

**13 MAY 1994**



**Contracting**

**MANUAL FOR WEAPON SYSTEM  
WARRANTIES**

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This manual implements AFPD 64-1, *Contracting*, by providing the directive requirements for managing weapon system warranties (WSW). It establishes procedures and responsibilities for acquiring, administering, and reporting of WSW. A WSW is a contractual means to motivate contractors to design, produce, and deliver quality weapon systems and to provide for a meaningful remedy should a weapon system not meet warranted requirements. Use this manual with the Federal Acquisition Regulation (FAR), Subpart 46.7, *Warranties*, and the Defense FAR Supplement (DFARS), and the Air Force FAR Supplement (AFFARS) thereto. This manual may be applied, all or in part, to warranties on acquisitions other than weapon systems.

### **SUMMARY OF CHANGES**

This initial issuance aligns the manual with AFPD 64-1; changes and clarifies some of the terms, and clarifies the objectives and purpose of a WSW in the Air Force; requires the establishment of a warranty team; clarifies and amplifies pricing considerations in several areas including profit, fixed-price incentive contracts, and liability caps; changes authority to designate Essential Performance Requirements (EPR); clarifies the remedies that are available; requires that Government repair be authorized at all times; and deletes Weapon System Reporting (RCS: HAF-AQC(SA)8701).

**1. Responsibilities and Authorities.** This manual establishes the following responsibilities and authorities.

#### **1.1. Air Force Secretariat:**

**1.1.1. SAF/AQ.** Establishes Air Force policy on the developing, selecting, applying, implementing, administering, and reporting warranties in compliance with regulatory requirements and the need to maintain compatibility with the normal support structure of the Air Force. Reviews and approves or rejects requests for warranty waivers.

#### **1.1.2. SAF/FM:**

1.1.2.1. Develops and maintains the rationale underlying the WSW cost benefit analysis

(CBA) and establishes policy for such CBAs.

1.1.2.2. Monitors the WSW program to ensure that the CBA is accurate and consistent with Air Force and Department of Defense (DoD) direction.

## **1.2. HQ USAF/LG:**

1.2.1. Establishes Air Force policy and guidance with SAF/AQ for the field administration, identification, processing, control, and failure reporting of warranted items in the logistics system.

1.2.2. Monitors the WSW Program to ensure implementation is effective, compatible with normal support operations, and consistent with Air Force and DoD direction.

## **1.3. Acquisition Command (AFMC):**

1.3.1. Designates a command office of primary responsibility for WSW Program policy and implementation.

1.3.2. Develops training requirements and implements training programs to ensure that program managers (PM), and depot support personnel are fully aware of their responsibilities under the WSW Program.

1.3.3. Assists the PM in determining if proposed warranty contract requirements are cost effective and enforceable and can be administered in the field.

1.3.4. Participates in the warranty planning effort and coordinates on proposed EPRs with recommended approaches for administering and tracking proposed EPR objectives.

## **1.4. Using Command:**

1.4.1. Designates a command office of primary responsibility for WSW Program implementation. Participates in developing and implementing WSW Program requirements.

1.4.2. Participates in the warranty planning efforts led by the PM and coordinates on the WSW Plan and proposed EPRs with recommended approaches for administering and tracking proposed EPR objectives.

1.4.3. Develops training requirements and implements training programs to ensure that all field support personnel are fully aware of their responsibilities under the WSW Program.

1.4.4. With the program office, ensures that warranty contract requirements are cost-effective and enforceable, and can be administered in the field.

1.4.5. When required by a coordinated WSW section of the Integrated Logistics Support Plan (ILSP):

1.4.5.1. Collects, evaluates, coordinates, and submits warranty reporting data as requested by the program office, and monitors the effectiveness of procured warranties in achieving WSW Program objectives.

1.4.5.2. Designates the field-level warranty action point to coordinate all warranty-related data collection, warranty failure reporting, and warranted item control and distribution requirements with the warranty manager.

1.4.6. Assumes the responsibilities of paragraph 1.5, when designated, in the Program Management Directive (PMD) as the responsible Operational Test and Evaluation (OT&E) organization.

**1.5. Air Force Operational Test and Evaluation Center (AFOTEC):**

1.5.1. Participates in the warranty planning efforts led by the PM and coordinates implementation of the OT&E plan to ensure that all warranty deficiencies discovered during OT&E are reported as required by the Warranty Section of the ILSP.

1.5.2. Coordinates through the AFOTEC Test Manager the individual program specific warranty actions for that program. These actions, as directed by AFI 99-101, *Developmental Test and Evaluation* (formerly AFRs 80-14 and 80-19), are accomplished through the Test Planning Working Group (TPWG) with the using command and the PM.

1.5.3. Provides the program office with an assessment of the testability of proposed EPR before production contract award.

**1.6. Program Manager.** The following responsibilities supplement and complement those in DoD Instruction 5000.2, AF Supplement 1. The PM:

1.6.1. Establishes and implements a WSW program as part of the overall acquisition or modification process, as prescribed in this regulation and FAR, Subpart 46.7, as supplemented.

1.6.2. Structures and establishes an effective warranty team - comprised of command-approved representatives of the acquisition and using commands and a representative of the contractor if appropriate - to develop and coordinate the program's WSW requirements as required by this manual.

1.6.3. Ensures that the WSW plan is developed, thoroughly coordinated, and included as a specific section of the ILSP. (Reference to a "Warranty Plan" is to that section of the ILSP.)

1.6.4. Designates the WSW manager and identifies specific functions and responsibilities assigned to the WSW manager. Delegates authority to the WSW manager to carry out WSW program taskings and requirements. As a minimum, the WSW manager must be tasked to:

1.6.4.1. Manage and integrate the performance, operational, and support requirements of the using and acquisition commands during WSW contract development and warranty administration planning.

1.6.4.2. Manages and coordinates warranty application, enforcement, and administrative requirements to include warranted item identification, deficiency processing and reporting, data collection, and disposition.

1.6.4.3. Coordinates resolution of warranty program requirements disputes with the appropriate offices, including the contracting or contract administration office, field or depot action points, and the legal office.

**2. Purpose of WSW:**

**2.1. WSW Program Objectives.** To ensure PMs provide adequate consideration to the need for weapon system warranties and, where determined appropriate, provide for warranties that:

2.1.1. Motivate contractors to design, produce, and deliver a better product and protect the Government when items delivered by contractors do not meet mutually agreed upon specifications or requirements upon delivery to the field.

2.1.2. Conform to the guidelines in attachments 2 and 3 of this manual.

2.1.3. Are cost effective.

2.1.4. Are implementable considering funding, hardware, software, training, manpower, and other significant factors.

2.1.5. Are enforceable.

## **2.2. WSW Planning by the Program Manager and Team:**

2.2.1. The PM and Program Team determine early in the acquisition cycle the need for warranties on their program. In the Acquisition plans supporting Demonstration and Validation (DEM/VAL) and Engineering & Manufacturing Development (EMD), the PM shall address the applicability of obtaining a WSW on production contracts. Where a warranty is envisioned, the Contracting Officer (CO) places a draft warranty provision in the DEM/VAL Request for Proposal (RFP). This draft warranty provision may only be a framework that identifies the essential system performance requirements that the contractor will warrant and the remedies the Government will invoke for the correction of defects. A more complete draft warranty provision that sets forth all the warranty terms and conditions shall be included in the EMD RFP. Results from the DEM/VAL and EMD phases should be used to tailor warranty requirements for the production phase. Unless it is impractical, the PM shall use a WSW during all of the initial, low-rate production efforts. This will ensure the contractor demonstrates the quality of a design and its associated production methods early in the acquisition cycle when any necessary redesign can be accomplished more easily. The PM, using this experience, can simplify and or modify warranties on follow-on production contracts. In response to solicitations with Government-authored warranty clauses, offerors may submit alternate WSW clauses. The PM and Program Team evaluate these alternate clauses for acceptability. The PM should reassess warranty strategy periodically throughout the acquisition cycle. Attachment 4 shows how warranty-related activities interface with the system life cycle.

2.2.2. The PM, in making a determination to apply a warranty to a weapon system, considers the impacts not only to the acquisition command but also the using commands and the responsible contract administration office (RCAO). To properly assess warranty application, the PM establishes during DEM/VAL a warranty team comprised of representatives from the various using commands and RCAO organizations. The PM may include contractor personnel on the warranty team. The warranty team, as directed by the PM, prepares a WSW Plan and coordinates it with the acquisition (implementing and supporting functions) and using commands, and the RCAO. The PM approves it as required in attachment 5 to this manual. The program will not enter the EMD Phase, nor will the CO award the EMD contract before the PM approving the WSW Plan. The PM must update the plan for the initial and follow-on production contracts.

2.2.3. PMs and COs may use discretion to request warranties for equipment that does not meet the definition of a weapon system (reference DFARs Supplement 246.770-1). The chief of the contracting office will approve warranty use in non-mandatory situations. PMs and COs may apply or tailor FAR Clauses 52.246-17, *Warranty of Supplies of a Non Complex Nature*, 52.246-18, *Warranty of Supplies of a Complex Nature*, or 52.246-19, *Warranty of Supplies Under Performance Specifications or Design Criteria*. The PM is required to develop a warranty plan when a warranty is to be contractually acquired for non-weapon systems, items, or services that will require using, supporting, and participating command support to administer and enforce the warranty. A warranty plan is also required for foreign military sales (FMS) and foreign military acquisitions when a WSW will be acquired.

**2.3. Contracting Officers Pricing Consideration.** In addition to the guidelines contained in the *Armed Services Pricing Manual*, the CO should follow these guidelines when developing the WSW price:

2.3.1. Make sure the contractor's warranty price may include reasonable administration and data costs. The contractor's warranty administration costs may include the salary of a warranty manager, information management systems to collect and report warranty data, and engineering costs related to the evaluation of warranty data. If applicable, contractors may include costs for the repair or replacement of predicted failures, administrative costs associated with analysis of the failures and the cost of gathering data about the performance of the warranted population. The repair of failures is not a remedy under the warranty but is necessary to implement the warranty. Contractors are to exclude any costs, such as quality assurance, sustaining engineering, and product support costs that would have been incurred without the warranty.

2.3.2. Do not include or accept costs which represent the Government's share of the risk of a redesign. A contractor's incentive would be derived not from having to redesign a product, but from having designed the product right the first time.

2.3.3. Establish a separately priced Contract Line Item Number (CLIN) for a WSW that does not include profit. When a fixed-price incentive contract is used, the warranty shall be a separate firm fixed price contract line item.

2.3.4. Use a bottom-up approach or, cost-estimating relationships, or a combination of the two approaches, to price a warranty as appropriate. Contractors shall provide detailed breakdowns of their warranty price, and all proposed costs must be justified. Obtain Engineering assistance for evaluating the proposed costs.

2.3.5. In deriving a cost-effective warranty, consider the need for specific exclusions and limitations in the terms of the WSW clause (DFARS, Subsection 246.770-3), as an example, use of a contractor's liability cap. The CO prevents inordinately low caps which could eliminate the possibility of completing any significant redesign remedy, and, therefore, render the warranty ineffective. Evaluate any proposed use of liability caps in terms of impact on the cost effectiveness of the warranty. Contractors shall never apply liability caps to material and workmanship or design and manufacturing guarantees. If a WSW includes a financial liability cap, the contractor's remedy costs applicable to the cap will not include profit.

#### **2.4. Essential Performance Requirement:**

2.4.1. The PM must act rapidly to affect design to achieve EPRs as a weapon system moves through the research and development phases. The CO must alert contractors at the beginning of the DEM/VAL phase that the Government intends to require a performance warranty for production units. The using command identifies the performance characteristics and requirements for the system in the Mission Need Statement (MNS). The PM uses those requirements as the source of EPRs. The EPRs are refined as the concept evolves, but must remain consistent with the operational effectiveness, efficiency, and suitability requirements stated in the MNS, depot support requirements documents (DSRD), and operational requirements documents (ORD). The CO includes the EPRs, subject to warranty in the weapon system production contract specifications. The engineering community will include EPRs in the WSW plan.

2.4.2. An EPR should be selected for a duration of time based on operational performance requirements for which compliance cannot be determined with certainty before or during accep-

tance testing. Such requirements include reliability, maintainability, and availability. The Government can only determine the contractor's compliance with these requirements from data collected during field operations in the environment in which the weapon system is required to operate. The PM and AFOTEC personnel should plan to measure EPRs starting in OT&E so that any necessary changes can be made in a reasonable manner. To allow this, AFOTEC personnel must conduct OT&E using the normal field maintenance data collection systems and techniques which are defined in the maintenance concept. The warranty team will evaluate field data collection systems before the start of data collection to determine if they can support the tracking of warranty objectives. If existing systems cannot support warranty tracking, alternative methods may be used. However, these alternative methods must follow the guidelines as laid out in attachment 2. In any case, the PM must include warranty data collection plans in the warranty plan for appropriate agency approval prior to the start of data collection.

2.4.3. Authority for identifying EPRs is delegated to Designated Acquisition Commanders (DAC) and to Program Executive Officers (PEO) for their assigned programs. PMs must coordinate EPRs with the using command before incorporating them into contract.

## **2.5. Waivers and Deviations to Specification Requirements:**

2.5.1. Before approval of any proposed waiver or deviation to a particular requirement set forth in the contract specification, the PM and Program Team must accomplish a written evaluation of the impact of the proposed waiver or deviation on the WSW EPR. In no event shall a waiver or deviation that releases the contractor from responsibility for complying with all or part of the WSW EPR be approved unless a Secretarial waiver is granted in accordance with DFARS Subpart 246.770-8, and AFFARS Subpart 5346.770-8. If a Secretarial waiver is granted subsequent to contract issuance, the CO must negotiate an equitable adjustment to the contract price and other terms and conditions of the contract.

2.5.2. To permit the Government's full review of a waiver, deviation, or engineering change proposal request submitted under MIL-STD-480A, the WSW must require the contractor to submit an impact statement with the request.

## **2.6. Remedies:**

2.6.1. Each WSW must clearly describe the remedies available to the Government to correct a manufacturing defect or performance failure covered under the WSW. For example, remedies for EPR breaches may provide for the immediate restoration of combat capability (through use of consignment spares), no cost ECP (to fix the breach), and or subsequent retrofit of new designs at no cost to the Government. As a minimum, the WSW must provide for the remedies specified in DFARS, Subsection 246.770-2(a)(2), which are described below:

2.6.1.1. Require the contractor to promptly take necessary corrective action (i.e., repair, replace, and or redesign) at no additional cost to the Government. (Note that redesign is generally the only acceptable long-term remedy for EPR breaches.)

2.6.1.2. Require the contractor to pay costs reasonably incurred by the Government in taking necessary corrective action (i.e., Government repair).

2.6.1.3. Provide for equitably reducing the contract price.

2.6.2. When contractor repair or replacement is stipulated as an authorized remedy, the warranty shall also stipulate the required turn-around time from the contractor receipt of the defective or

failed item to contractor shipment or Government acceptance of the repaired or replacement serviceable item. The warranty will also, stipulate the Government remedy should the contractor fail to meet the guaranteed turn-around time, (e.g., is consignment spares).

2.6.3. The warranty will specify that qualified Government repair is "authorized" at all times, subject to a requirement to advise the contractor of a discovered fault, if the warranty is invoked.

2.6.4. When the warranty contains EPR coverage, the warranty must identify redesign as a remedy available to the Government and under what circumstances redesign would be invoked. See DFARS Subsection 246.770-2. Most EPR breaches imply the need for redesign of the item, changes to the manufacturing process, or revising to some other element involved in providing the item to the user. The redesign remedy must include a clear statement of the contractor's and Government's responsibilities. These include: the cost of materials, the labor to install the modification, the timing of the actions, and updating of Technical Orders, etc.

**2.7. Clause Development:** The warranty team develops the warranty clause after the DEM/VAL contract under direction from the PM. Specific requirements that the team must address in preparing the warranty clause are contained in attachment 6.

## **2.8. WSW Implementation:**

2.8.1. Attachments 2 and 3 contain guidelines which, in qualitative terms, establish the impact on the system the Air Force can bear before the cost of the warranty and the remedy exceeds the value. The list of *Acceptable Techniques for Warranty Implementation* presents those which HQ USAF/LG has determined to be compatible with the normal support structure. The second list, *Techniques Normally Unacceptable for Warranty Implementation*, are techniques which were evaluated and found to have a negative impact on the ability of the support structure to support the Air Force mission.

2.8.2. PMs will structure their WSW to allow implementation using the acceptable techniques. If that proves impossible, with the concurrence of the user or users and the supporting function, the PM may ask HQ USAF/LG to sanction maintenance, supply, and transportation methods which are not generally acceptable. If this, too, proves impossible, and no alternate EPR can be designated, the PM must apply to SAF/AQ for a waiver of the WSW requirement. All requests for waivers must be based on cost effectiveness per AFFARS Subsection 5346.770-8, and paragraph 2.5 of this manual.

**2.9. WSW Administration.** The warranty team must develop WSW administration requirements as an integral part of the overall warranty planning, and with the warranty clause development process as required in attachment 6. Administration requirements must be consistent with and not impede the planned operational and maintenance concepts of the weapon system to be fielded. They also must be fully integrated with all logistics support elements, and any contractor support requirements. Administration planning must not require additional field level inspections, tests, measurements, or data collection systems to administer and enforce the terms of the warranty unless these additional requirements for new data systems are cost-effective, coordinated in the WSW Plan, and waivers are obtained. WSW administration must be compatible with the existing support structure and operate within the limits of acceptable actions (see attachment 2).

**2.10. Training.** PMs will ensure that orientation and special training requirements are established for all personnel responsible for WSW acquisition and administration. This orientation may be contractor conducted (but closely monitored by the Government) or included as a part of Government provided

special training programs. The PM, with the acquisition and using commands, must develop source materials or contractor requirements for this effort. PMs will ensure program unique training requirements will be identified in the WSW plan (attachment 5, paragraph 1.3.1.9.)

**2.11. Product Performance Agreement (PPA).** There are many types of PPAs (e.g., reliability improvement warranty, availability guarantee, and logistics support cost guarantee.) PPAs provide increased flexibility to tailor the WSW to the program office's needs. PMs should consider their use in the EPR portions of the WSW when the EPR represents minimum acceptable performance and higher performance would improve the suitability of the weapon system, or when the technology requires an extended time to mature.

**2.12. Contractor Reporting Requirements: (OMB Control Number 9000-0077).**

**2.12.1. Failure Analysis Reports.** Contracts containing WSW must require the contractor to provide failure analysis reports or corrective action reports for all items found deficient under the terms of the warranty. The contractor shall distribute those reports to the contract administration office and to appropriate management, engineering, logistics, test and evaluation activities which document a need for such data during the contract data requirements list (CDRL) preparation.

**2.12.2. Incurred Warranty Costs Report.** Contracts containing WSW shall require the contractor to provide a periodic report of any costs incurred as a result of the warranty to the WSW Manager. The report may be submitted in contractor format and as a part of other required cost reports or as a separate report.

**2.12.3. Warranty Activity Report.** The evolving maturity of a weapon system and an adequate performance data base may demonstrate that the continued use of a WSW on future buys is not feasible or cost-effective. Therefore, the PM will ensure the accomplishment of annual reports by the contractor that provide a summary of warranty activity for all contracts containing a WSW. The first report will be required not more than 1 year from the delivery of the first warranted item under the contract. Subsequent reports will be required as determined by the PM until all item warranties have expired and all claims are settled. The PM should use the warranty assessments to evaluate the overall effectiveness of the WSW, to determine warranty provisions and tasks for follow-on contracts and, as a key data input when accomplishing the required CBA. The report must include as a minimum:

2.12.3.1. The contractor and contract number.

2.12.3.2. A summary of the claim activity during the period and cumulative to date. Claim activity must include the claims submitted, honored, disputed, and denied, and include the dollar value for each category. Denied claims must include reasons for denials, such as false-pull (not defective), abuse, or not covered by the warranty.

2.12.3.3. A "remarks" section that identifies the warranty provisions and administrative techniques that are considered desirable or undesirable based on failure frequency, failure mode, or dollar value.

**2.12.4. Special Reports.** The PM may require special reports for timely support of special administrative or tracking efforts. These reports should be limited in use and temporary when possible.

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for Acquisition

## Attachment 1

### GLOSSARY OF REFERENCES, ABBREVIATIONS, ACRONYMS, AND TERMS

#### *References*

Title 10, United States Code (U.S.C.), Section 2403, *The Defense Procurement Reform Act of 1985*

Federal Acquisition Regulation (FAR), Subpart 46.7, *Warranties*

FAR Clauses 52.246-17, *Warranty of Supplies of a Non Complex Nature*

FAR Clause 52.246-19, *Warranty of Supplies Under Performance Specifications or Design Criteria*

*Foreign Assistance Act of 1961*, as amended

*Arms Export Control Act of 1976*

Department of Defense (DoD) Instruction 5000.2, Air Force Supplement 1, *Acquisition Management Policies and Procedures*

*Defense Federal Acquisition Regulation Supplement (DFARS)*

Subsection 246.770-2(a)(2)

Subsection 246.770-3

Subsection 246.770-8

Air Force Federal Acquisition Regulation Supplement (AFFARS) Subpart 5346.770-8

Military Standard (MIL-STD) 129, *Marking for Shipments and Storage*

MIL-STD 130, *Identification Marking of US Military Property*

Air Force Policy Directive (AFPD) 64-1, *Contracting*

Air Force Instruction (AFI) 99-101, *Developmental Test and Evaluation* (formerly AFRs 80-14 and 80-19).

#### *Abbreviations and Acronyms*

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

**AFOTEC**—Air Force Operational Test and Evaluation Center

**CBA**—Cost Benefit Analysis

**CDRL**—Contract Data Requirements List

**CO**—Contracting Officer

**CLIN**—Contract Line Item Number

**DAC**—Designated Acquisition Commanders

**DEM/VAL**—Demonstration and Validation

**DFARS**—Defense Federal Acquisition Regulation Supplement

**DoD**—Department of Defense

**DSRD**—Depot Support Requirements Documents  
**GFP**—Government-Furnished Property  
**EMD**—Engineering and Manufacturing Development  
**EPR**—Essential Performance Requirement  
**ETI**—Elapsed Time Indicator  
**FAR**—Federal Acquisition Regulation  
**FMS**—Foreign Military Sales  
**ILSP**—Integrated Logistics Support Plan  
**IOC**—Initial Operational Capability  
**MNS**—Mission Needs Statement  
**MOU**—Memorandum of Understanding  
**NSN**—National Stock Number  
**ORD**—Operational Requirements Documents  
**OT&E**—Operational Test and Evaluation  
**PEO**—Program Executive Officer  
**PM**—Program Manager  
**PMD**—Program Management Directive  
**PPA**—Product Performance Agreement  
**PQDR**—Product Quality Deficiency Reports  
**RCAO**—Responsible Contract Administration Office  
**RFP**—Request for Proposal  
**TMO**—Traffic Management Office  
**TPWG**—Test Planning Working Group  
**USAF**—United States Air Force  
**WSW**—Weapon System Warranties

*Terms*

**Cost Benefit Analysis (CBA)**—An analytical procedure used to determine if a warranty is cost effective by analyzing both qualitative and quantitative costs and benefits of the warranty.

**Defect**—As used in this instruction, a defect is any condition or characteristic in supplies or services furnished under a contract that does not conform to the contract provisions. (Also see Department of Defense Federal Acquisition Regulation Supplement (DFARS) Section 46.701.)

**Design and Manufacturing Requirements**—Structural and engineering plans and manufacturing particulars, including precise measurements, tolerances, materials, and finished product tests for the

weapon system produced.

**Essential Performance Requirement (EPR)**—Measurable, verifiable, traceable, and enforceable operating capabilities, including reliability and maintainability capabilities of a weapon system that are determined to be necessary for the system to fulfill the military requirement for which the system is designed. (Also see DFARS, Subsection 46.770-1.)

**Foreign Military Sales (FMS)**—That portion of United States security assistance authorized by the *Foreign Assistance Act of 1961*, as amended, and the *Arms Export Control Act of 1976*, as amended. This assistance differs from the Military Assistance Program and the International Military Education and Training Program in that the recipient provides reimbursement for defense articles and services transferred.

**Mature Full-Scale Production**—Production of a weapon system after manufacture of the lesser of the initial production quantity or one-tenth of the eventual total production quantity. (Also see DFARS Subsection 46.770-1.)

**Initial Production Quantity**—The number of units of a weapon system contracted for in the first program year of full-scale production.

**Product Performance Agreement (PPA)**—A form of warranty, guarantee, or incentive used in a Government contract to achieve or improve product performance or supportability in the operational environment.

**Program Manager (PM)**—The single Air Force manager (system program director, system support manager or development system manager and commodity manager) during the weapon system's life cycle.

**Supporting Organization**—The AFMC organization responsible for providing logistics support for weapon systems, subsystems, components, and equipment.

**Using Command**—The command assigned responsibility for operating, employing, and deploying Air Force weapon systems, subsystems, and equipment in the conduct of training or actual combat operations.

**Warranty**—A promise or affirmation given by the contractor to the Government regarding the nature, usefulness, or condition of the supplies or performance of services furnished under the contract.

**Weapon System**—As used in this instruction and consistent with DFARS Subsection 246.770-1, a system or major subsystem used directly by the Armed Forces to carry out combat missions. By way of illustration, the term "weapon system" includes, but is not limited to the following, if intended for use in carrying out combat missions: tracked and wheeled combat vehicles; self-propelled, towed, and fixed guns, howitzers and mortars; helicopters; naval vessels; bomber, fighter, reconnaissance and electronic warfare aircraft; strategic and tactical missiles including launching systems; guided munitions; military surveillance, command, control, and communication systems; military cargo vehicles and aircraft; mines; torpedoes; fire control systems; electronic warfare systems; and safety and survival systems. This term does not include related support equipment, such as ground-handling equipment, training devices and accessories thereto; or ammunition, unless an effective warranty for the weapon system would require inclusion of such items. This term does not include commercial items sold in substantial quantities to the general public as described at FAR Subsection 15.804.3(c).

**Weapon System Warranty Manager**—The office (or individual) designated by the program manager to be responsible for the management and administration of a specific contractual warranty.

**Weapon System Warranty Plan**—A plan containing program warranty strategy, terms of the warranty, and administration and enforcement requirements. This will be a part of the Integrated Logistics Support Plan. The plan is incorporated in the contract file per AFFARS Subsection 5346.770-90.

## Attachment 2

### ACCEPTABLE TECHNIQUES FOR WARRANTY IMPLEMENTATION

**A2.1. Consideration.** Please note that inclusion on this list indicates only that a particular technique, when applied to warranty implementation, is compatible with normal maintenance and supply procedures. There may be other considerations that would make use of the technique undesirable from a broader perspective.

#### **A2.2. Use of Contractor Support:**

A2.2.1. Special handling of a system or subsystem may involve total contractor support with no US Air Force resource involved. Other scenarios may involve more limited use of a contractor, such as to provide assistance in the on-equipment phase of maintenance along with the extra resources necessary for:

A2.2.1.1. Differentiating warranted items from non-warranted.

A2.2.1.2. Maintaining extensive records on warranted items.

A2.2.1.3. Handling warranted items differently from non-warranted items of the same National Stock Number (NSN) in the supply and transportation systems. This includes selecting a source of off-equipment repair based upon the warranty status of an item.

A2.2.2. Reforming off-equipment maintenance of a system or subsystem based upon the NSN. The contractor could be tasked to separate the items under warranty from those without warranty coverage, bill a maintenance line on a contract for the non-warranty repairs, and provide whatever documentation was required by the contract.

#### **A2.3. Normal Organic Procedures:**

A2.3.1. Some of the normal US Air Force procedures include:

Serial numbers of failed items.

Elapsed Time Indicator (ETI) readings of failed items.

Nature of the failure.

Actions to repair failures.

Submission of Product Quality Deficiency Reports (PQDR).

#### **NOTE:**

Normal warranty procedures do not include collecting this data on items which have not failed.

A2.3.2. To ensure the Air Force does not inadvertently violate the warranty conditions, the PM and Program Team ensures all EPRs within the WSW clause are enforceable, can be administered, and do not adversely affect the ability of the operating commands to perform their missions.

#### **A2.4. Use of Extraordinary Techniques Limited in Duration or Scope:**

A2.4.1. The support community is willing to exert extra effort to assist in achieving a satisfactory product as long as that effort does not threaten the ability of the organization to support the Air Force mission. Such extraordinary organic techniques include serial number tracking of assets (to allow identification of warranted members of a mixed NSN population, differential issue or evacuation, and maintaining item integrity through the maintenance process), additional failure analysis, use of PQDR for other than the normal purpose. These efforts can be applied:

A2.4.2. At startup. During the first year or so after a system is fielded at the first location, before it achieves Initial Operational Capability (IOC).

A2.4.3. At a designated measurement point. If the operational community is willing to stand down from the normal mission for an established period, the support community will do everything possible to allow careful evaluation of the performance of a system.

A2.4.4. To a small population of high-value, high-potential items, for an extended period. This is the nature of a Reliability Improvement Warranty, which may be combined with phased performance requirements and a measure of contractor risk to fulfill the conditions of the WSW.

#### **A2.5. Data Collection:**

A2.5.1. Warranty teams must design EPR warranties so that EPRs can be measured by standard Air Force operational maintenance data collection systems. Development or implementation of specialized, automated, or weapon system unique warranty performance measurements requires prior approval of HQ USAF/LG. Changes to existing automated maintenance data collection systems must also be approved by HQ USAF/LG.

### Attachment 3

#### TECHNIQUES NORMALLY UNACCEPTABLE FOR WARRANTY IMPLEMENTATION

The following warranty implementation techniques are generally incompatible with Air Force organic logistics concepts and should be avoided. They include:

**A3.1.** Organic serial number tracking of a population of items beyond that allowed in paragraph 3 of "*Acceptable Techniques*." This normally is called for in an effort to allow:

A3.1.1. Identification of warranted members of a mixed NSN population. This imposes unacceptable burdens at all levels.

A3.1.2. Maintaining item integrity through the maintenance process. This often is incompatible with the normal process. It tends to be more significant at the depot level.

A3.1.3. Failure analysis and reporting on labor and materials used in repair of an item. This too, is often incompatible with the normal maintenance process, especially at the depot level.

A3.1.4. Issue of an item based upon its warranty status. This can impose a significant burden on the supply and distribution system.

A3.1.5. Different return processes for failed items/components with the same NSN, based upon their warranty status. This is incompatible with normal operation of the base supply system.

**A3.2.** Extended, large scale use of PQDR for other than the established purpose of reporting deficiencies or failures that because of their nature or frequency threaten the ability of a system to perform its mission. Use of PQDR to report every warranty failure that doesn't meet PQDR submission criteria, consumes inordinate amounts of time at all levels, and clogs the PQDR system with the result that responses are delayed and assets may be tied up awaiting disposition instructions.

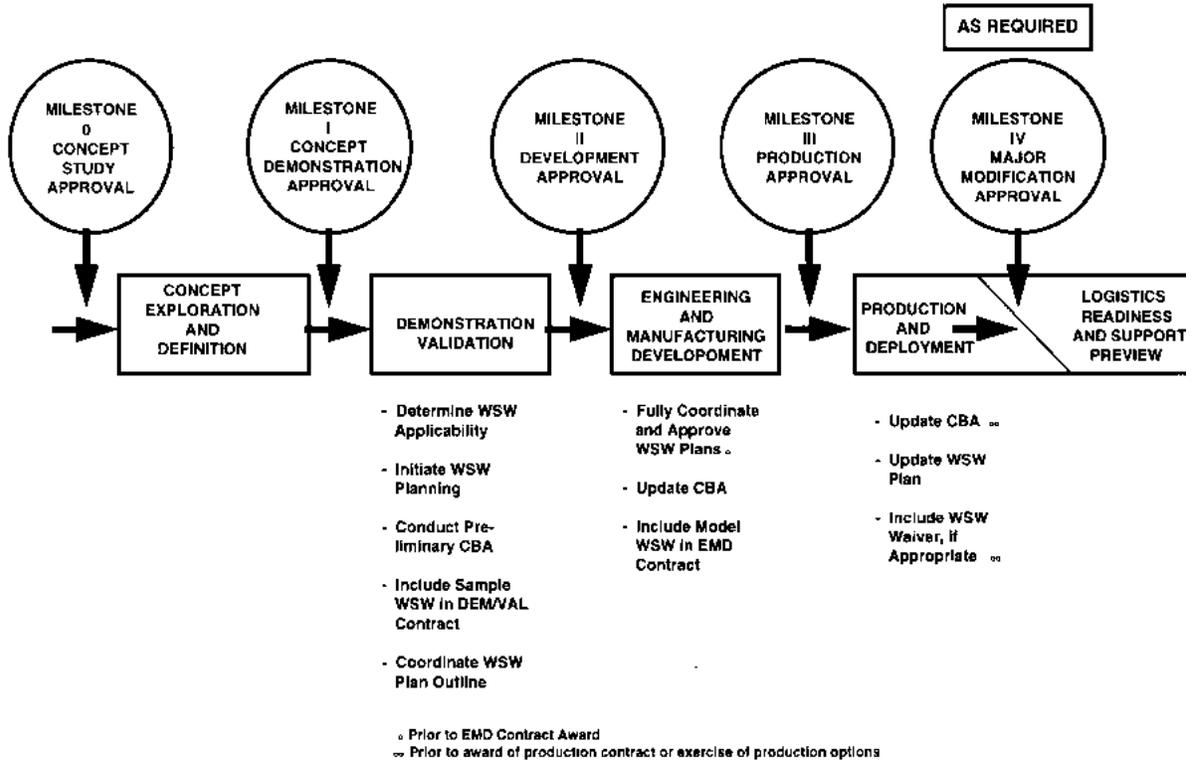
**A3.3.** Reliance upon labels to trigger some special action. Labels on items are unable to identify items which are warranted based upon operating hours or cycles or because of their association with a warranted next-higher assembly. Labels on containers are largely meaningless, because containers cannot be reserved for the item which came in them. Additionally, "installs" don't come in boxes.

## Attachment 4

### WSWS AND THE SYSTEM LIFE CYCLE

#### WSWs AND THE SYSTEM LIFE CYCLE

The warranty plan must be approved prior to the award of the EMD contract and updated as appropriate for the initial and follow-on production contracts



## Attachment 5

### WSW PLAN REQUIREMENTS

**A5.1.** The PM has overall responsibility for warranty planning and the establishment of the warranty team.

**A5.2.** The warranty team will develop warranty section of the ILSP, also known as the Warranty Plan, and coordinate it with using and acquisition (implementing and support functions) commands, as well as the cognizant RCAO and other organizations which are tasked in the plan for WSW support.

**A5.3.** The PM must approve the warranty plan before EMD contract award, and update it as needed to provide warranty implementation requirements for fielding the warranted item. The PM must also update the warranty plan to reflect any change in requirements prior to the award of follow-on production contracts.

**A5.4.** The warranty plan must address the following:

**A5.4.1. Acquisition Background.** Describe the weapon system being acquired. Summarize the program and warranty history to date, including an explanation of why DFARS Section 246.770 applies.

**A5.4.1.1. WSW Clause.** Attach the proposed warranty clause to the plan and identify here any special considerations or constraints affecting selection of the terms and conditions. The clause must address the requirements of this Attachment to this manual or rationale provided in the WSW plan for the exclusion of any of those requirements.

**A5.4.1.2. Cost Benefit Analysis (CBA) .** Describe the CBA methodology used and summarize the CBA results.

**A5.4.1.3. Warranty Administration.** Describe the specific requirements to administer the warranty. Ensure that the administrative requirements of the proposed warranty clause are consistent with this section of the warranty plan.

**A5.4.1.4. Warranty Team Membership.** Describe the warranty team organizational and management responsibilities. List the team membership (i.e., warranty manager, contracting officers, engineers, logistics specialists, cost analysts, using command representatives, AFOTEC representative, contract administration office, and other points of contact deemed necessary for warranty administration).

**A5.4.1.5. Foreign Military Sales.** If a WSW is to be obtained for an FMS purchaser, discuss the FMS purchaser's warranty requirements and the US Air Force's plan to obtain those requirements. The PM must develop separate FMS warranty plan if the FMS purchaser has requested unique warranty coverage that dictates the need for more detailed planning.

**A5.4.1.6. Contractor Support.** If contractor support (i.e., contractor logistics support (CLS) or interim contractor support (ICS)) is planned, clearly define the support requirements, ensure they are compatible with the WSW, and ensure the WSW and support costs are segregated for accounting purposes.

**A5.4.1.7. Schedule.** Identify key events and dates such as delivery dates, warranty periods, CBA accomplishment, and updates.

**A5.4.1.8. Training.** Identify training requirements, methods, schedule, and recipients. Incorporate this training into the program's formal training requirements and plans.

**A5.4.1.9. Contract Administration.** Identify responsibilities of the buying and administering activities. If a separate memorandum of understanding (MOU) is prepared and signed between the buying and administering activities, include the MOU as an attachment to the warranty plan and ensure their coordination on the warranty plan. Address the following administrative responsibilities and actions as to who:

A5.4.1.9.1. Reviews the warranty terms and conditions with the contractor to ensure all procedures are thoroughly understood.

A5.4.1.9.2. Tracks warranted units through the supply and maintenance system, if necessary.

A5.4.1.9.3. Determines if a warranted item has failed or is defective and how a failure or defect is determined.

A5.4.1.9.4. Determines system compliance with essential performance requirements and what actions are taken if the system is in noncompliance.

A5.4.1.9.5. Writes disposition instructions for a failed unit under warranty.

A5.4.1.9.6. Prepares the warranty failure analysis report.

A5.4.1.9.7. Reviews contractor internal warranty policy and procedures.

A5.4.1.9.8. Tracks contractor warranty related repairs, turnaround time and costs.

A5.4.1.9.9. Adjusts the contract when the Government takes corrective action and requires the contractor to pay for corrections.

A5.4.1.9.10. Collects and maintains data on systems or unit performance, and ensures data is used for possible improvement of the system or implementation of an engineering change proposal.

## Attachment 6

### WSW CLAUSE DEVELOPMENT

**A6.1.** The CO must tailor the terms and conditions of the WSW to the weapon system. They must be as clear and simple as possible with emphasis on enforcement of the warranty conditions through existing Air Force management, administration, and logistics processes. The CO must include the following requirements in the warranty terms and conditions unless the warranty plan provides rationale for the exclusion of the requirement and necessary approval has been granted. The WSW must:

A6.1.1. Define key terms such as, acceptance, defect, correction, remedy, etc.

A6.1.2. Incorporate the three guarantees required by Title 10, U.S.C., Section 2403, as addressed in DFARS, Subsection 246.770-2, unless a waiver is granted.

A6.1.3. Establish warranty terms and conditions consistent with the weapon system's operational and maintenance concept and the warranty administration requirements. Address the impact should the Government use other qualified spare parts in the repair of the warranted system.

A6.1.4. Describe the roles and responsibilities of the Government and contractor in the warranty process.

A6.1.5. Identify the production units covered by each of the three parts of the warranty and the units, if any, excluded from the warranty coverage.

A6.1.6. Address the prime contractor's warranty responsibility as it applies to Government-Furnished Property (GFP) (see DFARS, Subsection 246.770-4).

A6.1.7. State the duration of the warranty. WSW duration must be of enough length to determine that the WSW requirements have been achieved. When the duration is based on item utilization rather than calendar time, appropriate measuring devices or techniques (i.e., elapsed time indicator, cycle counter) must be required. Calendar based warranty duration should allow for those anticipated non-operational activities after delivery such as transportation, storage or shelf-life, and redistribution. Other warranty duration considerations the clause should address are:

A6.1.7.1. Whether warranty duration applies to an individual unit or to a group or subgroup.

A6.1.7.2. The point of warranty initiation. Determine if warranty duration starts with acceptance (delivery) or at time of installation of the unit in a higher level of assembly.

A6.1.7.3. Allowability of extending warranty periods and under what conditions (e.g., to compensate for warranty time lost while a defective unit was being repaired or replaced) extensions can be sought.

A6.1.7.4. Description of the EPRs to be warranted, how they are to be measured, when they are to be verified, and any special testing and test equipment required to complete the verification. Also identify the contractor's role and responsibility in the verification.

A6.1.8. Prescribe markings of warranted items in accordance with MIL-STD-129, *Marking for Shipments and Storage*, and MIL-STD-130, *Identification Marking of US Military Property*, except for items which cannot be effectively marked.

A6.1.9. Describe the remedies available to the Government if the system breaches the WSW. Conditions for invoking a particular remedy should be addressed. When contractor repair is stipulated as an

authorized remedy, state the required turn-around time from contractor receipt of the failed item to contractor shipment or Government acceptance of the repaired or replacement serviceable item. Also indicate the Government's remedy if the contractor fails to meet the required turn-around time. Identify any conditions, limitations, or exclusions which may apply to Government repair of the hardware. Also, identify the repair rates at which the contractor will reimburse the Government for repairs performed by the Government. State that redesign is a remedy and state the conditions under which it would be invoked and the responsibilities of all parties if that occurs.

A6.1.10. Describe all warranty data and report requirements and include appropriate CDRL that will be included in the contract for distribution to the cognizant contracting, engineering, logistics, and test activities.

A6.1.11. Identify any exclusions such as, mishandling, fire, combat damage, etc., (see DFARS, Subsection 246.770-3, as supplemented).

A6.1.12. Identify any limitations such as contractor's financial liability (see DFARS, Subpart 246.770-3, as supplemented).

A6.1.13. Include a statement that the warranty does not limit the Government's rights under any other contract clause.

A6.1.14. Establish packaging and handling requirements for warranted items according to the level of protection as specified in MIL-STD-2073-1A or as specified in a Government approved special packaging instruction. Packaging and handling costs are not directly reimbursable to the Government, but should be considered in the remedy for correction of failed warranted items.

A6.1.15. Establish transportation requirements after obtaining Traffic Management Office (TMO) advice as required by FAR Section 47.101.

A6.1.16. Describe the process for determining the impact on the WSW of approving a waiver or deviation to a requirement in the contract specification and for determining an equitable adjustment, if any, to contract price.

## Attachment 7

### APPLICATION OF WSW VS A CONSUMER WARRANTY

**A7.1. Statutory Requirements.** *The Defense Procurement Reform Act of 1985* (Title 10, United States Code, Section 2403) reemphasized the importance of warranties by enacting permanent statutory requirements for warranting weapon systems that are entering mature full-scale production. This manual provides the basic policies, procedures, and responsibilities to effectively implement WSW requirements through the use of warranties, guarantees, and various performance incentive arrangements, i.e., PPAs.

**A7.2. Consumer Warranty.** Warranties serve three basic purposes. They can: (1) protect against a catastrophic loss, (2) stabilize operating costs, and (3) promote a better product.

A7.2.1. A consumer type warranty clearly protects against a catastrophic loss. The individual consumer could suffer a financial catastrophe should, for example, the engine and transmission of a new automobile, without a warranty, need replacement. In contrast, the manufacturer is larger and financially more capable of sustaining the impact of repair or replacement of an item.

A7.2.2. A consumer type warranty also could stabilize a consumer's operating costs. The consumer warranty obtained by an individual buying an item ordinarily calls for the manufacturer to pay for repair or replacement of the item if it fails within a prescribed length of time. This consumer warranty is obtained at no additional cost to the consumer beyond the item purchase price. Since most consumers would otherwise have to pay for repair or replacement of the item if it failed, the warranty does allow the consumer to avoid unexpected operating costs. However, the actual cost of the failure has already been reflected in the consumers' purchase price. The manufacturer can project the number of failures which are likely to occur in the population and spread the anticipated cost of repair or replacement among all the consumers.

#### **A7.3. WSW:**

A7.3.1. The purpose of a WSW for the Air Force is to motivate contractors to design, produce, and deliver a better product. This will result in increased equipment availability and reduced maintenance and logistic support requirements (reduce operating costs).

A7.3.2. A WSW for the Air Force, should not include protection from a catastrophic loss. The Air Force is not a "consumer" in the sense that the term is used above. A loss which the Air Force would consider financially catastrophic would be even more devastating to the supplier.

A7.3.3. Also WSWs do not stabilize the operating costs (repair or replacement of the item) of the Air Force. Especially in the types of systems covered by a WSW, we are likely to buy most, if not all of the items produced. It, therefore, is difficult for the manufacturer to spread the cost of repairs and replacements among the buyers. The Air Force would pay the costs.

A7.3.4. Further, the Air Force has an extensive support structure which allows us to perform our own repairs. This structure includes maintenance, supply, and transportation functions at many levels and many locations. These various elements are linked by an elaborate set of systems, policies, and procedures. They support the Air Force as a whole and cannot be modified locally without the potential for significant impact. Things which sound simple, such as sending warranted items to a source of repair different from that used for non-warranted items, or submitting PQDR on every failure of a warranted item, will increase Air Force operating costs.

A7.3.5. The value of a warranty remedy must be evaluated in this context. Warranty repair is clearly not "free." The contract dollar cost of a warranty is very difficult to assess. A cost impact from interfering with the logistics and acquisition support structures due to WSW reporting and administration is even more elusive to quantify.