

**BY ORDER OF THE  
SECRETARY OF THE AIR FORCE**

**AIR FORCE INSTRUCTION 36-2251**

**20 MARCH 2003**



**Personnel**

**MANAGEMENT OF AIR FORCE TRAINING  
SYSTEMS**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

---

**NOTICE:** This publication is available digitally on the AFDPO WWW site at:  
<http://www.e-publishing.af.mil>

---

OPR: HQ USAF/XOOT (Maj Michael Koning)

Certified by: HQ USAF/XOO  
(Maj Gen Richard A. Mentemeyer)

Supersedes AFPAM36-2211, 1 November 1994

Pages: 31

Distribution: F

---

This instruction provides direction for managing Training Systems. It applies to all active United States Air Force agencies, Air Force Reserve Command (AFRC), and Air National Guard (ANG). This instruction implements Department of Defense Directive (DoDD) 1430.13, *Training Simulators and Devices*, DoDD 1322.18, *Military Training*, DoDD 5000.1, *Defense Acquisition*, Air Force Policy Directive (AFPD) 36-22, *Military Training*, and AFI 36-2201, *Developing, Managing, and Conducting Training*. Training Systems should be developed using Air Force Manual 36-2234, *Instructional System Development*. **Recommendations for Change of Publication** through channels to HQ USAF/XOOT, 1480 Air Force, Pentagon, Washington D.C. 20330-1480. Maintain and dispose of all records created as a result of prescribed processes in accordance with AFMAN 37-139, "Records Disposition Schedule."

**SUMMARY OF REVISIONS**

This instruction is a comprehensive rewrite of Air Force Pamphlet (AFPAM) 36-2211, *Guide for Management of Air Force Training Systems*. Every section has been rewritten, combined, or removed. Please review all sections.

## Chapter 1

### GENERAL INFORMATION

**1.1. Scope.** The purpose of this instruction is the *Management of Air Force Training Systems*. It outlines the requirement to develop, acquire, modify, test, validate, and support Prime Mission Training Systems and Training Services. This process is based on a systems perspective that accounts for the total life-cycle requirements of a prime mission system and its respective equipment while providing cradle-to-grave support and management. The term "prime mission system" encompasses any weapon or support system requiring training for operators, maintainers, or support personnel.

**1.2. System Development.** Training Systems are developed using the integrated management framework outlined in DoDD 5000.1 *Defense Acquisition*. Within this framework, three principal decision support systems forge a close and effective interface to acquire the quality products needed by the nation's Armed Forces. These support systems are: 1) the Requirements Generation System, 2) the Defense Acquisition System, and 3) the Planning, Programming, and Budgeting System. The management of Training Systems spans all Commands and many organizations. In addition, DoDD 1322.18, *Military Training*, and DoDD 1430.13, *Training Simulators and Devices*, provide additional overarching guidance with respect to the acquisition and fielding of training systems. The following concepts and terms are included to communicate DoD perspective and intentions. All Training Systems shall incorporate the intent of the following:

1.2.1. **Integrated Product and Process Development (IPPD).** Program Managers (PM) and other acquisition managers should apply the concept of IPPD throughout the acquisition process to the maximum extent practicable. IPPD is a management technique that integrates all acquisition activities starting with requirements definition through production, fielding/deployment and operational support in order to optimize the design, manufacturing, business, and supportability processes. At the core of IPPD implementation are Integrated Product Teams (IPTs).

1.2.2. **Program Stability.** Once the DoD initiates an acquisition program to meet an operational need, program managers should make stability of the program in acquisition a top priority. To maximize stability, the Air Force shall develop realistic long-range investment plans and affordability assessments. The Department's leadership shall strive to ensure stable program funding throughout the program's life cycle.

1.2.3. **Risk Assessment and Management.** Program Managers (PM) and other acquisition managers shall continually assess program risks. Risks must be well understood and risk management approaches developed before Milestone Decision Authorities (MDA) can authorize a program to proceed into the next phase of the acquisition process. To assess and manage program risk, PMs and other acquisition managers shall use a variety of techniques, including technology demonstrations, prototyping, modeling and simulation, test and evaluation, and system safety.

1.2.4. **Total System Approach.** Acquisition programs shall be managed to optimize total system performance and minimize the total ownership costs while at the same time giving maximum attention to reducing acquisition cycle time. Program managers should give full consideration to all aspects of system support including: logistics planning, manpower, personnel, and training; human environmental, safety, occupational health (ESOH), accessibility, survivability, and security factors; and spectrum management and the operational electromagnetic environment. By addressing both the equipment and

the human part of the equation through the application of systems engineering, acquisition program managers increase their probability of success.

**1.2.5. Training as a System.** All types of military training shall be considered as interdependent parts of an overall Training System. Possible effects on other parts of the system shall be considered when decisions are made that primarily concern one part of the system. For example, the effects on unit training shall be a key consideration in decisions on institutional training. Training systems/programs should be developed according to AFMAN 36-2234, *Instructional System Development (ISD)*.

**1.2.6. Application of Simulation.** Simulators and other training devices for prime mission systems and equipment shall be developed, procured, distributed, and used when supported by the ISD analysis. Particular emphasis shall be placed on simulators that provide training that might be limited by safety considerations or constraints on training space, time, or other resources. When deciding on simulation issues, the primary consideration shall be on improving the quality of training, safety, and the state of readiness. Potential savings in operating and support costs will normally be a secondary consideration.

**1.2.7. Human Systems Integration .** HSI is the process of effective integration of human factors engineering, manpower, personnel, training, and ESOH into the acquisition of prime mission systems to improve total system performance and reduce costs by focusing attention on the capabilities and limitations of humans. Training system development shall be considered as an integral part of an HSI program. The HSI program should be developed and conducted by the PM early in the acquisition process as part of the systems engineering process to integrate the human elements of manpower, personnel, training, human factors, ESOH, and survivability. Training program requirements outlined in the System Training Plan (STP) will be used to conduct HSI analysis and allow for system design decision-making. For new systems, the PM must decide whether or not the STP shall be stand-alone, part of HSI documentation, or part of the Single Acquisition Management Plan (SAMP).

**1.2.8. Assurance of Operation Safety, Suitability, and Effectiveness (OSS&E).** Disciplined systems engineering should be used by the PM to ensure, with the Lead Command (LC), the operational safety, suitability, and effectiveness throughout the system's lifecycle. This disciplined engineering process will emphasize the following key elements; system safety and operational risk management, configuration management, test and evaluation, technical order and technical data, and total ownership cost.

## Chapter 2

### COMMAND RELATIONSHIPS

**2.1. General.** AFD 36-22, *Military Training*, directs the Air Force to establish military training programs that satisfy mission-generated training requirements using the most efficient method possible; provide resources necessary to conduct the required military training programs; develop training programs using the Instructional System Development process; and develop, fund, acquire, and maintain training devices based on a training requirements analysis and documented in a System Training Plan (STP).

**2.2. Responsibilities.** AFD 36-22, *Military Training*, AFD 10-9, *Lead Operating Command Weapon Systems Management*, AFD 63-1 and AFI 63-101, *Acquisition System*, direct the following:

#### 2.2.1. Secretary of the Air Force.

2.2.1.1. The Assistant Secretary of the Air Force for Manpower & Reserve Affairs (SAF/MR) is responsible for military training policy matters.

2.2.1.2. The Assistant Secretary of the Air Force for Acquisition (SAF/AQ) serves as the Air Force Acquisition Executive for non-space related programs and the Air Force Senior Procurement Executive (SPE), oversees all non-space related acquisition programs through the Program Executive Officer (PEO) or Designated Acquisition Commander (DAC), and issues Program Management Directives (PMD) for all non-space related acquisition programs.

2.2.1.3. The Under Secretary of the Air Force (USecAF) serves as the Air Force Acquisition Executive for space related programs, the Milestone Decision Authority (MDA) for all DoD Space Major Defense Acquisition Programs (MDAP) and the DoD Executive Agent for Space, oversees all space related acquisition programs through the Program Executive Officer (PEO) and issues Program Management Directives (PMD) for all space related acquisition programs.

2.2.1.4. The PEO/DAC manages acquisition program costs and scheduling to meet all performance requirements within approved baselines, program direction, and acquisition strategy; directs all Program Managers and ensures program offices focus on satisfying operational requirements. The PEO/DAC makes sure that program offices exercise contracting authorities and responsibilities according to the Federal Acquisition Regulation (FAR) and Department of Defense Federal Acquisition (DFARS) and implemented in the AFFARS.

#### 2.2.2. Headquarters Air Force.

2.2.2.1. The Deputy Chief of Staff, Personnel (HQ USAF/DP) develops, coordinates, and executes personnel policy and essential procedural guidance for the management of military training programs.

2.2.2.2. Headquarters Air Force Offices of Primary Responsibility (OPR) will designate the LC for Prime Mission Systems.

2.2.2.3. Headquarters US Air Force Deputy Chief of Staff for Air and Space Operations, AF/XO, (for Air or Space Crew Training Devices) or the Deputy Chief of Staff for Installations and Logistics, AF/IL, (Maintenance Management Division) oversees the management of and policies for functional training, training devices, and STPs, as appropriate. They appoint career field managers to ensure development, implementation, and maintenance of Career Field Education and Training

Plans for Air Force specialties. As functional training manager, HQ USAF/XOOT shall review all ACAT I and ACAT II System Training Plans (may be part of the Single Acquisition Management Plans (SAMP) or Human System Integration (HSI) documentation). HQ USAF/XOOT shall advocate for funding of flight trainers. HQ USAF/XOSO shall advocate for space trainers. These include Aircrew/Spacecrew Training Systems as a whole, and Aircrew/Spacecrew Training Devices and Part Task Trainers in particular. HQ USAF/ILMM shall advocate for funding Maintenance Training Systems as a whole, and Maintenance Training Devices in particular.

### 2.2.3. Lead Command/User Commands (UC).

2.2.3.1. For primary weapon systems, support and training systems, the LC/UCs will as appropriate:

2.2.3.1.1. Advocate for the weapon system and respond to issues addressing weapon system status and use. Advocacy includes planning, programming, and budgeting for designated system-wide unique equipment, modifications, initial spares, replenishment spares, and follow-on test and evaluation.

2.2.3.1.2. Provide appropriate operational and support agency representation in the requirements and modification process. Follow established directives when establishing and prioritizing modification requirements.

2.2.3.1.3. Oversee weapon systems configuration following established Major Command (MAJCOM) and weapon system single program manager procedures. Although the weapon system program manager is responsible for maintaining systems engineering integrity; the lead command is responsible for fleet-wide interoperability and commonality. Therefore, both the lead command and the single manager must first approve any implementation of permanent modification for which there was no previously validated need.

2.2.3.1.4. Establish standards, tasks, and formal training requirements for both operations and maintenance training systems.

2.2.3.1.5. User commands retain responsibility for accomplishing these duties for command or mission unique equipment, modifications, and requirements.

2.2.3.2. Major Commands (MAJCOM), field operating agencies, and direct reporting units identify military training and resource requirements, establish supplementary training programs, execute their programs to comply with these policies, and report unit cost and student production data for all training programs.

2.2.3.3. Commanders at all levels identify, document, and track training requirements. They determine the priorities for training requirements at their level and systematically address shortfalls in resources to support those requirements. Requirements not addressed by current resources should be forwarded through the Chain of Command from the squadron level to the LC for every system.

2.2.3.4. Air Education and Training Command (AETC) acts as the Air Force's primary focal point for training technology, training development, and formal training programs. As such, and as a UC of most training systems, AETC will provide ISD advice and expertise to the LC, Program Manager, and Training Planning Team. As the Air Force's Trainer, AETC has a vested interest in the acquisition of systems and should be consulted in the development and validation of training requirements.

#### 2.2.4. Acquisition/Sustainment Command.

2.2.4.1. Air Force Materiel Command (AFMC) is responsible for providing manpower, training, organizing and equipping acquisition/sustainment programs assigned to the Electronic Systems Center, Air Armament Center, Air Logistics Centers and Aeronautical Systems Center. Air Force Space Command (AFSPC) is responsible for acquisition/sustainment programs assigned to the Space and Missile Center.

2.2.4.2. AFMC and AFSPC create integrated product teams that include full user participation at laboratories, and test, product, and logistics centers. One PM is in full charge of all aspects of an acquisition/sustainment program throughout its life cycle. AFMC usually allocates manpower resources necessary for SPD manning to support DAC and PEO acquisition activities. Depending where a product is relative to its lifecycle, the PM may reside at a product center or a logistic center.

2.2.4.3. AFMC and AFSPC support the PM by providing technical assistance, infrastructure, test capabilities, laboratory support, professional education, training and development, and all other aspects of support for AFAE, PEO, DAC, and PM functions; and supports long-range priorities and systems support planning.

2.2.4.4. AFMC and AFSPC work closely with users to formulate long-term objectives and integrate systems; support users by defining concepts and developing evaluation and integration studies; and develop, with users, affected PEOs, and DACs, alternative solutions to validated needs and integrate life-cycle cost estimates to support proposed alternatives.

## Chapter 3

### TRAINING SYSTEM MANAGEMENT, ACQUISITION, MODIFICATION AND MODERNIZATION

**3.1. Training System Management Responsibilities.** The effective management of training systems requires close coordination between the Lead, Using and Acquisition/Sustainment Commands.

3.1.1. **The Lead Command.** The Air Force assigns responsibility for overall management of each prime mission system to a LC. This ensures that all requirements associated with every system receive comprehensive and equitable consideration. The LC contributes to the process of developing and maintaining a force structure with a balance of complementary capabilities, and it establishes a basis for rational allocation of scarce resources among competing requirements. In other words, the LC is responsible for advocating, programming and allocating funding for those systems assigned to it. The LC will actively participate in all PM-sponsored Integrated Product Teams (IPT) during acquisition/modification. The Training System shall receive the same Air Force precedence rating as the prime mission system it supports and the same visibility, funding, and documentation priority.

3.1.1.1. Support the requirements for coincident development and concurrency of the Training System throughout the life of the prime mission system.

3.1.1.2. Emphasize that simulators and training devices are integral parts of an overall Training System.

3.1.1.3. Ensure that the training devices dedicated to prime mission systems or equipment are available in time for the fielding of the parent system.

3.1.1.4. Ensure that the acquisition/modification of Training System is assigned the same priority as that of the prime mission system.

3.1.1.5. With the exception of MILCON, LCs must fund training system modifications if the prime systems are modified or updated. Lead Commands shall fund training systems to ensure the training systems remain concurrent with systems in the field. Prime mission systems shall not be modified if there is insufficient funding to modify both the prime mission system and the training system.

3.1.2. **The User Command.** A UC is responsible for conducting mission operations using the resources allocated by the LC and Higher Headquarters. As such, a UC is responsible for defining the system requirements necessary to conduct operations. These requirements, to include training are submitted to the LC for advocacy, programming and funding allocation. HQ USAF/XOOT, HQ USAF/XOSO, and HQ USAF/ILMM are responsible for ensuring the LC balances the requirements and funding of a UC against the requirements and funding of the LC. Unless agreed to otherwise, a UC shall advocate, program, and allocate Operations and Maintenance and MILCON funding for training systems assigned to that UC for the period after the training system achieves Full Operational Capability (FOC). In some cases the UC funds initiatives that can't be funded by the LC for whatever reason. In these cases, the UC shall comply with AFPD 10-9. The LC for a system is usually also one of the UCs of a system.

3.1.3. **The Acquisition/Sustainment Command.** AFMC or AFSPC provides program managers for Air Force acquisition programs along with support and infrastructure to ensure acquisitions and modifications are accomplished in accordance with applicable laws, policy and guidance; and that issues

of configuration control, technical integrity, operational safety, suitability, and effectiveness are adequately addressed.

**3.1.4. The Program Manager (PM).** Weapon Systems' Program Managers are responsible to the LC to fulfill LC/UC requirements. For the purposes of this instruction, Program Manager is synonymous with System Program Director (SPD), Single Manager (SM), Product Group Manager, or Acquisition Program Manager. The PM is the only operating official who is responsible for program execution within the approved Acquisition Program Baseline, and has life-cycle responsibility for the prime mission system and supporting Training Systems. PM duties include providing assessments of program status and risk to higher authorities and to the operator or operator's representative; actively managing within approved resources, program cost, performance, and schedule; and providing assessments of contractor performance.

3.1.4.1. The PM shall acquire, modify, and maintain their Training Systems to remain concurrent with the prime mission systems (aircraft, spacecraft, etc) as identified in the approved program funding and direction.

3.1.4.2. The PM shall work closely with the LC and the UC to ensure adequate planning, budgeting, and program execution to deliver and sustain timely and effective Training Systems.

3.1.4.3. The PM shall ensure the intent of the System Training Plan (STP) is captured in required program documentation (e.g. SAMP, HSI) to include training support requirements for new prime mission systems, to ensure timely development and procurement of simulators and other training devices, with the intent to train personnel before fielding the prime mission system updates. This will allow personnel to learn from the courseware and the training devices before employing the updates on their prime mission equipment.

3.1.4.4. PMs will include Training System performance in their modernization planning. Through the modernization planning process, assess training support for MAJCOM tasks and resulting needs, shortfalls, and deficiencies with both materiel and non-materiel solutions. This process brings together the MAJCOM trainers (including AETC, if applicable), strategic planners, AFMC product center training and education Technical Planning/Integrated Product Teams (TPIPT), the Human Systems Integration Office, and the Air Force Research Laboratory (AFRL). Modernization planning products include MAJCOM long-range mission area/support plans, road maps, strategic plans, and TPIPT development plans. They become the basis of inputs to the planning, programming, and budgeting system (PPBS), AFRL research and development projects, as well as concept development for Training Systems of the future.

3.1.4.5. Program Managers should fully consider all resources at their disposal while managing programs. When initiating acquisitions/modifications of training products or services AFMC PMs shall contact the Training Systems Product Group (TSPG), ASC/YW, located at Wright Patterson AFB, Ohio, and the Requirements Division, AETC/XPR, located at Randolph AFB, Texas to get feedback on related efforts and available resources which might help them meet their requirements. AFSPC PMs shall contact the Space Training Acquisition Office (STAO), SMC/AXLY, and the Requirements Division, AETC/XPR. The TSPG, STAO, and AETC/XPR are excellent resources available to assist program managers in exploring existing and developmental training systems to satisfy training needs and leverage opportunities for cost sharing, technology transfer, or re-use that may exist in other Training Systems.

3.1.4.6. The PM should consider assigning those duties directly associated with Management of Training Systems to a single individual, as a single focal point responsible to the PM for these duties. This individual can come from many sources including, the program office, the TPSG, the LC, or the UC, and reports directly to the PM when carrying out these functions.

3.1.5. **Training Systems Product Group (TSPG).** Training Systems Product Group (TSPG), supported within AFMC, facilitates cross-flow of information between training programs, fosters development of new training technologies, and provides training system managers, supporting teams, and other resources to the prime mission system program managers and their delegated representative to assist execution of training system acquisition and sustainment programs. The TSPG will assist AFMC PMs and other training systems managers in exploring existing and developmental training systems to satisfy training needs. The TSPG conducts research and provides the needed training system acquisition (or modification and sustainment contracting) expertise. The TSPG will not assume the authority of PMs, but will serve as an extra resource to ensure Training Systems meet requirements while leveraging multi-platform synergies. The TSPG nominally consists of ASC/YW (lead), AFRL/HEA, and OO-ALC/YW. ASC/YW can be contacted at DSN 785-7408 or via the TSPG web page at <http://tspg.wpafb.af.mil/>. Specific TSPG responsibilities include providing training systems expertise; facilitating information cross-flow between programs concerning advanced training systems technology and concepts; training systems' contract acquisition actions for goods and services to meet customer requirements; and providing life cycle planning and support to keep training systems effective and affordable.

3.1.5.1. The TSPG should set up an aggressive inter-MAJCOM coordination program to transfer lessons learned, ensure availability, quality, and timely prime mission system and training data, share subject matter expertise, and provide funding/manpower advocacy.

3.1.6. **Space Training Acquisition Office (STAO).** The STAO will assist PMs within AFSPC in the development, acquisition, and sustainment of training systems for space operations and maintenance. The STAO is the space enterprise and center lead for all operations and maintenance training management within the PEO for space portfolio programs, regardless of location. They are responsible for facilitating training information cross-flow between programs, assisting with contract development, and coordination on all program documents that impact training system development and sustainment. Additionally, the STAO will manage technology research for space training systems and, in concert with program office, formulate common training solutions. The STAO may be contacted at DSN 833-5463.

3.1.7. **Contract Administration.** The procuring contracting officer may retain or delegate contract administration to the Defense Contract Management Agency (DCMA). DCMA has identified DCM Dayton as the centralized office for the administration of training systems contracts.

**3.2. Training Planning Team (TPT).** The TPT is responsible for documenting training requirements for inclusion in the SAMP, HSI documentation, or the STP. Training systems performance requirements shall be documented in the prime mission system Initial Requirements Document/Operational Requirements Document (IRD/ORD) or in more detail within a Technical Requirements Document (TRD). It is recommended that TPT meetings will be held annually. This meeting will maintain and document Training System quality and concurrency. The TPT shall be established and operational before the system acquisition strategy is developed, as early as Milestone A (Defense Acquisition Board); the acquisition strategy will be coordinated on by the TPT Chair.

3.2.1. **TPT Composition.** A representative from the LC shall chair the TPT. The TPT shall be comprised of Lead Command, PM, and User Command representatives. The TPT chair should include representatives from supporting commands, test and evaluation agency, validation and certification agency, AFRC, ANG, other Services, applicable laboratories, and designated contractor personnel, as needed. The Chair shall clearly define the composition of the TPT and the roles and responsibilities of each member, and delegate those responsibilities if desired. The User Commands are responsible for providing mission Subject Matter Experts (SME), and Instructional System Development (ISD) expertise. The LC is responsible for balancing TPT requirements with current fiscal policy and for advocating for resources within the Lead Command and from higher headquarters. The TPT Chair shall approve the TPT minutes and the STP with the coordination of the LC, all the UCs, and the PM as a minimum.

## Chapter 4

### SYSTEM TRAINING PLAN (STP)

**4.1. General Instructions.** Consult AFI 63-101, *Acquisition System* for an overview of the Air Force acquisition system. The TPT will determine if a STP will be developed, maintained, and reviewed for prime mission systems. If it is determined a STP is not required, the TPT should follow this systematic approach to determine training requirements. It should be used to support acquisition and modification processes, requirement documents, and milestone decisions. **Attachment 2** outlines the considerations and format for developing a STP.

**4.2. STP Development Process:** As an integral part of the overall systematic process required to develop, acquire, modify, test, validate, evaluate, support and manage the Training System, the STP shall be developed and sustained in accordance with **Attachment 2**.

**4.2.1. STPs for Emerging Prime Mission Systems.** For planning, programming, and budgeting purposes, the LC shall initiate the STP through a TPT as soon as possible after Acquisition Decision Milestone A. If desired, the LC can delegate some STP creation duties to another organization. The TPT Chair will coordinate the STP to obtain LC approval prior to Acquisition Milestone B. The TPT Chair shall require the coordination of the LC, all the UCs as well as the PM as a minimum on the STP. The TPT Chair shall forward a copy of the approved STP to HQ USAF/XOOT. The approved STP is a comprehensive document detailing the developmental steps, responsibilities, and guidance for the emerging Training System. See **Attachment 2** for topic areas.

**4.2.2. STP Review.** The TPT will review and update the STP at least annually throughout the life cycle of the prime mission system. If desired, the LC can delegate some STP review duties to another organization. The TPT will review changes affecting training that have occurred in the mission tasking, threat capabilities, tactics, personnel demographics or structure of the prime mission system, Training System availability, component capabilities, funding priorities, basing, new training technologies, or mishap reports identifying training deficiencies. The TPT Chair will coordinate the changes to the STP through LC all the UCs and the PM for final approval by the LC. The LC shall require the coordination of the LC, all the UCs as well as the PM as a minimum. The TPT Chair shall forward a copy of the approved STP to HQ USAF/XOOT.

## Chapter 5

### FUNDING, LOGISTICS SUPPORT, AND TRAINER FABRICATION ORGANIZATIONS

#### 5.1. Funding . Ensure adequate funding for the development and sustainment of Training Systems.

5.1.1. **Acquisition Funding.** The LC in coordination with the PM is responsible for the planning, programming, and budgeting for Training Systems as part of the overall prime mission system budget. Funding for the development and production of Training Systems for an emerging or existing prime mission system shall be included in the prime mission system acquisition program funding.

5.1.1.1. The PM will execute Training System programs according to the priorities documented in the IRD/CDD/CPD sponsored by the LC.

5.1.1.2. If a Training System has been designated as a stand-alone program, then the program shall be included in the most closely aligned major force program element. The PM will assist the appropriate Lead Command Program Element Monitor(s) (PEM) to establish and document Training System funding requirements, priority, and execution.

5.1.1.3. Funding for Training Systems flows through the Lead Command Program Element to the PM for the prime mission system for development, procurement, operations, MILCON, and maintenance funds.

5.1.2. **Modification Funding.** If the prime mission equipment is being modified, LCs shall fund corresponding Training System modifications. MILCON for modifications is programmed and funded by the UC. This funding shall be included in that prime mission equipment modification program to ensure training systems remain concurrent with the prime mission system. All permanent modifications to prime mission systems must include the corresponding modifications to the training system. Funding for modification of Training Systems for the purposes of technology insertion, performance enhancements, improved reliability, and maintainability shall be included in the prime mission system funding. If the LC does not fund a UC desired prime mission system or Training System modification and the UC elects to pursue it independently with the prime mission system PM, then that UC is responsible for planning, programming, and budgeting activities associated with that initiative throughout the life cycle of the prime mission system. In this case, the TPT Chair shall ensure the STP includes these modifications.

5.1.3. **Operations and Support Funding.** Unless agreed to otherwise, LCs and UCs shall each plan, program, and budget to provide funding for their own Training Systems' operating and support costs. This includes organic and contracted logistics support, instruction, and other training services, whether provided for during an initial period in conjunction with an acquisition program, or through a follow-on sustainment program.

5.1.4. **Refurbishment Funding.** If training devices have deteriorated during extended periods of storage, and are then designated for reuse, the gaining organization is responsible for funding the refurbishment of that device. Funding the refurbishment of devices that are loaned or leased to non-government organizations is the responsibility of the lessee.

#### 5.2. Logistics Support. The PM shall arrange for the contracting of the logistics support for training devices and follow guidance in AFI 10-602, *Determining Logistics Support and Readiness*.

5.2.1. **Responsibility.** For an emerging system, the PM is responsible for developing and furnishing logistics support.

5.2.2. **Contract Support Waivers.** The PM may request exception to contracted support by formal waiver from HQ USAF/ILM. Identify, to the AFMC program office the extent of desired contractor support.

5.2.3. **Air Force Trainer Fabrication Organization (TFO) Equipment.** The Using Unit ordering the equipment will notify the UC when support-training equipment manufactured by a TFO requires logistics support. If long-term logistics support is determined to be required, the UC will plan, program, and budget for this need.

5.2.4. **Computer Based Training (CBT) and Interactive Courseware (ICW).** CBT and ICW procured separately from a Training System contract will be supported by the procuring Command.

**5.3. Trainer Fabrication Organizations (TFO).** Command TFOs provide organic capability to design and fabricate training systems.

5.3.1. **Potential Source.** PMs should consider TFOs as a potential source of training systems to support existing and developing prime mission systems when:

5.3.1.1. The requirement is specifically one-of-a kind, a prototype, or proof-of-concept to establish technical and cost data.

5.3.1.2. Commercial products do not provide an acceptable solution.

5.3.1.3. The TFO represents the best value solution.

5.3.2. **Commands Utilizing Trainer Fabrication Facilities.** Commands utilizing trainer fabrication facilities shall develop their own procedures for logistically supporting them as well as their end products.

## Chapter 6

### MISCELLANEOUS TRAINING SYSTEMS TOPICS

**6.1. Movement of Training Devices** . Movement of centrally procured and managed training devices shall be in accordance with AFI 21-103, *Equipment Inventory, Status, and Utilization Reporting*. Accomplish the following steps:

- 6.1.1. Coordinate movement through the PM, and item manager. Allow enough lead-time to enable proper planning, programming, and funding.
- 6.1.2. Send a loss and gain message, per AFI 21-103, to the item manager.
- 6.1.3. Coordinate funding for the movement and temporary storage with the item manager, losing Command, and gaining Command. The MAJCOM funds intra-Command movements and the gaining Command funds inter-Command movements, unless coordinated otherwise.
- 6.1.4. Movement of local-purchase or MAJCOM-procured training devices and equipment is the responsibility of the MAJCOM.

**6.2. Disposition of Excess Training Devices** . Disposition of training devices shall be accomplished in accordance with Federal Acquisition Regulation and Supplements (FAR), AFMAN 23-110, *Air Force Supply Manual*, and AFI 23-501, *Retaining and Transferring Materiel*, as applicable. Following is a sequence of events:

- 6.2.1. Centrally procured and managed training devices that are declared excess will be offered for re-use before disposal.
- 6.2.2. The PM will identify excess training devices to the item manager via letter or message.
- 6.2.3. The item manager will query potential USAF, DoD, other US Government, foreign military, and international organizations to determine requirements for the excess training device and associated spares. Training devices may also be donated to Air Force museums or educational institutions, but only through the Defense Reutilization and Marketing Office (DRMO).
- 6.2.4. After coordination with the applicable DCMC property manager, the item manager will determine the final disposition of the device according to assigned priority of the responding organizations, in accordance with DRMS-M 4160.14.
- 6.2.5. The item manager and PM will then coordinate the appropriate actions for declassification and demilitarization of the device, removal of aircraft-common parts and other recoverable or hazardous materials prior to shipment of the device to DRMO or other destination.
- 6.2.6. When contract clauses are incorporated as required by Federal Acquisition Regulation 42.202 (Assignment of Contract Administration) and 42.302 (Contract Administration Functions), then disposal methods directed by Federal Acquisition Regulation 45.6 shall apply. In the absence of Federal Acquisition Regulation clauses 52.245-2 and 52.245-5, the procedures of paragraphs **6.2.2.** through **6.2.5.** of this instruction may be implemented.

**6.3. Disposition of Excess Training Materials** . Training equipment and materials that are local-purchase or Command-procured should also be considered for reuse rather than disposal. Courseware, hardware, and software may have utility for other U.S. or international agencies, particularly security

assistance programs. Disposition of local-purchase or Command-procured equipment and materials is the responsibility of the PM, and should not be referred to the item manager; however, the item manager may assist in locating potential users for such materials. If Federal Acquisition Regulation Clauses 52.245-2 and 52.245-5 are in the contract, then disposal methods directed by Federal Acquisition Regulation 45.6 shall apply.

**6.4. Lease or Loan of Training Devices .** If determined to be advantageous to the U.S. Government, training devices may be leased or loaned to non-US Government organizations in accordance with AFMAN 23-110v2, *Air Force Supply Manual*, and AFI 64-103, *Leasing USAF Aircraft and Related Equipment to Non-Government Organizations*. SAF/AQ authorizes such leases or loans and issues a Determination and Findings. Upon receipt of an approved determination and finding (D&F), the appropriate AFMC/AFSPC program office, product group, or materiel group evaluates lease/loan requests, determines device availability, and negotiates the lease or loan.

**6.5. Training Device Inventory.** PMs will maintain a training resource inventory by category, description, location, number, and type of logistics support and provide it upon request to HQ USAF/XOOT.

**6.6. Use of Grounded Aircraft and Excess Materiel for Training.** PMs should attempt to utilize excess materiel for training purposes before purchasing or fabricating a new system. PMs should refer to the following documents to use excess materiel for training: DOD 4160.21-M *Defense Materiel Disposition*; AFI 16-402 *Aerospace Vehicle Programming, Assignment, Distribution, Accounting and Termination*, Paragraph 4.3; AFMC 23-204 *Excess Property Accounting, Processing and Reporting at the Aerospace Maintenance and Regeneration Center (AMARC)*.

## Chapter 7

### SIMULATOR CERTIFICATION (SIMCERT) AND SIMULATOR VALIDATION (SIMVAL)

#### 7.1. Air Force Training System and Device Simulator Certification and Validation Programs:

Simulator certification (SIMCERT) is a program designed to ensure training devices are maintained to their design configuration and provide accurate and credible training. Simulator validation (SIMVAL) is a program designed to ensure that training devices provide realistic performance of the current mission and threats. They also provide the PM with an audit trail for training device effectiveness; provides a quality assurance measurement to oversee contractor-supported training or equipment; and compares the Training System with the prime mission system to establish and document concurrency baselines. Observe the following guidance:

7.1.1. **General.** LCs shall determine which training devices require a SIMCERT or SIMVAL program.

7.1.2. **User Commands, to include ANG and AFRC.** UCs should coordinate and align their SIMCERT program with the prime mission equipment SIMCERT program, where appropriate.

7.1.3. **SIMCERT Programs.** The LC, with assistance from appropriate agencies such as the PM, UC, and product or materiel group, shall establish training system certification requirements, to include training tasks, criteria, and certification interval. An overview of the certification requirements should be included in the STP/SAMP/HSI. Each LC SIMCERT program shall be documented in a Master SIMCERT plan IAW either the MAJCOM supplements to this AFI, AFI 36-2248, or in accordance with AFI 16-1001 *Verification, Validation and Accreditation (VV&A)*. These supplements shall specify the types and frequency of SIMCERT. The early identification of the SIMCERT program is directly related to the quality of the acquisition or modification of the Training System. Initial certification of training devices should be completed as soon as possible following delivery or major modifications to those systems.

7.1.4. **SIMVAL Programs .** The LC, with assistance from appropriate agencies such as the PM, UC, and product or materiel group, shall establish training system validation requirements, to include (1) a comparison of the training device's operating parameters and performance to the current intelligence assessment of a weapon system, threat and interaction between the weapon system and threat and (2) documentation of the differences and impacts. An overview of the validation requirements should be included in the STP/SAMP/HSI. Each LC SIMVAL program shall be accomplished IAW with either the MAJCOM supplements to this AFI, AFI 36-2248, or in accordance with AFI 16-1001 *Verification, Validation and Accreditation (VV&A)*. SIMVAL will be accomplished throughout the life cycle of the Training System.

RONALD E. KEYS, Lt General, USAF  
DCS/Air & Space Operations

**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFH 36-2235, Volumes 1 through 11, *Information for Designers of Instructional Systems*

AFI 10-601, *Mission Needs and Operational Requirements Guidance and Procedures*

AFI 10-602, *Determining Mission Capability and Supportability Requirements*

AFI 10-901, *Lead Operating Command—Communications Information Systems Management*

AFI 16-402, *Aerospace Vehicle Programming, Assignment, Distribution, Accounting and Termination*

AFI 16-1001, *Verification, Validation and Accreditation (VV&A)*

AFI 21-103, *Equipment Inventory, Status, and Utilization Reporting*

AFI 23-501, *Retaining and Transferring Materiel*

AFI 36-2201, *Training Development, Delivery, and Evaluation*

AFI 36-2248, *Operation and Management of Aircrew Training Devices*

AFI 63-101, *Acquisition System*

AFI 63-1201, *Assurance of Operational Safety, Suitability and Effectiveness*

AFI 64-103, *Leasing USAF Aircraft and Related Equipment to Nongovernment Organizations*

AFI 90-901, *Operational Risk Management*

AFI 90-202, *USAF Mishap Prevention Program*

AFMAN 23-110v2, *Air Force Supply Manual*

AFMAN 36-2234, *Instructional System Development (ISD)*

AFMAN 37-139, *Records Disposition Schedule*

AFMCI 23-204, *Excess Property Accounting, Processing and Reporting at the Aerospace Maintenance and Regeneration Center (AMARC)*

AFPD 10-6, *Mission Needs and Operational Requirements*

AFPD 10-9, *Lead Operating Command Weapon Systems Management*

AFPD 36-22, *Military Training*

AFPD 63-1, *Acquisition System*

DoDD 1322.18, *Military Training*

DoDD 1430.13, *Training Simulators and Devices*

DoDD 4160.21-M, *Defense Materiel Distribution*

DoDD 5000.1, *Defense Acquisition*

DoDD 7045.14, *The Planning, Programming, and Budgeting System (PPBS)*

DRMS-M 4160.14

Federal Acquisition Regulation and Supplements

MIL-STD- 882D, *Standard Practice for System Safety*

***Abbreviations and Acronyms***

**AETC**—Air Education and Training Command

**ACAT**—Acquisition Category

**AFFARS**—Air Force Federal Acquisition Regulation Supplement

**AFAE**—Air Force Acquisition Executive

**AFI** —Air Force Instruction

**AFMC**—Air Force Materiel Command

**AFPD** —Air Force Policy Directive

**AFRC**—Air Force Reserve Command

**AFRL**—Air Force Research Laboratory

**AFSC** —Air Force Specialty Code

**AFSPC**—Air Force Space Command

**AMARC**—Aerospace Maintenance and Regeneration Center

**ANG**—Air National Guard

**CBT** —Computer Based Training

**CLS** —Contract Logistics Support

**CDD**—Capabilities Development Document

**CPD**—Capabilities Production Document

**D&F** —Determination and Finding

**DAC**—Designated Acquisition Commander

**DCMA**—Defense Contract Management Agency

**DFARS**—Defense Federal Acquisition Regulation Supplement

**DoD**—Department of Defense

**DoDD**—Department of Defense Directive

**DoDI**—Department of Defense Instruction

**DMT** —Distributed Mission Training

**DRMO**—Defense Reutilization and Marketing Office

**EC** —Electronic Combat

**FAR**—Federal Acquisition Regulation  
**FOC**—Full Operational Capability  
**HQ USAF** —Headquarters US Air Force  
**HSI**—Human Systems Integration  
**ICW**—Interactive Courseware  
**IOC**—Initial Operational Capability  
**IPPD**—Integrated Product and Process Development  
**IPT**—Integrated Product Team  
**IRD**—Initial Requirements Document  
**ISD**—Instructional System Development  
**LC**—Lead Command  
**LSA**—Logistics Support Analysis  
**MAJCOM**—Major Command  
**MILCON**—Military Construction  
**MOA** —Memorandum of Agreement  
**MOU** —Memorandum of Understanding  
**MDA**—Milestone Decision Authority  
**MDAP**—Major Defense Acquisition Program  
**MTA(R)** —Mission/Task Analysis (Report)  
**MTD**—Maintenance Training Device  
**MTTL**—Master Training Task List  
**OMA(R)**—Objectives/Media Analysis (Report)  
**OPR** —Office of Primary Responsibility  
**ORD**—Operational Requirements Document  
**OSS&E** —Operational, Safety, Suitability, and Effectiveness  
**PEM**—Program Element Monitor  
**PEO**—Program Executive Officer  
**PM**—Program Manager  
**PMD**—Program Management Directive  
**PPBS**—Program Planning and Budgeting System  
**SAMP**—Single Acquisition Management Plan  
**SIMCERT**—Simulator Certification

**SIMVAL**—Simulator Validation  
**SKA**—Skills, Knowledge levels, and Attitudes  
**SLA**—Service Level Agreement  
**SM**—Single Manager  
**SME**—Subject Matter Expert  
**SPD**—System Program Director  
**SPE**—Senior Procurement Executive  
**STAO**—Space Training Acquisition Office  
**STP**—System Training Plan  
**TFO**—Trainer Fabrication Organization  
**TPIPT**—Technical Planning Integrated Product Team  
**TPT**—Training Planning Team  
**TRA(R)**—Training Requirements Analysis (Report)  
**TRD**—Technical Requirements Document  
**TSBA(R)**—Training Systems Basis Analysis (Report)  
**TSPG**—Training Systems Product Group  
**TSRA**—Training System Requirements Analysis  
**UC**—User Command  
**USecAF**—Undersecretary of the Air Force  
**VV&A**—Verification, Validation and Accreditation

### *Terms*

**Computer Based Training (CBT)**—Training in which computers are used for training development, delivery, evaluation, and training management. The management functions often include scheduling, lesson selection, score keeping, and quality of student responses.

**Concurrency**—The condition of ready for training being achieved on the training need date, and the functions and operation of the Training System and its supporting equipment and materials must match the supported prime mission system.

**Contract Logistics Support (CLS)**—A pre-planned method used to provide all or part of the logistics support for a system, subsystem, modification, or equipment throughout its entire life cycle. CLS covers depot maintenance and, as negotiated with the User Command, necessary organizational and intermediate level maintenance, software support, and other operation and maintenance tasks.

**Course**—Logically grouped instruction on a subject, designed to achieve defined learning objectives. A complete series of instructional units identified by a common title or number. An ordered arrangement of subject matter designed to instruct personnel in the knowledge, skills, or techniques required in the performance of tasks in a designated area of specialization.

**Courseware**—All instructional material including technical data, textual materials, and audio tapes, slides, movies, video tapes, video discs, and other audiovisual materials.

**Human Systems Integration (HSI)**—The process of effective integration of human factors engineering, manpower, personnel, training, and ESOH considerations into the acquisition of prime mission systems to improve total system performance and reduce costs by focusing attention on the capabilities and limitations of humans. (See DoDI 5000.2-R)

**Interactive Courseware (ICW)**—A computer program controlled instruction that relies on trainee input to determine the order and pace of instruction delivery.

**Instructional System Development (ISD)**—A deliberate and orderly process for planning and developing instructional programs that make sure personnel are taught the knowledge, skills, and attitudes essential for successful job performance. Depends on a description and analysis of the tasks necessary for performing the job, objectives, and tests clearly stated before instruction begins, evaluation procedures to determine whether or not the objectives have been reached, and methods for revising the process based on empirical data. (See AFMAN 36-2234)

**Lead Command (LC)**—The MAJCOM primarily operating a system, subsystem, or item of equipment. This generally applies to those operational Commands or organizations designated by Headquarters US Air Force to conduct or participate in operations or operational testing (See AFPD 10-9). The Air Force assigns responsibility for overall management of each prime mission system to a LC. The LC contributes to the process of developing and maintaining a force structure with a balance of complementary capabilities, and it establishes a basis for rational allocation of scarce resources among competing requirements. In other words, the LC is responsible for advocating, programming and allocating funding for those systems assigned to it.

**Master Training Task List (MTTL)**—Documentation of total training tasks developed for a prime mission system and its respective mission. It includes the entire spectrum of tasks in each functional area (operations, maintenance, and support) requiring training. The MTTL provides the training task baseline for all acquisition, modification, support, management, and funding actions through comparison with predecessor or future prime mission systems.

**Media**—The delivery vehicle for presenting instructional material or the basic communication stimuli presented to a student to induce learning.

**Mission/Task Analysis (MTA)**—A process of reviewing mission requirements, developing collective task statements, and arranging the collective tasks in a hierarchical relationship.

**Mission Trainer**—A trainer that provides the trainees with a simulated warfare environment that is specifically mission oriented to the type of prime mission system involved. The trainer can provide specific prime mission system operator modes or a mission mode that requires tactical decision-making.

**Prime Mission Equipment (System)**—Any weapon system, support system, work station, or end item that supports a specific military mission, therefore, requiring operations, maintenance, or support personnel training. Also called Defense System and Parent System.

**Program Manager (PM)**—The PM has life-cycle responsibility for the prime mission system. PM duties include providing assessments of program status and risk to higher authorities and to the operator or operator's representative; actively managing within approved resources, program cost, performance,

and schedule; and providing assessments of contractor performance. As used in this instruction applies collectively to System Program Director, single manager, product group manager, or acquisition program manager.

**Simulation**—A method for implementing a model over time. Also a technique for testing, analysis, or training in which real-world systems are used, or where real-world and conceptual systems are prepared by a model.

**Simulator**—A training device that permits development and practice of the necessary skills for accomplishing operational tasks, to a prescribed standard of competency, in a specific prime mission system and duty position.

**Simulator Certification (SIMCERT)**—The process of ensuring through validation of hardware and software baselines that a Training System and its components provide accurate and credible training. The process also makes sure the device continues to perform to the delivered specifications, performance criteria, and configuration levels. It will also set up an audit trail regarding specification and baseline data for compliance and subsequent contract solicitation or device modification.

**Simulator Validation (SIMVAL)**—The process for (1) comparing a training device's operating parameters and performance to the current intelligence assessment of a weapon system, threat and interaction between the weapon system and threat and (2) documenting the differences and impacts. This process includes generation and deployment of an intelligence data baseline of the system, comparison of simulator characteristics and performance, support for the modification and upgrade of the simulator, a comparison of simulator and threat operating procedures, and correction of any significant deficiencies. Uncorrected deficiencies are identified and published in validation reports. The process continues throughout the life cycle of the simulator.

**System Training Plan (STP)**—*The STP is an iterative planning document that defines the justification, design, development, funding, resources, support, modification, operation, and management of a Training System. The STP is designed to provide for planning and implementation of training and to make sure all resources and supporting actions required for establishment and support are considered. The STP may be a stand-alone document, or part of a Single Acquisition Management Plan (SAMP), or Human Systems Integration (HSI) documents. All references to the STP in this document incorporate the possibility that the intended documentation may be part of a SAMP or HSI.*

**Technical Planning Integrated Product Team (TPIPT)**—TPIPTs are multi-constituent teams of Operators and AFMC laboratories, System Program Offices, development planners, and industry to generate, consolidate, and analyze an array of concept options and technology needs that address the Operator's needs.

**Training**—Instruction and applied exercises for the acquisition and retention of skills, knowledge, and attitudes required to accomplish military tasks.

**Training Device**—A hardware device that permits learning, development, and the practice of skills and procedures necessary for understanding and operating the integrated systems of a specific prime mission system.

**Training Planning Team (TPT)**—An action group composed of representatives from all pertinent functional areas, disciplines, and interests involved in the life cycle design, development, acquisition, support, modification, funding, and management of a specific prime mission training system. The TPT uses the STP to ensure training considerations are adequately addressed in the prime mission system acquisition and modification processes.

**Training Requirement**—The skills and knowledge that are required for satisfying the job performance requirements and are not already in the incoming students' repertoire.

**Training System**—A systematically developed curriculum including, but not necessarily limited to, courseware, classroom aids, training simulators and devices, operational equipment, embedded training capability, and personnel to operate, maintain, or employ a system. The Training System includes all necessary elements of logistic support.

**Training System Product Group (TSPG)**—The Training Systems Product Group (TSPG) assists PMs in exploring existing and developmental training systems to satisfy training needs. The TSPG conducts research and provides the needed training system acquisition (or modification and sustainment contracting) expertise.

**Training Systems Requirements Analysis (TSRA)**—The initial step in user requirements identification. It consists of mission/task analysis, training requirements identification, objectives/media analysis, and training systems basis analysis. A TSRA integrates the products of the Instructional System Development (ISD) process and the Systems Engineering (SE) process to describe the Training System to be procured. It serves as a required input to the System Training Plan. It is accomplished by the PM in coordination with the LC and UC.

**User Command (UC)**—Any Command or organization that uses the products of the Training System. A User Command may have management functions assigned to it. The User Command is responsible for conducting mission operations using the resources allocated by the Lead Command and higher Headquarters. As such, the UC is responsible for defining the system requirements necessary to conduct operations. These requirements are submitted to the Lead Command for advocacy, programming and funding allocation. If only one MAJCOM or agency possesses the weapon system, that MAJCOM or agency is the designated lead command. Per AFPD 10-9, a UC shall advocate, program and allocate Operations and Maintenance and MILCON funding for training systems assigned to that UC for the period after the training system achieves Initial Operational Capability.

## Attachment 2

### SYSTEM TRAINING PLAN (STP)

#### **A2.1. STP PURPOSE:** The STP normally:

A2.1.1. Establishes training system definition through acquisition and modification documentation that will support the review and decision process.

A2.1.2. Identifies training needs, concepts, strategies, constraints, risks, data, alternatives, resources, responsibilities, and other areas, through an iterative process.

A2.1.3. Documents the results of early, front-end, and follow-on training task analyses.

A2.1.4. Provides information and identify resources for management decisions within the planning, programming, and budgeting process which support defense/training system acquisition, modification and sustainment processes.

A2.1.5. Provides the basic concepts and strategy to attain and maintain training system concurrency to support desired training capability at the appropriate time.

A2.1.6. Identifies alternate training strategies, to include methodology and media, if funding, concurrency, or other unknowns negatively impact required training system capabilities.

A2.1.7. Establishes milestones and schedules to ensure timely development, testing, and fielding of training capability and training support.

#### **A2.2. STP FORMAT.** The TPT may choose to utilize one of two formats for the STP depending upon the life-cycle phase of the prime mission systems: STP for emerging prime mission systems and STP for existing prime mission systems.

**A2.2.1. STP FORMAT FOR EMERGING PRIME MISSION SYSTEMS.** The exact composition of the STP is at the discretion of the TPT. The STP may be a stand-alone document, or part of a Single Acquisition Management Plan (SAMP), or Human System Integration (HSI) documents. The STP is a "top level" document providing as much detail as necessary to support the acquisition and budget process. The details needed to support this analysis may be maintained in other documents and referenced in the STP.

A2.2.1.1. Suggested STP Sections. Following are suggested STP sections. Include only those sections necessary to guide the development, fielding, and management of the Training System:

A2.2.1.1.1. Executive Summary. Provide an overview of the STP. Highlight sufficient and significant elements to support your program, shortfalls, and future objectives. Briefly describe the overall mission of the prime mission system, the Training System, and requirements. Show the relationship of the resource to meeting the overall mission, shortfalls, and alternatives.

A2.2.1.1.2. Mission and Prime Mission System Description. Describe the prime mission system and mission based on the operational requirement, threat environment, and the designed operational capability, when determined. Include a thorough analysis of the prime system mission. A classified attachment may be required. Include title, nomenclature, and program elements for budget, security classification, prime mission system priority rating, and principal

agencies. Reference other plans and documents that support the prime mission or Training System acquisition and modification process. Include a brief summary of baseline system to be replaced, modified, or augmented; shortcomings, displacement, or disposition, if being replaced.

A2.2.1.1.3. Training Planning Team Membership (TPT). The STP should document LC, UCs, PM, Acquisition Agencies, and other TPT members.

**A2.2.1.2. Training System Description.** Describe the total Training System by functional area, including instructional strategy, duration, content, media, training devices and utilization rates, and facilities. Provide strategy and alternative methodologies throughout the training continuum for initial training, on-the-job training, in unit training (i.e. continuation and career progression training), required qualification levels, reentry qualifications, evaluation points, training concept during hostilities, etc. Identify proposed approach to acquire training equipment and facilities. Estimate training qualification time required to full proficiency. Include description of database, systems integration, networking protocols, compatibility, transportability, and deployability requirements. Address ability to efficiently and cost effectively modify Training System software concurrently with the prime mission system. Identify requirement for CBT and ICW. Provide a course summary document.

A2.2.1.2.1. Diagram on a time continuum, the training progression of each operational and maintenance functional area from entry-into to exit-from the prime mission system. Identify on the continuum all qualification levels, evaluation checkpoints, and reentry qualification points. State the policy upon which decisions will be based for critical points, such as course sequence, media allocation, on prime mission equipment training, and qualification evaluation. Indicate basic training principles to be taken into account, such as building-block approach.

A2.2.1.2.1.1. Describe:

A2.2.1.2.1.1.1. Operator Training System(s).

A2.2.1.2.1.1.2. Maintenance Training System(s).

A2.2.1.2.1.1.3. Support (Depot) Training System(s).

A2.2.1.2.1.2. List and describe Training System components role, use, and capabilities:

A2.2.1.2.1.2.1. Actual prime mission and non-prime mission system equipment.

A2.2.1.2.1.2.2. Courseware and associated equipment.

A2.2.1.2.1.2.3. Training aids and devices.

A2.2.1.2.1.2.4. Embedded training capability in the prime mission system.

A2.2.1.2.1.3. Describe AFRC and ANG participation.

A2.2.1.2.1.4. Identify all Joint training and training with potential sister Service applications.

A2.2.1.2.1.5. Address potential or unresolved training issues.

**A2.2.1.3. Training System Requirements.** Describe how manpower, personnel, training, human factors engineering, and environmental, safety, and occupational health (ESOH) hazards considerations are applied to the design and development of the prime mission or Training System to reduce costs and enhance capabilities. Establish initial objectives that support readiness, force structure, affordability, and operational objectives.

**A2.2.1.4. Training System Requirements Analysis (TSRA).** The TPT will use the results of the TSRA to identify the Training System training requirements. The TPT will validate the TSRA products for use in the design of the Training System. The Mission/Task Analysis Report (MTAR) and Training Requirements Analysis Report (TRAR) will be used by the TPT to develop the Master Training Task List (MTTL) with performance criteria for inclusion in the Training System requirement documents. The Objectives/Media Analysis Report (OMAR) and Training Systems Basis Analysis Report (TSBAR) will be use to identify other Training System requirements, such as the number and type of training devices, courseware, etc., to be included in the Training System requirement documents. (See [Attachment 3](#) for TSRA process description.)

**A2.2.1.5. Implementation.** Describe data sources, implementation procedures, special authorization or approvals, and assign responsibilities. Identify those training areas not supported by a complete task analysis process.

**A2.2.1.6. Training System Concurrency Strategy.** Identify and group critical training tasks consistent with mission training development and implementation that are impacted by concurrency. When incremental (phased) delivery of training capability is advantageous or necessary, training capabilities should support the following priorities as agreed to by the TPT:

A2.2.1.6.1. Safety training requirements and tasks.

A2.2.1.6.2. Warfighting training requirements and tasks.

A2.2.1.6.3. Full mission training and rehearsal requirements and tasks.

**A2.2.1.7. Organizing Interfaces.** Identify Government agencies necessary to ensure timely approvals and data, equipment, and property transfers should be concurrent with the first contract award and renewed throughout the life cycle of the prime mission and training system. Include established agreements such as SLA, Memorandums Of Understanding (MOU) and other agreements. Briefly spell out each Command or agency responsibilities.

**A2.2.1.8. Training System Management and Support Concept.** Concurrency must be given a primary consideration in contracting. Identify the concept and strategy for achieving cradle-to-grave management and support of the Training System. Describe requirements and options for logistics support. Contractor Logistics Support (CLS) contracts that include modifications (hardware/software) should be developed and used. Consider:

A2.2.1.8.1. CLS and management.

A2.2.1.8.2. Technical data.

A2.2.1.8.3. Spares.

A2.2.1.8.4. Consumables.

A2.2.1.8.5. Organizational, intermediate, and depot level maintenance.

A2.2.1.8.6. Special or system operational equipment.

A2.2.1.8.7. Common or special tools and equipment.

**A2.2.1.9. Manpower Support Concept, Military Personnel Utilization Concept, and Personnel Training Requirements.** Consider student demographics, entry requirements, and student throughput estimates; estimate portion of military, civilian, or contract personnel. Describe Air Force specialty codes (AFSC) employed. Identify these and any other unique requirements for this system in each of the following functional areas:

A2.2.1.9.1. Combined test force.

A2.2.1.9.2. Initial cadre.

A2.2.1.9.3. Operations.

A2.2.1.9.4. Maintenance.

A2.2.1.9.5. Depot.

A2.2.1.9.6. Security forces.

A2.2.1.9.7. Munitions and explosive ordnance.

A2.2.1.9.8. Contractor support/CLS/Contract Training.

**A2.2.1.10. Training Constraints and Risks.** Include all potential limitations that will or may affect timely implementation of training objectives to meet mission initial operational capability (IOC) and maintain full operational capability. Describe all peacetime training constraints. Consider manpower or personnel and resource availability, security, cost, and environmental, safety, and occupational health (ESOH) considerations, which may influence training media and methodology design, development, and selection. Include peacetime restrictions on the use of the prime mission system. Identify risks and assign risk levels that may affect deployment schedules or other milestones. Identify the expected impact of late to need or unusable training devices in terms of work-a-rounds, dollar costs for alternative training, increased use of the prime mission system, or impact of failure to perform on combat capability. Initiatives such as advanced prime mission system design change data deliveries and long-lead contractor provided equipment or Government-furnished equipment, information, or property should be considered. The risk Government-furnished property adds to a concurrent delivery schedule must be discussed and tradeoffs identified.

**A2.2.1.11. Prime mission and Training System Milestones.** Identify the prime mission system and Training System schedules and priority ratings necessary for concurrency required to deliver the Training System. Show "need dates" in terms of milestones. Include key engineering change proposals, management responsibility and operational milestones. Consider all schedules pertinent to satisfying training objectives through definitive milestones. These could include:

A2.2.1.11.1. Prime mission system major milestones to include IOC through full operational capability (FOC).

A2.2.1.11.2. Task requirements and analyses completion dates.

A2.2.1.11.3. Training equipment requirements and delivery.

A2.2.1.11.4. Facility beneficial occupancy dates.

A2.2.1.11.5. Prime mission and training system deployment dates.

- A2.2.1.11.6. Training system support center activation.
- A2.2.1.11.7. Factory or contractor training dates.
- A2.2.1.11.8. Instructional course start dates.
- A2.2.1.11.9. Logistics support requirements dates.
- A2.2.1.11.10. Ready for training, and Required Assets Available dates.
- A2.2.1.11.11. Technical data availability.
- A2.2.1.11.12. Courseware development completion dates.
- A2.2.1.11.13. Training management system completion dates.
- A2.2.1.11.14. Training system evaluation plan and review dates.

A2.2.1.12. **Resource Summary.** Identify total resource requirements to develop and operate the Training System throughout the prime mission system life cycle. Include recommended tradeoffs to support training and impact of not funding or procuring desired training capability.

- A2.2.1.12.1. Indicate funding by allocation and Fiscal Year.
- A2.2.1.12.2. Training or test equipment, courseware, training aids, technical manuals, and documentation:
  - A2.2.1.12.2.1. Types.
  - A2.2.1.12.2.2. Numbers.
  - A2.2.1.12.2.3. Life-cycle support.
- A2.2.1.12.3. Manpower:
  - A2.2.1.12.3.1. Officer.
  - A2.2.1.12.3.2. Enlisted.
  - A2.2.1.12.3.3. Civilian.
- A2.2.1.12.4. Personnel:
  - A2.2.1.12.4.1. Instructor cadre.
  - A2.2.1.12.4.2. Support personnel.
- A2.2.1.12.5. Military construction or facility modification. Describe project and costing by fiscal year. Establish physical, power, ESOH, security, etc., requirements.
  - A2.2.1.12.5.1. Facility requirements.
  - A2.2.1.12.5.2. Furniture, audiovisual, etc., requirements.
  - A2.2.1.12.5.3. Security.
- A2.2.1.12.6. Contractor support. Time, effort, and cost. Initial training support.
- A2.2.1.12.7. Travel and per diem.
- A2.2.1.12.8. Other. Airspace, ranges, flying hours, munitions, etc.

A2.2.1.13. **Training Evaluation and Validation.** Develop and document evaluation and validation criteria, methodology, and responsibilities. Provide cost benefit analysis of proposed alternatives. Include plan for evaluation of training effectiveness.

A2.2.1.14. **R&D Efforts.** Describe current and future R&D studies and cost benefit analysis that may support upgrades to the systems or alternative methodologies to close any training gaps or accomplish the training with fewer resources.

A2.2.1.15. **Lessons Learned.** Identify problem areas common with other programs and potential solutions. Document assumptions made, fixes, work-a-rounds, or changes to requirements based on lessons learned. Include impact on system costs, effectiveness, and combat capability.

A2.2.1.16. **Distribution.** Include appropriate distribution to members of the training planning team and other designated agencies.

A2.2.2. **STP FORMAT FOR EXISTING PRIME MISSION SYSTEMS.** After fielding of the Training System, the STP for an emerging prime mission system becomes a historical document providing direction, perspective, and guidance for managers of the training system. The STP for an existing prime mission system is a forward-looking road map of the Training System. The exact composition of the STP is at the discretion of the TPT. It should include the following:

A2.2.2.1. An assessment of future training needs caused by changes in the prime mission system and/or its mission tasking.

A2.2.2.2. A timeline to show the plan for sustaining, modifying, disposing, and replacing the Training System components.

A2.2.2.3. Any analysis, assessment, or background documentation that provides justification for acquisition, modification, and funding support for Training System components.

A2.2.2.4. An assessment of Training System deficiencies and their impact on the training system costs, effectiveness, and combat capability. Document recommended fixes, work-a-rounds, or changes to requirements.

A2.2.2.5. An assessment of future R&D efforts or technological advances that could improve training effectiveness/efficiency, including cost-benefit analysis data.

### Attachment 3

## TRAINING SYSTEMS REQUIREMENTS ANALYSIS (TSRA)

**A3.1. Training System Requirements Analysis (TSRA) Process .** For new and emerging weapon systems, a Training System Requirements Analysis shall be conducted to fully define the training system requirements and to identify any risks to develop and implement the training system. For existing weapon systems, TSRAs will be conducted when major modifications to existing training capability are anticipated or when the training system PM, or TPT determines the need for a TSRA. This analysis enables the UC experts to prioritize critical tasks and ensure all training requirements are addressed in the Instructional Systems Development (ISD) process. The LC, in conjunction with Air Force Materiel Command (AFMC)/Air Force Space Command (AFSPC) program office, product or materiel group, or AETC, should perform the TSRA. The TSRA contains four major components: mission/task analysis (MTA), training requirements analysis (TRA), objectives/media analysis (OMA), and the Training System Basis Analysis (TSBA).

**A3.1.1. Mission/Task Analysis (MTA).** The MTA identifies and analyses all tasks to be performed for the operation and maintenance of the prime mission system. The MTA will result in the training task list for each mission area. The TSM, together with appropriate agencies, will develop and the TPT will maintain a Master Training Task List (MTTL) by mission area for each prime mission system. The MTA is the parent document for the MTTL. Thus, the MTTL should be derived from analysis of mission tasks, associated system tasks, legacy mission equipment or Training System task lists, and additional requirements resulting from personnel and resource availability, security, cost, and environmental, safety, and occupational health (ESOH), constraints imposed by the peacetime environment. The TPT will determine the configuration of the MTTL. The MTTL should:

A3.1.1.1. Provide a total listing of tasks to be trained from initial entry into the prime mission equipment through upgrade, qualification, and continuation training.

A3.1.1.2. Break each mission into tasks to be trained, situational context, and coordination requirements. Each prime equipment mission shall be described in terms of mission objectives, scenarios, and mission profiles.

A3.1.1.3. Provide a full range of threat and environmental conditions.

A3.1.1.4. Provide a detailed task analysis record that characterizes each task and the criteria for successful performance in a mission context.

**A3.1.2. Training Requirements Analysis (TRA).** The TRA converts the MTTL into the training requirements for the prime mission system. The TRA defines the entry level and exit level Skills, Knowledge-levels and Attitudes (SKA) for each unique target student population.

A3.1.2.1. Training requirements equal  $SKA_{Exit}$  minus  $SKA_{Entry}$

A3.1.2.2. Entry SKAs are baselined to the target student population (e.g. Basic Training graduate, cross-trainee).

A3.1.2.3. Exit SKAs are derived from the Job Performance Requirements (JPR) provided in the MTA.

A3.1.2.4. SKAs are classified as perceptual, motor, cognitive, and information processing skills, knowledge requirements, and desired attitudes.

A3.1.3. Objectives/Media Analysis (OMA). The OMA identifies all training objectives. It also allocates and justifies instructional strategies, methods, and media for each training objective. The OMA:

A3.1.3.1. Defines training objectives in terms of conditions, required behavior, and standards of acceptable performance.

A3.1.3.2. Defines a media analysis and selection process.

A3.1.3.3. Documents the method/media trade process.

A3.1.3.4. Selects the method/media to be used and, with rationale, allocates the training objectives.

A3.1.3.5. Develops the syllabus and course map.

A3.1.4. Training Systems Basis Analysis (TSBA). The final step in the TSRA is the TSBA. The TSBA:

A3.1.4.1. Analyzes the existing Training System, identifies training deficiencies, and recommends solutions.

A3.1.4.2. Assesses technology for potential application of new training technology to Training System concepts.

A3.1.4.3. Evaluates alternative Training System concepts and system configurations.

A3.1.4.4. Recommends numbers, functions, and types of training media, courseware requirements, and training management system functions.

A3.1.4.5. Provides rationale and justification concerning how proposed system will remedy deficiencies.

A3.1.4.6. (Optional) Develops a preliminary system requirements document that consolidates training and system requirements.

**A3.2. TSRA Support of the STP** . For emerging systems and updates to fielded systems, the TSRA provides inputs and supporting rationale for the STP. The TSRA should:

A3.2.1. Identify tasks for which personnel cannot be currently adequately trained. These tasks should be documented in the STP as unmet requirements. If necessary, they will be identified as potential limiting factors in the ability to accomplish the prime equipment mission.

A3.2.2. Include an ISD analysis of the ground-based media. Analyze how it complements hands-on training or supplements training when resource availability, , security, cost, and ESOH constraints limit use of the prime mission equipment as a training media.

A3.2.3. Identify alternatives based on validated opportunities to train, qualify, and certify personnel.

A3.2.4. Identify how subsystems and components should be integrated into the total Training System.

A3.2.5. Recommend areas for new technology applications to improve future Training System effectiveness and efficiency.