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┌─── STUDENT REPORT ───┐

HANDBOOK FOR TRAINING MANAGEMENT
DURING SYSTEM ACQUISITION

MAJOR ROGER B. GRAVES   86-1005
"insights into tomorrow"

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Developing and managing training programs for systems undergoing acquisition is a highly complex task involving a large number of organizations making up the training community. Failure to effectively accomplish required training management activities can not only adversely impact initial operational capability, but can also increase program costs dramatically. This handbook provides a brief overview of the system acquisition process; an overview of the training community including a description of the major players and their organizational responsibilities; and a description of the key training management activities required during each phase of the system acquisition process. The handbook focuses more on the training community's actions than on one organization's role. Training managers from ATC, operational commands, and participating commands should find it equally useful.

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PREFACE

Purpose

This handbook addresses the subject of training management during system acquisition from a training community perspective. Its purpose is threefold: to acquaint the training manager with the activities of other members of the training community, to acquaint non-Air Training Command (ATC) members with the training management activities of ATC, and to provide a training tool for new ATC training managers.

No single organization can develop and manage a training program for a new system--it must be a community effort. This is true because each organization has parochial interests. For example, ATC faculty development is of vital concern to ATC but not of particular interest to the Air Force Operational Test and Evaluation Center (AFOTEC). Remedial training for unqualified crew members at an operational unit is critical to the operating command, but it is not a great concern to ATC or Air Force Systems Command (AFSC). Each member organization is parochial in its interests; however, each organization is also dependent on other members of the training community. The Air Force test team cannot perform its mission if ATC does not provide them training. ATC cannot provide training if the using commands do not request it. Thus, one purpose of this handbook is to familiarize the members of the training community with the activities and requirements of the others.

ATC is one of the major players in developing a training program for a new system. The ATC regulations provide detailed guidance to enable the ATC training manager to perform *his duties. But as previously stated, ATC requires inputs from other organizations, and the other organizations are not always aware of those requirements. Most non-ATC training managers are not familiar with the constraints facing ATC training managers. Therefore, another purpose of this handbook is to acquaint the training community with ATC training management activities and hopefully alleviate some of the problems arising from misconceptions.

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*Throughout this handbook, the pronouns "he, him, and his" are used for simplicity and are not intended to express gender; they may be read "she, her, and hers."

The final purpose of this handbook is to provide a training tool for new ATC training managers. When the author became a training manager, the entire training management process was learned by personal trial and error and by the advice of kindly civilian training managers with years of experience. ATC is now making giant strides in providing more definitive guidance and a viable training program for new training managers. Hopefully, this handbook will supplement that training process and provide a fresh perspective.

Need Assessment

Is there really a need for a handbook such as this, and if so, why? The author believes there are four reasons why this handbook is important.

First, training management is critical to the successful deployment of new weapon systems. If people are inadequately trained, they cannot operate and maintain the new sophisticated weapon systems. If weapons cannot be operated or maintained, they are useless; and without weapons, the Air Force cannot fight and win. Training management is therefore critical to the Air Force mission. This concept is expressed in AFM 1-1, Basic Aerospace Doctrine of the United States Air Force: "The Air Force has a primary function to train combat and support forces to ensure the conduct of prompt and sustained aerospace combat."

Second, training management is a very complex task. It is performed in varying degrees by every organization, for every man and woman, military and Department of Defense (DOD) civilian, in every specialty supporting every weapon and support system in the Air Force inventory. This handbook addresses only training management activities during system acquisition, perhaps the most complex of any area of training management. The training manager must understand the system acquisition process, itself a very complex discipline, and further complicated by the 5- to 10-year lead times for most acquisition programs. The military training manager will rarely manage a system through its entire acquisition. He must be concerned with issues relating to operations, maintenance, logistics, manpower, test and evaluation, security, safety, and others. He must work with many different agencies, commands, sister services, and civilian industries. He must work with state-of-the-art technologies for which there is often no precedent, relying only on best judgement for innovative approaches. Above all, he must understand training methods and resources available to him. A new training manager faces an almost overwhelming task of learning all he needs to know in order to effectively manage his program.

Third, training is very costly. The ATC budget for contractor-provided training supporting system acquisition

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exceeded $18 million in FY 1985. This figure does not include the cost of training embedded in procurement contracts, nor the cost of ATC-conducted training at six technical training centers and over 90 Field Training Detachments world-wide. In addition to these training costs, one must consider the costs of training facilities, equipment and simulators and their maintenance, instructional materials, instructor manpower, and management overhead. Add to these the costs of time devoted to course development, TDY to schools, and student salaries, and one can begin to appreciate the enormity of training costs associated with the large Air Force inventory. With increasing sophistication of weapon systems and declining manpower and budgets, the Air Force cannot afford to ineffectively manage its training. Low quality training in both operations and maintenance could cost lives as well as expensive systems. Managers must also ensure training equipment exactly meets the need because unnecessary capabilities drive up training costs. AFSCP 800-3 sums it up nicely: "Since life cycle costs of the training program could exceed the costs of all other system support elements, it requires careful managerial attention."

Finally, even though training management is critical to the Air Force mission, extremely complex, and very expensive, there is currently no single Air Force document addressing training management from a total training community perspective through the entire system acquisition process. The following example illustrates the problems that can result from an uninformed training community. A MAJCOM training manager received a phone call from a contractor asking what ATC course number had been assigned to a course supporting a modification to the training manager's system. Having never heard of the course, the training manager questioned him and discovered the first class was to begin in 3 weeks. The MAJCOM training manager called the ATC training manager and found that he had never heard of it either. Further investigation revealed that a young officer engineer at the System Program Office had arranged the training through the system procurement contract, had estimated the using command's training requirement, and had notified neither ATC, the using command, nor the unit providing the students. As a result, the Air Force paid several thousand dollars for excessive training and received none of the essential data the unit required to develop its own training capability. On such short notice, the unit was unable to schedule enough crew members to fill all of the training slots; and had not ATC quickly established course numbers, the students would not have received documentation for attendance. The Air Force regulations specify the actions which should have been taken, but they do no good if Air Force managers are ignorant of them. The author believes this handbook will help prevent this kind of fiasco by informing the entire training community of required actions.

Author's Training Background

What qualifies the author to develop such a handbook? He has dealt with the problems of training management from a wide variety of management levels and organizations. As an instructor in an operational unit, he became familiar with unit-level training. He experienced the difficulties in developing unit training for system modifications when higher level training management did not provide instructor cadre training or adequate system training planning information. As an ATC resident training instructor and course developer, he became familiar with ATC resident training. He also experienced the problems of resident training becoming outdated because of ATC not being informed of system modifications and ATC instructor cadre training not being provided. As an ATC weapon system training manager and as a training manager supervisor, he learned from experience the complexities of ATC training management applied to over 150 training programs in all phases of system acquisition. He also experienced the difficulties in trying to learn that complex job with no formal training program. As a MAJCOM system training manager, he learned the differences in training management from an operational command's perspective. When he discovered the lack of training management experience and the lack of available guidance for MAJCOM training managers, he authored the first MAJCOM regulation for system acquisition training management in his command. With his wide background in training management, he is able to address the subject from a total training community perspective.

Methodology

In order to accomplish its purpose, the handbook begins with a brief description of the overall system acquisition process. Next, it introduces the members of the training community and their functions. Finally, it examines each phase of the acquisition process and explains what training management activities are normally associated with that phase. The reader must remember that the acquisition process is flexible and every program is unique; therefore, the training activities for a given program may have to be accomplished during a different phase.

When references are provided for regulations, specific pages and paragraphs have been omitted due to the periodic changes of many publications. The bibliography lists the dates of the regulations used in this handbook. Many of the acquisition regulations contradict themselves on some points. In such cases, the Air Force-level regulations were used. Much of the material is based on the author's personal experience. Because every program is different, some opinions may conflict with the

reader's experience. Remember, this is a handbook and not a regulation.

This handbook is not an attempt to duplicate existing efforts in this area. The author has intentionally omitted many of the mechanical details of organizational procedures. The emphasis is on acquainting readers with the kinds of training management tasks required during system acquisition rather than on providing a step-by-step checklist of how to accomplish the tasks.

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ABOUT THE AUTHOR

Major Roger B. Graves graduated from Texas A&M University in 1971 with a Bachelor of Arts Degree in English. He also holds a Master of Arts Degree in Human Relations from Webster University. He entered active duty in 1972 as a Titan II launch officer at Little Rock Air Force Base, Arkansas. At Little Rock, he served as an Instructor Missile Combat Crew Commander at both the squadron and wing levels. In 1978, he transferred to Sheppard Air Force Base, Texas, as an Air Training Command Titan II launch officer instructor. He was named Sheppard Technical Training Center's Officer Instructor of the Year for 1979. In 1980, he was reassigned to Headquarters, 3785th Field Training Group (now Wing) as a Weapon System Training Manager for the Ground Launched Cruise Missile, the Space Transportation System, and a number of other missile and space systems. In 1981, he was promoted to Chief of the Fighter/Missile Branch of the Systems Management Division. In that capacity, he managed the activities of a number of weapon system training managers and training equipment managers who together managed the Air Training Command training programs for over 150 fighter aircraft, missiles, space systems, and aircraft "special capability" programs through all phases of system acquisition. In 1983, Major Graves moved to Headquarters, Space Command/Headquarters, North American Aerospace Defense Command (NORAD) in the Directorate of Training for the Deputy Chief of Staff for Operations. There, he managed the training programs for Space Command and NORAD operational units and developed training programs for space and satellite systems undergoing acquisition. His experience as an instructor and training developer in both an operational unit and Air Training Command, and as a training manager for both Air Training Command and a major operating command gives him a unique perspective on the subject of training management during system acquisition.

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GLOSSARY

AD	Armament Division
AFAE	Air Force Acquisition Executive
AFDAP	Air Force Directed Acquisition Program
AFLC	Air Force Logistics Command
AFM	Air Force Manual
AFMPC	Air Force Manpower Personnel Center
AFMTC	Air Force Military Training Center
AFOTEC	Air Force Operational Test and Evaluation Center
AFR	Air Force Regulation
AFSARC	Air Force System Acquisition Review Council
AFSC	Air Force Systems Command
	Air Force Specialty Code
AFSCP	Air Force Systems Command Pamphlet
AFSCR	Air Force Systems Command Regulation
ASD	Aeronautical Systems Division
ATC	Air Training Command
ATCM	Air Training Command Manual
ATCR	Air Training Command Regulation
CAI	Computer Assisted Instruction
CBPO	Consolidated Base Personnel Office
CDR	Critical Design Review
CFE	Contractor Furnished Equipment
CMG	Center Management Group
CMI	Computer Managed Instruction
CRISP	Computer Resources Integrated Support Plan
CRWG	Computer Resources Working Group
CSOC	Consolidated Space Operations Center
CTS	Course Training Standard
CTTC	Chanute Technical Training Center
DAE	Defense Acquisition Executive
DCP	Defense Coordinating Paper
DCS	Deputy Chief of Staff
DPML	Deputy Program Manager for Logistics
DSARC	Defense System Acquisition Review Council
DT&E	Developmental Test and Evaluation
ECP	Engineering Change Proposal
ESD	Electronic Systems Division
FLDTW	Field Training Wing
FOT&E	Follow-on Operational Test and Evaluation
FTD	Field Training Detachment
GFE	Government Furnished Equipment

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GTTC      Goodfellow Technical Training Center
HQ        Headquarters
ICS       Interim Contractor Support
ILS       Integrated Logistics Support
ILSM      Integrated Logistics Support Manager
ILSMT     Integrated Logistics Support Management Team
ILSP      Integrated Logistics Support Plan
IOC       Initial Operational Capability
IOT&E     Initial Operational Test and Evaluation
IPR       In-process Review
IPS       Integrated Program Summary
ISD       Instructional System Development
ISP       Integrated Support Plan
JMSNS     Justification for Major System New Start
JPO       Joint Program Office
JSOR      Joint Service Operational Requirement
KTTC      Keesler Technical Training Center
LSA       Logistics Support Analysis
LTTC      Lowry Technical Training Center
MAJCOM    Major Command
MSA       Major System Acquisition
OJT       On-the-Job Training
OT&E      Operational Test and Evaluation
PDM       Program Decision Memorandum
PDR       Preliminary Design Review
PDS       Personnel Data System
PMD       Program Management Directive
PMP       Program Management Plan
PMRT      Program Management Responsibility Transfer
POI       Plan of Instruction
POM       Program Objective Memorandum
PSOC      Preliminary System Operational Concept
PWI       Participation with Industry
RFP       Request for Proposal
RFPP      Request for Purchase Package
RRG       Requirements Review Group
SATAF     Site Activation Task Force
SCP       System Concept Paper
SD        Space Division
SECDEF    Secretary of Defense
SERD      Support Equipment Recommendation Data
SMART     Simulation Model for Acquisition of Resources for
          Training
SOC       System Operational Concept
SON       Statement of Operational Need
SOW       Statement of Work
SPO       System Program Office
SSEB      Source Selection Evaluation Board
STTC      Sheppard Technical Training Center
TDP       Training Development Plan
TDY       Temporary Duty
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TEMP	Test and Evaluation Master Plan
TES	Test and Evaluation Squadron
TPG	Training Planning Group
TPP	Test Participation Plan
TPR	Trained Personnel Requirement
TPT	Training Planning Team
TPWG	Test Plan Working Group
TRRRM	Training Requirements Recommendation Review Meeting
TTEP	Training and Training Equipment Plan
USAF	United States Air Force

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Chapter One

OVERVIEW OF THE SYSTEM ACQUISITION PROCESS

This chapter provides a brief overview of the system acquisition process. The training manager must be familiar with this process because it creates the environment and determines the timing for the execution of his responsibilities. It sets the stage for the training community players described in Chapter Two. Subsequent chapters explain how the players actually accomplish their training management activities in each phase of the system acquisition process. This overview describes how the system acquisition process starts and the major activities of each phase.

HOW THE SYSTEM ACQUISITION PROCESS BEGINS

The HQ USAF and MAJCOM headquarters continuously evaluate foreign military capabilities as well as our own. When analysis identifies a deficiency in our ability to counter a threat, or a new operational requirement, the applicable staff originates a Statement of Operational Need (SON) or a Joint Service Operational Requirement (JSOR) in accordance with AFR 57-1. The preparing command coordinates with Air Force Systems Command (AFSC), Air Force Logistics Command (AFLC), and Air Training Command (ATC) during preparation so that each may ensure the SON or JSOR includes appropriate inputs for their respective areas of interest. The preparing MAJCOM submits the SON or JSOR to HQ USAF for consideration. (AFR 57-1)

If HQ USAF agrees with the SON and cannot correct the deficiency by implementing policy changes or by redistributing existing resources, they present the recommendation to the Air Force Requirements Review Group (RRG). Depending upon the estimated expense of the proposal, the acquisition will fall within one of three categories. If the acquisition program is small, the Air Force RRG is the final approval authority. The second category is called an Air Force Designated Acquisition Program (AFDAP). If the RRG approves it, the AFDAP goes to the Secretary of the Air Force for final approval. The third category is called a Major System Acquisition (MSA). It requires the Air Staff to submit a Justification for Major System New Start (JMSNS) for approval first by the RRG and then

by the Secretary of the Air Force. He then submits the JMSNS
to the Secretary of Defense (SECDEF) as a Program Objective
Memorandum (POM) item. If the SECDEF approves the acquisition,
he issues a Program Decision Memorandum (PDM). For each of the
three categories, the final approval decision constitutes Mile-
stone 0 and begins the system acquisition process. (AFR 800-2;
AFR 57-1)

THE MAJOR PHASES OF SYSTEM ACQUISITION

1. Concept Exploration Phase
2. Demonstration and Validation Phase
3. Full-Scale Development Phase
4. Production and Deployment Phase

CONCEPT EXPLORATION PHASE--MAJOR ACTIVITIES

Upon final approval of the need for the system (Mile-
stone 0), HQ USAF issues a Program Management Directive (PMD).
The PMD defines the roles and responsibilities of each agency
involved in the acquisition process. The implementing command
is usually AFSC. The operating command is the MAJCOM that will
operate and maintain the system when it becomes operational.
The supporting command is the MAJCOM, usually AFLC, who pro-
vides logistical support to the system. Participating commands
are those MAJCOMS who assist the implementing command in a
given system acquisition effort. The operating command, sup-
porting command, ATC, and the Air Force Operational Test and
Evaluation Center (AFOTEC) are participating commands.
(AFR 800-2)

The implementing command designates a program manager and
establishes a system program office (SPO) to manage the system
acquisition. If AFSC is the implementing command, the SPO is
assigned to the appropriate AFSC product division as described
in Chapter Two. In joint service acquisition programs, the
lead service is responsible for establishing a joint program
office (JPO) in accordance with that service's acquisition
policy. The program manager then begins development of the
Program Management Plan (PMP). (AFR 800-2)

The SPO also ensures that other agencies begin the devel-
opment of other planning documents during this phase. The op-
erating command prepares the Preliminary System Operational
Concept (PSOC). (AFR 55-24) The SPO dev_lops the Test and
Evaluation Master Plan (TEMP) with the help of the Test Plan
Working Group (TPWG). (AFR 80-14) The Computer Resources
Working Group (CRWG) develops the Computer Resources Inte-
grated Support Plan (CRISP). (AFR 800-14, Vol II) The Train-

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ing Planning Team (TPT) prepares the Training Development Plan (TDP). (AFR 50-8) The Deputy Program Manager for Logistics (DPML) develops the Integrated Logistics Support Plan (ILSP), usually by forming an Integrated Logistics Support Management Team (ILSMT). (AFR 800-8) All of these plans initially contain very general planning information, but they become more detailed as the system concept matures. Development of these plans continues during this phase. They should be completed at the beginning of the Demonstration and Validation Phase. (AFR 55-24)

During the Concept Exploration Phase, the SPO solicits approaches from defense contractors on how to satisfy the Air Force need. The SPO issues a Request for Proposal (RFP) to interested companies, describing the operational need. The RFP includes the Statement of Work (SOW). Participating commands usually coordinate on the SOW prior to release of the RFP. Those companies choosing to compete submit detailed proposals to the SPO describing how they would satisfy the operational need. After evaluating the proposals, the SPO determines the best candidates and submits a System Concept Paper (SCP) to the Air Staff for review. The SCP explains the rationale for the candidate selection. (AFSCP 800-3)

For an AFDAP, Air Staff reviews the SCP and submits it to the Air Force Acquisition Executive (AFAE). The AFAE performs required coordination and submits it to the Air Force System Acquisition Review Council (AFSARC). The Secretary of the Air Force considers AFSARC findings and decides if the AFDAP should continue. (AFR 800-2)

For an MSA, Air Staff reviews the SCP and submits it to the Defense Acquisition Executive (DAE) who coordinates it with the Office of the Joint Chiefs and the Office of the SECDEF. The DAE then sends the SCP to the Defense System Acquisition Review Council (DSARC). The Secretary of the Air Force provides comments to the DSARC chairman. The SECDEF considers DSARC recommendations and decides if MSA programs should continue. (AFR 800-2)

The Secretary of the Air Force or SECDEF decision for concept selection is Milestone I. It marks the end of the Concept Exploration Phase and the beginning of the Demonstration and Validation Phase. (AFR 800-2)

DEMONSTRATION AND VALIDATION PHASE--MAJOR ACTIVITIES

From the remaining contractor candidates, the Air Force must determine the single best candidate and whether it will satisfy the operational need. To make this determination,

the SPO usually relies on one of two methods or a combination of the two.

One method is through system studies, sometimes called "paper" competition. The contractors define the proposed system in such terms as system concept, hardware, operability, reliability, maintainability, integrated logistics support, management, schedules, and cost estimates. An Air Force Source Selection Evaluation Board composed of members from the participating commands evaluates the candidate programs and selects the best candidate. (AFSCP 800-3)

A second method is called "system prototyping." The contractors each develop a prototype system. The prototypes then compete with each other in "fly-offs" to determine the winner. (AFSCP 800-3)

The system prototyping method is sometimes used for selecting low cost aircraft weapon systems. The system studies method is more suited to expensive aircraft and one-of-a-kind systems such as control centers or satellite ground stations. A combination of these two methods is more feasible for other systems.

As the system becomes better defined, all of the planning documents begun during the Concept Exploration Phase become more detailed. The working groups responsible for those plans meet regularly with the SPO and contractors. Technical interchange meetings facilitate the flow of information between the concerned agencies. The using command begins expanding the PSOC to become the System Operational Concept (SOC). The operating command also begins planning for the activation of the operational site to receive the new system.

Upon completion of the source selection process, the SPO prepares a Decision Coordinating Paper/Integrated Program Summary (DCP/IPS), and this document is reviewed and approved in the same sequence as the SCP. The decision of the Secretary of the Air Force or the SECDEF to continue into full-scale development is Milestone II. It marks the end of the Demonstration and Validation Phase and the beginning of the Full-Scale Development Phase. (AFR 800-2)

FULL-SCALE DEVELOPMENT PHASE--MAJOR ACTIVITIES

Full-scale development includes designing, building, testing, and evaluating the system to determine if it will satisfy the operational need before full production begins. In addition to hardware, the evaluation considers support equipment; tools and test equipment; logistical support ele-

ments such as training requirements, manpower and personnel requirements, and facilities; and many other items. (AFSCP 800-3)

The contractor conducts the Preliminary (35%) Design Review (PDR) and Critical (95%) Design Review (CDR) to ensure the Air Force agrees with the design prior to production. The various planning groups expand the planning documents and prepare for their implementation. Under ATC management, the contractor trains the Air Force test team and the initial cadres of ATC and operational command instructors. The contractor conducts Developmental Test and Evaluation (DT&E) to ensure the system performs according to specification. The Air Force test team, usually AFOTEC, then conducts Initial Operational Test and Evaluation (IOT&E) to ensure the system performs in accordance with the criteria established in the TEMP. (AFSCP 800-3; ATCR 800-1, Vol II)

Results of IOT&E form the basis for the Production Decision (Milestone III). The SECDEF normally delegates this decision to the Secretary of the Air Force. Milestone III marks the end of the Full-Scale Development Phase and the beginning of the Production and Deployment Phase.

PRODUCTION AND DEPLOYMENT PHASE--MAJOR ACTIVITIES

According to AFSCP 800-3, the primary objective of this phase is to produce and deliver to the operating unit an effective supportable system efficiently and at optimum cost. During this phase, the system hardware and its support elements such as training equipment, spares, facilities, and data are produced and turned over to the unit. ATC develops its courses and trains the operations and maintenance personnel. The operating command activates its operational unit. Program Management Responsibility Transfer (PMRT) occurs when the implementing command turns over support responsibilities to the supporting command in accordance with AFR 800-4. Initial Operational Capability (IOC) occurs when previously established criteria, such as a specified number of deployed operational units and qualified operators, are achieved. AFOTEC conducts Follow-on Operational Test and Evaluation (FOT&E). The original operational requirement which began the acquisition process has now been satisfied. (AFR 800-2; AFSCP 800-3)

TAILORING THE SYSTEM ACQUISITION PROCESS

The acquisition process described in this chapter is a brief and simplistic explanation of a highly complex and dynamic procedure. The process must be tailored to meet the needs of each individual program. AFR 800-2 emphasizes the

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need for flexible and innovative approaches within the frame-
work of certain sound management principles. Some programs
may require some phases to be combined or omitted altogether.
Each acquisition program is unique, but each program also re-
quires many common crucial management actions. Specific
training management activities associated with each phase of
the acquisition process are contained in the chapters dealing
with the phases in which they occur; however, the needs of a
particular program may dictate certain training management
activities to be accomplished during a different phase. Like
the system acquisition process itself, training management
must also be tailored to suit the requirements of the program.

Chapter Two

OVERVIEW OF THE TRAINING COMMUNITY

This chapter introduces the major players and working groups in the training management arena during system acquisition. This initial introduction will define organizational responsibilities in general terms only. Specific responsibilities for particular acquisition events are addressed in later chapters dealing with each phase of the acquisition process. For a training manager to be effective, he must know who holds the information he requires. This chapter identifies those key players and their functions.

MAJOR PLAYERS

HQ USAF

According to AFR 50-8, two agencies share primary responsibility for training at the Air Staff level. These are the Deputy Chief of Staff (DCS) for Manpower and Personnel (HQ USAF/MP) and the DCS for Plans and Operations (HQ USAF/XO). Specific roles of these and other Air Staff agencies are described later in this chapter.

The Big Three

During system acquisition, three organizations play a leading role in determining how effective the training program will be. The Big Three include the SPO who manages the acquisition of the system, the operating command who will operate and maintain the system when it becomes operational, and ATC who provides the formal technical training for the system operators and maintainers.

Other Important Members

Depending on the system being procured, a variety of other organizations could be involved in supporting training

management activities during system acquisition. Two organizations which almost always provide support are AFLC as the supporting command and AFOTEC as the operational test and evaluation (OT&E) command.

MAJOR WORKING GROUPS

The members of the training community execute training management responsibilities through participation in multi-command working groups as well as through their own internal organizational agencies. Here are some of the more prominent working level groups of interest to the training community.

The Training Planning Team (TPT)

AFR 50-8 directs the formation of the TPT as early as possible in the life cycle of a system. It is usually composed of one representative from each major command headquarters involved in the training program, but The Big Three are the most prominent. It is usually chaired by the SPO, but the SPO can delegate this responsibility to another Air Force Systems Command organization. For example, the Consolidated Space Operations Center (CSOC) SPO delegated the CSOC TPT chairmanship to a planning organization at the Air Force Satellite Control Facility. TPT representatives often appoint subject matter experts from within their organizations to serve as advisors to the TPT in technical matters. The TPT provides a vehicle for identifying training requirements and training resource requirements, developing the training concept, and documenting the results and rationale of all training planning decisions. This documentation is formalized in the Training Development Plan (TDP). The TDP is approved by Air Staff and provides the information required for budget proposals and other program planning documents. AFR 50-8 provides the format for the TDP as well as specific organizational responsibilities in support of the TPT.

The Test Plan Working Group (TPWG)

AFR 80-14 provides authority for the SPO to establish and chair the TPWG. Membership includes representatives from each participating command. The TPWG identifies test related training requirements. These are documented in the Test and Evaluation Master Plan (TEMP).

The Computer Resources Working Group (CRWG)

The SPO establishes the CRWG in accordance with AFR 800-14, Vol II. The CRWG determines computer resource requirements to include computer-related training and training equipment requirements. All participating commands are represented on the CRWG. It is initially chaired by the SPO, but chairmanship passes to the supporting command after Program Management Responsibility Transfer (PMRT). The CRWG produces the Computer Resources Integrated Support Plan (CRISP).

The Integrated Logistics Support Management Team (ILSMT)

AFR 800-8 requires the DPML or the Integrated Logistics Support Manager (ILSM) to document ILS planning information by developing the Integrated Logistics Support Plan (ILSP). To do this, he normally forms an ILSMT composed of representatives from the participating commands. The Training and Training Support (TTS) element of the ILSP is important and requires close attention by the training community.

The Site Activation Task Force (SATAF) Training Working Group

Some SPOs employ the SATAF concept in activating a location to receive a new system or convert from one system to another. When formed, the SATAF serves as the focal point for coordination between the many participating organizations. The SATAF is frequently used for new aircraft systems, and the training for maintenance in support of the new aircraft usually involves ATC field training managed by the 3785th Field Training Wing (3785 FLDTW). This organization has developed detailed procedures to conduct the many training planning activities required by a site activation. These procedures are conducted through the SATAF Training Working Group. Their procedures are described in Chapter Four.

In addition to the collective responsibilities of multi-command working groups described above, the training manager should also know the general training-related responsibilities of the organizational members of the training community and their various agencies. The remainder of this chapter deals with the training community's member agencies.

HQ USAF AGENCIES

Several Air Staff agencies provide vital managerial guidance to the training community. This overview makes no attempt to provide an exhaustive list of all agencies supporting the training community nor all of tneir responsibilities. The purpose is rather to acquaint the training manager with some of the major Air Staff agencies and at least one area of responsibility in support of training management during system acquisition.

The Training Programs Division (HQ USAF/MPPT): Formulates policy guidance for ATC. (AFR 50-8)

The Deputy Director for Operations and Training (HQ USAF/XOOT): Formulates training policy guidance for the operational commands. (AFR 50-8)

The Director of Plans (HQ USAF/XOX): Reviews and approves all PSOCs and SOCs. (AFR 55-24) This directorate also serves as the HQ USAF point of contact for all PPBS activity that affects or is affected by instructional programs. (AFR 50-8)

The DCS Logistics and Engineering (HQ USAF/LE): Formulates policy guidance on Integrated Logistics Support. (AFR 800-8)

The DCS Research, Development and Acquisition (HQ USAF/RD): Formulates Air Force policy guidance for system acquisition and issues Program Management Directives as required. (AFR 800-2; AFR 800-12)

AIR FORCE SYSTEMS COMMAND (AFSC) AGENCIES

Responsibility for managing system acquisition programs is divided among the following AFSC organizations known as product divisions.

Aeronautical Systems Division (ASD), Wright-Patterson AFB OH: Plans and manages the acquisition of aeronautical systems, subsystems, and associated equipment. (AFSCR 23-3)

Armament Division (AD), Eglin AFB FL: Manages the acquisition
of armament systems, subsystems, and related equipment pro-
grams. (AFSCR 23-7)

Space Division (SD), Los Angeles AFS CA: Plans, programs, and
manages systems programs to acquire space systems, subsystems,
support equipment, and related hardware and software.
(AFSCR 23-9)

Electronic Systems Division (ESD), Hanscom AFB MA: Plans, man-
ages, and conducts technological development (including re-
search, exploratory, advanced, and engineering development),
acquisition, installation, and delivery of command, control,
communications, and intelligence (C^3I) systems and ground elec-
tronics systems for AFSC. (AFSCR 23-10)

　　　　Regardless of the division executing SPO responsibility,
AFR 800-8 requires the SPO program manager to integrate logis-
tics requirements from all sources into the Program Management
Plan (PMP), ILSP, and other program documentation. These re-
quirements include instructor manpower, training equipment,
technical data, and facilities to house them.

THE OPERATING COMMAND AGENCIES

　　　　The operating command is responsible for developing a pre-
liminary system operational concept (PSOC) for each new system.
The PSOC is later expanded into the System Operational Concept
(SOC), as required by AFR 800-2. The contents of the PSOC and
SOC are specified in AFR 55-24 and include training planning
information developed by the TPT.

　　　　One of the most important training responsibilities of the
operating command is identifying training requirements to ATC.
Until training requirements are identified, no other training
planning functions can be accomplished. After identifying pre-
liminary training requirements, the operating command develops
a training concept with the assistance of ATC. Then, using the
Instructional System Development (ISD) model, the training de-
velopers determine training equipment requirements. The oper-
ating command must also plan, develop, and implement unit train-
ing programs and on-the-job training (OJT) to complete the sys-
tem qualification of personnel graduating from ATC-provided
training.

Although organizational structures and office symbols vary between MAJCOMs, the functions supporting training management remain fairly constant. Some of the MAJCOM agencies with whom the training manager must deal include the following.

Plans and Programs: Serves as the MAJCOM focal point for systems acquisition. They develop plans which may include sections with training planning information.

Operations: Formulates and administers operational policies for units operating the system. They are a prime player in the development of operational concepts and, in some commands, approve operational checklists.

Maintenance: Formulates and administers maintenance policies for units maintaining the system. They develop maintenance concepts and may be involved in maintenance training planning activities. In some commands this responsibility is divided between managers for communications systems, computer systems, and mechanical systems.

Logistics: Responsible for a wide variety of support functions from procurement of equipment and spare parts to administering contracts. They establish Tables of Allowances for training equipment and manage the procurement of technical data.

Manpower and Personnel: Manages such issues as instructor manpower and student training flow. They also collect requests for formal training and submit them to HQ ATC.

Comptroller: Works with Plans and Programs managers to prepare POM inputs. They control the purse strings for unfunded training requirements.

Operations Training and Standardization/Evaluation: Formulates and administers training and stan/eval policies for operational units.

Engineering Services: Ensures training facilities are available with adequate power supplies for simulators and with TEMPEST shielding if required. Other services include such items as environmental assessments of field training programs.

Other Headquarters Agencies: May play a role in training management, depending on the nature of the system. Examples might include Safety and Security Police.

Operational Units: Also play important roles, especially as the system approaches Initial Operational Capability (IOC). They conduct unit planning, participate in SATAF activities, and may provide subject matter experts for higher headquarters planning.

AIR TRAINING COMMAND

As a participating command, ATC helps the implementing, operating, and supporting commands define training concepts and identify training requirements. (AFR 800-2) Additionally, AFR 50-9 specifies that ATC is the sole Air Force agent for contract training and is the Air Force single manager for special training programs, except for special flying training. A number of ATC agencies provide special services to support these responsibilities.

DCS/Technical Training (HQ ATC/TT): Responsible for officer technical training and for all (except medical) airman accession and specialized skill training provided by ATC.

System Training Directorate (HQ ATC/TTY): Responsible for ATC policy and guidance governing the management of training and training resources supporting system acquisition. They serve as the ATC OPR for training inputs to the PMP, PMD, and other planning documents.

Career Field Training Directorate (HQ ATC/TTQ): Responsible for training policy and guidance governing the management of training and training resources supporting initial skill and career progression courses. Training programs initially managed by TTY during system acquisition will transition to TTQ when the system becomes mature.

Programs Directorate (HQ ATC/TTP): Responsible for controlling the flow of students through the training pipeline. Training requests submitted by other MAJCOMs are screened here and routed to the appropriate technical training center training manager for validation. They also perform the annual screening to determine Air Force-wide training needs.

<u>3306th Test and Evaluation Squadron (TES):</u> The prime ATC element supporting Air Force Test and Evaluation programs. They also review contractor Logistics Support Analysis (LSA) data using the ISD process in developing ATC training programs for new systems. Members of this unit often become the initial instructor cadre for new systems.

<u>3308th Technical Training Squadron (Advisory):</u> Serve as liaison officers to MAJCOMs, AFSC product divisions, and other agencies involved with system acquisition. They serve the MAJCOM by providing required information about ATC matters, and they serve ATC by gathering pertinent system information required by ATC.

ATC operates six technical training centers, each providing training for different types of systems and specialties. These six centers are listed below.

<u>Air Force Military Training Center (AFMTC), Lackland AFB TX:</u> Provides training in the specialties of Cryptographic Equipment, Security Police, Social Actions, Marksmanship, and Recruiter.

<u>Chanute Technical Training Center (CTTC), Chanute AFB IL:</u> Provides training in the areas of Weapons System Support, Aircraft Maintenance, Weather, Missiles, and Aircraft Specialists.

<u>Goodfellow Technical Training Center (GTTC), Goodfellow AFB TX:</u> Provides training in the areas of Cryptological, Operational and Electrical Intelligence.

<u>Keesler Technical Training Center (KTTC), Keesler AFB MS:</u> Provides training in the areas of Avionics, Computers, Radar Systems/Air Traffic Control, Personnel, Administration, and Communications.

<u>Lowry Technical Training Center (LTTC), Lowry AFB CO:</u> Provides training in the areas of Intelligence/Audiovisual, Logistics, Avionics, and Munitions.

<u>Sheppard Technical training center (STTC), Sheppard AFB TX:</u>
Provides training in the areas of Communication/Missile/Comp-
troller, Aircraft Maintenance, Transportation, and Civil
Engineering.

<u>3785th Field Training Wing, Sheppard AFB TX:</u> Headquarters for
over 90 Field Training Detachments (FTDs) world-wide, this
organization performs training management functions during
weapon system acquisition just as technical training wings at
each of the technical training centers.

Located at each technical training center is a technical
training wing. Within the wing organization, the Operations
Division (TTGX) is responsible for managing assigned systems.
The center training manager is a prime player in the system
acquisition training community. Due to manpower constraints
at the HQ ATC level, the center training managers become heav-
ily involved in such activities as attending training working
group meetings, reviewing documents, and preparing ATC inputs
to training plans. ATC instructors at the technical training
centers sometimes support acquisition activities as subject
matter experts.

The training community is composed of many players from
many organizations, and each system acquisition requires a
different combination of participants. Due to manning con-
straints, many of the individual players must manage several
different systems; therefore, all of the players for a given
system are rarely able to meet together at the same time. In
order to be effective, the training community must keep each
other informed of all significant issues pertaining to the
system acquisition program. Effective communication is the
key to a successful program.

Chapter Three

TRAINING MANAGEMENT ACTIVITIES
IN THE CONCEPT EXPLORATION PHASE

In order to implement a successful training program, the
training community must actively participate in the acquisition
activities for a new system from the very beginning. This
chapter describes some of those early activities and training
community involvement in them.

The training community should be involved in at least two
activities before the system acquisition is formally initiated;
that is, prior to Milestone 0. These activities include a
training review and input to the Statement of Need (SON) and to
the Program Objective Memorandum (POM).

TRAINING INPUT TO THE SON

The MAJCOM identifying the operational requirement submits
the SON in accordance with AFR 57-1. This regulation specifies
one of four formats for the SON and includes a section for
logistics support, of which training is a part. The SON could
propose a new system or a modification to an existing system.
In either case, the training community can make some assump-
tions. If a new system is going to exist, its operators and
maintainers must be trained. If a system is going to be modi-
fied, its operators and maintainers may require retraining or
additional training. Furthermore, depending on the training
concept, training equipment may be required; and training
equipment may require training facilities, unique power re-
quirements, and special technical data. System modifications
may require modifications to existing training equipment and
facilities and changes to technical data and training mater-
ials.

The operating command training manager must consider the
implications on the operations and maintenance training pro-
grams at the operational units. The ATC training manager must
likewise consider the implications on resident and field
training programs supporting both the system and its related
career fields. Both AFR 57-1 and AFR 57-4 require ATC to re-
view and comment on SONs. The requirement for MAJCOM training

managers to participate in SON development, though not specifically required by these regulations, is just as important.

TRAINING INPUT TO THE POM

Major system acquisition programs are submitted by the Secretary of the Air Force to the SECDEF by means of the POM. The MAJCOM and ATC training managers must ensure that training inputs are included in that POM to avoid being caught short of resources required to implement the system training program. Important items in the POM for training include manpower authorizations for both course development and course presentation, overhead for training shops, and money for training equipment, training facilities, and technical data. Funds should also be identified for training manager TDYs to attend important planning meetings. ATC should also program money for Type 1 training to qualify initial instructor cadres.

FORMATION OF THE TRAINING COMMUNITY

One of the most important tasks facing the training managers in each organization during the Concept Exploration Phase is establishing membership in all of the planning working groups that will have an impact on the training program. This will ensure the training community is receiving all pertinent information relating to the system and that vital training concerns are being considered by responsible agencies. Failure to participate in these working groups could result in serious training deficiencies.

TRAINING COMMUNITY REPRESENTATION
ON PLANNING WORKING GROUPS

The significance of the various planning working groups to the training community depends on the characteristics of the system being acquired. For example, a system relying heavily on computer resources will probably demand greater participation of training managers on the Computer Resources Working Group than a system with limited computer requirements. Nevertheless, the training representatives of each participating organization will probably need to establish membership in the following groups.

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Training Planning Team (TPT)

As the primary training planning entity during system acquisition, the TPT should be formed as early as possible in the life cycle of the system in accordance with AFR 50-8. HQ ATC/TTY normally provides the ATC representative, but occasionally this function is delegated to the prime center system training manager. The representative of the operating command may come from the Plans and Programs function or from other MAJCOM agencies with training planning responsibilities. The TPT is chaired by the SPO. The TPT develops the training concept and other training planning inputs that will be included in the training sections of other important planning documents. The TPT documents the training concept, requirements, and the rationale for all training planning decisions in the Training Development Plan (TDP). It is imperative that every participating command be represented on the TPT to ensure all training requirements and training resource requirements are identified and training issues are resolved.

Because TPT membership is limited, the various representatives must ensure they are completely familiar with the training issues and concerns of both their headquarters and their subordinate units. There are several ways to do this.

ATC establishes an organizational structure to accomplish the task through the provisions of ATCR 800-1. This calls for establishment of a Center Management Group (CMG) chaired by the system training manager. The CMG membership includes representatives from all concerned ATC agencies at a technical training center who meet at least quarterly.

Participating MAJCOMs employ various methods to ensure their TPT representative is informed of all training issues and concerns. One particularly effective method is used by Space Command. As soon as a new acquisition program is initiated, they establish a system Training Planning Group (TPG). It is chaired by the system training manager from the DCS who will ultimately have operational control of the system. Every command agency with training requirements or with training support responsibilities provides a representative to the TPG. The objectives of the TPG include:
1. identifying all training requirements,
2. identifying all training resource requirements,
3. ensuring training courses are available to satisfy the training requirements,
4. documenting all requirements in a system training plan, and
5. serving as a forum for identifying and resolving training related issues.
The chairman of the TPG serves as the command representative

to the TPT. He ensures that all action items levied by the TPT
are distributed through the TPG to the appropriate agency, and
he ensures that any issue which cannot be resolved within the
command is presented to the TPT for resolution. The TPG docu-
ments all meetings and action items in published minutes and
distributes them to the participants, the SPO, ATC, and other
interested members of the training community.

Test Plan Working Group (TPWG)

The SPO establishes and chairs the TPWG in accordance with
AFR 80-14. Membership includes representatives from each par-
ticipating command. HQ USAF designates either AFOTEC or the
operating command to be the operational test and evaluation
(OT&E) command. The OT&E command and all participating commands
must identify test-related training requirements to ATC. This
AFR 80-14 requirement therefore requires the training community
to participate on the TPWG. The TPWG documents test objectives
and requirements in the Test and Evaluation Master Plan (TEMP).
The training community should ensure Air Force test team train-
ing requirements are identified and that test objectives include
evaluating the adequacy of ATC and unit training programs.
Additionally, if training equipment is to be procured, relia-
bility and maintainability test objectives for training equip-
ment should be included in the TEMP.

Part of ATC's responsibility in support of a new system
acquisition is test participation. Normally, test-related
responsibilities are assigned to the 3306 TES at Edwards AFB
CA. The 3306 TES develops a Test Participation Plan (TPP)
outlining ATC responsibilities and test objectives. They
organize an ISD team and begin the ISD process described in
Chapter Five.

Computer Resources Working Group (CRWG)

The SPO establishes and initially chairs the CRWG in
accordance with AFR 800-14, Vol II. The CRWG consists of
representatives from each of the participating commands. They
determine the qualifications for personnel supporting computer
equipment and computer programs, and they determine their
training requirements. Again, this calls for participation of
the training community. If computer aided instruction (CAI)
or computer managed instruction (CMI) devices are planned, the
training community will be even more involved in CRWG activi-
ties. The CRWG documents requirements in the Computer
Resources Integrated Support Plan (CRISP). After program Man-
agement Responsibility Transfer (PMRT), the supporting command
chairs the CRWG.

Integrated Logistics Support (ILS)

AFLC designates a DPML or an ILSM to serve as a member of the SPO. This manager assists the program manager in the development of the ILSP in accordance with AFR 800-8. To do this, he usually establishes an ILSMT or some other type of ILS working group composed of representatives from the participating commands. The ILSP includes a section on training. Initially, the ILSP is merely Section 9 of the Program Management Plan (PMP), but for major programs, as more data becomes available the ILSP may be maintained as a separate document. The training community must participate heavily in the development of the ILSP.

HOW A TRAINING MANAGER CAN EFFECTIVELY PARTICIPATE IN SO MANY DIFFERENT PLANNING ACTIVITIES

In large programs, participation in all planning activities would be a full-time job, and since most training managers work a number of different programs, it would be impossible to attend every meeting. Indeed, meetings of interest to training often occur simultaneously in different locations. For this reason, it is important for the training community to organize early and work together. For example, the ATC training manager and the MAJCOM training manager should agree to represent each other's concerns at meetings where only one can attend. This, of course, requires each training manager to be thoroughly familiar with the concerns of the other. Another solution is to find someone from another agency within the training manager's own organization who must attend the meeting and arrange for him to represent training concerns. A third alternative is to appoint primary and alternate training managers for every system managed in an organization. In this way, if the primary cannot attend, the alternate is someone who is somewhat familiar with the program. It is always wise to check in advance with the person chairing the meeting to determine if significant training discussions are anticipated. The training community should be included on the distribution list for meeting minutes, especially for those times when attendance is impossible.

OTHER DOCUMENTS OF INTEREST TO TRAINING

In addition to participating in the preparation of planning documents through membership in established working groups, the training community must also provide inputs to other important documents. These include the PMP, the PSOC, and the RFP.

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Program Management Plan (PMP)

The program manager is responsible for developing the PMP with inputs from participating commands in accordance with AFR 800-2, Attachment 3, and AFSCP 800-3. The PMP lays out the entire acquisition approach for the new system, and several of its sections may be of interest to the training community.

Section 3 (Program Management) includes schedules for facilities and site activation, test and evaluation, training, support equipment delivery, computer resource support capability delivery, and technical order validation, verification, and field delivery.

Section 5 (Test and Evaluation) includes test-related training information.

Section 7 (Operations) includes information on personnel and manpower, training, facilities, related training, and operational readiness training.

Section 9 (Logistics) is the ILSP. For major programs, the ILSP is removed from the PMP and maintained as a separate document. When this occurs, Section 9 contains a statement of that fact.

Section 10 (Manpower and Organization) includes the total requirements (grades and skills codes) for officers, airmen, and civilians, by fiscal year, phased through the equipment life cycle for all participating commands. It also includes the structure and chairmanship of working groups to be established.

Section 11 (Personnel Training) includes inputs from HQ ATC, the operating command, HQ AFOTEC, and other participating commands. It must summarize the training required to meet equipment tests as well as operations and support activities. According to AFR 800-2, this section must emphasize early planning and provide activation schedules for 5 years when applicable. This section should include:
1. requirements for trained personnel to operate the equipment,
2. types, location, and key dates of individual training courses,
3. required training equipment and associated support equipment,
4. facilities expansions needed for training, and
5. initial and replacement training loads by fiscal quarters.

The PMP initially contains very generalized training planning information, but as the TPT develops the TDP, the PMP becomes more detailed.

Preliminary System Operational Concept (PSOC)

The operating command is responsible for developing the PSOC in accordance with AFR 55-24. The PSOC is important because it establishes a foundation for the operational and support concepts that will influence the entire system acquisition effort. It includes a support section which contains the training concept. AFR 55-24 specifies that HQ ATC will coordinate on PSOCs to ensure the training concept is supportable. Though not specifically required by regulation, the MAJCOM training manager should participate in the development of the PSOC.

Request for Proposal (RFP)

Another extremely important document to the training community is the RFP. The RFP developed during the Concept Exploration Phase normally goes to a number of contractors and solicits proposals on how best to satisfy the operational need expressed in the SON. RFPs developed during other phases are discussed in the chapters dealing with those phases. The RFP includes a Statement of Work (SOW) which specifies exactly what the contractor is required to deliver. The training community must ensure that the SOW includes a requirement for training planning information describing what training requirements the contractor anticipates, the training he would provide, and recommended training equipment for both ATC and the operating command. Prior to release of the RFP, the SPO should issue a Data Call. This provides participating commands the opportunity to specify the data they require from the contractor to perform their responsibilities. Training managers should request such data as monthly schedules, a Training and Training Equipment Plan (TTEP) (if the SOW calls for a TTEP to be produced at this time), the Integrated Support Plan (ISP), and Support Equipment Recommendation Data (SERD). Specific programs may dictate other required data; however, unneeded data increases costs, so managers should order only _essential_ data. With this training planning information, the training community is much better able to develop detailed training requirements and training concepts, as well as to evaluate the competing contractors' proposals during the source selection for the next phase.

OTHER MEETINGS OF INTEREST TO THE TRAINING COMMUNITY

In addition to participating on planning working groups and providing inputs to planning documents, the members of the training community should also participate in other system planning meetings. These include SPO program reviews, system working group meetings, and technical interchange meetings with the contractors.

With regard to meetings with contractors, training managers must exercise great caution. Training services and training materials provided by contractors represent very large dollar amounts. In accordance with AFR 30-30, the training manager must avoid any appearance of conflict of interest. Contractors have been known to offer gifts and other promotional gimmicks to government representatives in attempts to gain a favorable advantage over competitors. Such advantages might include gaining inside information ("Source Selection Sensitive Information") or inducing a person to decide favorably for one competitor over another. Due to the many legal ramifications, no Air Force member should deal directly with contractor personnel without the expressed approval of the SPO. When a training manager relies on unit level subject matter experts, these cautions should be passed along to them.

Another activity of interest to the training community is the selection of candidates for continued competition in the Demonstration and Validation Phase. The SPO may choose to evaluate the proposals with a Source Selection Evaluation Board or by some other selection team. A representative from the training community should participate in this process to determine the suitability of the training information specified in the SOW. Common shortfalls in the training area include unrealistic training development schedules, excessive training requirements, and unnecessarily elaborate training devices and simulators. When the Source Selection Evaluation Board has narrowed the field of competition, the SPO forwards a System Concept Paper (SCP) to the Air Staff explaining the rationale for the candidate selection. HQ ATC and other members of the training community may be requested to coordinate on the SCP. After AFSARC or DSARC review, final approval of the SCP by either the Secretary of the Air Force for AFDAP or by the SECDEF for MSA programs concludes the Concept Exploration Phase. The system planning documents begun during this phase should be finalized at this point.

HOW A TRAINING CONCEPT AND TRAINING REQUIREMENTS
## CAN BE DEVELOPED BEFORE SYSTEM DESIGN IS DEFINED

Until the contractor provides system training planning information, training requirements and the training concept can only be stated in general terms. All of the planning documents are living documents and should be updated as more information becomes available. The training community can make several early assumptions to get a head start on the process.

First, if the new system will be similar to an existing system, the personnel numbers and specialty codes may be comparable. Therefore, the training required to sustain the current system may be similar to the new system.

Second, most training concepts are similar. For example, each AFSC will probably first receive specialty training in residence at an ATC technical training center. Next, the trainee may receive system training at either a technical training center or on location at an ATC Field Training Detachment (FTD). Finally, he will receive unit classroom training and/or OJT. In order to qualify the ATC and unit instructor cadres, ATC will probably procure Type 1 (contractor provided) training for a limited number of ATC and unit instructors. The ATC instructor cadre will then teach the same course using contractor-developed lesson plans as a Type 2 course until they can incorporate the new material into a Type 3 (ATC resident) course or a Type 4 (ATC field training) course. Some training requirements may be satisfied by sending Air Force students to courses provided by other services or other government agencies (Type 5 training) since that is normally cheaper than developing a duplicate capability.

Finally, knowing that operators and maintainers must be trained on equipment, the training community may be able to anticipate training equipment requirements. For example, if the system will be deployed at many bases with a large number of people requiring hands-on training, training equipment may be installed at a technical training center. On the other hand, if the system will be deployed at only one base, and with a limited number of operators and maintainers, it may be more cost effective to put training equipment on location and share it between unit instructors and ATC FTD instructors. Decisions such as actual equipment used for training versus mock-ups may also be feasible very early in the Concept Exploration Phase. Obviously, in order to develop a training concept, the training community must be very familiar with the operations and maintenance concepts through participation in planning groups and review of planning documents.

The important thing to remember about training management
activities in the Concept Exploration Phase is establishing
membership in the planning working groups to ensure the train-
ing community is both involved in and aware of program devel-
opments and that the acquisition community is aware of train-
ing issues and concerns. Perhaps one of the greatest problems
of training managers is being brought into an acquisition pro-
gram too late.
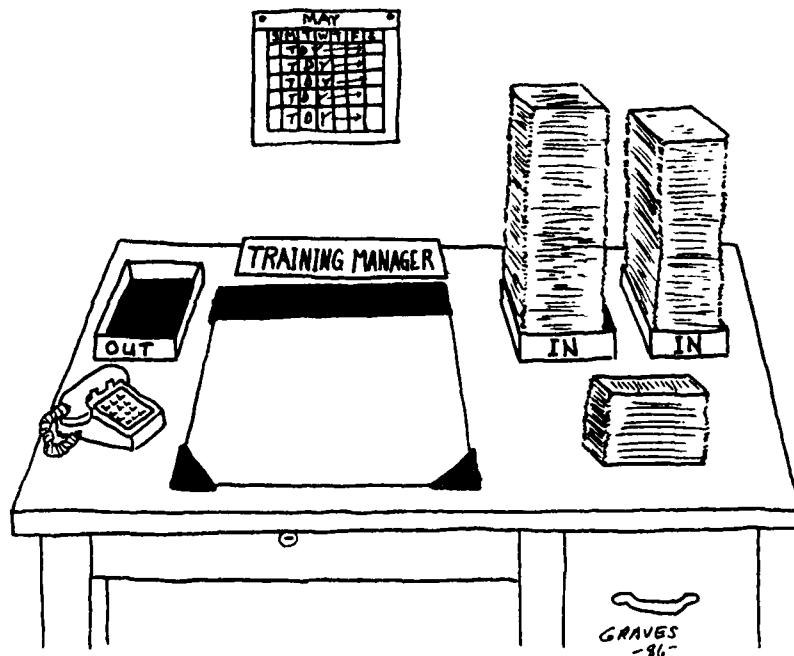
Chapter Four

TRAINING MANAGEMENT ACTIVITIES
IN THE DEMONSTRATION AND VALIDATION PHASE

The primary purpose of the Demonstration and Validation Phase of system acquisition is to determine the system which will best satisfy the operational need. The candidate systems remaining in the competition during this phase become increasingly better defined, thereby providing the training community with more data for training planning. This chapter describes the training management activities to be performed prior to full-scale development.

DEVELOPMENT OF THE SYSTEM OPERATIONAL CONCEPT (SOC)

As the candidate systems become better defined, the operating command expands the PSOC developed during the Concept Exploration Phase into the SOC. The SOC, like the PSOC, contains the operations and the training concepts. The training community, working through the TPT, refines and expands the TDP as new information becomes available. The operating command training manager should insert the most current training concept into the SOC. HQ ATC must review and coordinate on the SOC just as they did with the PSOC in accordance with AFR 55-24.

DEVELOPMENT OF THE SYSTEM SPECIFICATIONS

The contractor proposals submitted in response to the first RFP include specifications for the proposed system. Those candidates remaining after the first source selection will now be expanding those proposals while they design either a "paper" system or a prototype system for competitive fly-offs.

SPECIFICATION REVIEW

The Air Force reviews the contractor specifications to ensure the system will satisfy the operational need. The specification review is a prime input to the system develop-

ment effort, and it provides planning information for the training community as well. If specifications are being developed for training equipment, the training community will be prime participants in the specification review.

IDENTIFICATION OF TRAINING REQUIREMENTS

Even though the contractors have not yet designed specific support equipment, they should at least have a concept of the kinds of support equipment to be used. For example, they may have recognized the need for a power generation system, but have not selected the specific power generation unit (PGU) and the backup battery power supply units. Even without the specifics, the training community can perform a training requirement analysis and define with reasonable accuracy the general training requirements. In order to maintain a PGU, the Air Force normally uses 423X5 personnel. The 423X5 receives career field specialty training at Chanute Technical Training Center. Checking AFM 50-5, one can learn the average course lengths for the various kinds of PGUs. The system operations concept should describe the approximate number of systems, where they will be deployed, and when. From this information, the training manager can estimate the number of people who will require training and the time frame they will need it. When the contractor determines specific PGU and battery power supplies, the training manager can then determine specific course numbers.

The training community should make every effort to identify all known training requirements as soon as possible to ATC. ATC must have this information in order to POM for both additional money and manpower. Failure to program sufficient resources may result in training shortfalls which could delay IOC.

REQUESTING TRAINING

As soon as a training requirement is identified, the training manager for the organization requiring the training should accomplish an AF Form 403 (Request for Special Training). A separate form must be used for each course. The AF Form 403 goes to the local CBPO, then to the formal training division of the originating unit's MAJCOM headquarters. The formal training division enters the data into a computer terminal which is tied to HQ ATC/TTPP. When HQ ATC/TTPP receives the request, they determine the appropriate training manager for the system named on the AF Form 403. By entering that system training manager's personal code, the data is transferred via computer to the ATC training manager at the appro-

priate technical training center. After reviewing the request, the ATC training manager determines if the request is valid in terms of numbers of people to be trained (called the "trained personnel requirement" or TPR), the training window when the training is required, and the location. The ATC training manager knows if the request is valid because of his participation in the training planning activities for that system. Upon validation of the request, the training manager assigns an ATC course number if one is known at that time. Requests for the same training from other MAJCOMs appear as separate line items under the same course number. When it is time to procure the training, the ATC system training manager bases the procurement on the number of requests he has received and validated. The status of the requests can be called up on the computer terminal of the MAJCOM submitting the request, enabling the formal training division to verify what requirements have been validated (and therefore how many bogeys have been used). What is a bogey? Read the next section for an explanation.

FORECASTING TRAINING REQUIREMENTS

Each year, the MAJCOM training managers must predict the number of persons who will require ATC formal training during the next year. ATC uses that information in their POM submission to receive their training budget. After the POM is approved, each command is given a quota for training slots. These slots are known as "bogeys." Each time an ATC training manager validates a training requirement, a corresponding number of bogeys are deducted from that MAJCOM's quota. When that command's bogeys are used up, it can receive no more training unless an agreement is made with another command to transfer unused bogeys. For this reason, it is vital for the training managers in each participating command to identify their training requirements for a new system as early as possible in the acquisition life cycle.

TRAINING OF CONTRACTORS

Occasionally, a situation may arise where the training community might find it prudent to provide Air Force training to contractor personnel. For example, if the maintenance concept calls for a portion of the system to be maintained by contract maintenance, and the Air Force is required by contract to pay for their training, the government could realize substantial savings by providing Air Force training. AFR 50-55 governs this practice, and the training manager should refer to it if he encounters the situation.

DEVELOPMENT OF THE ATC SYSTEM TRAINING PLAN

The ATC prime center training manager begins development
of the ATC System Training Plan in accordance with ATCR 52-5
as soon as enough planning information is available. Like
the other planning documents, this training plan grows as the
system becomes better defined. ATCR 52-5 requires it to be
reviewed and updated at least every 6 months. The ATC System
Training Plan is directive only on ATC agencies, serving as
an implementing document and authorizing the expenditure of
resources to accomplish the actions called for in the plan.
It includes the following annexes:

ANNEX	SUBJECT
A	Responsibilities
B	Operations
C	Logistics
D	Personnel
E	Manpower
F	Security
G	Facilities
H	Comptroller
I	Training
J	Requirements
K	Environmental Assessment
L	Test and Evaluation
M	Reports
N	Time Phased Actions

UPDATE OF PLANNING DOCUMENTS

The various planning working groups should continue to
meet periodically to update the documents for which they are
responsible. This is especially important for the TPT and
the training community. The better the system and the opera-
tional concept are defined, the more accurate the training
requirements can be identified. Likewise, the training sec-
tions of the PMP, the TDP, the TEMP, the CRISP, and the ILSP
can be expanded.

FORMATION OF THE SITE ACTIVATION TASK FORCE (SATAF)

The SATAF concept is frequently used by the Aeronautical
Systems Division SPOs when preparing a base to receive a new
aircraft system or to convert from one aircraft system to an-
other. Space Division SPOs occasionally use the SATAF con-
cept also, as they did for the Space Transportation System at
Vandenberg AFB and for the Consolidated Space Operations Cen-

ter at Falcon AFS. The following information is extracted from an unpublished document used by the 3785th Field Training Wing to guide SATAF actions and procedures during aircraft weapon system conversions. Although it is directed at aircraft site activations, the same training planning considerations apply to any system.

According to the guide titled "Requirements/Procedures to be Used During Weapon System Conversion (FTD Conversion)," the SPO has management responsibility for the weapon system until responsibility is transferred to AFLC. It also has responsibility for all SATAF activities. These activities are always centered on the activation site with participants from other organizations meeting on location. The SATAF serves as the focal point for interorganization coordination of plans and schedules. According to the guide, "The SATAF is formed for any particular activation as a result of the <u>desires of the activating unit and its headquarters</u>. The authority of the SATAF stems from the expressed sanction of the commander of the organizations involved." SATAF membership includes the SPO, HQ USAF, the Air Force Military Personnel Center (AFMPC), MAJCOM headquarters of the primary operating command, ATC, AFLC, the system contractors, the activation unit and its headquarters, and specialized organizations such as AFOTEC. For aircraft conversions, ATC personnel include representatives from HQ ATC/TTY, HQ 3785 FLDTW and the FTDs supporting the training effort. The guide specifies 14 actions required by ATC personnel:

    1. Participate in facilities survey for existing or proposed training facilities.

    2. Define training facility requirements for weapon system.

    3. Attend SATAF meetings and SATAF outbriefings.

    4. Brief Weapon System Maintenance Training Concept.

    5. Chair Personnel/Training Working Group meetings during SATAF.

    6. Initiate required action items applicable to training.

    7. Provide write-ups of briefings to be included in SATAF minutes.

    8. Attend unit/base "mini" SATAF meetings as ATC representative.

    9. Brief status of training action items during unit/base "mini" SATAF meetings.

    10. Coordinate with system training manager on all action items pertaining to training.

    11. Review assigned action items to be accomplished by FTD for applicability and ensure that action is accomplished no later than suspense date.

    12. Review and document items on checklist. (See Appendix, page 57.)

13. Be aware of key events applicable to training on mile-stone chart. (See Appendix, page 60.)
14. Identify any potential problems, such as lack of fa-cilities, equipment, personnel, etc., that will impact site ac-tivation and training.

If the training concept calls for the employment of an ATC Field Training Detachment, the host base must provide for its support. The specific support requirements are governed by AFR 50-54. Additionally, some programs may require host-tenant support agreements, and these are governed by AFR 11-4. Both the ATC and the operating command training managers should be familiar with these regulations.

DEVELOPMENT OF THE RFP/SOW

As the SPO prepares to develop the RFP and its SOW, the ATC training manager must decide the strategy for procuring Type 1 training from the contractor to train the initial in-structor cadre and the Air Force test team. Two primary options exist for Type 1 procurement. One is to have ATC procure it under separate contract, and the other is to include it as a line item in the basic procurement contract. The training com-munity should understand the ramifications of each.

Separate Training Contract

If sufficient training planning information does not exist in time to include contractor-provided training in the SOW for the procurement contract, the SOW may indicate ATC will pro-cure training under a separate contract. The advantage of this practice is to buy time for the ATC system training manager to develop a more closely controlled training RFP when more train-ing planning information becomes available. With more planning information, the training manager may determine that alternate sources for portions of the training are available at less cost. The number of people requiring training may increase or decrease as participating commands refine their training requirements in light of new system information. The primary disadvantage of a separate ATC training contract is increased cost. By not in-cluding training as a line item in the procurement contract, training is not competed in conjunction with the source selec-tion process. Waiting until after source selection almost guarantees that ATC must develop a sole source training contract with the winning contractor. ATC thus loses important leverage when negotiating the cost of the training contract.

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Training as a Line Item in the Procurement Contract

If training is included as a separate line item in the procurement contract, AFR 50-9 requires ATC to manage the training portion of the contract, including preparing and approving the training statement of work. AFR 50-9 clearly states that ATC is the sole Air Force agent for procuring contract training, and it forbids other MAJCOMs from contracting for training. Violations of this directive could result in loose training contracts without all required deliverable data and with instruction of inferior quality. The great advantage of including training in the procurement contract is cost savings resulting from competitive bids. The disadvantage is that specific information required for the training SOW may not be available at that time. This problem can be overcome by experienced training managers who can write the training SOW in terms that allow some flexibility. Flexibility can be achieved in such areas as class sizes, numbers of classes, training windows which will slip if the acquisition schedule slips, and the option for the Air Force to train organically if equipment is employed for which the Air Force has already developed or procured training.

SOURCE SELECTION

Upon completion of the paper studies or the competitive fly-offs, the SPO convenes a Source Selection Evaluation Board (SSEB). The SSEB should include representatives from the training community. ATCR 800-1, Vol II contains detailed instructions to guide the ATC training manager in discharging SSEB-related responsibilities. A training manager from the operating command does not have such a document for assistance in evaluating the training from an operational command perspective. Since the Type 1 training proposal is an ATC responsibility and hopefully was based on clearly identified user training requirements, the primary focus of the training manager from an operating command should be in evaluating specifications of training equipment to be used at operational units, and contractor training data to be used by the operating command. This data might include lesson plans, transparencies, and other such training materials.

DECISION COORDINATING PAPER/INTEGRATED PROGRAM SUMMARY

Upon completion of the source selection, the SPO prepares the DCP/IPS to inform the Air Staff, the Secretary of the Air Force, and (for MSA programs) the SECDEF of the rationale for the decision. The training community may be asked to coordinate on the SCP/IPS. After AFSARC/DSARC review and the

approval by the appropriate secretary to continue the system acquisition process into full-scale development, the Demonstration and Validation Phase ends.
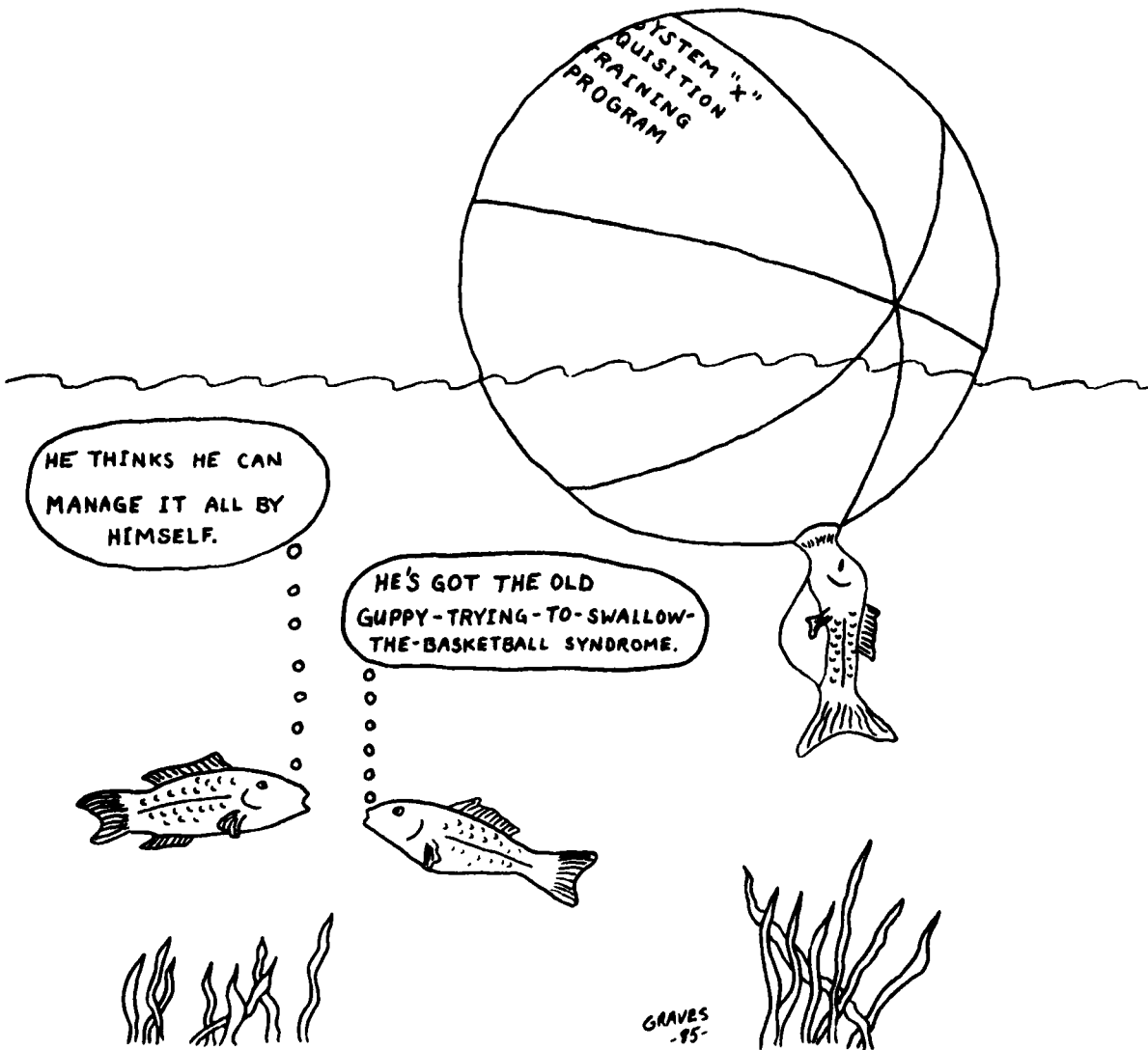
Chapter Five

TRAINING MANAGEMENT ACTIVITIES
IN THE FULL-SCALE DEVELOPMENT PHASE

The purpose of the Full-Scale Development Phase is to design, fabricate, and test the preproduction system. As the details of the system come into focus, the training management activities increase drastically. This chapter describes the training management activities to be performed during this phase.

INSTRUCTIONAL SYSTEM DEVELOPMENT (ISD)

With design of the system becoming more detailed, the training community can more accurately predict the training requirements. The depth with which training managers accomplish the training requirement identification may vary from a gross estimate by a single individual to a detailed analysis by a team of subject matter experts. In general, the more accurately training requirements are expressed, the more effective the training program will be. The Air Force mandates through AFR 50-8 that in developing training, managers will use the ISD process. The 5-step ISD process is as follows:
1. Analyze system requirements.
2. Define education and training requirements.
3. Develop objectives and tests.
4. Plan, develop, and validate instruction.
5. Conduct and evaluate instruction.
A detailed explanation of how to accomplish the ISD process appears in AFM 50-2 and AFP 50-58.

3306th TEST EVALUATION SQUADRON (TES) ACTIVITIES

In the acquisition of a new system, ATC normally uses the 3306 TES to accomplish the major portion of the ISD process. The 3306 TES personnel assigned to a new system stay with that system through the entire acquisition effort, becoming subject matter experts. They transition to the primary training location before IOC and become the nucleus of the ATC instructor cadre.

In accomplishing the 5-step Air Force ISD model for a new system, the 3306 TES employs a 14-step process to develop the ATC training program. Although the majority of the 3306 TES effort is directed toward maintenance training, their process may also be used for operations training. In ideal circumstances, this effort begins a little over 4 years before the planned IOC. The 14 steps are described in the <u>3306th TES Procedural Handbook</u>. Those steps are listed below.

1. Identify system maintenance requirements.
2. Identify characteristics of the target population.
3. Determine training requirements.
4. Determine types of technical training materials required.
5. Develop instructional strategies.
6. Identify fidelity requirements of hardware components.
7. Select instructional features for hardware media.
8. Prepare ISD-derived training equipment specifications.
9. Identify method of instruction.
10. Prepare course control documents.
11. Prepare instructional materials and tests.
12. Validate instruction.
13. Conduct training.
14. Evaluate training.

In order to determine the maintenance requirements, perform the task analysis, and identify training requirements, the 3306 TES team relies on a variety of information. One of the most important sources is contractor-provided Logistics Support Analysis (LSA) data. Other data comes from system design reviews and contractor-provided courses. Because of their developing system expertise, the 3306 TES sometimes provides system familiarization courses as an effective and less expensive alternative to contractor training.

After analyzing and documenting training requirements, they attempt to identify technical training material and training equipment needed to support the training program. These training equipment and data requirements are then reviewed through participation of key ATC personnel in a Training Requirements Recommendation Review Meeting (TRRRM). Out of the TRRRM comes a consolidated package of recommended training equipment and materials submitted through the prime center training manager to HQ ATC for approval. HQ ATC forwards those items requiring funding and procurement action to the SPO. The SPO develops engineering specifications for trainers with assistance from 3306 TES subject matter experts. After specification review by ATC to ensure specifications will fulfill ISD requirements, the SPO begins procurement actions. All of these procedures are outlined in the <u>3306th TES Procedural Handbook</u>.

Constraints and limitations within the acquisition environment often prevent the application of the ideal ISD approach. The most common of these constraints are time, manpower, and funding. In their procedural handbook, the 3306 TES recommends the following alternatives when a full ISD effort is impossible.

1. When time constraints prevent accomplishing a complete task analysis, prepare a list of representative sample tasks from every subsystem and maintenance area. Then perform 3306 TES ISD steps 1 through 9 on the sample tasks list to determine an early estimation of training equipment requirements. After contract award, use available time to perform a full ISD effort on previously omitted tasks.

2. Visit training centers and contractors to learn the state-of-the-art training equipment being employed in similar systems which could meet the functional requirements for the new system.

3. Send subject matter specialists to the contractor facility to perform the ISD analysis, relying on prototype units, information from the development engineers, and the ILS departments.

4. Use documentation from existing similar systems to estimate duties and responsibilities, generic tasks, basic training requirements, functional types of equipment, and course lengths.

5. If forced to make an early decision, consider actual operational equipment for training. While having the advantages of perfect interface with support equipment, facility power requirements, and representative hardware, actual equipment is not always the best training device. For example, training effectiveness could be limited by inadequate work space for student and instructor, noise, hazardous conditions or components, and tremendous cost. Without benefit of an ISD analysis to define actual training requirements, the training equipment could be overly capable and extremely costly.

6. Request training representatives at the SPO to help secure needed data when time is critical.

7. When constrained by time and manpower, consider having available subject matter specialists perform the task analysis for more than one AFSC when specialty, scope of analysis, and capability permit.

8. If training must begin before full ISD is complete, request ATC to provide "knowledge only" training with skill

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training provided by the operating command through OJT as an interim measure.

9. Recommend ATC receive the first production article to use for hands-on training until ISD-derived trainers can be delivered.

10. Train primarily through Type 1 training until the ISD analysis is complete and ISD-derived trainers are delivered.

11. Recommend life cycle contractor maintenance support instead of developing an organic maintenance capability.

12. Recommend all training be conducted by OJT for the life of the program. Low student flow and relative ease of the tasks may indicate OJT is more appropriate.

Even though these procedures and alternatives are aimed at ATC training development, the operating command may be able to adapt some of them to the operational unit training development effort. The entire training community faces the same constraints as ATC during system acquisition.

TYPE 1 PROCUREMENT ACTIONS

The ATC system training manager is responsible for developing the Request for Purchase Package (RFPP) for the Type 1 courses to train the initial cadres and the Air Force test team. These procedures are spelled out in ATCM 52-9, but training managers outside of ATC should have a general understanding of the ATC process. After the validation of the training requirements as described in Chapter Four, the ATC training manager can begin developing the RFPP. The RFPP contains the documents described below.

ATC Form 407A (Type 1 Training Course Summary)

This form includes the ATC course number, course title, and PDS code, previously established by the ATC training manager submitting an ATC Form 179 to HQ ATC. The 407A also shows the course length, start date, and completion date. This had to be coordinated with the MAJCOMs furnishing students and the contractor providing the training. Student prerequisites and security clearance requirements must be indicated. Contractor Furnished Equipment (CFε) and Government Furnished Equipment (GFE), technical data requirements, and availability and adequacy of training facilities are also documented, each requiring extensive coordination by the training manager. He submits a separate 407A for each course.

AF Form 9 (Request for Purchase)

The training manager accomplishes the AF Form 9 detailing the services to be purchased.

ATC Form 255 (Training Schedule)

The training manager determines the class schedule based on the number of students, the maximum class size, the number of classes, availability of training equipment and facilities, training need dates of each organization, and agreement with the contractor. Once the schedule is fixed, the contractor may have to be paid for Air Force-initiated changes.

ATC Form 449 (Course Chart)

The course chart includes a narrative course description, prerequisites, required equipment, and a block-by-block outline of the material to be trained and the number of class hours devoted to each block. The training manager must ensure he has correctly interpreted the various users' training requirements, but he also relies on training planning information supplied by the contractor describing what the contractor believes the system operators and maintainers should know. The training manager must then determine if the contractor has included knowledge and skills the students already possess and also if the submitted training requirements accurately reflect the user needs. From a cost standpoint, excessive training is an expensive waste, but from an operational point of view, inadequate training could render the new system ineffective.

Course Training Standard (CTS)

The training manager may be directed by HQ ATC to include a CTS. The CTS lists every task to be trained and the knowledge and skill level the student should attain by course completion.

DD Form 154 (Contract Security Classification Specification)

The training manager accomplishes this form when course material is classified to prevent security compromises.

ATC Form 259 (Government Furnished Equipment List) and ATC Form 259A (Government Furnished Technical Data List)

If the government will furnish equipment and data, the training manager must accomplish these forms. This requires coordinating the GFE and data through appropriate logistics channels to ensure the equipment and data is delivered in good condition at the proper place in time to support the training effort. Once GFE is stipulated in the training contract, failure of GFE or technical data to arrive on time can have serious consequences. On the other hand, the government can often save a lot of money by furnishing equipment the contractor would otherwise have to lease.

DD Form 1423 (Contract Data Requirements List)

When the training contract is prepared to develop an initial instructor cadre, this form becomes extremely important. It enables the students to receive contractor-developed lesson plans, study guides, workbooks, handouts, slides, computer software, and other training materials. Without these deliverables, the student would have to rely on notes to develop his own training materials.

ATC Form 251 (Major Items of Contractor Furnished Training Equipment)

The ATC training manager specifies the training equipment to be furnished by the contractor on this form.

When the ATC training manager has completed the RFPP, he attaches an RFPP Letter of Transmittal and forwards it to HQ ATC for review and approval. It then goes to the ATC contracting office. If the training contract is a line item in the system procurement contract, ATC Contracting works closely with the product division contracting office. For a separate ATC training contract, the ATC contracting office sends the RFPP out as a Request for Quote. The contractors submit proposals in response to the Request for Quote. The training manager evaluates the technical proposal while ATC Contracting evaluates the cost proposal. The training manager looks for such things as all requested tasks being adequately addressed, reasonable number of hours for each task area, reasonable number of transparencies, adequate hands-on training time, and appropriate training methods. He documents any discrepancies and forwards them to ATC Contracting. He may be asked to participate in the contract negotiations. After the contract is awarded, the training manager serves as a point of contact for

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the contractor training developer as inevitable training-related problems arise.

Here is a hypothetical example: The original maintenance training proposal was based on a preliminary design calling for a special item of test equipment to be developed by the contractor. The Support Equipment Recommendation Data (SERD) has been disapproved and the design has been changed to allow the use of a standard piece of test equipment already in the Air Force inventory. The lists of CFE and GFE in the training contract need to be modified, and the number of hours in the course need to be reduced since the students are already trained on the use of the Air Force test equipment. The training manager needs to coordinate the change with the SPO, the ATC logistics personnel responsible for making GFE available, and ATC Contracting to seek a possible refund for reduced training length and schedule changes. Also, training equipment provisioning lists need to be modified at the training units. These kinds of issues arise frequently until the design is firm, and the training manager must ensure the training impacts are considered.

UPDATE OF PLANNING DOCUMENTS

Because of design changes such as the one illustrated in the above example, the training community must continue to actively participate in all of the planning groups created early in the system acquisition process. The documents produced by those planning groups must be kept current.

PRELIMINARY DESIGN REVIEW (PDR)

When the contractor develops a preliminary system design, the SPO requires the contractor to host a PDR, sometimes called a 35% Design Review. Subject matter experts from many specialties review the design to ensure all specification requirements are being met. If any major design changes are to be made, this is the time. The SPO documents and considers all recommendations in a review board, and approved changes are passed to the contractor. The training community should actively participate in the PDR, both to consider training implications in the design and to gain training planning information.

CRITICAL DESIGN REVIEW (CDR)

When the contractor has incorporated the recommended PDR changes and almost completed the design, the SPO requires the contractor to host a CDR, sometimes called a 95% Design Review. This is the last opportunity for the Air Force to make design

change recommendations without serious cost and schedule impacts. By this time, there should be no major changes to the design. After CDR, the design is normally frozen. Essential changes then can only be made through Engineering Change Proposals (ECPs). The training community should again participate in CDR and continue to monitor ECPs for training impacts.

CONTRACTOR COURSE DEVELOPMENT EFFORT

After CDR, Type 1 course development can proceed in earnest. To ensure the course development is on track, it is useful to have stipulated in the training contract for the contractor to host an In-process Review (IPR) for the courses. This gives the training community the opportunity to review the training documents, training materials, and course content while the course developers can still make changes.

SCHEDULE SLIPS

Due to the application of advanced technology in new weapon systems, schedule slips are fairly common. Unfortunately, these slips create enormous problems for training managers. If the training contract is separate from the procurement contract, the training contract may have to be renegotiated. This usually means more money to the contractor because the instructors cannot be laid off until time for the course to be taught. Additionally, the personnel identified by the using commands to attend the training must be notified. Significant delays could cause some students to be too near reassignment dates for the Air Force to benefit from their training. If the training has already been given before the schedule slips, the students may forget much of the material before they can apply it. Other considerations for schedule slips include GFE availability, training facility availability, and quarters and travel arrangements for the students. Also, schedule slips due to design problems may require the contractor to double up on laboratory time, reducing equipment availability for hands-on training for courses already in progress.

A classic example of the problems schedule slips can cause for training managers occurred during the Ground Launched Cruise Missile (GLCM) acquisition program. One AFSC required three separate courses from three different contractors in two different locations. The courses were sequential and each one began the next training day after the previous one ended. On the Friday afternoon before the first class was to begin on Monday morning, the Program Office made the decision to postpone class start due to technical problems requiring full-time use of the laboratory where hands-on training was to be con-

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ducted. Students from widely scattered locations were already enroute to the training location. Delay in class start of the first course would change the schedules for all three courses. Three separate training contracts would have to be renegotiated, orders amended, students returned home, hotel reservations changed, etc. Although this issue was eventually resolved with minimum cost and schedule impacts, the training manager must be prepared to deal with issues like this at any time.

REPORTING INSTRUCTIONS

Each MAJCOM providing students to contractor or ATC-provided training should provide names of students to their MAJCOM formal training division as soon as the information is available. The MAJCOM normally receives a tasking from ATC for this information via the Simulation Model for Allocation of Resources for Training (SMART) computer system well in advance of the scheduled class start date. Approximately 30 days before class start, the ATC training manager submits reporting instructions to HQ ATC/TTPP. HQ ATC then provides the reporting instructions and fund citation to the servicing CBPO for each student so that travel orders can be cut. In order to send those reporting instructions, the ATC training manager must have coordinated with the training location to determine facility security clearance requirements, reporting time and location, uniform requirements, messing, quarters, and transportation arrangements. It is also wise to brief students on AFR 30-30 requirements and caution them about seeking additional data from contractors. For example, one student innocently asked a contractor instructor for a set of special transparencies (not called for in the contract) to use in his course. The contractor gladly provided them and sent ATC the bill. Since they were not contract deliverables, the student had to pay for them.

COURSE EVALUATION

The ATC training manager is responsible for ensuring the Type 1 training is adequate, according to ATCM 52-9. He can do this in at least three ways. He can personally visit the classroom and observe training in progress; he may designate an ATC member attending the course to evaluate it; or he may elect to merely review the student critique sheets required by contract to be collected from each student and provided to the training manager. Such considerations as the cost of the training, length of the course, and number of scheduled classes help the training manager decide on the appropriate method of evaluation. Deficiencies must be identified to the

contractor and ATC contracting office immediately. For example, inability of the contractor to provide the number of hours of hands-on training specified in the contract could be grounds for a rebate from the contractor.

Often, if the contractor is made aware of a problem, he will make a sincere effort to correct it himself rather than involving the contracting office. For example, an ATC training manager was personally evaluating a class on the opening day of a new course, and he discovered that the contractor instructor was unprepared and totally inadequate. The ATC training manager informed the contractor middle management, saying he would have to inform ATC Contracting. The contractor asked if he could delay until noon to see if the problem could be corrected, and the training manager agreed. At noon when the class began again, the class found a new and quite capable instructor. The first instructor had been fired on the spot.

CONTRACT CERTIFICATION

The ATC training manager is responsible for certifying that the contractor provided the services specified in the contract. This includes both the instruction and the deliverable course materials. Until the training manager signs the certification, the contractor cannot be paid. This responsibility gives the ATC training manager the power to insist upon a quality product from the contractor.

A FINAL WORD ABOUT TYPE 1 TRAINING

AFR 50-9 stipulates that Type 1 training should be procured only when ATC cannot satisfy the training requirement organically. There are a number of reasons for this requirement.

First, because of the lengthy lead time required by ATC to develop and award a training contract, coupled with the length of time required for course development by the contractor, the participating commands must submit training requirements very early in the acquisition cycle. The training requirements must be submitted before the system design is firm, so the requester probably does not know exactly what training is required or exactly how many people require the training.

The ATC training manager receives the request and begins developing the RFPP based on the less than perfect training request. The RFPP requires the training manager to develop a course chart specifying what information is to be taught and for how many hours. Once the contract is awarded, the con-

tractor is required to deliver that training according to the schedule and to the number of persons specified in the contract.

The cost of Type 1 training is usually very high. If the acquisition schedule slips, the training contract may have to be renegotiated, increasing the cost. Also, requiring the contractor to develop the training in accordance with the Air Force ISD model usually greatly increases the cost; therefore, only a modified ISD effort is normally required.

If the user identified more training slots than can be filled, vacant seats must still be paid for. Furthermore, due to the expense of Type 1 training, students may pick up as much as a 3-year active duty service commitment for a course only a few weeks long. The unwillingness of students to agree to this kind of commitment can aggravate the empty seat problem.

The training should ideally occur prior to the arrival of the first system. However, if training occurs too early, the student may either forget the material or be reassigned before equipment arrival. Hands-on training prior to delivery of first system requires training on either a prototype (which may be different from the operational system) or in the contractor laboratory. However, the time just before equipment delivery is often the busiest for laboratory equipment. The student may not receive adequate training. Training immediately upon equipment delivery is complicated by acceptance testing requirements, and waiting until after turnover means operational equipment with no trained personnel to operate or maintain it. The point is that adequate hands-on training is a common problem with Type 1 training.

Upon completion of the training, the instructor cadre must rely on memory, notes, and handouts to develop ATC courses and unit OJT. Depending on the quality of those three items, the final product may have deficiencies.

This paints a rather gloomy picture of Type 1 training, and it is admittedly based on a worst-case scenario. But, the training community should be aware of the inherent weaknesses in the system and be prepared to deal with them. In many cases, it is the only means available to establish an initial capability. The training community can minimize the adverse effects by early involvement, careful planning, and close coordination.

One common alternative to formal Type 1 training is Participation with Industry (PWI). Although still considered Type 1 training, it is less structured and less expensive,

allowing the student to learn by observing "over the shoulder" as contractor technicians perform maintenance procedures. It is most commonly used to overcome time and cost constraints when experienced Air Force technicians require system-specific training on procedures they can already perform on similar systems.

AIR FORCE COURSE DEVELOPMENT

Two course development efforts must now take place--the ATC formal course development and the operational unit's OJT course development. The 3306 TES subject matter specialists should perform the majority of the ATC course development if they are involved in the program. If they are not, then selected ATC instructors develop the courses. The first course control document should be the Course Training Standard (CTS). The CTS, mentioned previously in discussing RFPP preparation, lists all tasks to be trained and to what knowledge and skill level. The CTS must be agreed to by both ATC and the using command. If there is more than one using command, all parties must agree to the CTS. Once approved, the CTS becomes the contract between ATC and the user. Other course control documents are developed from the CTS. These include the Course Chart, the Plan of Instruction (POI), and finally the Lesson Plan. The entire course is developed in accordance with the ISD model.

While ATC is developing its formal courses, the operational unit instructor cadre develops its operations and maintenance training programs. The unit instructors should be familiar with the level of training ATC will provide so that there will be neither needless redundancy nor information gaps for the students graduating from ATC and entering the unit training program. AFR 50-23 governs the Air Force OJT program. To assist units in developing OJT programs, ATC provides the OJT Advisory Service at many bases.

TEST AND EVALUATION

Although part of the Air Force Initial Operational Test and Evaluation (IOT&E) may have been performed concurrently with the Developmental Test and Evaluation (DT&E) activities, additional tests under field conditions and approximating the operational environment as closely as possible may be required. If called for in the Test Plan, the training program will also be evaluated to determine the adequacy of the training to prepare operators and maintainers of the system. ATC and MAJCOM training managers should closely monitor the evaluation results to determine if the training programs re-

quire modification. Furthermore, IOT&E often identifies re-
quired changes in procedural checklists and possibly even in
equipment configuration which would require corresponding
changes in the training program and related training equipment.

Successful completion of IOT&E forms the basis for the
Production Decision. The SECDEF usually delegates this deci-
sion to the Secretary of the Air Force. The Production Deci-
sion marks the end of the Full-Scale Development Phase and the
beginning of the Production and Deployment Phase.

GRAVES' TEN LAWS
of
TRAINING MANAGEMENT

I.   It's always something.

II.   It's always late.

III.   It's never simple.

IV.   After the camel's back is broken, an infinite number of straws may be piled thereon.

V.   The likelihood of receiving an action item from a meeting is enhanced by nonattendance.

VI.   The person with whom you deal may not be the best action officer, but he's slow.

VII.   In coordinating any piece of staff work, the person with the least involvement will have the most objections.

VIII.   Talk to the guy who grinds the organ, not to the guy who holds the cup.

IX.   The validity of any decision is determined by subsequent events.

X.   No guts, no Air Medal.

Chapter Six

TRAINING MANAGEMENT ACTIVITIES
IN THE PRODUCTION AND DEPLOYMENT PHASE

During the Production and Deployment Phase, the system
and its support components are produced and turned over to the
Air Force, and the operating command activates its operational
units. This chapter identifies the training management activ-
ities required during this phase.

SITE ACTIVATION

Over 18 months of SATAF planning culminate as the opera-
tional site is activated in preparation for the system deliv-
ery. Both ATC and unit training programs must be developed in
time to train the unit operators and maintainers. All train-
ing facilities, training equipment, data, and furnishings
should be in place.

INITIAL OPERATIONAL CAPABILITY (IOC)

The definition of IOC may vary from system to system. It
is normally based on a particular number of operationally
ready systems deployed at a unit. By IOC, the training pro-
gram should be self-perpetuating. That is, instructors lost
to attrition can be replaced by new instructors trained and
qualified through formal training and OJT. To achieve the
scheduled IOC without trained Air Force maintenance techni-
cians, the SPO and operating command may opt for Interim Con-
tractor Support (ICS). The ICS option allows a contractor to
maintain the system until the Air Force can maintain it.

PROGRAM MANAGEMENT RESPONSIBILITY TRANSFER (PMRT)

The PMRT shifts program management responsibility from
the SPO to the supporting command, usually AFLC. The timing
of this milestone is agreed to early in the acquisition cycle
and is documented in the PMD and the PMRT Plan. After PMRT,
training managers normally work training equipment issues
through AFLC instead of the SPO.

FOLLOW-ON OPERATIONAL TEST AND EVALUATION (FOT&E)

After the Production Decision, the Air Force test team may carry out additional test and evaluation activities known as FOT&E. These activities could include evaluating the training program. The training community should monitor all FOT&E activities in case a change in equipment or procedures impacts the training program.

CONFIGURATION CONTROL

All training equipment should have national stock numbers and be controlled by AFLC item managers. This process is accomplished through ILS procedures during acquisition. The training manager should monitor operational system modifications to ensure corresponding modifications are made to trainers and training equipment used to train operators and maintainers. When equipment is modified, the AFLC item manager ensures modification kits are issued for every item of that equipment, but occasionally slip-ups can occur. For example, unknown to the responsible ATC training manager, some conservation-minded and skillful maintenance instructors manufactured three ACES II Ejection Seats from spare parts cannibalized from non-reparable seats. These no-cost trainers greatly enhanced their life support courses. Unknown to the instructors, a number of modifications were made to the ACES II Ejection Seat. Modification kits were not sent to the trainers because the item manager did not know they existed. Fortunately, the trainers were discovered before their students performed incorrect procedures on actual equipment. If the instructors had reported these seats to the training manager, he could have taken action to establish serial numbers for them, and the item manager could have routinely provided modification kits. This, in fact, was done after the problem surfaced. This example illustrates the necessity for configuration control.

SYSTEM MODIFICATIONS

Throughout its life cycle, the system is subject to modification. The training community must always be alert to modifications because they must always be analyzed for training requirements. The operational unit must plan to train the instructor cadre and the unit personnel on the modification, either through OJT or by submitting a request for formal training to ATC.

The ATC training manager must consider several possible impacts. First, how will the instructors get trained? Will they require Type 1 training or can they obtain the needed

information through OJT from the vendor? Second, will the
resident course or the field training course require changes?
Third, will Career Development Courses (CDCs) require
changes? Fourth, will ATC-owned training equipment be
affected? Finally, will a special resident course or mobile
training team be required to train the operating command and
the Air Force test team? This kind of continuing analysis is
essential to maintaining a quality training program for sys-
tem operators, maintainers, and support specialists.

A FINAL WORD

The successful development and management of training
throughout the system acquisition process is critical, com-
plex, and costly. It is critical because the system cannot
be operated or maintained without trained people. It is
complex due to the multitude of disciplines and organizations
involved in the process. The complexity of the process and
the expense of manpower, facilities, equipment, and data all
contribute to making a training program costly. Unfortun-
ately, a training program not well managed is even more
costly.

How can the Air Force ensure training is managed well?
First, training managers in every organization and at every
level must know how to do their jobs. Second, the training
community must get involved early in each new system acquisi-
tion. Finally, a successful training program requires an
entire training community with each member serving an essen-
tial role, and each member dependent on every other member.
It is this training community perspective that the author has
attempted to provide.
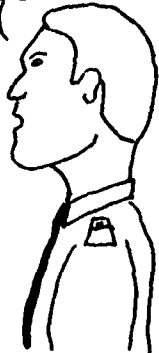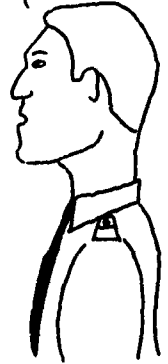
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APPENDIX

SITE ACTIVATION TRAINING PLANNING CHECKLIST

1. FTD FACILITIES REQUIREMENTS
   o Facilities survey completed
   o New construction required
   o Modifications required
   o Total classroom/office/storage, etc., requirements
   o Trainer dimensions and power requirements

2. LOCAL MANUFACTURED REQUIREMENTS
   o Refer to Master Mobile Training Set (MTS) Listing
   o Copy of drawings (obtained through base RT office)
   o Requires budgeting requirements

3. BUDGET REQUIREMENTS
   o O&M funded administrative equipment
   o Administrative/overhead supplies
   o Handtool requirements
   o Budget Code 1/9 requirements
   o Local manufactured items (refer to Master Listing)
   o O&M funded Support Equipment (follow-on)
   o Engine Bench Stock

4. UNIT/FTD JOINT-USE SUPPORT EQUIPMENT (SE)
   o List presented to SE Working Group
      - SE with MTS at FTD
      - SE without MTS at FTD
   o Required to support training start date

5. TECHNICAL ORDERS
   o Preliminary T.O.s identified and ordered through ASD
   o Standard T.O.s identified and ordered through TODO
   o Complete MTS listing with quantities

6. MAINTENANCE VIDEO TAPES (MVT)
   o Copy of MVT Index (contract or 3785 FLDTW)
   o Two copies of AVS MVTs (contract & 3785 FLDTW)

7. MASTER MTS LISTING
   o Engine
   o Airframe
   o Instructional media SE

8. MTS REQUIRED
   o Movement/delivery request initiated
   o MTS items inventoried
   o Engine and engine tools
   o Video playback monitoring equipment
   o Power requirements
     - Overseas
     - Stateside

9. CONSOLIDATED TOOL KIT LISTING
   o Engine
   o Seat (ACES II)
   o MTS

10. PICTURES OF TRAINERS
    o SAMTS
    o MTS trainers

11. TRANSPARENCIES
    o Index
    o Requirements identified to 3785 FLDTW
    o Delivered to FTD

12. TRAINER DIMENSIONS
    o SAMTS
    o Hardware trainers

13. INITIAL SPARES SUPPORT LIST (ISSL) REQUIREMENTS
    (APPLICABLE TRAINERS)
    o Card Deck ordered
    o Card Deck to Unit/LG
    o ISSL Card Deck loaded
    o MTS spares received

14. HANDS-ON-TRAINERS (TRAINING AIRCRAFT)
    o Requirement identified/approved
    o Date established for on-site delivery to FTD
    o Released to unit

15. SHELVING REQUIREMENTS
    o Engine Support Equipment
    o T.O. files, etc.

16. FTD MANNING (UMD)
    o Proposed UMD prepared and submitted to 3785 FLDTW
    o UMD approved
    o Instructor retraining guidelines
    o Weapon System Qualification Training scheduled
    o Qualification Training completed

17. UNIT TRAINING REQUIREMENTS
    o Identified
    o Scheduled

18. COURSE CONTROL DOCUMENTS
    o Requisitioned from HQ 3785 FLDTW
    o Trainer vs No-Trainer Program

19. READY TO BEGIN TRAINING

SATAF TRAINING PLANNING MILESTONES

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MONTHS
BEFORE
DELIVERY

  18---13  12  11  10  9  8  7  6  5  4  3  2  1  *
                                                  FIRST
                                                  AIRCRAFT
      *                                     *
      BASE CE TAKE                          BOD
      ACTION TO                             FTD FACILITY
      BUILD/MODIFY
      FTD FACILITY            *
                             ESTABLISH
                             FTD/UDL
                                            *
                                            MOVE MTS

                                                *
                                                START
                                                FTD TRAINING

                                                *
                                                ISSL
                                                REQUISITIONING

                                                    *
                                                    ISSL
                                                    LAY-IN

                                                        *
                                                        TRAVEL
                                                        TEAM
                                                        TRAINING
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