysis.</li> <li>h. Performed auroral oval analysis.</li> <li>i. Performed diurnal prediction analysis.</li> <li>j. Performed field strength analysis.</li> <li>k. Performed signal-to-noise analysis.</li> <li>l. Performed flight path analysis.</li> <li>m. Managed, created, deleted modified, and viewed flight path.</li> <li>n. Created, modified, and deleted a way point.</li> <li>o. Performed ground wave analysis.</li> <li>p. Performed linear antenna analysis.</li> <li>q. Managed, created, deleted, modified, and viewed linear antenna.</li> <li>r. Performed net analysis.</li> <li>s. Performed ray trace analysis.</li> <li>t. Performed secure band analysis.</li> <li>u. Performed sky wave analysis.</li> <li>v. Performed track analysis.</li> <li>w. One site overshoot analysis.</li> <li>x. Performed all sites overshoot analysis.</li> <li>y. Performed one link overshoot analysis.</li> <li>z. Performed one site cosite analysis.</li> <li>aa. Performed all sites cosite analysis.</li> <li>ab. Performed gain pattern analysis.</li> <li>ac. Performed rank antenna analysis.</li> <li>ad. Performed link reliability analysis.</li> <li>ae. Performed signal-to-interference analysis.</li> </ul>	—	—
36. Performed ionospheric sounder data entry. <ul style="list-style-type: none"> <li>a. Managed sounders.</li> <li>b. Created, deleted, modified, and viewed sounder.</li> <li>c. Managed, created, deleted, modified, and viewed sounder reading.</li> </ul>	—	—

## STP 11-31W4-SM-TG

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

### References

#### Required

COMMANDERS BATTLE PLAN  
MISSION STATEMENT  
TB 11-7010-308-10-1  
UNIT OPORD  
UNIT SOP

#### Related

## Subject Area 3: Signal System/Network Engineering

**Engineer an Echelons Corps and Below (ECB) or Echelons Above Corps (EAC) Network Using the Network Planning Terminal (NPT)****113-613-5008**

**Conditions:** As a plans/operations NCO in a Signal Battalion/Brigade Operation Center, given communications system/equipment status report, reference material, maps, mission statement/commander's battle plan, NPT, and FM 11-55.

**Standards:** Engineered network using the NPT IAW the mission statement/commander's battle plan and FM 11-55, and obtained approval of network from S3 OIC/NCOIC.

**Performance Steps**

1. Perform NPT system power-up procedures.
2. Initialize the NPT software.
3. Place assets.
  - a. Create force lay down area of operations.
    - (1) Specify the area of operations where unit will be located using automatic asset placement.
    - (2) Ensure that this area of operations is large enough to cover the portion of the battlefield for which you are responsible for providing communications.
  - b. Input unit information collected about the units, in the area of operations.
  - c. Specify area coverage.

NOTE: AAP allows you to tailor the RAU coverage in your area of operations to provide selected areas with zero, single, double, or triple coverage. AAP will adjust the placements of RAUs and switches according to the amount of coverage specified. If no area coverage boundaries are created in the AAP scenario, AAP will use single coverage as the requirement for the entire area of operations.

- d. Edit planning factors.
  - (1) View the factors used in the network planning of AAP before placing the switches and RAUs.
  - (2) Input the constraints collected for your network during the planning stage.

NOTE: When placed, extension nodes that do not meet the nominal planning factors will not be connected to switches.

- e. Edit assets.

NOTE: Use the data collected in the planning stage for AAP to know what assets are available for use in the network.

- (1) Input the number of switch assemblages.
- (2) Input the number of radio assemblages.
- (3) Input the number of remote RAUs.
- f. Place extension nodes, switches, and remote RAUs.
  - (1) Allocate extension nodes according to the number of wireline subscribers at a specific location.
  - (2) Place LENS at a unit location where the number of stand-alone DSVTs and DNVTs exceeds the capabilities of a small extension node (SEN).
  - (3) Place switches so that each extension node can be connected to the network in such a way that the extension nodes meet the planning factor criteria.
  - (4) Place the remote RAUs based on the mobile subscriber density.

NOTE: An area that does not have any mobile subscribers will not have RAU coverage.

- g. Interconnect the network.

**Performance Steps**

NOTE: After placing the remote RAUs, you can install the "backbone" by interconnecting the network. Each switch is automatically connected to three other switches. This option also connects the remote RAUs to a switch. At this point, the network is complete; however, link reliability has not been analyzed. The initial network generated by automatic asset placement was based primarily on the user-defined unit and network planning factor requirements. In general, the automatic asset placement network will not provide reliable links throughout the network. The NPT procedures to assist in upgrading the link reliability are discussed in the following performance steps.

4. Modify site locations and links.

(NOTE: Site locations and links need to be modified if the link reliability is unacceptable or if sites have been placed in areas that are inaccessible. These sites should be relocated before assigning frequencies to the network.)

a. Evaluate link reliability.

NOTE: Interactive asset placement provides a path reliability evaluation of each link and a capability to manipulate the network to improve link reliability that is initially unacceptable.

- (1) Determine which links are critical to the network quality.
- (2) Increase critical links from the 90 percent default requirement.
- (3) Examine network display which indicates link quality by the color of the link on the display.

NOTE: A red link is unacceptable and inoperable. An amber link is marginally reliable. A green link indicates an acceptable and operable link.

- (4) Modify sites and links to upgrade the red and amber links to green.

b. Perform site modification as required.

NOTE: A method of selecting candidate locations for assets that need to be relocated is to use the High Elevation Retrieval option within the Network Planning - Frequency Assignment. This capability enables you to select a specified number of high elevation sites within a user-defined area. The high elevation sites will usually provide improved link performance for the sites selected by automatic asset placement. If any RAU sites are modified or added, Interactive Asset Placement should be used to evaluate the reliability of these added or modified links.

c. Modify antenna heights to improve link reliability.

NOTE: Link degradation may occur from increased antenna heights.

5. Evaluate RAU coverage.

- a. Perform propagation analyses to plot radio coverage of local and remote RAUs.
- b. Adjust RAU locations if the RAU plot shows areas that are not covered by the RAU.
  - (1) Select a RAU.
  - (2) Input new coordinates.

NOTE: You also have the capability to add a new RAU.

- (3) Save the new coordinates to an exercise once the RAUs are positioned to provide the required coverage.

c. Evaluate the reliability of added or modified RAU-to-switch links.

6. Assign frequencies.

a. Assign UHF and SHF frequencies.

NOTE: UHF and SHF are assigned for the network links through use of Network Planning - Frequency Assignment. Before assigning frequencies, you must select the list of frequencies available for assignment and the appropriate sets of criteria for the radios in exercise.

- b. Select frequency lists and selection criteria.
  - (1) Create one or more frequency list(s) that contain(s) all of the available frequencies for the exercise.
  - (2) Specify frequencies for each radio type in the exercise.
  - (3) Create a secondary and a tertiary criteria list for each radio type.

NOTE: The tertiary list should contain the most relaxed restrictions. If NPT cannot assign frequencies to all links based on the primary criteria, it will try using the secondary and tertiary criteria.

- c. Perform frequency assignment by selecting the Frequency Assignment Option of NPT and the method of assignment.



**Performance Steps**

NOTE: If NPT is unable to assign frequencies to all the links, you must either relax the selection criteria or select a different method of assignment. After the frequencies are assigned, the link reliability is reevaluated using Interactive Asset Placement.

- d. Assign VHF frequencies.

NOTE: VHF assignments are recommended for MSRTs and RAUs through the use of VHF Planning and Management. You may create your own frequency resource or you may load a resource via floppy disk. Once a frequency resource is generated, you can specify the number of pairs assigned and the assignment strategy. A list of frequency pairs is generated to create a VHF plan. You may also manually enter a frequency plan. VHF plans are then distributed to the RAU GLUs and activated at the appropriate time.

- 7. Analyze electronic warfare (EW) threat.
  - a. Position the EW threat platform.
    - (1) Input the characteristics of the jammer elements by referring to the appropriate threat documentation.
    - (2) Coordinate with military intelligence, if in a tactical environment, to define the position and emitter type of the jammer.
  - b. Display EW effects.
    - (1) Select the option to display the effects of EW threats on your network.
    - (2) Modify the sites and/or links if link reliability degrades to unacceptable.
  - c. Respond to EW threats by using Net Planning - Network Connectivity Optimization to suggest site locations that will provide upgraded link performance.

- 8. Reassign frequencies as required.

NOTE: The NPT frequency assignment algorithm depends on the network geometry. Therefore, after site and/or link modification is incorporated, the network frequencies must be reassigned by using Network Planning - Frequency Assignment.

- 9. Obtain approval of the planned ECB/EAC network from the S3 OIC/NCOIC.

**Evaluation Preparation:** Setup: Communications system/equipment status reports, reference materials, mission statement/commander's battle plan, and maps will be available. Brief Soldier: You will engineer a network using the NPT to meet the requirement of the mission statement/commander's battle plan. It must be approved by the S3 OIC-NCOIC for you to receive a GO.

**Performance Measures**

	<u>GO</u>	<u>NO GO</u>
1. Performed NPT system power-up procedures.	_____	_____
2. Initialized the NPT software.	_____	_____
3. Placed assets. <ul style="list-style-type: none"> <li>a. Created force lay down area of operations.                             <ul style="list-style-type: none"> <li>(1) Specified the area of operations where unit will be located using automatic asset placement.</li> <li>(2) Ensured that this area of operations is large enough to cover the portion of the battlefield for which you are responsible for providing communications.</li> </ul> </li> <li>b. Input unit information collected about the units, in the area of operations.</li> <li>c. Specified area coverage.</li> </ul>	_____	_____

NOTE: AAP allows you to tailor the RAU coverage in your area of operations to provide selected areas with zero, single, double, or triple coverage. AAP will adjust the placements of RAUs and switches according to the amount of coverage specified. If no area coverage boundaries are created in the AAP scenario, AAP will use single coverage as the requirement for the entire area of operations.

- d. Edited planning factors.

**Performance Measures**

GO    NO GO

- (1) Viewed the factors used in the network planning of automatic asset placement before placing the switches and RAUs.
- (2) Input the constraints collected for your network during the planning stage.

NOTE: When placed, extension nodes that do not meet the nominal planning factors will not be connected to switches.

e. Edited assets.

NOTE: Use the data collected in the planning stage for automatic asset placement to know what assets are available for use in the network.

- (1) Input the number of switch assemblages.
- (2) Input the number of radio assemblages.
- (3) Input the number of remote RAUs.

f. Placed extension nodes, switches, and remote RAUs.

- (1) Allocated extension nodes according to the number of wireline subscribers at a specific location.
- (2) Placed LENSs at a unit location where the number of stand-alone DSVTs and DNVTs exceeds the capabilities of a SEN.
- (3) Placed switches so that each extension node can be connected to the network in such a way that the extension nodes meet the planning factor criteria.
- (4) Placed the remote RAUs based on the mobile subscriber density.

NOTE: An area that does not have any mobile subscribers will not have RAU coverage.

g. Interconnected the network.

NOTE: After placing the remote RAUs, you can install the "backbone" by interconnecting the network. Each switch is automatically connected to three other switches. This option also connects the remote RAUs to a switch. At this point, the network is complete; however, link reliability has not been analyzed. The initial network generated by AAP was based primarily on the user-defined unit and network planning factor requirements. In general, the AAP network will not provide reliable links throughout the network. The NPT procedures to assist in upgrading the link reliability are discussed in the following performance steps.

4. Modified site locations and links.

NOTE: Site locations and links need to be modified if the link reliability is unacceptable or if sites have been placed in areas that are inaccessible. These sites should be relocated before assigning frequencies to the network.

a. Evaluated link reliability.

NOTE: Interactive asset placement provides a path reliability evaluation of each link and a capability to manipulate the network to improve link reliability that is initially unacceptable.

- (1) Determined which links are critical to the network quality.
- (2) Increased critical links from the 90 percent default requirement.
- (3) Examined network display, which indicates link quality by the color of the link on the display.

NOTE: A red link is unacceptable and inoperable. An amber link is marginally reliable. A green link indicates an acceptable and operable link.

- (4) Modified sites and links to upgrade the red and amber links to green.

b. Performed site modification as required.

**Performance Measures**

GO    NO GO

NOTE: A method of selecting candidate locations for assets that need to be relocated is to use the High Elevation Retrieval option within the Network Planning - Frequency Assignment. This capability enables you to select a specified number of high elevation sites within a user-defined area. The high elevation sites will usually provide improved link performance for the sites selected by automatic asset placement. If any RAU sites are modified or added, Interactive Asset Placement should be used to evaluate the reliability of these added or modified links.

- c. Modified antenna heights to improve link reliability.

NOTE: Linked degradation may occur from increased antenna heights.

- 5. Evaluated RAU coverage. \_\_\_\_\_
  - a. Performed propagation analyses to plot radio coverage of local and remote RAUs.
  - b. Adjusted RAU locations if the RAU plot shows areas that are not covered by the RAU.
    - (1) Selected a RAU.
    - (2) Input new coordinates.

NOTE: You also have the capability to add a new RAU.

- (3) Saved the new coordinates to an exercise once the RAUs are positioned to provide the required coverage.
- c. Evaluated the reliability of added or modified RAU-to-switch links.

- 6. Assigned frequencies. \_\_\_\_\_
  - a. Assigned UHF and SHF frequencies.

NOTE: UHF and SHF are assigned for the network links through use of Network Planning - Frequency Assignment. Before assigning frequencies, you must select the list of frequencies available for assignment and the appropriate sets of criteria for the radios in exercise.)

- b. Selected frequency lists and selection criteria.
  - (1) Created one or more frequency list(s) that contain(s) all of the available frequencies for the exercise.
  - (2) Specified frequencies for each radio type in the exercise.
  - (3) Created a secondary and a tertiary criteria list for each radio type.

NOTE: The tertiary list should contain the most relaxed restrictions. If NPT cannot assign frequencies to all links based on the primary criteria, it will try using the secondary and tertiary criteria.

- c. Performed frequency assignment by selecting the Frequency Assignment Option of NPT and the method of assignment.

(NOTE: If NPT is unable to assign frequencies to all the links, you must either relax the selection criteria or select a different method of assignment. After the frequencies are assigned, the link reliability is reevaluated using Interactive Asset Placement.

- d. Assigned VHF frequencies.

NOTE: VHF assignments are recommended for MSRTs and RAUs through the use of VHF Planning and Management. You may create your own frequency resource or you may load a resource via floppy disk. Once a frequency resource is generated, you can specify the number of pairs assigned and the assignment strategy. A list of frequency pairs is generated to create a VHF plan. You may also manually enter a frequency plan. VHF plans are then distributed to the RAU GLUs and activated at the appropriate time.

- 7. Analyzed EW threat. \_\_\_\_\_
  - a. Positioned the EW threat platform.
    - (1) Input the characteristics of the jammer elements by referring to the appropriate threat documentation.
    - (2) Coordinated with military intelligence, if in a tactical environment, to define the position and emitter type of the jammer.

**Performance Measures**

**GO**    **NO GO**

- b. Displayed EW effects.
  - (1) Selected the option to display the effects of EW threats on your network.
  - (2) Modified the sites and/or links if link reliability degrades to unacceptable.
- c. Responded to EW threats by using Net Planning - Network Connectivity Optimization to suggest site locations that will provide upgraded link performance.

8. Reassigned frequencies as required.

\_\_\_\_\_

NOTE: The NPT frequency assignment algorithm depends on the network geometry. Therefore, after site and/or link modification is incorporated, the network frequencies must be reassigned by using Network Planning - Frequency Assignment.

9. Obtained approval of the planned ECB/EAC network from the S3 OIC/NCOIC.

\_\_\_\_\_

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

**References**

**Required**

COMMANDERS BATTLE PLAN  
 FM 11-55  
 MISSION STATEMENT

**Related**

TB 11-5895-1544-10-1  
 TB 11-5895-1544-10-2

**Engineer an EAC Network**  
**113-613-5006**

**Conditions:** Given the task to engineer an EAC network, mission statement/commander's battle plan, unit OPORD/OPLAN, user service requests, subscriber analysis, signal site allocation, resource definition printouts from the CSCE, paper maps of the area of operation, FM 11-55, TM 11-5820-934-13-1-1, TM 11-5820-934-13-2-1, TM 11-5820-1135-12, TM 11-5820-1136-12, TM 11-5820-1137-12, TM 11-5820-1138-12, TM 11-5805-796-12-1, TB 11-7010-248-10, TM 11-5895-1392-12, TM 11-5895-1434-12-1, TM 11-5895-1433-12-1, TM 11-5805-798-12-1, TM 11-5805-765-12-1, and TM 11-5805-764-13-1.

**Standards:** Engineered EAC network to meet the requirements of the mission statement/commander's battle plan and obtained approval for the EAC network from the S3 OIC/NCOIC.

**Performance Steps**

1. Prepare the system/network backbone diagram IAW the mission statement/commander's battle plan and the OPORD/OPLAN.
2. Prepare map overlays.
  - a. Plot corps/division boundaries.
  - b. Plot site (NC, LENS, SENS, RAU/MSRT, LOS, and so forth).
  - c. Plot the internodal link requirements.
  - d. Plot the placement of extension links, to include with and without down-the-hill (DTH) requirements.
  - e. Plot RAU/MSRT coverage and layout.
3. Prepare an NC configuration time line.
4. Prepare a bypass and duplication requirements list.
5. Prepare an EUB requirements list.
6. Prepare a COMSEC key distribution/control and procedures checklist to include the following:
  - a. Prepositioning COMSEC key requirements.
  - b. COMSEC bulk transfer requirements and procedures.
7. Prepare network requirements for combat net radio interface (CNRI), commercial access, TROPO, TACSAT, non-MSE, and gateway interfaces.
8. Prepare project/assignment work sheets for the AN/TYQ-46(V) including:
  - a. General information.
  - b. Link data status.
  - c. Equipment status.
  - d. Personnel status.
9. Prepare an order message designating corps/division boundaries.
10. Prepare an order message to request the LOS frequency plan.
11. Prepare an order message to request the VHF plan.
12. Prepare an order message to change/modify the NS database.
13. Prepare an order message to change/modify the LENS database.
14. Prepare a subscriber classmarks/profile/assignment.
15. Review the network plan and make necessary changes.
16. Obtain final approval of the EAC network from S3 OIC/NCOIC.

<b>Performance Measures</b>	<b><u>GO</u></b>	<b><u>NO GO</u></b>
1. Prepared the system/network backbone diagram IAW the mission statement/commander's battle plan and the OPORD/OPLAN.	—	—
2. Prepared map overlays. <ul style="list-style-type: none"> <li>a. Plotted corps/division boundaries.</li> <li>b. Plotted site (NC, LENS, SENS, RAU/MSRT, LOS, and so forth).</li> <li>c. Plotted the internodal link requirements.</li> <li>d. Plotted the placement of extension links, to include with and without DTH requirements.</li> <li>e. Plotted RAU/MSRT coverage and layout.</li> </ul>	—	—
3. Prepared an NC configuration time line.	—	—
4. Prepared a bypass and duplication requirements list.	—	—
5. Prepared an EUB requirements list.	—	—
6. Prepared a COMSEC key distribution/control and procedures checklist to include the following: <ul style="list-style-type: none"> <li>a. Positioned COMSEC key requirements.</li> <li>b. COMSEC bulk transfer requirements and procedures.</li> </ul>	—	—
7. Prepared network requirements for CNRI, commercial access, TROPO, TACSAT, non-MSE, and gateway interfaces.	—	—
8. Prepared project/assignment work sheets for the AN/TYQ-46(V) including: <ul style="list-style-type: none"> <li>a. General information.</li> <li>b. Linked data status.</li> <li>c. Equipment status.</li> <li>d. Personnel status.</li> </ul>	—	—
9. Prepared an order message designating corps/division boundaries.	—	—
10. Prepared an order message to request the LOS frequency plan.	—	—
11. Prepared an order message to request the VHF plan.	—	—
12. Prepared an order message to change/modify the NS database.	—	—
13. Prepared an order message to change/modify the LENS database.	—	—
14. Prepared a subscriber classmarks/profile/assignment.	—	—
15. Reviewed the network plan and make necessary changes.	—	—
16. Obtained final approval of the EAC network from S3 OIC/NCOIC.	—	—

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

**References**

**Required**

COMMANDERS BATTLE PLAN  
FM 11-55  
MISSION STATEMENT  
TB 11-7010-248-10  
TM 11-5805-764-13-1  
TM 11-5805-765-12-1  
TM 11-5805-796-12-1  
TM 11-5805-798-12-1  
TM 11-5820-1135-12  
TM 11-5820-1136-12  
TM 11-5820-1137-12  
TM 11-5820-1138-12  
TM 11-5820-934-13-1-1  
TM 11-5820-934-13-2-1  
TM 11-5895-1392-12  
TM 11-5895-1433-12-1  
TM 11-5895-1434-12-1  
UNIT OPLAN  
UNIT OPORD

**Related**

FM 11-41  
FM 11-45  
FM 24-11  
TM 11-5800-216-10-1  
TM 11-5800-216-10-2

**Prepare the Signal Annex to the Operations Order (OPORD)**

**113-611-5014**

**Conditions:** Given an OPOrd, user requirements, DA Form 2406 (Materiel Condition Status Report), FM 24-16, FM 101-5, and AR 380-5.

**Standards:** Prepared signal annex IAW with FM 24-16, FM 101-5, and AR 380-5; and obtained approval of signal annex from S3.

**Performance Steps**

**NOTE:** In order to prepare the signal annex to the OPOrd, it is necessary to review the OPOrd in detail so you have a complete understanding of the signal requirements to support the mission. You must also understand the contents of the SOP, SOI, and material status reports (DA Form 2406).

1. Analyze the mission as it pertains to CE responsibility.
  - a. Read the SOP.
  - b. Read the SOI.
  - c. Read material status reports (DA Form 2406).
  - d. Read OPLAN or fragmentary order (FRAGO).
2. Determine the Signal System planning requirements.
3. Prepare the signal annex.
  - a. Prepare heading and classification with the same classification as the basic OPOrd.
  - b. Prepare Paragraph 1 (Situation), briefly giving a general picture so subordinate commanders will understand the current situation.
    - (1) Prepare subparagraph regarding Enemy Forces.
    - (2) Prepare subparagraph regarding friendly forces, amplifying only information pertinent to the operation of the signal unit, where required, to clarify the mission.
    - (3) Prepare subparagraph regarding attached and detached Signal units with the effective date and time of the attachment or detachment from the issuing headquarters.

**NOTE:** If these units are indicated in a task organization, enter the appropriate reference.

- (4) Prepare subparagraph regarding Commander's Evaluation.

**NOTE:** This is an optional subparagraph to be used when directed or required. It gives the commander's evaluation of the situation.

- c. Prepare Paragraph 2 (Mission), briefly stating the missions that are assigned to the unit or assumed by the unit commander.

**NOTE:** When the missions are as stated in the command operations, service operations, service support orders, or their annexes, the missions may be extracted and amplified as necessary to ensure clarity.

This paragraph is never subparagraphed.

- d. Prepare Paragraph 3 (Execution), stating the Signal unit commander's concept of the operation and the tasks assigned to each major element of the signal unit.

**NOTE:** Task assignments may be made by simply referring to the unit SOP if they have been adequately and appropriately covered; otherwise, the tasks assigned to appropriate elements of the units are stated in this paragraph. Overlays, maps, or diagrams may be used to indicate task assignments. The last subparagraph includes appropriate coordinating instructions when instructions are applicable to two or more elements of the command.

- e. Prepare Paragraph 4 (Service Support), stating essential information pertaining to the procedures for obtaining service support not covered by the unit SOP, other orders, or instructions.

**NOTE:** It lists the locations on the administrative, supply, and maintenance installations that provide support to the unit; or it makes reference to a service support order or annex that contains service support information.

- f. Prepare Paragraph 5 (Command and Signal).



**Performance Steps**

- (1) Prepare Subparagraph a, stating the appropriate reference to the applicable portion of the SOI to be in effect and special instructions relating to signal matters, such as instructions on the use of pyrotechnics or restrictions on the employment of any means of communications.
- (2) Prepare Subparagraph b, including the location of the command post (CP) of the issuing unit (if not shown graphically) and the location of the CP.

NOTE: Subparagraph b may also include the CP locations of subordinate units; the CP location of the next higher headquarters; and the designation of the active and standby tactical CPs.

- (3) Prepare Subparagraph c, which will contain information on future locations of major headquarters, if a signal annex is not published.

g. Prepare the order.

NOTE: The preparation of the order is a logical and systematic procedure. It is the product of a coordinated effort by the commander and his staff. The ideal situation is to make a formal estimate of the situation, develop a formal plan, and follow with the order. Because of the type of operation and time available, you have the luxury of developing a textbook order. In a tactical environment, surprise is a key factor so you will not sacrifice the element of surprise to mull over the estimate and plan before issuing the order.

h. Distribute the order.

NOTE: In developing and distributing the order, consider the time it takes subordinate units to prepare and plan for the operation or the order will lose its effectiveness. If there is not sufficient time to develop a formal OPORD, you may have to use a series of FRAGOs, a previously prepared plan, or a combination of directives, orders, and instructions.

- 4. Prepare appendixes for the signal annex (as required).

NOTE: A signal unit OPORD is identical in formation to the signal annex of an OPORD. It normally expands the signal annex.

**Evaluation Preparation:** Setup: You will be provided with an OPORD, DA Form 2406, a field SOP, and a FRAGO (if applicable). Brief Soldier: You must prepare a Signal Annex for the OPORD.

**Performance Measures**

**GO      NO GO**

NOTE: In order to prepare the signal annex to the OPORD, it is necessary to review the OPORD in detail so you have a complete understanding of the signal requirements to support the mission. You must also understand the contents of the SOP, SOI, and material status reports (DA Form 2406).

- |  |  |       |       |       |       |       |       |
|--|--|-------|-------|-------|-------|-------|-------|
| <ul style="list-style-type: none"> <li>1. Analyzed the mission as it pertains to CE responsibility.                             <ul style="list-style-type: none"> <li>a. Read the SOP.</li> <li>b. Read the SOI.</li> <li>c. Read material status reports (DA Form 2406).</li> <li>d. Read OPLAN or FRAGO.</li> </ul> </li> <li>2. Determined the Signal System planning requirements.</li> <li>3. Prepared the signal annex.                             <ul style="list-style-type: none"> <li>a. Prepared heading and classification with the same classification as the basic OPORD.</li> <li>b. Prepared Paragraph 1 (Situation), briefly giving a general picture so subordinate commanders will understand the current situation.                                     <ul style="list-style-type: none"> <li>(1) Prepared subparagraph regarding Enemy Forces.</li> <li>(2) Prepared subparagraph regarding friendly forces, amplifying only information pertinent to the operation of the signal unit, where required, to clarify the mission.</li> <li>(3) Prepared subparagraph regarding attached and detached Signal units with the effective date and time of the attachment or detachment from the issuing headquarters.</li> </ul> </li> </ul> </li> </ul> | <table border="0"> <tr> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> </table> | _____ | _____ | _____ | _____ | _____ | _____ |
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| _____  | _____  |       |       |       |       |       |       |

**Performance Measures****GO**    **NO GO**

NOTE: If these units are indicated in a task organization, enter the appropriate reference.

(4) Prepared subparagraph regarding Commander's Evaluation.

NOTE: This is an optional subparagraph to be used when directed or required. It gives the commander's evaluation of the situation.

c. Prepared Paragraph 2 (Mission), briefly stating the missions that are assigned to the unit or assumed by the unit commander.

NOTE: When the missions are as stated in the command operations, service operations, service support orders, or their annexes, the missions may be extracted and amplified as necessary to ensure clarity. This paragraph is never subparagraphed.

d. Prepared Paragraph 3 (Execution), stating the Signal unit commander's concept of the operation and the tasks assigned to each major element of the signal unit.

NOTE: Task assignments may be made by simply referring to the unit SOP if they have been adequately and appropriately covered; otherwise, the tasks assigned to appropriate elements of the units are stated in this paragraph. Overlays, maps, or diagrams may be used to indicate task assignments. The last subparagraph includes appropriate coordinating instructions when instructions are applicable to two or more elements of the command.

e. Prepared Paragraph 4 (Service Support), stating essential information pertaining to the procedures for obtaining service support not covered by the unit SOP, other orders, or instructions.

NOTE: It lists the locations on the administrative, supply, and maintenance installations that provide support to the unit; or it makes reference to a service support order or annex that contains service support information.

f. Prepared Paragraph 5 (Command and Signal).

(1) Prepared Subparagraph a, stating the appropriate reference to the applicable portion of the SOI to be in effect and special instructions relating to signal matters, such as instructions on the use of pyrotechnics or restrictions on the employment of any means of communications.

(2) Prepared Subparagraph b, including the location of the CP of the issuing unit (if not shown graphically) and the location of the CP.

NOTE: Subparagraph b may also include the CP locations of subordinate units; the CP location of the next higher headquarters; and the designation of the active and standby tactical CPs.

(3) Prepared Subparagraph c, which will contain information on future locations of major headquarters, if a signal annex is not published.

g. Prepared the order.

NOTE: The preparation of the order is a logical and systematic procedure. It is the product of a coordinated effort by the commander and his staff. The ideal situation is to make a formal estimate of the situation, develop a formal plan, and follow with the order. Because of the type of operation and time available, you have the luxury of developing a textbook order. In a tactical environment, surprise is a key factor so you will not sacrifice the element of surprise to mull over the estimate and plan before issuing the order.

h. Distributed the order.

NOTE: In developing and distributing the order, consider the time it takes subordinate units to prepare and plan for the operation or the order will lose its effectiveness. If there is not sufficient time to develop a formal OPORD, you may have to use a series of FRAGOs, a previously prepared plan, or a combination of directives, orders, and instructions.

4. Prepared appendixes for the signal annex (as required).

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**Performance Measures**

GO   NO GO

NOTE: A signal unit OPORD is identical in formation to the signal annex of an OPORD. It normally expands the signal annex.

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

**References**

**Required**

AR 380-5  
DA FORM 2406  
FM 101-5  
FM 24-16  
UNIT OPORD

**Related**

Subject Area 4: Signal System/Installation Operations

**Distribute Communications Security (COMSEC) Keys  
113-609-6003**

**Conditions:** Given an OPORD/OPLAN, identification of fill devices, identification of the users to receive and sign for the fill devices, and procedures to verify the accountability of keys on COMSEC key control logs.

**Standards:** Distributed COMSEC keys IAW OPORD/OPLAN.

**Performance Steps**

1. Review the OPORD/OPLAN.
  - a. Determine COMSEC key distribution.
  - b. Determine type of generation requirements.
2. Determine the repositioning of COMSEC required.
  - a. Refer to commander's battle plan.
  - b. Refer to the OPORD/OPLAN.
3. Identify the TSEC/KGX-93 AKDC at the primary node center (PNC) to be activated when automatic keying is required.
4. Identify the fill devices to be loaded when manual keying is required.
5. Identify the user to receive (pick up and sign for) the fill devices.  
NOTE: Refer to the OPORD/OPLAN.
6. Determine the procedures to verify the accountability of keys on COMSEC key control logs.

**Evaluation Preparation:** Setup: Not Applicable. Brief Soldier: You will plan the distribution of COMSEC keys to all network assemblages.

<b>Performance Measures</b>	<b><u>GO</u></b>	<b><u>NO GO</u></b>
1. Reviewed the OPORD/OPLAN. <ol style="list-style-type: none"> <li>a. Determined COMSEC key distribution.</li> <li>b. Determined type of generation requirements.</li> </ol>	—	—
2. Determined the repositioning of COMSEC required. <ol style="list-style-type: none"> <li>a. Referred to commander's battle plan.</li> <li>b. Referred to the OPORD/OPLAN.</li> </ol>	—	—
3. Identified the TSEC/KGX-93 AKDC at the PNC to be activated when automatic keying is required.	—	—
4. Identified the fill devices to be loaded when manual keying is required.	—	—
5. Identified the user to receive (pick up and sign for) the fill devices. NOTE: Referred to the OPORD/OPLAN.	—	—
6. Determined the procedures to verify the accountability of keys on COMSEC key control logs.	—	—

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

**References**

**Required**  
UNIT OPLAN  
UNIT OPORD

**Related**  
TM 11-5805-766-12-1  
TM 11-5805-766-12-2  
TM 11-5805-766-12-3  
TM 11-5805-766-12-4

**Check the Establishment of a Secure Digital Group Multiplexing Radio Assemblage  
113-606-2051**

**Conditions:** Given an active signal node with DGM radio assemblages, unit OPORD/OPLAN, DGM terminal configuration crew assignment sheets, paper maps of area of operation, protractor, compass, operational site diagram, TM 11-5820-864-12-1, TM 11-5820-865-12-1, TM 11-5820-926-12-1, TM 11-5820-931-12-1, TM 11-5820-934-13-1-1, and TM 11-5820-934-13-1-2.

**Standards:** Checked the establishment of a secure digital group multiplexing radio assemblage to ensure it met the mission requirements of your unit.

**Performance Steps**

1. Review the OPORD/OPLAN to determine the site location.
2. Ensure preliminary checks are completed.
3. Check the installation of the multiplexing radio assemblages.
4. Check the initialization of the multiplexing radio assemblages.
5. Evaluate performance and make corrections required.

**Performance Measures**

1. Reviewed the OPORD/OPLAN to determine the site location.
2. Ensured preliminary checks are completed.
3. Checked the installation of the multiplexing radio assemblages.
4. Checked the initialization of the multiplexing radio assemblages.
5. Evaluated performance and make corrections required.

<u>GO</u>	<u>NO GO</u>
—	—
—	—
—	—
—	—
—	—

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

**References**

**Required**

- TM 11-5820-864-12-1
- TM 11-5820-865-12-1
- TM 11-5820-926-12-1
- TM 11-5820-931-12-1
- TM 11-5820-934-13-1-1
- TM 11-5820-934-13-1-2
- UNIT OPLAN
- UNIT OPORD

**Related**

**Verify the Installation of a Single Shelter Switch (SSS) AN/TCC-56  
113-603-7042**

**Conditions:** Given an AN/TTC-56, auxiliary power unit 10 KW MEP-903C, diesel generator set 10KW PU-798, TM 11-5805-802-13&P, TM 9-6115-642-10, and TM 11-5805-804-13&P.

**DANGER:** HIGH VOLTAGE is used in this equipment. Be careful when working near equipment interior or AC power distribution. DEATH on contact may result if safety precautions are not observed. Observe technical manuals' warning notes and warning decals on the equipment.

**Standards:** Ensured initialization procedures were completed.

**Performance Steps**

(Refer to TM 11-5805-802-13&P and TM 11-5805-804-13&P for all performance steps.)

1. Select site.
2. Ensure equipment is properly positioned.
3. Verify truck(s) and trailer(s) are level.
4. Verify DAMP is properly grounded and powered up.
5. Verify system is grounded.
6. Verify auxiliary power unit (APU) is grounded and powered up.
7. Verify system is initialized.

**Performance Measures**

(Refer to TM 11-5805-802-13&P and TM 11-5805-804-13&P for all PMs.)

	<u>GO</u>	<u>NO GO</u>
1. Selected site.	___	___
2. Ensured equipment is properly positioned.	___	___
3. Verified the truck(s) and trailer(s) are level.	___	___
4. Verified DAMP is properly grounded and powered up.	___	___
5. Verified system is grounded.	___	___
6. Verified APU is grounded and powered up.	___	___
7. Verified system is initialized.	___	___

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

**References**

<b>Required</b>	<b>Related</b>
TM 11-5805-802-13&P	
TM 11-5805-804-13&P	
TM 9-6115-642-10	

**Verify the installation of the Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T)  
AN/TSC-154  
113-589-7131**

**Conditions:** Given a vehicle-mounted SMART-T AN/TSC-154 with power source, a supervisor and soldiers, 8-pound sledgehammer, grounding kit, ground rod, WF-16, TM 11-5895-1612-12, and TM 11-6115-481-13.

**Standards:** System was operational when the vehicle-mounted SMART-T AC power was applied.

**Performance Steps**

(Refer to TM 11-5895-1612-12 for all performance steps.)

1. Select site.
2. Verify positioning of equipment.
3. Verify leveling of pallet trucks and trailer.
4. Verify grounding of the SMART-T.
5. Verify preliminary servicing and adjustment of equipment.
6. Verify generator pre-checks and start-up procedures.
7. Verify generator prime power source of 26 - 27 VDC.
8. Verify database.
9. Verify global positioning system (GPS) cryptographic key.
10. Verify zeroized key.
11. Verify PMCS.

**Performance Measures**

(Refer to TM 11-5895-1612-12 for all PMs.)

	<u>GO</u>	<u>NO GO</u>
1. Selected site.	_____	_____
2. Verified positioning of equipment.	_____	_____
3. Verified leveling of pallet trucks and trailer.	_____	_____
4. Verified grounding of the SMART-T.	_____	_____
5. Verified preliminary servicing and adjustment of equipment.	_____	_____
6. Verified generator pre-checks and start-up procedures.	_____	_____
7. Verified generator prime power source of 26 - 27 VDC.	_____	_____
8. Verified database.	_____	_____
9. Verified GPS cryptographic key.	_____	_____
10. Verified zeroized key.	_____	_____
11. Verified PMCS.	_____	_____



**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

**References**

**Required**

TM 11-5895-1612-12

TM 11-6115-481-13

**Related**

**Direct the Establishment of a Signal Site Defense**

**113-611-5016**

**Conditions:** Given a specified area to defend, a Signal platoon, the unit SOP, map, protractor, OPORD, a requirement to defend that area, STP 21-1-SMCT, STP 21-24-SMCT and AR 380-5..

**Standards:** Planned and established site defense and prepared site defense overlay.

**Performance Steps**

1. Design a tentative site-defense plan.

NOTE: A well-prepared site defense plan gives advance warning of attackers, reduces the number of possible approach routes, and assists in denying or delaying penetration by the enemy.

2. Position security outposts around the site to provide early warning of an enemy approach.

NOTE: Listening and observation posts should be established and manned as personnel and mission requirements permit.

- a. Establish posts outside the security zone in protected locations.
- b. Establish posts in locations that provide an unobstructed view of possible avenues of enemy approach.

3. Establish entrance/exit points and lanes for traffic flow within the site.

NOTE: Protective physical barriers must be established to provide security for the security zone.

- a. Determine the size of the area by the complexity of the site and the degree of compartmentalization required.
- b. Establish positive barriers to:
  - (1) Control vehicular and pedestrian traffic flow.
  - (2) Check identification of personnel entering or departing.
  - (3) Define a buffer zone for more highly classified areas.

4. Coordinate with engineer elements for assistance in establishing field fortifications for communication assemblages, as required.

5. Direct the location and construction of individual and crew-served fighting positions.

- a. Locate these positions to take maximum advantage of natural cover and concealment.
- b. Locate these positions to provide good, clear fields of fire so a credible defense of the site is accomplished.
- c. Construct individual fighting positions as small as possible, but large enough for individual soldiers in full combat gear.
- d. Construct overhead protection if time and the tactical situation permit.
- e. Construct crew-served weapons fighting positions larger than individual fighting positions due to the requirements for two or more soldiers to man the weapons.
- f. Construct crew-served weapons fighting positions to provide for firing positions for both the crew-served weapons and the individual weapons of the soldiers.

6. Direct the installation of artificial obstacles, as required.

NOTE: Use concertina wire when it is available, especially around areas where classified information or materials is located. The unit SOP will provide additional guidance on the use of the barrier material.

7. Identify and locate focal points for command and control of the site defense.

8. Plan for orderly withdrawal, to include:

- a. Specific instructions for destruction of material, which cannot be evacuated.

NOTE: In the event it becomes necessary to withdraw from a location, materials ranging from classified papers to equipment may have to be destroyed in place. The unit SOP will contain instructions for the implementation of site destruction plans. The procedures to follow for the destruction of classified material are contained in AR 380-5, page 19, paragraph 3-16.

- b. Positive controls for implementation of the destruction plan.

**Evaluation Preparation:** Setup: You are provided with an operational tactical signal site, equipment, and personnel. Brief Soldier: You will direct the establishment of a site defense.

<b>Performance Measures</b>	<b><u>GO</u></b>	<b><u>NO GO</u></b>
<p>1. Designed a tentative site-defense plan.</p> <p>NOTE: A well-prepared site defense plan gives advance warning of attackers, reduces the number of possible approach routes, and assists in denying or delaying penetration by the enemy.</p>	—	—
<p>2. Positioned security outposts around the site to provide early warning of an enemy approach.</p> <p>NOTE: Listening and observation posts should be established and manned as personnel and mission requirements permit.</p> <p>a. Established posts outside the security zone in protected locations.</p> <p>b. Established posts in locations that provide an unobstructed view of possible avenues of enemy approach.</p>	—	—
<p>3. Established entrance/exit points and lanes for traffic flow within the site.</p> <p>NOTE: Protective physical barriers must be established to provide security for the security zone.</p> <p>a. Determined the size of the area by the complexity of the site and the degree of compartmentalization required.</p> <p>b. Established positive barriers to:</p> <p>(1) Control vehicular and pedestrian traffic flow.</p> <p>(2) Check identification of personnel entering or departing.</p> <p>(3) Define a buffer zone for more highly classified areas.</p>	—	—
<p>4. Coordinated with engineer elements for assistance in establishing field fortifications for communication assemblages, as required.</p>	—	—
<p>5. Directed the location and construction of individual and crew-served fighting positions.</p> <p>a. Located these positions to take maximum advantage of natural cover and concealment.</p> <p>b. Located these positions to provide good, clear fields of fire so a credible defense of the site is accomplished.</p> <p>c. Constructed individual fighting positions as small as possible, but large enough for individual soldiers in full combat gear.</p> <p>d. Constructed overhead protection if time and the tactical situation permit.</p> <p>e. Constructed crew-served weapons fighting positions larger than individual fighting positions due to the requirements for two or more soldiers to man the weapons.</p> <p>f. Constructed crew-served weapons fighting positions to provide for firing positions for both the crew-served weapons and the individual weapons of the soldiers.</p>	—	—
<p>6. Directed the installation of artificial obstacles, as required.</p> <p>NOTE: Use concertina wire when it is available, especially around areas where classified information or materials is located. The unit SOP will provide additional guidance on the use of the barrier material.</p>	—	—
<p>7. Identified and located focal points for command and control of the site defense.</p>	—	—
<p>8. Planned for orderly withdrawal, to include:</p> <p>a. Specified instructions for destruction of material, which cannot be evacuated.</p>	—	—

**Performance Measures**

**GO    NO GO**

NOTE: In the event it becomes necessary to withdraw from a location, materials ranging from classified papers to equipment may have to be destroyed in place. The unit SOP will contain instructions for the implementation of site destruction plans. The procedures to follow for the destruction of classified material are contained in AR 380-5, page 19, paragraph 3-16.

- b. Positive controls for implementation of the destruction plan.

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

**References**

**Required**

AR 380-5  
STP 21-1-SMCT  
STP 21-24-SMCT  
UNIT OPORD  
UNIT SOP

**Related**

FM 21-75  
TC 24-21

**Supervise Router Configuration of a Network**  
**113-583-7103**

**Conditions:** Given the mission requirements to provide data connectivity through the router in a tactical environment, a data network, unit OPORD, and the Global Circuit Switch Quick Reference Guide.

**Standards:** Supervised successful configuration of router to support the network requirements IAW the unit OPORD.

**Performance Steps**

(Refer to the unit OPORD for all performance steps).

1. Supervise configuration of inter-network operating system.
2. Supervise configuration of the host name.
3. Supervise configuration of the interface Internet protocol (IP) address and subnet mask.
4. Supervise configuration of the router for Open Shortest Path First (OSPF) 21.
  - a. Identify advertised networks.
  - b. Identify inverse mask.
  - c. Identify area.
5. Supervise configuration of the router for Border Gateway Protocol (BGP).
  - a. Identify the autonomous system number (ASN).
  - b. Identify the neighbor.
6. Supervise configuration of access list. (Applied to OSPF and BGP statements.)
7. Supervise configuration of the simple network management protocol (SNMP)-server community string.
8. Supervise configuration of the passwords for telnet access.

**Performance Measures**

(Refer to the unit OPORD for all PMs).

	<u>GO</u>	<u>NO GO</u>
1. Supervised configuration of inter-network operating system.	___	___
2. Supervised configuration of the host name.	___	___
3. Supervised configuration of the interface IP address and subnet mask.	___	___
4. Supervised configuration of the router for OSPF 21. <ol style="list-style-type: none"> <li>a. Identified advertised networks.</li> <li>b. Identified inverse mask.</li> <li>c. Identified area.</li> </ol>	___	___
5. Supervised configuration of the router for BGP. <ol style="list-style-type: none"> <li>a. Identified the ASN.</li> <li>b. Identified the neighbor.</li> </ol>	___	___
6. Supervised configuration of access list. (Applied to OSPF and BGP statements.)	___	___
7. Supervised configuration of the SNMP-server community string.	___	___
8. Supervised configuration of the passwords for telnet access.	___	___

## STP 11-31W4-SM-TG

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

### References

#### Required

QUICK REFERENCE GUIDE 3  
UNIT OPORD

#### Related

## Verify the Establishment of a Radio Access Unit (RAU)

113-625-7010

**Conditions:** Given an authorized table of organization and equipment/table of distribution and allowances (TOE/TDA), personnel, equipment with the required generation capability, one AN/TRC-190(V)1 LOS radio assemblage with generator, AN/TRC-191 RAU, TMs 11-5800-216-10-1/2/3/4, TMs 11-5820-1022-13-1/2/3, and TMs 11-5820-1023-13-1/2/3.

**Standards:** Verified remote RAU was operational and awaiting orders from ISYSCON operator to start transmitting the RAU marker.

### Performance Steps

NOTE: The AN/TRC-191 RAU can be deployed in two configurations, local and remote.

1. Review the OPORD/OPLAN to determine equipment site locations.
2. Notify the node management facility (NMF) manager when the RAU is operational and ready to activate the RAU.

NOTE: The backbone system must be installed with a minimum of two solid/active links.

3. Verify that each NMF manager notifies the ISYSCON operator when the RAU is ready to be activated.
4. Verify that the NMF manager activates the RAU when the connected node links are active and the ISYSCON transmits the project order message.
5. Verify that the NMF directs, monitors, and assists (interacts with) the RAU operation or operator.  
The NMF will:
  - a. Verify that the RAU operator activates the RAU and affiliates the RAU DSVT(s).
  - b. Verify that the RAU operator then places a call from the RAU DSVTs to all other NMFs of their node switch group.

NOTE: If calls cannot be completed at any time, the operator notifies the NMF manager and waits for instructions.

- c. Verify that if calls are completed, the RAU operator affiliates the group logic unit (GLU) and notifies the NMF manager.
- d. Verify that when all calls cannot be completed, the NMF manager transmits a message to the ISYSCON operator for COMSEC verification, a new set of COMSEC keys, or additional instructions that pertain to the total network operations.
- e. Verify that if the GLU is affiliated, the NMF manager places a call to the GLU directory number and transmits a frequency plan request to the ISYSCON operator.
- f. Verify that the ISYSCON operator downloads the RAU/MSRT frequency plan to the GLU and sends an operational message RAU/MSRT frequency plan activated.

NOTE: If no message is received, request the frequency plan again.

- g. Verify that after the RAU/MSRT frequency plan message is received and logged by the NMF and RAU operators, the RAU operator activates the marker beacon.
6. Verify the installation of the RAU. (Refer to TMs 11-5820-1022-13-1/2/3).
7. Verify the operation of the RAU. (Refer to TMs 11-5820-1022-13-1/2/3).
8. Verify the installation and operation of the LOS AN/TRC/190(V)1 radio assemblage. (Refer to TMs 11-5820-11023-13-1/2/3).
9. Verify the installation of the remote RAU. (Refer to TMs 11-5820-1022-13-1/2/3).
10. Verify the operation of the remote RAU. (Refer to TMs 11-5820-1022-13-1/2/3).
11. Evaluate and take corrective action, as required.

**STP 11-31W4-SM-TG**

**Performance Measures**

**GO      NO GO**

NOTE: The AN/TRC-191 RAU can be deployed in two configurations, local and remote.

- |  |   |   |
|--|---|---|
| 1. Reviewed the OPORD/OPLAN to determine equipment site locations.                     | — | — |
| 2. Notified the NMF manager when the RAU is operational and ready to activate the RAU. | — | — |

NOTE: The backbone system must be installed with a minimum of two solid/active links.

- |  |   |   |
|--|---|---|
| 3. Verified that each NMF manager notifies the ISYSCON operator when the RAU is ready to be activated.   | — | — |
| 4. Verified that the NMF manager activates the RAU when the connected node links are active and the ISYSCON transmits the project order message. | — | — |
| 5. Verified that the NMF directs, monitors, and assists (interacts with) the RAU operation or operator. The NMF will:                            | — | — |
| a. Verified that the RAU operator activates the RAU and affiliates the RAU DSVT(s).  |   |   |
| b. Verified that the RAU operator then places a call from the RAU DSVTs to all other NMFs of their node switch group.                            |   |   |

NOTE: If calls cannot be completed at any time, the operator notifies the NMF manager and waits for instructions.

- |  |  |  |
|--|--|--|
| c. Verified that if calls are completed, the RAU operator affiliates the GLU and notifies the NMF manager.   |  |  |
| d. Verified that when all calls cannot be completed, the NMF manager transmits a message to the ISYSCON operator for COMSEC verification, a new set of COMSEC keys, or additional instructions that pertain to the total network operations. |  |  |
| e. Verified that if the GLU is affiliated, the NMF manager places a call to the GLU directory number and transmits a frequency plan request to the ISYSCON operator.   |  |  |
| f. Verified that the ISYSCON operator downloads the RAU/MSRT frequency plan to the GLU and sends an operational message RAU/MSRT frequency plan activated.   |  |  |

NOTE: If no message is received, request the frequency plan again.

- |   |  |  |
|---|--|--|
| g. Verified that after the RAU/MSRT frequency plan message is received and logged by the NMF and RAU operators, the RAU operator activates the marker beacon. |  |  |
|---|--|--|

- |  |   |   |
|--|---|---|
| 6. Verified the installation of the RAU. (Refer to TMs 11-5820-1022-13-1/2/3).   | — | — |
| 7. Verified the operation of the RAU. (Refer to TMs 11-5820-1022-13-1/2/3).  | — | — |
| 8. Verified the installation and operation of the LOS AN/TRC/190(V)1 radio assemblage. (Refer to TMs 11-5820-1023-13-1/2/3). | — | — |
| 9. Verified the installation of the remote RAU. (Refer to TMs 11-5820-1022-13-1/2/3).  | — | — |
| 10. Verified the operation of the remote RAU. (Refer to TMs 11-5820-1022-13-1/2/3).  | — | — |
| 11. Evaluated and took corrective action, as required.   | — | — |

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.



**References**

**Required**

TM 11-5800-216-10-1  
TM 11-5800-216-10-2  
TM 11-5800-216-10-3  
TM 11-5800-216-10-4  
TM 11-5820-1022-13-1  
TM 11-5820-1022-13-2  
TM 11-5820-1022-13-3  
TM 11-5820-1023-13-1  
TM 11-5820-1023-13-2  
TM 11-5820-1023-13-3

**Related**

TM 11-5820-1027-13&P

**Direct the Establishment of a Node Center at ECB**

**113-625-7004**

**Conditions:** Given a requirement to establish an NC in a MSE-ECB network, OPORD/OPLAN, paper map of the area of operation, compass, protractor, operational site diagram, one NS, AN/TTC-47; four LOS radio assemblies, AN/TRC-190(V)3; one RAU, AN/TRC-191; one SEN, AN/TTC-48; one NMF, AN/TSQ-154; support vehicles as required by mission; and one ISYSCON center (if required by the OPORD/OPLAN).

**Standards:** Directed site placement, initialization, and operability of NC and verified all cables were connected to meet the communications requirements of the unit OPORD/OPLAN.

**Performance Steps**

(Refer to the unit OPORD/OPLAN for all performance steps.)

1. Review the operational site diagram to determine the proper placement of the assemblages.
2. Direct the installation and operation of the NS.
3. Direct the installation and operation of the four LOS assemblages.
4. Direct the installation and operation of the local SENS.
5. Direct the installation and operation of the local RAU.
6. Direct the site placement of support vehicles.
7. Direct the site placement of the ISYSCON (if required by OPORD/OPLAN).
8. Plan a field cable/wire system (if required by OPORD/OPLAN).
  - a. Check availability of:
    - (1) Material.
    - (2) Number and type of circuits required.
    - (3) Number of lines required.
    - (4) Number of lines available.
    - (5) Time permitted for installation.
    - (6) Type of terrain.
  - b. Perform reconnaissance of available cable/wire routes.
  - c. Select the proper route for cable/wire that best supports the mission.
  - d. Prepare a line route map, if required.

**Performance Measures**

(Refer to the unit OPORD/OPLAN for all PMs.)

	<u>GO</u>	<u>NO GO</u>
1. Reviewed the operational site diagram to determine the proper placement of the assemblages.	—	—
2. Directed the installation and operation of the NS.	—	—
3. Directed the installation and operation of the four LOS assemblages.	—	—
4. Directed the installation and operation of the local SENS.	—	—
5. Directed the installation and operation of the local RAU.	—	—
6. Directed the site placement of support vehicles.	—	—
7. Directed the site placement of the ISYSCON (if required by OPORD/OPLAN).	—	—
8. Planned a field cable/wire system (if required by OPORD/OPLAN).	—	—

**Performance Measures****GO**    **NO GO**

- a. Checked availability of:
  - (1) Material.
  - (2) Number and type of circuits required.
  - (3) Number of lines required.
  - (4) Number of lines available.
  - (5) Time permitted for installation.
  - (6) Type of terrain.
- b. Performed reconnaissance of available cable/wire routes.
- c. Selected the proper route for cable/wire that best supports the mission.
- d. Prepared a line route map, if required.

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

**References****Required**

UNIT OPLAN  
UNIT OPORD

**Related**

FM 11-55  
TC 24-20  
TM 11-5800-216-10-1  
TM 11-5800-216-10-2  
TM 11-5800-216-10-3  
TM 11-5800-216-10-4

**Direct the Installation of the Integrated System Control (ISYSCON) AN/TYQ-76A ( )  
113-616-8005**

**Conditions:** Given a vehicle mounted ISYSCON AN/TYQ-76A( ), tent and tent equipment, PU-753/M generator set, ground rods, ground straps, 8-pound sledge hammer, TM 11-5895-1560-13&P, and TM 5-6115-632-14&P.

**NOTE:** The ISYSCON can be installed in corps and division configurations. This task deals only with the ISYSCON in the corps configuration.

**Standards:** Directed installation of ISYSCON AN/TYQ-76A( ) so that it was positioned when the power was applied.

**Performance Steps**

(Refer to TM 11-5895-1560-13&P for all performance steps except where noted.)

1. Direct positioning of shelters and power unit.
2. Direct the unpacking of cables, tents, and tent equipment.
3. Direct the installation of shelter ground rods and straps. (Refer to TM 5-6115-632-14&P.)

**WARNING:** Ground straps must be connected to ground rod BEFORE ground rod is connected to shelter or power unit. Before connecting DC cable, ensure 28 VDC CB1 is OFF.

4. Direct soldiers to apply DC power to shelters.
5. Direct the soldiers to ground AC power unit. (Refer to TM 5-6115-632-14&P.)
6. Direct that soldiers connect AC power cables. (Refer to TM 5-6115-632-14&P.)

**WARNING:** Before switching to AC power, secure connections to AC power cables, ground straps, and signal cables.

7. Direct the switch over to AC power operation. (Refer to TM 5-6115-632-14&P.)
8. Direct the soldiers to install bootwall, tent, and tent equipment.
9. Direct the connection of tent signal and power cables.

**Performance Measures**

(Refer to TM 11-5895-1560-13&P for all PMs except where noted.)

- |  | <u>GO</u> | <u>NO GO</u> |
|--|-----------|--------------|
| 1. Directed positioning of shelters and power unit.  | —         | —            |
| 2. Directed the unpacking of cables, tents, and tent equipment.                                | —         | —            |
| 3. Directed the installation of shelter ground rods and straps. (Refer to TM 5-6115-632-14&P.) | —         | —            |

**WARNING:** Ground straps must be connected to ground rod BEFORE ground rod is connected to shelter or power unit. Before connecting DC cable, ensure 28 VDC CB1 is OFF.

- |   |   |   |
|---|---|---|
| 4. Directed soldiers to apply DC power to shelters.                               | — | — |
| 5. Directed the soldiers to ground AC power unit. (Refer to TM 5-6115-632-14&P.)  | — | — |
| 6. Directed that soldiers connect AC power cables. (Refer to TM 5-6115-632-14&P.) | — | — |

**WARNING:** Before switching to AC power, secure connections to AC power cables, ground straps, and signal cables.

- |   |   |   |
|---|---|---|
| 7. Directed the switch over to AC power operation. (Refer to TM 5-6115-632-14&P.) | — | — |
|---|---|---|

**Performance Measures**

- 8. Directed the soldiers to install bootwall, tent, and tent equipment.
- 9. Directed the connection of tent signal and power cables.

<u>GO</u>	<u>NO GO</u>
—	—
—	—

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

**References**

**Required**

- TM 11-5895-1560-13&P
- TM 5-6115-632-14&P

**Related**

Subject Area 5: Signal Network/Site Management

**Direct Preventive Maintenance Checks and Services (PMCS)**

**113-623-7119**

**Conditions:** Given the requirement to check the before, during, and after PMCS, TOE/TDA assigned equipment, assigned personnel, AR 750-1, DA Form 2404 (Equipment Inspection and Maintenance Worksheet) or DA Form 5988-E (Equipment Inspection Maintenance Worksheet), DA Form 2407 (Maintenance Request), DA Pam 738-750, and authorized parts and materials.

**Standards:** Performed required daily PMCS IAW appropriate TMs, correctly completed entries in maintenance forms, and reported readiness status of all equipment to the maintenance officer/NCO.

**Performance Steps**

(Refer to DA Pam 738-750 for all performance steps.)

1. Coordinate with training officer/NCO for scheduling of maintenance time and training schedules.
2. Ensure required supplies, equipment, and technical publications are available and used.
3. Ensure equipment operators perform PMCS at and for their authorized level of maintenance as outlined in the applicable TM.
4. Ensure correct maintenance procedures, as outlined in applicable TM, are being followed.
5. Coordinate with applicable section for technical assistance, as follows:
  - a. Motor Sergeant, for vehicle and generator equipment.
  - b. Battalion electronic maintenance, for communications-electronics (CE) equipment.
6. Ensure DA Form 2404 or DA Form 5988-E reflects:
  - a. Inspection and services that are completed.
  - b. Uncorrected faults.
  - c. Readiness status.
7. Direct submission of DA Form 2407 or DA Form 5988-E, as required.
8. Ensure equipment logbook and forms are completed and maintained IAW DA Pam 738-750.
9. Report readiness status of all equipment to the maintenance officer/NCO.

**Performance Measures**

(Refer to DA Pam 738-750 for all PMs.)

	<u>GO</u>	<u>NO GO</u>
1. Coordinated with training officer/NCO for scheduling of maintenance time and training schedules.	—	—
2. Ensured required supplies, equipment, and technical publications are available and used.	—	—
3. Ensured equipment operators perform PMCS at and for their authorized level of maintenance as outlined in the applicable TM.	—	—
4. Ensured correct maintenance procedures, as outlined in applicable TM, are being followed.	—	—
5. Coordinated with applicable section for technical assistance, as follows: <ol style="list-style-type: none"> <li>a. Motor Sergeant, for vehicle and generator equipment.</li> <li>b. Battalion electronic maintenance for CE equipment.</li> </ol>	—	—

**Performance Measures**

	<u>GO</u>	<u>NO GO</u>
6. Ensured DA Form 2404 or DA Form 5988-E reflects:	—	—
a. Inspection and services that are completed.		
b. Uncorrected faults.		
c. Readiness status.		
7. Directed submission of DA Form 2407 or DA Form 5988-E, as required.	—	—
8. Ensured equipment logbook and forms are completed and maintained IAW DA Pam 738-750.	—	—
9. Reported readiness status of all equipment to the maintenance officer/NCO.	—	—

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

**References**

**Required**

APPLICABLE TM  
 AR 750-1  
 DA FORM 2404  
 DA FORM 2407  
 DA FORM 5988-E  
 DA PAM 738-750

**Related**

**Perform Wide Area Network Management Operations Using Integrated System Control (ISYSCON)  
AN/TYQ-76A( )  
113-616-7045**

**Conditions:** Given an operational network of a corps/division signal brigade, mission statement/ commander's battle plan, SOP, data for the corps/division network using the ISYSCON AN/TYQ-76B(V)1 and TB 11-7010-308-10-1.

**NOTE:** This function also includes identifying problems and initiating planning activities to address the identified problems. The wide area network (WAN) monitors, controls, and reports on managed resources in a tactical network. The automated portion of WAN includes event detection, dissemination and logging, alarm management, resource monitoring (i.e., state and relationship), and resource creations/deletions. Automatic status information is received from managed devices through a SNMP agent on each device. ISYSCON provides a graphical representation of communication networks managed by ISYSCON. The WAN display is composed of SNMP-equipped devices, including devices in the MSE and router networks, discovered by Hewlett Packard (HP) Network Node Manager (NNM). ISYSCON includes Cisco Works 2000 to assist in the management of tactical router networks. Event translation, detection, filtering, and dissemination activities control the presentation of the display (including display at remote ISYSCONs) and notify the WAN staff users (SU) of network problems requiring resolution. WAN also allows you to determine trouble ticket parameters and filters. Trouble tickets can either be created automatically by the system or manually by any user. A ticket can also be entered manually if a service user has reported a problem by e-mail, fax, CNR, or courier.

**Standards:** Established operational network IAW the requirement of the unit OPORD and collected, displayed, updated, and distributed WAN network status.

**Performance Steps**

1. Perform traps management.
  - a. Manage circuit switch trap destinations.
  - b. Launch HP Open view.
  - c. Add trap destination.
  - d. Select managed switch.
  - e. Replace trap destination.
  - f. View trap destination.
  - g. Set remedy filter options.
2. Perform NNM background processes and database management.
  - a. View NNM process status.
  - b. Start NNM background processes.
  - c. Stop NNM background processes.
  - d. View NNM process log.
  - e. List collection stations.
  - f. Add collection station.
  - g. Unmanage collection station.
  - h. Remove collection station.
  - i. Synchronize circuit switch (CS) topology.
  - j. Test collection station.
  - k. View submaps.
  - l. Clear NNM database.
3. Perform object information viewing.
  - a. Perform peer monitoring using the browser.
  - b. View circuit switch alarms.
  - c. View circuit switch management information database (MIB).
  - d. View circuit switch profile.



**Performance Steps**

- e. View circuit switch workstation.
  - f. View circuit switch electronic journal.
  - g. View circuit switch SNMP agent.
  - h. View circuit switch equipment - Table.
  - i. View circuit switch equipment - Components.
  - j. View circuit switch equipment - Nine Channel Mux/Demux.
  - k. View circuit switch equipment - Signaling Buffer.
  - l. View circuit switch equipment - Conference Brigade Unit.
  - m. View circuit switch equipment - Loop Key Generator.
  - n. View circuit switch equipment - Time Division Memory Function.
  - o. View circuit switch link table.
  - p. View circuit switch link table - Table.
  - q. View circuit switch link table - Components.
  - r. View circuit switch link table - Electronic Journal.
  - s. View circuit switch link table - Transmission Group.
  - t. View circuit switch link table - Trunk Group Clusters.
4. Launch other application from HP Open view.
    - a. Launch Cisco view from HP Open view.
  5. Perform remedy trouble ticketing management.
    - a. Set up remedy user accounts.
    - b. Create a trouble ticket manually.
    - c. Add remedy license.
    - d. Remove trouble ticket create notice.
    - e. Resolve trouble ticket.
    - f. Add remedy user account.
    - g. Modify remedy user account.
    - h. Delete remedy user account.
    - i. Set up trouble ticket preferences.
    - j. Assign trouble ticket.
  6. Perform Cisco works procedures.
    - a. Launch resource manager essentials (RME).
    - b. Import from local NMS.
    - c. Enter community names.
    - d. Update archive.
    - e. Create availability graph.
    - f. Clear RME database.
    - g. Clear RME logs.
    - h. Backup RME database.
    - i. Restore RME database.

**Performance Measures**

	<u>GO</u>	<u>NO GO</u>
1. Performed traps management.	—	—
a. Managed circuit switch trap destinations.		
b. Launched HP Open view.		
c. Added trap destination.		
d. Selected managed switch.		
e. Replaced trap destination.		
f. Viewed trap destination.		
g. Set remedy filter options.		
2. Performed NNM background processes and database management.	—	—
a. Viewed NNM process status.		

**Performance Measures**

**GO      NO GO**

- b. Started NNM background processes.
  - c. Stopped NNM background processes.
  - d. Viewed NNM process log.
  - e. Listed collection stations.
  - f. Added collection station.
  - g. Unmanaged collection station.
  - h. Removed collection station.
  - i. Synchronized CS topology.
  - j. Tested collection station.
  - k. Viewed submaps.
  - l. Cleared NNM database.
3. Performed object information viewing. \_\_\_\_\_ \_\_\_\_\_
- a. Performed peer monitoring using the browser.
  - b. Viewed circuit switch alarms.
  - c. Viewed circuit switch MIB.
  - d. Viewed circuit switch profile.
  - e. Viewed circuit switch workstation.
  - f. Viewed circuit switch electronic journal.
  - g. Viewed circuit switch SNMP agent.
  - h. Viewed circuit switch equipment - Table.
  - i. Viewed circuit switch equipment - Components.
  - j. Viewed circuit switch equipment - Nine Channel Mux/Demux.
  - k. Viewed circuit switch equipment - Signaling Buffer.
  - l. Viewed circuit switch equipment - Conference Brigade Unit.
  - m. Viewed circuit switch equipment - Loop Key Generator.
  - n. Viewed circuit switch equipment - Time Division Memory Function.
  - o. Viewed circuit switch link table.
  - p. Viewed circuit switch link table - Table.
  - q. Viewed circuit switch link table - Components.
  - r. Viewed circuit switch link table - Electronic Journal.
  - s. Viewed circuit switch link table - Transmission Group.
  - t. Viewed circuit switch link table - Trunk Group Clusters.
4. Launched other application from HP Open view. \_\_\_\_\_ \_\_\_\_\_
- a. Launched Cisco view from HP Open view.
5. Performed remedy trouble ticketing management. \_\_\_\_\_ \_\_\_\_\_
- a. Set up remedy user accounts.
  - b. Created a trouble ticket manually.
  - c. Added remedy license.
  - d. Removed trouble ticket create notice.
  - e. Resolved trouble ticket.
  - f. Added remedy user account.
  - g. Modified remedy user account.
  - h. Deleted remedy user account.
  - i. Set up trouble ticket preferences.
  - j. Assigned trouble ticket.
6. Performed Cisco works procedures. \_\_\_\_\_ \_\_\_\_\_
- a. Launched RME.
  - b. Imported from local NMS.
  - c. Entered community names.
  - d. Updated archive.
  - e. Created availability graph.
  - f. Cleared RME database.

**Performance Measures**

GO   NO GO

- g. Cleared RME logs.
- h. Backed up RME database.
- i. Restored RME database.

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

**References**

**Required**

COMMANDERS BATTLE PLAN  
MISSION STATEMENT  
TB 11-7010-308-10-1  
UNIT OPORD  
UNIT SOP

**Related**

**Manage an Echelons Above Corps (EAC) Network using Communications System Control Element (CSCE)**

**113-616-7044**

**Conditions:** Given an operational laptop computer with CSCE V3.0 Server and Client software loaded, connection with TPN, and TB 11-7010-248-10.

**Standards:** Reported the communications network status and performance (R-Reports) using the CSCE.

**Performance Steps**

(Refer to TB 11-7010-248-10 for all performance steps.)

1. Perform CSCE system log on using a valid CSCE user name and password.
2. Load TK-50 distribution tape formatted with telecommunications service order (TSO) #1.
3. Verify the operational role of the CSCE.
4. Perform nodal engineering (AN/TYQ-31 shelters only).
5. Conduct circuit switch (CS) download using the remote visual display terminal (RVDT) function of the CSCE software (AN/TYQ-31 shelters only.)
6. Verify the establishment of intershelter communications for the CSCE network.
7. Use the CSCE to control the tactical communications network.

**Performance Measures**

(Refer to TB 11-7010-248-10 for all PMs.)

	<u><b>GO</b></u>	<u><b>NO GO</b></u>
1. Performed CSCE system log on using a valid CSCE user name and password.	___	___
2. Loaded TK-50 distribution tape formatted with TSO #1.	___	___
3. Verified the operational role of the CSCE.	___	___
4. Performed nodal engineering (AN/TYQ-31 shelters only).	___	___
5. Conducted CS download using the RVDT function of the CSCE software (AN/TYQ-31 shelters only.)	___	___
6. Verified the establishment of intershelter communications for the CSCE network.	___	___
7. Used the CSCE to control the tactical communications network.	___	___

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

**References**

**Required**

TB 11-7010-248-10

**Related**

**Manage the Tactical Packet Network (TPN)**

**113-625-6001**

**Conditions:** Given the requirement to brief visiting personnel, a Communications Systems/Equipment Status Report and situation map, reference materials, and FM 101-5.

**Standards:** Presented an informal signal situation briefing in a clear, concise, and logical manner IAW FM 101-5; reflected the current communications status in the briefing; prepared memorandum for record (MFR).

**Performance Steps**

1. Prepare to conduct an informal Signal situation briefing.
  - a. Assemble the required information in a logical order and format. (Refer to FM 101-5.)
  - b. Verify the status of communications facilities as accurately as possible.
  - c. Analyze the situation.
2. Construct the briefing.
3. Present an informal Signal situation briefing using the techniques listed in FM 101-5.
  - a. Anticipate possible questions.
  - b. Collect the material.
  - c. Know the subject thoroughly.
  - d. Isolate the key points.
  - e. Arrange the key points in logical order.
  - f. Provide supporting data to substantiate the validity of key points.
  - g. Select visual aids.
  - h. Establish the wording.
  - i. Rehearse before a knowledgeable person who can critique the briefing.
  - j. Invite and answer questions from the personnel being briefed.
    - (1) Anticipate possible questions.
    - (2) Prepare to support any part of the briefing
4. Prepare an MFR when briefing is over.
  - a. Record subject, date, time, and place of the briefing; and the ranks, names, and positions of those present.
  - b. Distribute MFR to:
    - (1) Staff sections or agencies with operations or plans which may be influenced
    - (2) Who must take action on the decision?

**Performance Measures**

	<u>GO</u>	<u>NO GO</u>
1. Prepared to conduct an informal Signal situation briefing.	_____	_____
a. Assembled the required information in a logical order and format. (Refer to FM 101-5.)		
b. Verified the status of communications facilities as accurately as possible.		
c. Analyzed the situation.		
2. Constructed the briefing.	_____	_____
3. Presented an informal Signal situation briefing using the techniques listed in FM 101-5.	_____	_____
a. Anticipated possible questions.		
b. Collected the material.		
c. Knew the subject thoroughly.		
d. Isolated the key points.		
e. Arranged the key points in logical order.		



**Present an Informal Signal Situation Briefing  
113-608-6001**

**Conditions:** As a Network Operations Chief in a field environment, given network management center (NMC) AN/TYQ-54, TM 11-5895-1543-13&P-2, and a unit OPORD. You are directed to manage start-up and shutdown of a TPN within your domain of responsibility (DOR).

**Standards:** Managed start-up and shutdown of a TPN within your DOR IAW specifications of the OPORD, and registered all the deployed TPN entities within your DOR in the database of the AN/TYQ-54.

**Performance Steps**

(Refer to TM 11-5895-1543-13&P-2 for all the performance steps.)

1. Start the NMC workstation
  - a. Power up the NMC workstation.
  - b. Set up the data.
  - c. Identify the NMC.
  - d. Log in.
  - e. Assume control of DORs.
  
2. Shut down the system.
  - a. Select Shut Down option.
  - b. Select EXECUTE option.
  - c. Turn off the machine.

**Performance Measures**

(Refer to TM 11-5895-1543-13&P-2 for all the PMs.)

1. Started the NMC workstation
  - a. Powered up the NMC workstation.
  - b. Set up the data.
  - c. Identified the NMC.
  - d. Logged in.
  - e. Assumed control of DORs.
  
2. Shut down the system.
  - a. Selected Shut Down option.
  - b. Selected EXECUTE option.
  - c. Turned off the machine.

**GO      NO GO**

1. Started the NMC workstation	_____	_____
a. Powered up the NMC workstation.		
b. Set up the data.		
c. Identified the NMC.		
d. Logged in.		
e. Assumed control of DORs.		
2. Shut down the system.	_____	_____
a. Selected Shut Down option.		
b. Selected EXECUTE option.		
c. Turned off the machine.		

**Evaluation Guidance:** Score the soldier a GO if all PMs are passed. Score the soldier a NO-GO if any PM is failed. If the soldier fails any PM, show what was done wrong and how to do it correctly. Have the soldier perform the PMs until they are done correctly.

**References**

**Required**

TM 11-5895-1543-13&P-2  
UNIT OPORD

**Related**

TM 11-5895-1543-13&P-1





**APPENDIX A - DA FORM 5164-R (HANDS-ON EVALUATION)****A-1. Introduction.**

The DA Form 5164-R allows the trainer to keep a record of the performance measures a soldier passes or fails on each task. Instructions for using this form follow.

**A-2. Prior to evaluating the soldier.**

- a. Obtain a blank copy of DA Form 5164-R, which you may locally reproduce on 8 1/2- by 11-inch paper.
- b. Enter the task title and 10-digit task number from the soldier's manual task summary in Chapter 3.
- c. In column a, enter the number of each performance measure listed under the Performance Measures section in the task summary.
- d. In column b, enter the performance measure corresponding to the performance measure number in column a. (You may abbreviate this information if necessary.)
- e. Enter the Evaluation Guidance statement from the soldier's manual task summary just below the last performance measure.
- f. Locally reproduce the partially completed form if you are evaluating more than one soldier on the task or the same soldier on more than one task.

**A-3. During the evaluation.**

- a. Enter the date just before evaluating the soldier's task performance.
- b. Enter the evaluator's name and the soldier's name and unit.
- c. For each performance measure, column b, enter a check in column c (*PASS*) or column d (*FAIL*), as appropriate.
- d. Compare the number of performance measures the soldier passes (and if applicable, which ones) against the task standard shown in the Evaluation Guidance statement. If the standard is met or exceeded, check the *GO* block under *STATUS*; otherwise check the *NO-GO* block.

Figure A-1 is a sample of a completed DA Form 5164-R.

<b>HANDS-ON EVALUATION</b>		DATE	
For use of this form, see AR 350-57. The proponent agency is DCSOPS.		<b>2 FEB 2004</b>	
TASK TITLE <b>PERFORM SYSTEM SHUTDOWN FOR SEN SYSTEM AN/TTC-48(V)</b>		TASK NUMBER <b>113-625-2090</b>	
ITEM a	PERFORMANCE STEP b	SCORE (Check One)	
		PASS c	FAIL d
1	PERFORMED OPERATIONAL SHUTDOWN PROCEDURES	<input checked="" type="checkbox"/> P	<input type="checkbox"/> F
2	PERFORMED STORAGE PROCEDURES	<input checked="" type="checkbox"/> P	<input type="checkbox"/> F
3	PERFORMED POWER CABLE REMOVAL/STORAGE PROCEDURES	<input checked="" type="checkbox"/> P	<input type="checkbox"/> F
4	PERFORMED POWER FIELD CABLE REMOVAL/STORAGE PROCEDURES	<input checked="" type="checkbox"/> P	<input type="checkbox"/> F
5	PERFORMED GROUNDED STRAP AND ROD REMOVAL PROCEDURES	<input type="checkbox"/> P	<input checked="" type="checkbox"/> F
6	SECURED THE SHELTER DOOR AND ALL EXTERNAL COVERS	<input checked="" type="checkbox"/> P	<input type="checkbox"/> F
EVALUATOR'S NAME <b>SFC WHITMAN</b>		UNIT <b>A CO 369TH</b>	
SOLDIER'S NAME <b>SPC ANDERSON</b>		STATUS <input type="checkbox"/> GO <input checked="" type="checkbox"/> NO GO	

DA FORM 5164-R, SEP 85 (EDITION OF DEC 82 IS OBSOLETE)

Figure A-1. Sample DA Form 5164-R

**APPENDIX B - DA FORM 5165-R (FIELD EXPEDIENT SQUAD BOOK)****B-1. Introduction.**

The DA Form 5165-R allows the trainer to keep a record of task proficiency for a group of soldiers. Instructions for using this form follow.

**B-2. Prior to evaluating the soldier.**

- a. Obtain a blank copy of DA Form 5165-R, which you may locally reproduce on 8 1/2- by 11-inch paper.
- b. Enter the SM task number and abbreviated task title for the evaluated tasks in the appropriate column. Use additional sheets as necessary.
- c. Locally reproduce the partially completed form if you are evaluating more than nine soldiers.

**B-3. During the evaluation.**

- a. Enter the names of the soldiers you are evaluating, one name per column, at the top of the form. You may add the names of newly assigned soldiers if there are blank columns.
- b. Under STATUS, record (*in pencil*) the date in the GO block if the soldier demonstrated task proficiency to soldier's manual standards. Keep this information current by always recording the most recent date on which the soldier demonstrated task proficiency. Record the date in the NO GO block if the soldier failed to demonstrate task proficiency to soldier's manual standards. Soldiers who failed to perform the task should be retrained and re-evaluated until they can meet the standards. When that occurs, enter the date in the appropriate GO block and erase the previous entry from the NO GO block.

**B-4. After the evaluation.**

- a. Read down each column (GO/NO GO) to determine the training status of that individual. This will give you a quick indication on which tasks a soldier needs training.
- b. Read across the rows for each task to determine the training status of all soldiers. You can readily see on which tasks to focus training.
- c. Line through the training status column of any soldier who departs from the unit.

Figure B-1 is a sample of a completed DA Form 5165-R.

FIELD EXPEDIENT SQUAD BOOK											SHEET 1 OF 5					
For use of this form see AR 350-57. The proponent agency is DCSOPS.																
USER APPLICATION	SOLDIER'S NAME															
	MOHLMAN		COOPER		ESHEW		L SMITH		FRUIT							
TASK NUMBER AND SHORT TITLE	STATUS		STATUS		STATUS		STATUS		STATUS		STATUS		STATUS		STATUS	
	GO	NO GO	GO	NO GO	GO	NO GO	GO	NO GO	GO	NO GO	GO	NO GO	GO	NO GO	GO	NO GO
113-580-0053 TRBLSHT A TACLAN CABLE	4-2-03		3-2-03		3-2-03		3-2-03									
113-587-0074 SYS TRBLSHT RADIO AN/PRC-127	5-1-03		3-1-03		5-1-03		3-1-03									
113-587-1071 INSTALL MULTIPLEXER TD-1456/VRC	5-12-01		5-12-01		5-12-01		5-12-01									
113-587-2081 MAINTAIN SECURE AN/VRC-49 RETRANS	5-11-03		5-11-03		5-11-03		5-11-03									
113-587-2082 MAINTAIN SECURE AN/VRC-49 RETRANS																
113-589-1009 INSTALL SECURE AN/VSC-7																
113-587-2083 MAINTAIN SECURE TACSAT RETRANS																
113-580-1034 INSTALL ATCCS CHS																
113-580-0040 TRBLSHT MCS																
113-580-3053 PERFORM SCHEDULED ULM ON MCS																
113-580-0052 TRBLSHT SICPS CHS																
113-580-0044 TRBLSHT PLGR																

DA FORM 5165-R, SEP 85 (EDITION OF DEC 82 IS OBSOLETE)

Figure B-1. Sample DA Form 5165-R

## GLOSSARY

**(C)** CONFIDENTIAL

**(O)** FOR OFFICIAL USE ONLY

**(U)** Unclassified

**(V)** version

**1SG** First Sergeant

**AAP** Army Apprenticeship Program; automatic asset placement

**AAR** after action review

**AC** alternating current/Active Component/assistant commandant

**ACCP** Army Correspondence Course Program

**ACUS** Area Common User System

**AN** Annually (frequency code)

**ANCOC** Advanced Noncommissioned Officer Course

**AOP** aerial observation post

**AOR** area of responsibility

**APU** auxiliary power unit

**AR** Army Regulation/Army Reserve

**Army Training and Evaluation Program (ARTEP)**

The US Army's collective training program. The ARTEP establishes unit training objectives critical to unit survival and performance in combat. They combine the training and the evaluation processes into one integrated function. The ARTEP is a training program and not a test. The sole

## **STP 11-31W4-SM-TG**

purpose of external evaluation under this program is to diagnose unit requirements for future training.

### **ASI**

Additional Skill Identifier; alarm status indicator

### **ASN**

assigned serial number; autonomous system number

### **AUTODIN**

automatic digital network

### **BA**

biannually (frequency code)

### **BFA**

battlefield functional area

### **BFACS**

Battlefield Functional Area Control System

### **BGP**

Border Gateway Protocol

### **BNCOC**

Basic Noncommissioned Officer Course

### **BSM**

Battlefield Spectrum Management

### **BW**

Biweekly (frequency code)

### **CE**

communications-electronics; common emitter

### **CJCSM**

Chairman, Joint Chiefs of Staff Manual

### **CM**

communications modem

### **CNR**

combat net radio; calibration not required

### **CNRI**

combat net radio interface

### **COML**

commercial

### **common task**

A critical task for which all soldiers at a given skill level are accountable, regardless of their MOS.

### **COMSEC**

communications security

**CONUSA**

the numbered Armies in the continental United States

**CP**

Command Post

**Critical Task Selection Board**

A management device, which serves a quality control function in critical task selection. The board reviews the total task inventory and job performance data and recommends tasks for approval to the appropriate authority as critical tasks.

**Cross Training**

The opportunity for an individual to train to additional jobs within his or her MOS.

**CS**

combat support; circuit switch; O-chlorobenzyl-malononitrile

**CSCE**

Communications System Control Element

**CSM**

Command Sergeant Major

**CSO**

communications service order

**CTC**

Combat Training Centers

**DA**

Department of the Army; distribution amplifier

**DA Form**

Department of the Army Form

**DA PAM**

Department of the Army Pamphlet

**DAMP**

DGM Antenna Mast Program

**DC**

direct current; District of Columbia; Dental Corps

**DGM**

digital group multiplexer; digital group modem

**DNVT**

digital nonsecure voice telephone

**DoD/DOD**

Department of Defense

**DOR**

domain of responsibility

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### **DSN**

Defense Switched Network

### **DSVT**

digital subscriber voice terminal

### **DTH**

down-the-hill

### **duty position**

The job a service member performs within the unit. AR 611-201 has names of official duty positions for each MOS.

### **DWNLOD**

Download

### **EAC**

echelons above corps

### **ECB**

echelons corps and below

### **ECCM**

electronic counter-counter measures

### **EEFI**

essential elements of friendly information

### **E-mail**

electronic mail

### **ENVPAR**

Environmental Parameters

### **EUB**

essential user bypass

### **EW**

electronic warfare

### **FM**

field manual; frequency modulation; file maintenance

### **FRAGO**

fragmentary order

### **frequency**

Cycles per second, measured in hertz (Hz).

### **GPS**

Global Positioning System

### **HF**

high frequency



**HP**  
Hewlett Packard

**IAW**  
in accordance with

**Incl**  
Inclosure

**individual training**  
Training which the officer, NCO, or soldier receives in the training base, units, on the job, or by self-study. This training prepares the individual to perform specified duties or tasks related to the assigned or next higher specialty code of MOS skill level and duty position.

**IP**  
Internet protocol; implementation procedures

**ISYSCON**  
Integrated System Control

**LEN**  
large extension node

**LOS**  
line of sight

**MACOM**  
major Army command

**maintenance**  
The process of keeping equipment (or program) in working order.

**METL**  
mission essential task list

**MFR**  
memorandum for record

**MIB**  
Management information base

**MIJI**  
meaconing, intrusion, jamming, and interference

**Military Occupational Specialty (MOS) Code**  
A fixed number which indicates a given military occupational specialty. Also known as military occupational number and specification serial number.

**MO**  
Monthly (frequency code)

**Mobile Subscriber Radiotelephone Terminal (MSRT)**  
The AN/VCR-97 consisting of RT-1539 and KY-69 DSVT

**MOOTW**  
military operations other than war

## **STP 11-31W4-SM-TG**

### **MOS**

Military Occupational Specialty

### **MOS training plan (MTP)**

The MTP is a guide for the conduct of individual training in units. The MTP is developed for each MOS/AOC and addresses all skill levels of an MOS/AOC and all duty positions. The MTP lists all MOS/AOC-specific and shared critical tasks for which the MOS/AOC is responsible. It will not include common tasks.

### **MPI**

Map Products and Interfaces

### **MSE**

mobile subscriber equipment

### **MSRT**

mobile subscriber radiotelephone terminal

### **NBC**

nuclear, biological, chemical

### **NCO**

noncommissioned officer

### **NCOIC**

noncommissioned officer in charge

### **NIMA**

National Imagery and Mapping Agency

### **NMF**

node management facility

### **NNM**

network node manager

### **NPE**

Network Planning and Engineering

### **NPT**

network planning terminal

### **NS**

node switch

### **OCU**

orderwire control unit

### **OIC**

officer in charge

### **OPLAN**

operation plan

**OPORD**

operation order

**OSPF**

open shortest path first

**PAL**

preaffiliation subscriber list; phase alternate line

**PAM/Pam**

power amplifier; port adapter module; pulse amplitude modulation; pamphlet

**PCL**

Preprogrammed conference list

**PDSS**

predeployment software support

**performance measures (PM )**

Those behavior or product characteristics which the trainer observes/checks to determine if the soldier has performed the task correctly.

**PM**

performance measure(s)

**PMCS**

preventive maintenance checks and services

**PNC**

primary node center

**power**

The rate at which energy is expended or dissipated. Power is expressed in joules per second, more often called watts.

**PROWORD**

Procedure words

**PUB/pub**

publication

**QT**

Quarterly (frequency code)

**Radio frequency**

Any frequency of electrical energy, usually above 20 kHz, capable of propagation into space.

**RAU**

radio access unit

**RF**

Reserve Forces; radio frequency

**RFL**

restricted frequency list

## **STP 11-31W4-SM-TG**

### **RME**

Resource manager essentials

### **S2**

Intelligence Officer (U.S. Army)

### **S3**

Operations and Training Officer (U.S. Army)

### **SA**

situational awareness; semiannually (frequency code)

### **SCC**

system control center

### **SEN**

small extension node; Satellite Education Network

### **SGM**

sergeant major

### **SHF**

super high frequency

### **SIGSEC**

signal security

### **skill level (SL)**

A number which denotes the level of qualification within the total MOS. Levels of qualification are identified by characters 0 through 5 in the position of the MOS code.

### **SM**

soldier's manual

### **SMART-T**

Secure Mobile Anti-Jam Reliable Tactical Terminal

### **SMCT**

Soldier's Manual of Common Tasks

### **SNCO**

Senior Noncommissioned Officer Course (brevity code)

### **SNMP**

simple network management protocol

### **SOP**

standard operating procedure

### **SSS**

Single Shelter Switch

### **STP**

soldier training publication

**SU**

staff user

**Sustainment training**

The provision of instruction and opportunities for practice to insure that individual or collective task proficiency is maintained at a requisite level. The frequency will vary with individual and collective tasks, the role, location, and personnel fill of the unit, and the desires of the commander.

**SWIDUP**

switch database update

**TACSAT**

tactical satellite

**TADSS**

Training Aids, Devices, Simulators, and Simulations

**task summary (TS)**

A statement of the task in an action-verb format plus all essential performance measures. A standard format fully describes the task for the soldier in the field. It will accommodate any product or process task whether it is in fixed sequence, alternate sequence, or combination. The task summary is used both to train the soldier to perform the task and to evaluate the soldier's ability to perform the task (within testing constraints).

**TB**

technical bulletin

**TC**

technical coordinator; training circular; thermocouple

**TDA**

tables of distribution and allowances

**Technical manual (TM)**

A publication, which describes equipment, weapons, or weapons systems with instructions for effective use. It may include sections for instructions covering initial preparation for use and operational maintenance and overhaul.

**TG**

trainer's guide

**TM**

technical manual

**TOA**

transfer of authority

**TOE**

table(s) of organization and equipment

## **STP 11-31W4-SM-TG**

### **TOPOMAN**

topographic management

### **TPN**

Tactical Packet Network

### **Training Circular (TC)**

TCs are publications (paper or computer-based) which provide a means to distribute unit or individual soldier training information that does not fit standard requirements for other established types of training publications. TCs are part of the Armywide Doctrinal and Training Literature Program (ADTLP).

### **training objective**

A statement that describes the desired outcome of a training activity in the unit. It consists of the following three parts: task, condition(s), and standards.

### **train-up**

The process of increasing the skills and knowledge of an individual to a higher skill level in the appropriate MOS. (It may involve certification.)

### **TRANSEC**

transmission security

### **TROPO**

tropospheric scatter

### **TSO**

telecommunications service order

### **TTP**

Tactics, Techniques, and Procedures

### **UHF**

ultra high frequency

### **UNIT**

trained in the unit (brevity code)

### **US**

United States

### **VAC**

voltage/volts alternating current

### **VDC**

voltage/volts direct current

### **VHF**

very high frequency

### **w/**

with

### **WAN**

Wide Area Network

**WHCA**

White House Communications Agency

**WK**

Weekly (frequency code)

**ZRL**

Zone restriction list





## REFERENCES

### Required Publications

Required publications are sources that users must read in order to understand or to comply with this publication.

#### Army Regulations

AR 380-40	(O) Policy for Safeguarding and Controlling Communications Security (COMSEC) Material (U). 30 June 2000
AR 380-5	Department of the Army Information Security Program (Only available in electronic media on EM 0001). 29 September 2000
AR 750-1	Army Materiel Maintenance Policy and Retail Maintenance Operations (Only available in electronic media on EM 0001). 1 August 1994

#### Department of Army Forms

DA FORM 2028	Recommended Changes to Publications and Blank Forms (Only available in electronic media on EM 0001). 1 February 1974
DA FORM 2404	Equipment Inspection and Maintenance Worksheet (Only available in electronic media on EM 0001). 1 April 1979
DA FORM 2406	Materiel Condition Status Report (Only available in electronic media on EM 0001). 1 April 1993
DA FORM 2407	Maintenance Request. 7 July 1994
DA FORM 5164-R	Hands-On Evaluation (LRA) (This item is included on EM 0001). 00 September 1985
DA FORM 5165-R	Field Expedient Squad Book (LRA) (This item is included on EM 0001). 00 September 1985
DA FORM 5988-E	Equipment Inspection Maintenance Worksheet. 03 January 1991.

#### Department of Army Pamphlets

DA PAM 350-59	Army Correspondence Course Program Catalog (Only available in electronic media on EM 0001). 1 October 2002
DA PAM 738-750	Functional Users Manual for the Army Maintenance Management System (TAMMS) (Only available in electronic media on EM 0001). 1 August 1994

#### Field Manuals

FM 101-5	Staff Organization and Operations. 31 May 1997
FM 11-55	Mobile Subscriber Equipment (MSE) Operations (This item is included on EM 0205). 22 June 1999
FM 24-16	Communications-Electronics Operations, Orders, Records, and Reports. 7 April 1978
FM 24-33	Communications Techniques: Electronic Counter-Countermeasures (This item is included on EM 0205). 17 July 1990
FM 7-0	Training the Force. 22 October 2002

#### Joint Publications

CJCSM 6231.04A	Manual for Employing Joint Tactical Communications. 26 February 2000
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### Other Product Types

COMMANDERS BATTLE PLAN	Commander's Battle Plan
MISSION STATEMENT	Mission Statement
QUICK REFERENCE GUIDE 3	Global Circuit Switch Quick Reference Guide
UNIT OPLAN	Unit/Unit's Operation Plan (OPLAN)
UNIT OPORD	Unit/Unit's Operation Order (OPORD)
UNIT SOP	Unit/Unit's Standing Operating Procedure (SOP)

### Soldier Training Publications

STP 21-1-SMCT	Soldier's Manual of Common Tasks Skill Level 1. 31 August 2003
STP 21-24-SMCT	Soldier's Manual of Common Tasks (SMCT) Skill Levels 2-4. 31 August 2003

### Technical Bulletins

TB 11-5895-1544-10-1	Operator's Manual for Mobile Subscriber Equipment Network Planning Terminal (MSE-NPT) V1.00 (This item is included on EM 0075). 1 May 1994
TB 11-5895-1544-10-2	Operator's Manual for Mobile Subscriber Equipment Network Planning Terminal (MSE-NPT) V1.00 (Reprinted w/Basic Incl C1-2) (This item is included on EM 0075). 1 May 1994
TB 11-7010-248-10	Software Operator's Manual for Version 2.4 Integrated Network Management System (INMS) for the Communications System Control Element (CSCE) AN/TYQ-30( ) and AN/TYQ-31. 1 May 1995
TB 11-7010-308-10-1	Software Operator's Manual for Version 2.0 Staff User's Manual (Sum) for the Integrated System Control (ISYSCON) AN/TYQ-76B(V)1 Domain/Version Management and Preplanning (This item is included on EM 0079 and EM 0164). 1 June 2002

### Technical Manuals

APPLICABLE TM	Applicable Technical Manuals (TMs)
TM 11-5800-216-10-1	System Manual for Mobile Subscriber Equipment MSE (Reprinted w/Basic Incl C1-4) (This item is included on EM 0075). 1 September 1991
TM 11-5800-216-10-2	System Manual for Mobile Subscriber Equipment MSE (Reprinted w/Basic Incl C1-3) (This item is included on EM 0075). 1 September 1991
TM 11-5800-216-10-3	(C) System Manual for Mobile Subscriber Equipment Appendix K COMSEC Key Management MSE (U). 1 November 1994
TM 11-5800-216-10-4	System Manual for Mobile Subscriber Equipment MSE (Reprinted w/Basic Incl C1-3) (This item is included on EM 0075). 1 November 1992
TM 11-5805-764-13-1	Operator's, Unit, and Direct Support Maintenance Manual for Small Extension Node Switch AN/TTC-48A(V)2, AN/TTC-48C(V)1, AN/TTC-48C(V)2, AN/TTC-48C(V)3, AN/TTC-48C(V)4 MSE (Reprinted w/Basic Incl C1-3) (This item is included on EM 0075). 1 November 1993
TM 11-5805-765-12-1	Operator's and Unit Maintenance Manual for Large Extension Node Switch AN/TTC-46C(V)1 Consisting of Operations Group OL-412C(V)1/TTC-46C(V), Switching Group ON-305C ....MSE (Reprinted w/Basic Incl C1-4) (This item is included on EM 0075). 1 November 1993

TM 11-5805-796-12-1	Operator's and Unit Maintenance Manual Central Office, Telephone, Automatic AN/TTC-39D(V)2 Vol 1 Chapter 1 - Introduction, Chapter 2 - Operating Instructions (This item is included on EM 0059). 1 August 1998
TM 11-5805-798-12-1	Operator's and Unit Maintenance Manual for Node Center Switch AN/TTC-47D(V)1 Consisting of Operations Group OL-413D(V)1/TTC-47D(V) Switching Group ON-306C(V)1/TTC-47C(V) and Node Center Switch .....MSE (This item is included on EM 0075). 1 August 1997
TM 11-5805-802-13&P	Operator's, Unit, and Direct Support Maintenance Manual Including Repair Parts and Special Tools List for Communications Subsystem ON-505(V)1(P)T; ON-505(V)2(P)T; ON-505(V)3(P)T; ..... ON-505(V)5(P)T (This item is included on EM 0059). 15 December 2000
TM 11-5805-804-13&P	Operators, Unit, and Direct Support Maintenance Manual Including Repair Parts and Special Tools List for Communications Subsystem ON-442A/TTC (Reprinted w/Basic Incl C1) (This item is included on EM 0059). 1 June 2000
TM 11-5820-1022-13-1	Operator's, Unit, and Direct Support Maintenance Manual for Radio Access Unit AN/TRC-191A(V)1 and Radio Access Unit AN/TRC-191A(V)2 MSE (Reprinted w/Basic Incl C1) (This item is included on EM 0075). 1 February 1996
TM 11-5820-1022-13-2	Operator's, Unit, and Direct Support Maintenance Manual for Radio Access Unit AN/TRC-191 and Radio Access Unit AN/TRC-191A(V) (Reprinted w/Basic Incl C1-5) (This item is included on EM 0075). 1 February 1990
TM 11-5820-1022-13-3	Operator's, Unit, and Direct Support Maintenance Manual for Radio Access Unit AN/TRC-191A(V)1, Radio Access Unit AN/TRC-191A(V)2 (Cable Maintenance) MSE (This item is included on EM 0075). 1 November 1992
TM 11-5820-1023-13-1	Operator's, Unit, and Direct Support Maintenance Manual for Line-of-Sight Multichannel Radio Terminal AN/TRC-190(V)1, AN/TRC-190A(V)1, AN/TRC-190(V)2, AN/TRC-190A(V)2 ..... (Reprinted w/Basic Incl C1-5) (This item is included on EM 0075). 1 March 1989
TM 11-5820-1023-13-2	Operator's, Unit, and Direct Support Maintenance Manual for Line-of-Sight Multichannel Radio Terminal AN/TRC-190(V)1, AN/TRC-190A(V)1, AN/TRC-190(V)2, AN/TRC-190A(V)2, ..... (Reprinted w/Basic Incl C1-4) (This item is included on EM 0075). 1 February 1990
TM 11-5820-1023-13-3	Operator's, Unit, and Intermediate Direct Support Maintenance Manual for Line-of-Sight Multichannel Radio Terminal AN/TRC-190(V)1, AN/TRC-190A(V)1, AN/TRC-190(V)2, ..... (Reprinted w/Basic Incl C1-6) (This item is included on EM 0075). 19 January 1988
TM 11-5820-1135-12	Operator's and Unit Maintenance Manual for Radio Repeater Set AN/TRC-138C (This item is included on EM 0152). 1 July 1998
TM 11-5820-1136-12	Operator's and Unit Maintenance for Radio Terminal Set AN/TRC-173B (This item is included on EM 0152). 1 July 1998
TM 11-5820-1137-12	Operator's and Unit Maintenance Manual for Radio Repeater Set AN/TRC-174B (This item is included on EM 0152). 1 July 1998
TM 11-5820-1138-12	Operator's and Unit Maintenance Manual for Radio Terminal Set AN/TRC-175B (This item is included on EM 0152). 1 July 1998
TM 11-5820-864-12-1	Operator's and Unit Maintenance Manual for Radio Repeater Set AN/TRC-174, Vol I (Reprinted w/Basic Incl C1) (This item is included on EM 1052). 1 January 1989

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TM 11-5820-865-12-1	Operator's and Unit Maintenance Manual for Radio Terminal Set AN/TRC-173 (Reprinted w/Basic Incl C1-2) (This item is included on EM 0152). 1 January 1989
TM 11-5820-926-12-1	Operator's and Unit Maintenance Manual for Radio Repeater Set AN/TRC-138A, Vol I (Reprinted w/Basic Incl C1) (This item is included on EM 0152). 1 January 1989
TM 11-5820-931-12-1	Operator's and Unit Maintenance Manual for Radio Terminal Set AN/TRC-175 (Reprinted w/Basic Incl C1) (This item is included on EM 0152). 1 January 1989
TM 11-5820-934-13-1-1	Combined Operation and Maintenance Instructions Chapters One Through Six Organizational and Intermediate Radio Terminal Set AN/TRC-170(V)2, Part Number 951100-4 (Reprinted w/Basic Incl C1-15) (This item is included on EM 0152). 1 August 1985
TM 11-5820-934-13-1-2	Combined Operation and Maintenance Instructions Chapter Seven Part I Organizational and Intermediate Radio Terminal Set AN/TRC-170(V)2 Part Number 951100-4 (Reprinted w/Basic Incl C1-7) (This item is included on EM 0152). 1 August 1985
TM 11-5820-934-13-2-1	Combined Operation and Maintenance Instructions for Organizational and Intermediate Radio Terminal Set AN/TRC-170(V)3 Part Number 951100-5 (Reprinted w/Basic Incl C1-16) (This item is included on EM 0152). 1 August 1985
TM 11-5895-1392-12	Operator's and Unit Maintenance Manual for Communications System, Control Element, Signal Processor AN/TYQ-30(V)1, AN/TYQ-30(V)2 (Reprinted w/Basic Incl C1). 15 September 1991
TM 11-5895-1433-12-1	Operator's and Organizational Maintenance Manual for Satellite Communications Terminals AN/TSC-85B(V)1 and AN/TSC-85B(V)2 Operation and Operator Maintenance (Reprinted w/Basic Incl C1) (This item is included on EM 0169). 15 September 1991
TM 11-5895-1434-12-1	Operator's and Organizational Maintenance Manual for Satellite Communications Terminals AN/TSC-93B(V)1 and AN/TSC-93B(V)2 (Reprinted w/Basic Incl C1) (This item is included on EM 0169). 15 September 1991
TM 11-5895-1543-13&P-2	Operator's, Unit, and Direct Support Maintenance Manual, Including Repair Parts and Special Tools List for Network Management Central AN/TYQ-54 (This item is included on EM 0164). 15 May 1994
TM 11-5895-1560-13&P	Operator's, Unit, and Direct Support Maintenance Manual Including Repair Parts and Special Tool List for Integrated System Control Echelon Corps and Below AN/TYQ-76(V)1 Consisting of System Control ..... (This item is included on EM 0075). 1 January 2001
TM 11-5895-1612-12	Operator's and Unit Maintenance Manual for Terminal, Satellite Communications AN/TSC-154 (This item is included on EM 0169). 1 August 2002
TM 11-6115-481-13	Operator's, Unit, and Direct Support Maintenance Manual for Generator Set, Diesel Engine PU-815/TSC-154. 1 April 2003
TM 5-6115-632-14&P	Operator's, Unit, Intermediate Direct Support and Intermediate General Support Maintenance Manual (Including Repair Parts and Special Tools Lists) for Power Unit ..... (Reprinted w/Basic Incl C1-5) (This item is included on EM 0086). 17 June 1988
TM 9-6115-642-10	Operator's Manual for Generator Set Skid Mounted, Tactical Quiet 10 KW, 60 and 400 HZ MEP-803A (60 HZ) MEP-813A (400 HZ) (Reprinted w/Basic Incl C1-2) (This item is included on EM 0086). 30 December 1992

### Related Publications

Related publications are sources of additional information. They are not required in order to understand this publication.

#### Army Regulations

- AR 380-5 Department of the Army Information Security Program (Only available in electronic media on EM 0001). 29 September 2000
- AR 530-1 Operations Security (OPSEC). 3 March 1995

#### Field Manuals

- FM 101-5-1 Operational Terms and Graphics. 30 September 1997
- FM 11-41 Signal Support: Echelons Corps and Below (ECB) (This item is included on EM 0205). 18 December 1991
- FM 11-45 Signal Support to Theater Operations (This item is included on EM 0205). 30 June 1999
- FM 11-55 Mobile Subscriber Equipment (MSE) Operations (This item is included on EM 0205). 22 June 1999
- FM 21-75 Combat Skills of the Soldier (This item is included on EM 0205).
- FM 24-11 Tactical Satellite Communications (This item is included on EM 0205). 20 September 1990
- FM 24-18 Tactical Single-Channel Radio Communications Techniques (This item is included on EM 0205). 30 September 1987
- FM 3-19.30 Physical Security (Formerly FM 19-30) (This item is included on EM 0205). 8 January 2001
- FM 34-60 Counterintelligence (This item is included on EM 0205). 3 October 1995

#### Technical Bulletins

- TB 11-5895-1544-10-1 Operator's Manual for Mobile Subscriber Equipment Network Planning Terminal (MSE-NPT) V1.00 (This item is included on EM 0075). 1 May 1994
- TB 11-5895-1544-10-2 Operator's Manual for Mobile Subscriber Equipment Network Planning Terminal (MSE-NPT) V1.00 (Reprinted w/Basic Incl C1-2) (This item is included on EM 0075). 1 May 1994

#### Technical Manuals

- TM 11-5800-216-10-1 System Manual for Mobile Subscriber Equipment MSE (Reprinted w/Basic Incl C1-4) (This item is included on EM 0075). 1 September 1991
- TM 11-5800-216-10-2 System Manual for Mobile Subscriber Equipment MSE (Reprinted w/Basic Incl C1-3) (This item is included on EM 0075). 1 September 1991
- TM 11-5800-216-10-3 (C) System Manual for Mobile Subscriber Equipment Appendix K COMSEC Key Management MSE (U). 1 November 1994
- TM 11-5800-216-10-4 System Manual for Mobile Subscriber Equipment MSE (Reprinted w/Basic Incl C1-3) (This item is included on EM 0075). 1 November 1992

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- TM 11-5805-766-12-1 Operator's and Unit Maintenance Manual for Node Center Switch AN/TTC-47C(V)1 Consisting of Operations Group OL-413C(V)1/TTC-47C(V) Switching Group ON-306C(V)1/TTC-47C(V) .... (Reprinted w/Basic Incl C1-3) (This item is included on EM 0075). 1 November 1994
- TM 11-5805-766-12-2 Operator's and Unit Maintenance Manual for Node Center Switch AN/TTC-47C(V)1 Consisting of Operations Group OL-413C(V)1/TTC-47C(V) Switching Group ON-306C(V)1/TTC-47C(V) and Node Center ..... (This item is included on EM 0075). 29 February 1996
- TM 11-5805-766-12-3 Operator's and Unit Maintenance Manual for Node Center Switch AN/TTC-47 Consisting of Operations Group OL-413/TTC-47 Switching Group ON-306/TTC-47 and Node Center Switch .... (Reprinted w/Basic Incl C1-4) (This item is included on EM 0075). 1 January 1991
- TM 11-5805-766-12-4 Operator's and Unit Maintenance Manual for Node Center Switch AN/TTC-47C(V)1 Consisting of Operations Group OL-413C(V)1/TTC-47C(V) Switching Group ON-306C(V)1/TTC-47C ..... (Reprinted w/Basic Incl C1-2) (This item is included on EM 0075). 1 November 1993
- TM 11-5820-1027-13&P Operator's, Unit, and Intermediate Direct Support Maintenance Manual Including Repair Parts and Special Tools List for Receiver-Transmitter RT-1539A(P)(C)/G MSE (Reprinted w/Basic Incl C1-4) (This item is included on EM 0075). 1 March 1989
- TM 11-5895-1543-13&P-1 Operator's, Unit, and Direct Support Maintenance Manual, Including Repair Parts and Special Tools List for Network Management Central AN/TYQ-54 and AN/TYQ-54A (This item is included on EM 0164). 15 May 1994
- TM 11-5895-1544-13&P Operator's, Unit, and Direct Support Maintenance Manual (Including Repair Parts and Special Tools List) for Network Planning Terminal AN/UYK-100 MSE (This item is included on EM 0075). 1 September 1997

### Training Circulars

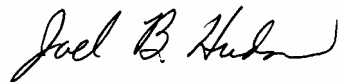
- TC 24-20 Tactical Wire and Cable Techniques. 3 October 1988
- TC 24-21 Tactical Multichannel Radio Communications Techniques. 3 October 1988

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**7 APRIL 2004**

**By Order of the Secretary of the Army:**

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