

PROVISIONING

1. Introduction. Provisioning is essential to successfully sustaining a new or modified materiel system. For example, a major weapon system can be made of more than 100,000 separate parts. Each part will have a finite reliability and some parts will be essential to the system's operation. Once an essential part fails, the system is inoperable until the part is repaired or a replacement part has been installed. These maintenance actions are possible only if provisioning has occurred.

2. Objectives. At the conclusion of this unit of instruction, you should:

- a. Be able to recite the objective of the provisioning process.
- b. Be able to discuss the responsibilities of the functional organizations participating in the provisioning process and the significant provisioning events in the materiel acquisition process.
- c. Be able to describe the relationship between provisioning and integrated logistics support (ILS) [now called acquisition logistics]¹.

3. Definitions.

a. Provisioning is defined as, "A management process for determining and acquiring the range and quantity of support items necessary to operate and maintain an end item of materiel for an initial period of service."² Provisioning extends over a wide range of functions including system design, development, maintenance planning, supply, requirements determination, item entry control, acquisition, cataloging, and contract administration. Initial provisioning culminates in the delivery of a range and quantity of support items at user, maintenance, and supply activities during an initial period of service.

b. Other definitions related to provisioning are in Appendix A.

4. Provisioning Objectives. The primary objectives of the Army provisioning activities are to ensure that:

a. Minimum initial stocks of support items and associated technical documentation are available at using organizations and at maintenance and supply activities. Initial stocks are required to sustain the programmed operation of systems and end items until normal replenishment can be accomplished.

b. Logistics data are updated with field experience to assure sustainment throughout the acquisition process.

¹ An attempt is made to provide dual terminology because of its continuing widespread use.

² DoD 4140.1-R, DoD Materiel Management Regulation, May 1998.

c. Equipment will be provided to support the stated system availability or system readiness objectives (SRO). Support is to be provided at the least initial investment cost.³

5. Types of provisioning. (In addition to initial provisioning.)

a. Phased provisioning is a selective management technique associated with the provisioning process which allows deferment of procurement of the total computed provisioning requirement of a spare and or repair part until the provisioning activity can more reliably predict the requirement. Phased provisioning does not provide a means to develop an Army inventory, but is an interim measure to replace parts and or assemblies that fail during the production contract period. Quantitative requirements to be set aside for selected support items (usually high-cost items) are computed as a part of the initial provisioning process as an interim contractor "set aside." Phased provisioning provides a means of providing supply support for items that are not accepted by the Army as "design stabilized. "

b. Incremental provisioning is a management technique associated with the provisioning process that allows completion of provisioning on portions of the end item without waiting for complete design stability. The utilization of incremental provisioning allows identification and acquisition of assemblies and subassemblies without waiting for complete design stability.

c. Stratified provisioning is a management technique associated with the provisioning process that allows the identification and procurement of logistic support for unit and direct support (DS) parts and defers procurement of general support (GS) and depot parts. Where there is no planned DS, selected GS parts may be procured in sufficient quantity to assure sustainability. Stratified provisioning provides a capability to concentrate resources on development of logistic support at the most critical level and defers action on levels that least affects initial readiness.

d. Accelerated provisioning. This is a collection of streamlining techniques designed to minimize the normal timeline for provisioning a new or modified system.

6. Provisioning policies.

a. Provisioning is incorporated into the acquisition process and the integrated logistics support process through a series of life cycle events associated with the requirement to provide support to an end item, to have adequate support items available when the end item is initially deployed, and to provide the basis for maintaining adequate support throughout the life cycle of the end item. The integrated logistics support process requires that a Supportability Strategy formerly called an Integrated Logistics Support Plan (ILSP) be developed and that it be the foundation upon which provisioning and programming are developed. To ensure integration of all logistics elements, the Supportability Strategy shall include a summarization of the Provisioning Plan.

b. The DoD Components shall establish and pursue the goal of provisioning sufficient support items to meet end item readiness objectives at minimum investment cost.

³ AR 700-18, Provisioning of U.S. Army Equipment.

- c. To measure the effectiveness of provisioning performance, tools, and process improvement initiatives, provisioning performance measures (quality standards) shall be established.
- d. Provisioning requirements and activities shall be integrated within system acquisition processes.
- e. Materiel managers shall actively participate in the logistics support program established within each acquisition program office.
- f. Provisioning planning shall begin in the concept and technical development acquisition phase and continue through the system acquisition process.
- g. Materiel managers shall ensure that life cycle supply support technical data requirements are assessed and documented. The objective of provisioning technical data management is timely access to all data required to identify and acquire initial support items.
- h. Maximum emphasis shall be placed on reducing the variety of parts and associated documentation required by weapon systems or end items.
- i. Materiel managers, together with other acquisition and logistics managers, shall evaluate various supply support concepts (organic, contractor or some combination) through the supportability analysis process to select the most cost-effective supply support concept.
- j. Contractor supply support and servicing capabilities shall be used to the maximum extent possible when cost effective.
- k. Readiness-Based Sparing (RBS) shall be used for weapon system support provisioning requirements computations so that the resulting investment in supplies will meet end item readiness objectives at minimum cost. When it is not economically feasible to use RBS models and processes, demand-based requirements determination methodologies may be used. However, total stockage computed by such methodologies shall not exceed 1-year's worth of projected demand at each echelon in question.
- l. When using demand based methodologies, safety level quantities are not authorized for provisioning.
- m. Provisioning procurement actions shall be phased based on weapon system or end item program development and delivery schedules. Procurements should not be made until a lead time before organic supported fielding of the weapon system or end item.
- n. Provisioning requirements extend through the demand development period (DDP) for an item, which is the period of time extending from the expected initial date of demand support to a point in time when requirements may be forecast using actual demands.

(1) The expected initial date of demand support is equal to the preliminary operational capability date of the weapon system plus the expected time until first demand (based on reliability of item). For items only used in depot-level repair of a higher assembly, the expected date should be the first scheduled date for depot level repair of the higher assembly.

(2) The DDP should be minimized to no more than 1 year when representative operating time exists, and should not normally exceed 2 years. If sufficient representative operating time has not been accumulated at the end of this period to adjust the demand forecast, an evaluation may be made to extend the DDP.

7. Provisioning procedures.

a. Provisioning data management.

(1) Materiel managers shall provide logistics managers with applicable provisioning data requirements to be included in acquisition solicitation documents. Provisioning data requirements are defined as, Provisioning Technical Documentation (PTD) and Engineering Data for Provisioning (EDFP).

(2) Provisioning data shall be acquired to do the following:

- (a) Assign Source, Maintenance, and Recoverability (SMR) coding. (See Appendix B)
- (b) Do provisioning screening.
- (c) Review for parts standardization.
- (d) Review for potential interchangeability and substitutability.
- (e) Assign Item Management Codes (IMCs).
- (f) Prepare item identifications for assigning National Stock Numbers (NSNs).
- (g) Prepare allowance and issue lists.
- (h) Determine requirements.
- (i) Procure for initial support.

(3) Engineering data for provisioning shall be tailored by the provisioning activity to get product engineering drawings or commercial drawings.

(4) For joint Service acquisition programs, uniform provisioning technical documentation and engineering data for provisioning requirements should be established. The materiel manager

of the lead DoD Component shall coordinate provisioning requirements with the supporting DoD Components so that unnecessary duplication of data, formats, procedures, and operations is avoided.

(5) Digital format is the preferred method for generating and accepting provisioning data.

(6) For nondevelopmental items (NDI), contractor commercial data products should be used to the maximum extent possible to satisfy provisioning data requirements.

(7) Materiel managers shall verify that provisioning data is sufficient to support procurement of required items. Data deficiencies should be identified and corrected before the expiration of contractual obligations.

(8) During provisioning, materiel managers shall ensure that provisioned support items are coded and reviewed for shelf-life considerations, in accordance with the DoD Shelf-Life Item Management Program. Emphasis should be on identification and use of non-hazardous items and longer shelf-life items, where possible.

b. Provisioning screening.

(1) Manufacturer's part numbers and other reference number data shall be screened during the provisioning process to prevent unnecessary or duplicate items from entering the supply system.

(2) When provisioning screening reveals that a support item or an acceptable substitute item is already an established item (that is, assigned an NSN), the requirement for the item shall be filled from existing stocks or through normal replenishment procurement.

(3) The DoD Components shall facilitate electronic access to Federal cataloging systems files by contractors who are under current system development or production contracts.

c. Provisioning support concepts.

(1) The selected supply support approach during the provisioning period shall be based on cost effectiveness, providing a balance between meeting readiness objectives and minimizing life cycle cost, inventory management risk, and logistics burden to the operational user.

(2) When applicable, transition to organic supply support should be planned as follows:

(a) The transition schedule should be based on design stability and supply support concept compatibility with maintenance concepts and other logistics support elements.

(b) Contractor to organic supply support transition and schedules should be consistent with the system's supportability strategy. Phased support approaches are encouraged, allowing for the cost-effective transition to organic supply support.

(3) Procedural control over models and other analytic approaches to select optimum life cycle supply support concepts that are integrated with overall logistics and system support concepts shall be retained at the headquarters of the DoD Component.

(4) Maximum utilization of contractor supply support shall be considered. Explicit candidates for contractor supply support are items during the early production period when they are of poor reliability or unstable design, they have a high unit cost and require substantial initial investment, or the probability of design obsolescence or expensive modification is high.

(5) For NDI or end items procured in small quantities, the preferred method of supply support is reliance on commercial sources.

d. Provisioning requirements determination.

(1) For cost-effective weapon system support provisioning, requirements for spare and repair parts shall be computed through a readiness based sparing (RBS) requirements determination process.

(a) RBS processes require that you establish an optimum range and quantity of spare and repair parts at all stockage and user locations to meet approved, quantifiable, weapon system readiness, operational availability, or fully mission capable objectives.

(b) RBS requirements processes shall be compatible with replenishment requirements determination models. Control over these models and processes shall be retained at the headquarters of the DoD Component.

(2) When using demand-based sparing processes, an approach of minimizing the costs of achieving a targeted supply performance goal shall be used.

(3) Requirements for provisioned items shall be computed using the latest end item program or delivery data and projected mature maintenance replacement rates (MRR 1). Calculated risks may be taken during the provisioning period by deferring procurement of partial quantities of computed requirements for selected spare and repair parts when program uncertainties or other circumstances make such risks acceptable in the context of available resources and readiness goals. Contractors may be requested to give recommendations on the range and quantity of support items required.

(4) When an established item is managed by a DoD Component other than the provisioning DoD Component, the provisioning DoD Component shall register the requirement with the Integrated Materiel Manager (IMM) by submitting a Supply Support Request (SSR) for consumable items. The Integrated Materiel Manager will submit a Nonconsumable Item Materiel Support Request (NIMSR) for reparable items. These requests cover a forecasted 12-month requirement, identify how the requirement is computed, and are based on average program requirements during the demand development period.

(5) Items for which anticipated demands are insufficient to justify stockage on an economic basis shall not be stocked unless required as limited demand or insurance items.

e. Procuring provisioned support items.

(1) Provisioning quantities for retail procurement levels should be developed based on end item density factors and site activation schedules.

(2) Provisioning quantities for wholesale procurement levels should be developed based on a time-weighted average month's program, which is the average number of end items supported each month.

(3) The procuring DoD Component may authorize contractors, in advance of formal procurement, to release limited quantities of long lead time support items (those items which due to their complexity of design, complicated manufacturing processes, or limited production require early ordering to ensure timely delivery). Incrementally releasing procurement orders for provisioned support items should be executed so that the obligation of funds is made on the basis of the procurement lead time required to ensure that the support items arrive for the scheduled initial outfitting support dates. When it is uneconomical to release orders incrementally, this method may be waived by the procuring DoD Component.

(4) DoD materiel managers, in cooperation with program managers, shall arrange for the acquisition of initial spares, as well as replenishment spares, as early in the production process as possible.

f. The demand development period (DDP).

(1) During the DDP, new item demand is forecasted using an engineering estimate because representative operating time is not yet sufficient to adjust this estimate with historical data. Once representative operating time is sufficient (the DDP has ended), the weight on the engineering estimate shall decrease. The objective of that procedure is to ensure that increasing consideration is given to actual demand data as opposed to provisioning estimates.

(2) When interim contractor support (ICS) is employed, materiel managers shall identify the necessary usage data to be collected by the contractor and delivered to the Government in a format compatible with the automated system used in the Government's requirements determination process. The contractor's usage data, rather than engineering estimates, shall be used to forecast replenishment spare and repair parts requirements when considered representative. Possession of the contractor's usage data may eliminate the need to establish a DDP upon transition to organic support. The DDP could actually occur during ICS.

(3) Preferably, the DDP should be measured against an equipment operating standard (hours, miles, rounds; etc.) instead of calendar time. If that is not possible, a traditional calendar-based DDP may be employed.

(4) Whether using a calendar-based or operating standard-based DDP, once sufficient representative operating time exists to adjust demand forecasts (or after 5 years, the maximum DDP), stockage, requirements, and retention should be based on actual usage data.

g. Provisioning performance measures.

(1) DoD Components shall develop and maintain provisioning performance measures such as:

(a) Provisioning contribution to achievement of readiness objectives.

(b) Accuracy of provisioning buys.

(c) Ability to meet provisioning milestones.

(d) Accuracy of provisioning documentation.

(2) DoD Components shall develop action plans to correct deficiencies identified in the quality process and ensure continuous improvement in the quality of secondary items.

8. Spare Parts Breakout Program.

a. The Department of Defense shall reduce the costs of spare parts through the use of competitive procurement methods, or the purchase of parts directly from the actual manufacturer rather than the prime contractor, while maintaining the integrity of the systems and equipment in which the parts are to be used. The DoD Spare Parts Breakout Program shall carry out that policy.

b. Commanders of activities with responsibility for design control, acquisition, and management of any centrally managed replenishment or provisioned part for military systems and equipment shall:

(1) Assist in identifying and purchasing data rights and technical data, and reviewing restrictive legends on technical data, during system or equipment development and production, to allow for breakout of parts where possible. Reverse engineering should be considered as a method of developing or increasing competition.

(2) Designate a program manager to serve as the activity's central focal point, communicate breakout policy, ensure cost-effectiveness of screening actions as well as the activity's breakout program, provide assistance in implementing breakout screening, monitor ongoing breakout efforts and achievements and provide program surveillance. The program manager shall report to the commander or the deputy commander of the activity with breakout screening responsibility.

c. Ensure that actions to remove impediments to spare parts breakout are continued so long as it is cost-effective to do so, or until no further improvements to spare parts breakout may be made. Further amplification can be found in Defense FAR Supplement, Appendix E.

9. Provisioning organizations supporting typical Army programs.

a. The Army Materiel Command (AMC) has major subordinate commands (MSC's) heavily involved in the provisioning process i.e., U.S. Army Aviation & Missile Command U.S. Army Tank-automotive & Armaments Command (TACOM), U.S. Army Communications-Electronics Command (CECOM), the U.S. Army Simulation, Training & Instrumentation Command (STRICOM) and the U.S. Army Soldier and Biological Chemical Command (SBCCOM). These Commands represent the "hub" of the provisioning process. All provisioning actions are planned and coordinated by the designated MSC.

b. The Defense Logistics Agency (DLA) is responsible for assigning National Stock Numbers (NSNs) for all parts being stocked in the DoD inventory. Additionally, DLA provides item management for many support items.

c. Gaining commands are defined as those major Army commands scheduled to receive and operate the new systems. These gaining commands are responsible for submitting a Mission Support Plan (MSP) to the major subordinate command which will identify logistics units assigned to provide support to the units scheduled to receive the systems. The AMC MSC uses this data in calculating required quantities of support items. The gaining commands are also responsible for making the final decision on the range and quantity of support items they will stock at the various units within their command.

d. The Department of Defense, Department of the Army, and AMC Headquarters formulate provisioning policy.

e. Government contractors are responsible for developing some provisioning data and producing the support items.

10. Provisioning Data Entry and the Commodity Command Standard System (CCSS).

a. The process of data entry into CCSS begins with the Selection Worksheet (SW). This documentation is developed by the contractor with military oversight and contains key information critical to a successful provisioning program. The H/H-1 data record sheets contain detailed data on every part in the weapon system. Key data elements are the Provisioning Control Code (PCC), the Provisioning Contract Control Number (PCCN), and the Provisioning Line Item Sequence Number (PLISN). These codes and numbers identify the weapon systems and each part on the weapon system.

b. Once the parts are identified, the cataloging process begins. As NSNs are assigned, a record is built for each part in CCSS, which is called the National Stock Number Master Data Record (NSNMDR). At the same time, a Provisioning Master Record (PMR) file is being built. The PMR is used to record detailed information pertaining to the spare/repair parts which make up the weapon system.

c. Once the Provisioning Master Record is complete, a stand alone model outside of CCSS can be run to provide basic budget information on the supportability cost of the new system. The Selected Essential Item Stockage for Availability Method (SESAME) model is a computer program used for estimating budget requirements for provisioning. SESAME is the approved Army model for calculation of initial PLL and ASL. When this program is used in the Standard Initial Provisioning (SIP) mode, the requirements calculated are the same as computed by the CCSS Automated Requirements Computation System Initial Provisioning (ARCSIP) program. SESAME may also be used to find the best retail allocation of stock for a given total budget or to find the smallest budget to achieve a given supply availability (A_o). These analyses are conducted through the Essential Repair Parts Stockage List (ERPSL) mode of SESAME. When the ERPSL mode is used, the calculated quantities for each spare part can be input into the CCSS process by the use of "K" cards, posting the results in the PMR.

d. The next file which must be built in CCSS is the End Item Parameter (EIP) file. This file contains weapon system equipment densities and deployment schedules by Provisioning Contract Control Numbers.

e. After specific part number information has been gathered and placed into the system in the PMR and the end item data established in the EIP, the requirements determination process for provisioning can be started. The application in CCSS which computes the provisioning requirements is called the Automated Requirements Computation System Initial Provisioning (ARCSIP) system. ARCSIP is designed to compute retail requirements for initial issue consisting of Order Ship Time (OST), Operating Level (OL), and safety level. Repairable items also include Turnaround Time (TAT) quantities. ARCSIP also computes wholesale replenishment quantities for repairable items. These are gross quantities required to support an end item for up to five years for locally-managed items and for the first 12 months of deployment for nonlocally-managed items. The results of the calculation process are posted into the NSNMDR, Sector 13/04.

f. The Requirements Determination and Execution System (RD&ES) is the supply management process which creates the requirements which are passed to procurement. It considers all of the requirements which were generated by the ARCSIP process and loaded in the NSNMDR plus any other requirements that might exist for the studied NSN. A Procurement Work Directive (PWD) is created by the RD&ES process and this document initiates the procurement action.

11. Summary. The old axiom which ends, "...for want of a nail, a kingdom was lost." is an apt description of the importance of provisioning. All end items will stop operating sooner or later due to a parts failure. And because it is unlikely that we will ever produce parts with 100% reliability, provisioning is essential to each system meeting its operational availability goal. This, in turn, makes provisioning critical to the success of any Army unit.

Appendix A

DEFINITIONS

Cataloging. The act of naming, classifying, describing and numbering each item repetitively used, purchased, stocked, or distributed so as to distinguish each item from every other item. Also included is the maintenance of information related to the item and the dissemination of that information to item users.

Classes of Supply. Not to be confused with Federal Supply Class, terminology used to divide supplies and equipment into 10 easily identifiable categories of materiel that are depicted by Roman Numerals, as follows:

Class I. Subsistence, including gratuitous health and welfare items.

Class II. Clothing, individual equipment, tentage, organizational tool kits, hand tools, administrative, and housekeeping supplies and equipment.

Class III. Petroleum fuels, lubricants, hydraulic and insulating oils, preservatives, liquid and compressed gases, bulk chemical products, coolants, de-icing and antifreeze compounds, together with components and additives of such products, and coal.

Class IV. Construction materials to include installed equipment and all fortification and/or barrier materials.

Class V. Ammunition of all types (including chemical, biological, radiological, and special weapons), bombs, explosives, mines, fuses, detonators, pyrotechnics, missiles, rockets, propellants, and other associated items.

Class VI. Personal demand items (non-military sales items).

Class VII. Major end items. A final combination of end products that is ready for its intended use; that is, launchers, tanks, mobile machine shop, and vehicles; etc.

Class VIII. Medical materiel, including medical peculiar repair parts.

Class IX. Repair parts and components to include kits, assemblies and subassemblies, repairable and consumable items required for maintenance support of all equipment, excluding medical peculiar repair parts.

Class X. Materiel to support nonmilitary programs, such as agriculture and economic development, not included in classes I through IX.

Consumable Item. An item of supply (except explosive ordnance and major end items of equipment) that is normally expended or used up beyond recovery in the use for which it is designed or intended.

Classified Items. Materiel that requires protection in the interest of national security.

Sensitive Items. Materiel that requires a high degree of protection and control due to statutory requirements or regulations, such as narcotics and drug abuse items; precious metals; items of high value, highly technical, or hazardous nature; and small arms and ammunition.

Pilferable Items. Materiel having a ready resale value or application to personal possession, which is especially subject to theft.

Defense Reutilization and Marketing Office (DRMO). An operating level organization of the DRMS.

Defense Reutilization and Marketing Service (DRMS). A primary level field activity of the DLA charged with the responsibility of managing all aspects of the process of receiving, storing, marketing, redistributing, and disposing of all materiel determined by elements of the DoD materiel management structure to be excess to the needs of a DoD activity.

Demand. An indication of a requirement (requisition, request, issue, and reparable generation; etc.) for issue of serviceable materiel. Demands are categorized as either "recurring" or "non-recurring."

Demand-Based Requirements. A requirements determination process that has a goal targeted at filling a percent of demand or at satisfying demand within a given period of time.

Demand-Support Items. Items that are stocked based on forecasted usage. Demand-supported items are stocked with demand-based requirements on the basis of economics or with limited demand requirements on basis of military mission essentiality.

Demand Development Period. The period of time extending from the date of preliminary operational capability to a point in time when spare and repair parts requirements can be forecast based on actual demands using statistically valid methods.

Demilitarization. The act of destroying the functional or military capabilities of certain types of equipment or material that has been screened through inventory control points and declared surplus or foreign excess. That term includes mutilation, cutting, crushing, scrapping, melting, burning, or alteration to prevent the further use of that equipment or material for its originally intended purpose, and applies equally to equipment or material in serviceable or unserviceable condition.

Depot Level Repairable Item. A repairable item of supply that is designated for repair at depot level or that is designated for repair below the depot level, but if repair cannot be accomplished at that level, shall have its unserviceable carcasses either forwarded to the depot for repair or condemnation, or reported to the ICP for disposition.

Economic Order Quantity (EOQ). The quantity derived from a mathematical technique used to determine the optimum (lowest) total variable costs to order and hold inventory.

Economic Repair Quantity. The quantity derived from a mathematical technique used to determine the optimum (lowest) total variable costs to repair and hold inventory.

Economic Stockage. An item with demand-based requirements is stocked based on economics when the cost of being out of stock is equal to or exceeds the cost of holding stock and shall be stocked at the wholesale level.

Electronic Data Interchange. A standard, commercial syntax and set of variable length transactions to facilitate the interchange of electronic data relating to such business transactions as order placement and processing, shipping and receiving information, invoicing, and payment and cash application.

End Item. A final combination of end products, component parts, and/or materials ready for its intended use, e.g., a ship, tank, mobile machine shop, or aircraft.

Essential Item. A support item or a repair part whose absence renders the supported system or end item inoperable.

Essentiality Code. The essentiality code for an EI is a one-position, alpha code contained in authorization and allowance media other than repair, parts, and special tools list (RPSTL). In those cases of newly acquired weapon systems or EIs where reliability and failure mode are required to be applied, use of the results of analyses in determining essentiality codes is mandatory.

Essentiality Stockage. An item with limited demand requirements is stocked based on anticipated usage, but at a level that the item does not meet the established economic stockage criteria. Although a limited demand item fails the economic criteria for stockage because its probability of demand is low, it qualifies as an MME code I, II, or III because the lack of a replacement would seriously hamper the operational readiness of a weapon system.

Federal Supply Class (FSC). A series of 4 numerals at the beginning of the NSN that designates the general commodity grouping of the item of supply; e.g., Class 5130, Hand Tools, Power Driven.

Force or Activity Designator (FAD). The FAD is an integral part of the UMMIPS. The FAD is a Roman numeral (I to V) assigned by the Secretary of Defense, the Chairman of the Joint Chiefs of Staff, or a DoD Component to indicate the relative mission essentiality of a unit, organization, installation, project, or program.

Government Furnished Materiel (GFM). Material owned by the Government and furnished to a contractor to use for specific contract purposes. Title to all material furnished by the Government remains with the Government. GFM is property that may be incorporated into or attached to a deliverable end item or that may be consumed or expended in performing a contract. GFM does not include materiel sold by the Government to a contractor.

Inactive Inventory. Materiel that is not expected to be consumed within the budget period but is likely to be used in future years.

Initial Operational Capability (IOC). The first attainment of the capability to use effectively a weapon, item of equipment, or system of approved specific characteristics that is operated by an adequately trained, equipped, and supported military unit or force.

Initial Spares. Spares stocked to support a newly fielded weapon system or a modification of a weapon system.

Insurance Item. A non-demand-based, stocked, essential item for which no failure is predicted through normal usage. However, if a failure were to be experienced, or a loss should occur through accident, abnormal equipment or system failure, or other unexpected occurrence, lack of replacement item will seriously hamper the operational capability of a weapon system.

Integrated Materiel Manager (IMM). Any DoD activity or agency that has been assigned wholesale integrated materiel management responsibility for the Department of Defense and participating Federal Agencies. Integrated materiel management responsibilities include cataloging, requirements determination, procurement, distribution, overhaul, repair and disposal of materiel.

Interchangeable Item. An item that possesses such functional and physical characteristics as to be equivalent in performance, reliability, and maintainability, to another item of similar or identical purposes, and is capable of being exchanged for the other item without selection for fit or performance, and without alteration of the item itself or of adjoining items, except for adjustment.

Inventory. Materiel, titled to the Government, held for sale or issue, held for repair, or held pending transfer to disposal.

Inventory Control Point (ICP). An organizational unit or activity within the DoD supply system that is assigned the primary responsibility for the materiel management of a group of items either for a particular Service or for the Department of Defense as a whole. In addition to IMM functions, an ICP may perform other logistics functions in support of a particular Service or for a particular end item (e.g., centralized computation of retail requirements levels and engineering tasks associated with weapon system components).

Item Essentiality. A measure of an item's military worth in terms of how its failure (if a replacement is not immediately available) would affect the ability of a weapon system, end item, or organization to perform its intended functions. In stockage models, it is the number by which the shortage cost parameter is multiplied to reflect the differences in military worth among items.

Item Identification. Sufficient data to establish the essential characteristics of an item that give the item its unique character and differentiate it from other supply items.

Item Management Coding. The process of determining whether items of supply in FSCs for Integrated Materiel Management qualify for management by the individual DoD Components other than the DLA or the GSA.

Life-Cycle Cost. The total cost to the Government of acquisition and ownership of a system over its useful life. It includes the cost of development, acquisition, support, and disposal.

Life-of-Type Buy. A one-time procurement, when all cost-effective and prudent alternatives have been exhausted, for the total future requirement of an item that is no longer expected to be produced. The procurement quantity shall be based upon demand or engineering estimates of mortality sufficient to support the applicable equipment until phased out.

Limited Demand Item. A demand-based item for which usage is anticipated, but the item does not meet the established economic stockage criteria, or an item for which the computed demand-based quantity is less than the authorized stockage level. Although limited demand items fail the economic criteria for demand-based stockage because the probability of demand is low, they qualify as an MME code I, II, or III because the lack of a replacement item would seriously hamper the operational readiness of a weapon system.

Materiel. All items (including ships, tanks, self-propelled weapons, and aircraft; etc., and related spares, repair parts, and support equipment, but excluding real property, installations, and utilities) necessary to equip, operate, maintain, and support military activities without distinction as to its application for administrative or combat purposes. Materiel is either serviceable (i.e., in an issuable condition) or unserviceable (i.e., in need of repair to make it serviceable).

Materiel Management. Continuing actions relating to planning, organizing, directing, coordinating, controlling, and evaluating the application of resources to ensure the effective and economical support of military forces. It includes provisioning, cataloging, requirements determination, acquisition, distribution, maintenance, and disposal. The terms "materiel management," "materiel control," "inventory control," "inventory management," and "supply management" are synonymous.

Maintenance Replacement. The replacement of an unserviceable reparable item by a serviceable item. In that context, unserviceable items shall include items that are replaced due to malfunction or shall have reached the end of an administratively determined removal interval for preventive maintenance or safety considerations.

Maintenance Replacement Rate I (MRR 1) is defined as the peacetime replacement rate factor for the item indicating the number of expected failures, which will require removal and replacement of the support item below depot level in a given next higher assembly per equipment or end item per year. This factor is to be based on the known or estimated end item usage and mature failure rates. The objective for calculation of initial prescribed load list (PLL) and authorized stockage list (ASL) is to determine the least cost mix of spares and repair parts needed to achieve the operational availability (A_o) goal as stated in the Operational Requirements Document (ORD). Selected Essential Item Stockage for Availability Method (SESAME) is the approved Army model for implementing this objective and will be used to compute the least cost spares list for all weapon systems.

Maintenance Replacement Rate 2 is a wartime factor which is calculated by multiplying MRR 1 by a wartime adjust factor consisting of consideration of intensified rate of usage; increased stress due to combat operations; accident rate; ballistic damages; and differences in turnaround time.⁴

Materiel Release Order (MRO). An order issued by an accountable supply system manager (usually an inventory control point or accountable depot and/or stock point directing a non-accountable activity (usually as storage site or materiel drop point) within the same supply distribution complex to release and ship materiel.

Model. A mathematical representation of an operation or management system capable of manipulation to achieve optimum solutions to stated problems.

Modification. A Government-approved change in the configuration of a part or item that offers a significant benefit to the Government by correcting deficiencies, satisfying a change in operational or logistic support requirements, or effecting a substantial life-cycle cost savings.

National Item Identification Number (NIIN). The last 9 digits of the NSN that differentiates each individual supply item from all other supply items. The first 2 digits signify the National Codification Bureau that assigned the NIIN, while the last 7 digits are

⁴ MIL-PRF-49506, *Logistics Management Information*.

nonsignificant and are sequentially assigned by the FLIS. All U.S. manufactured items have a National Codification Bureau Code of "00" (cataloged before 1975) or "01" (cataloged in 1975, or later).

National Stock Number. A 13-digit stock number used to identify items of supply. It consists of a 4-digit FSC and a 9-digit NIIN.

Non-demand-Based. A requirements determination process that is not based on forecasted demand but qualifies stockage based on other criteria. Types of non-demand-based stockage are insurance stockage, life-of-type buys, and program based buys.

Not Stocked. An item for which there is no established RO. Inventory or usage data may be present; however, stock replenishment would not be initiated.

Order and Shipping Time (OST) Level. The quantities of materiel required to sustain operations during the interval between the time that an activity initiates a replenishment requisition and the time the activity receives the requisitioned materiel.

Organic Support. The capability of a Military Service or a Defense Agency to sustain logistics operations through Government organizational structures.

Phased Support. A contractor support approach to provide interim support for new acquisitions with a commitment to attain organic capability. Phasing may be done by support level (e.g., organization, intermediate, or depot), by subsystem, by design stable components, or other criteria.

Preliminary Operational Capability. The attainment of the capability for equipment or systems to be used by operational units and to function in a manner that is preliminary to, but in support of, the achievement of an IOC.

Principal Item. An end item or a replacement assembly of such importance to operational readiness that management techniques require centralized individual item management throughout the supply system to include items stocked at depot level, base level, and using unit level.

Priority Designator (PD). An integral part of the UMMIPS, the PD is a 2-position numeric code (01-15) that identifies the relative priority of the competing requisitions. The PD is used by the materiel management systems to allocate available stocks among competing requisitions. The PD is based on the combination of the FAD assigned to the requisitioning activity and the Urgency of Need Designator (UND).

Production Lead Time (PLT). The time interval between the letting of a contract or the placing of an order, and receipt into the supply system of materiel purchased.

Program Objective Memorandum (POM). The POM documents a 6-year projected blueprint of each organization's proposals for updating DoD programs. It is submitted to the Secretary of Defense by each Military Department, Defense Agency, and Special Operations Command for approval. The approved POM defines the programs to be supported in the Military Department and the Defense Agency budgets.

Provisioning. The management process of determining and acquiring the range and quantity of support items necessary to operate and maintain an end item of materiel for an initial period of service.

Readiness. A measure or measures of the ability of a system to undertake and sustain a specified set of missions at planned peacetime and wartime utilization rates. Measures take account of the effects of system design (reliability and maintainability), the characteristics of the support system, and the quantity and location of support resources. Examples of system readiness measures are combat sortie rate, fully mission capable rate, and operational availability.

Readiness-Based Requirements. A requirement determination process that has a goal targeted at weapon system readiness.

Reorder Point (ROP). That point at which a stock replenishment requisition will be submitted to maintain the predetermined or calculated stockage objective. The sum of the safety level of supply, the level for ordering and shipping time, repair cycle level, and authorized additive levels equals the reorder point.

Repair-Cycle Level. The quantity of reparable items required to sustain operations during the repair cycle that commences when a maintenance replacement takes place and ends when the unserviceable asset is returned to stock in a serviceable condition. That includes such stages as removed, awaiting shipment, in transit, in pre-repair screening, in process of repair, and being returned to serviceable stock. Any extraordinary awaiting-parts delays and any intentional extended-transit, storage, or repair-process delays should be excluded from the repair cycle.

Reparable Item. An item of supply subject to economical repair and for which the repair (at either depot or field level) is considered in satisfying computed requirements at any inventory level.

Repair part. Material capable of separate supply and replacement which is required for the maintenance, overhaul, or repair of a system, equipment or end item. This definition does not include Support Equipment but does include repair parts for support equipment.

Replenishment. Actions to resupply an inventory when the inventory position reaches the reorder point.

Required Delivery Date (RDD). A 3 position field that is used to identify the level of service (in terms of time) that a customer requires of the logistics system. The RDD specifies the allotted times that each element of the logistics system has to satisfy the service level required by the customer. The logistics management systems use the RDD to determine the service level times that must be met or exceeded and allocate their resources, accordingly.

Requirements Computation. Any mathematical calculation performed to support requirements determination functions.

Requirements Objective. For wholesale stock replenishment, the maximum authorized quantity of stock for an item. It consists of the sum of stock represented by the economic order quantity, the safety level, the repair cycle level, and authorized additive levels.

Requisition. An order for materiel initiated by an established, authorized organization (i.e., a DoD or non-DoD organization that has been assigned a DoD Activity Address Code) that is transmitted either electronically, by mail, or telephoned to a supply source within the Department of Defense or external to the Department of Defense (General Services Administration (GSA), Federal Aviation Administration (FAA), or other organizations assigned management responsibility for categories of materiel).

Requisitioning Objective. The maximum quantity of materiel to be maintained on hand and on order to sustain current operations and core war reserves. It shall consist of the sum of stocks represented by the operating level, safety level, repair cycle, if applicable, the order and shipping time level, and authorized additive levels.

Retail. Level of inventory below the wholesale level, either at the consumer level (directly supporting customers) or at the intermediate level (supporting a geographical area).

Retail-Level Supply. Those secondary items stored within DoD intermediate and consumer levels of supply down to and including these activities: the Army - to Authorized Stockage List, the Navy - to shipboard and shore stations, the Air Force - to base supply, and the Marines - to base supply and the Marine Expeditionary Force supplies. Retail-level supply does not include end use secondary item materiel.

Retail Stock. Stock held in the custody or on the records of a supply organization below the wholesale level.

Safety Level. The quantity of materiel required to be on hand to permit continued operation in the event of a minor interruption of normal replenishment or a fluctuation in demand.

Secondary Item. An item that is not defined as a principal item and includes reparable components, subsystems, and assemblies, consumable repair parts, bulk items and material, subsistence, and expendable end items, including clothing and other personal gear.

Shelf-Life Item. An item of supply possessing deteriorative or unstable characteristics to the degree that a storage time period must be assigned to ensure that it will perform satisfactorily in service.

Spares. Articles identical to or interchangeable with the end articles on contract which are procured over and above the quantity needed for initial installation for support of a system.

Spares acquisition integrated with production (SAIP). SAIP shall be used to combine procurement of selected spares with procurement of identical items produced for installation on the primary system, subsystem, or equipment when the result will be a reduction of total cost

Stock Fund. A revolving fund established to finance the costs of inventories of supplies. It is authorized by specific provision of law to finance a continuing cycle of operations. Reimbursements and collections derived from such operations are available for use by the fund without further action by the Congress.

Substitutable Item. An item that possesses such functional and physical characteristics as to be capable of being exchanged for another only under specified conditions or for particular applications and without alteration of the items themselves or of adjoining items. That term is synonymous with the phrase "one way interchangeability," such as item B shall be interchanged in all applications for item A, but item A shall not be used in all applications requiring item B.

Supply Pipeline. The link from the end-user to the retail level to the wholesale level of supply through which requisitions and materiel normally flow.

Supply Support Request (SSR). A transaction identifying requirements for consumable items that is submitted by the Component introducing a materiel and/or weapon system to the IMM.

Support equipment. " Support Equipment" is that equipment required to make an item, system, or facility operational in its intended environment. This includes all equipment required to maintain and operate the item, system or facility including aerospace ground equipment and ground equipment.

Support items. Items subordinate to or associated with an end item, i.e., spares, repair parts and support equipment.

Total Asset Visibility (TAV). The capability to provide timely and accurate information on the location, movement, status, and identity of units, personnel, equipment, and supplies. It also includes the capability to act on that information to improve the overall performance of DoD logistics practices.

Total Variable Cost. The sum of the variable cost to order, variable cost to hold, and implied shortage cost. Procurement cycles and safety levels are determined through minimization of these costs for any given group of items in an inventory.

Uniform Materiel Movement and Issue Priority System (UMMIPS). A structure that establishes time standards, based on the mission and urgency of need of the requestor, for the supply of materiel from the time of origination of the requirement (date of the requisition) to the time that the acknowledgment of physical receipt is posted to the requisitioner's inventory record.

Unit of Issue. Denotes by what means we buy and ultimately issue materiel for our end-users and/or customers. Depending on the item, unit of issue can be quantity or physical measurement, or by container or shape of the item. Unit of issue is standard for each item of supply across the Department of Defense.

Weapon System Availability. A weapon system is available if it is capable of performing its intended mission.

Wholesale. The highest level of organized DoD supply, and as such, procures, repairs and maintains stocks to resupply the retail levels of supply. The terms "wholesale supply," "wholesale level of supply," and "wholesale echelon" are synonymous.

Wholesale Stock. Stock, regardless of funding sources, over which the IMM has asset knowledge and exercises unrestricted asset control to meet worldwide inventory management responsibilities.

Appendix B

Source, Maintenance and Recoverability (SMR) Codes are used to communicate maintenance and supply instructions to the various logistic support levels and using commands for the logistic support of system, equipment, and end items. These codes are made available to their intended users by means of technical publications, such as allowance lists, illustrated parts breakdown (IPB) manuals, maintenance manuals, and supply documents. These codes are assigned to each support item based on the logistic support planned for the end item and its components.

Source code.	Codes assigned to support items to indicate the manner of acquiring items for the maintenance, repair, or overhaul of end items. Source Codes are assigned to support items to indicate the manner of acquiring support items for maintenance, repair, or overhaul of end items. Source codes are entered in the first and second positions of the Uniform SMR Code format as follows:
Code: PA	Definition: Item procured and stocked for anticipated or known usage.
Code: PB	Definition: Item procured and stocked for insurance purposes because essentiality dictates that a minimum quantity be available in the supply systems.
Code: PC	Definition: Item procured and stocked and which otherwise would be coded PA except that it is deteriorative in nature.
Code: PD	Definition: Support item, excluding support equipment, procured for initial issue or outfitting and stocked only for subsequent or additional initial issue or outfitting. Not subject to automatic replenishment.
Code: PE	Definition: Support equipment procured and stocked for initial issue or outfitting to specified maintenance repair activities.
Code: PF	Definition: Support equipment which will not be stocked but which will be centrally procured on Demand.
Code: PG	Definition: Item procured and stocked to provide for sustained support for the life of the equipment. It is applied to an item peculiar to the equipment which because of probable discontinuance or shutdown of production facilities would prove uneconomical to reproduce at a later time
Code: PH	Definition: Item procured and stocked and has been identified to contain hazardous material. Item requires recordation in the Hazardous Material Information System (HMIS) and a Material Safety Data Sheet (MSDS).
Code: PR	Definition: End item and/or support item terminal or obsolete and replaced. No longer authorized for procurement. On hand assets may be issued until exhausted. Then use replacement item.
Code: PZ	Definition: Item terminal or obsolete with no replacement. Discontinue use. (Army only. This code will not effect other services if they are recorded in DLIS.)
Code: KD	Definition: An item of depot overhaul/repair kit and not purchased separately. Depot kit defined as a kit that provides items required at the time of overhaul or repair.
Code: KF	Definition: An item of a maintenance kit and not purchased separately. Maintenance kit defined as a kit that provides an item that can be replaced at organizational or intermediate levels of maintenance.
Code: KB	Definition: Item included in both a depot overhaul/repair kit and a maintenance kit.
Code: MO	Definition: Item to be manufactured or fabricated at organizational level.
Code: MF	Definition: Item to be manufactured or fabricated at intermediate maintenance levels. Army--Direct Support
Code: MH	Definition: Item to be manufactured or fabricated at intermediate maintenance levels. Army--General Support.
Code: ML	Definition: Item is to be manufactured at a specialized repair facility (e.g., environmental consideration).

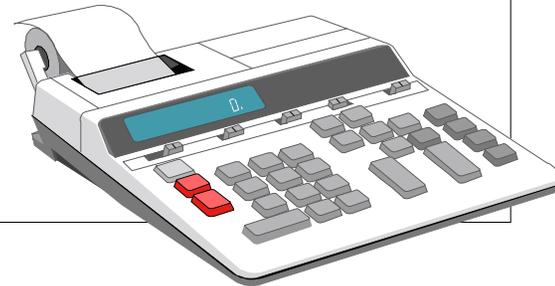
Code: MD	Definition: Item to be manufactured or fabricated at depot maintenance level.
Code: AO	Definition: Item to be assembled at organizational level.
Code: AF	Definition: Item to be assembled at intermediate maintenance levels. Army--Direct Support
Code: AH	Definition: Item to be assembled at intermediate maintenance levels. Army--General Support
Code: AD	Definition: Item to be assembled at depot maintenance levels.
Code: XA	Definition: Item is not procured or stocked because the requirements for the item will result in the replacement of the next higher assembly.
Code: XB	Definition: Item is not procured or stocked. If not available through salvage, requisition.
Code: XC	Definition: Installation drawing diagram, instruction sheet, field service drawing, that is identified by manufacturer's part number.
Code: XD	Definition: Support item with low mortality rate. Local purchase or requisition using CAGE and reference number. Not available from salvage cannibalization.
<p>Maintenance code. Codes assigned to support items to indicate the maintenance levels authorized to perform the required maintenance functions. Maintenance codes are assigned to indicate the levels of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the Uniform SMR Code Format as follows: B-2. Use (third position.) The maintenance code entered in the third position will indicate the lowest maintenance level authorized to remove, replace, and use the support item. The decision to code the item for removal and replacement at the indicated maintenance level will require that all the capabilities necessary to install and insure proper operation after installation of a replacement item (i.e., pre-installation, testing and post-installation checkout) are provided. The maintenance code entered in the third position will indicate one of the following levels of maintenance.</p>	
Code: O	Application/Explanation: Support item is removed, replaced, used at the organizational level of maintenance. On Army programs, a code "C " may be used in the third position to denote crew or operator maintenance performed within organizational maintenance. On joint programs the Army will receive or transmit an O to indicate organizational level.
Code: F	Application/Explanation: Support item is removed, replaced, used at the following intermediate levels: USA--Direct Support
Code: H	Application/Explanation: Support item is removed, replaced, used at the following intermediate levels: USA--General Support
Code: D	Application/Explanation: Support item is removed, replaced, used at Depot only: USA--Depot, Mobile Depot, Specialized Repair Activity
<p>B-3. Repair (fourth position.) The maintenance code entered in the fourth position indicates whether the item is to be repaired and identifies the lowest maintenance level with the capability to perform complete repair (i.e., all authorized maintenance functions)' The decision to code the support item for repair at the indicated maintenance levels requires that all maintenance capability (remove, replace, repair, assemble, and test) for the support items to be provided to that level. This does not preclude some repair which may be accomplished at a lower level of maintenance. However, because of service differences in communicating maintenance repair level information a maintenance code entry in this position is not required by all services. When a maintenance code is not used a dash (--) sign will be entered. For multi-service equipment/systems or when a code is entered, this position will contain one of the following maintenance codes as assigned by the service(s) that require the code:</p>	
Code: O	Application/Explanation: The lowest maintenance level capable of complete repair of the support item is the organizational level.
Code: F	Application/Explanation: The lowest maintenance level capable of complete repair of the support item is the following intermediate level:
Code: H	Application/Explanation: The lowest maintenance level capable of complete repair of the support USA--General Support

Code: D	Application/Explanation: The lowest maintenance level capable of complete repair of the support item is the depot level:
Code: L	Application/Explanation: Repair restricted to designated Specialized Repair Activity USA--Depot, Mobile Depot, Specialized Repair Activity
Code: Z	Application/Explanation: Non-repairable. No repair is authorized.
Code: B	Application/Explanation: No repair is authorized. Adjusting, lubricating, etc. at the user level may recondition the item. No parts or special tools are procured for the maintenance of this item.
Recoverability code. Codes assigned to support items to indicate the disposition action on unserviceable support items. Recoverability Codes are assigned to support items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the uniform SMR Code Format as follows:	
Recoverability Codes: Z	Definition: Nonreparable item. When unserviceable, condemn and dispose at the level indicated in column 3
Recoverability Codes: O	Definition: Repairable item. When uneconomically repairable, condemn and dispose at organizational level.
Recoverability Codes: F	Definition: Repairable item. When uneconomically repairable, condemn and dispose at the following intermediate levels: USA--Direct Support
Recoverability Codes: H	Definition: Repairable item. When uneconomically repairable, condemn and dispose at the following levels:
Recoverability Codes: D	Definition: Repairable item'. When beyond lower level repair capability, return to depot. Condemnation and disposal not authorized below depot level.
Recoverability Codes: L	Definition: Repairable item. Repair, condemnation and disposal not authorized below depot/Specialized Repair Activity level.
Recoverability Codes: A	Definition: Item requires special handling or condemnation procedures because of specific reasons (i.e., precious metal content, high dollar value, critical material or hazardous material). Refer to appropriate manuals/directives for specific instructions.

Definition of Provisioning

- A management process for determining and acquiring the range and quantity of support items necessary to operate & maintain an end item of materiel for an initial period of service.

DoD 4140.1-R/AR 700-18



Objective of Provisioning

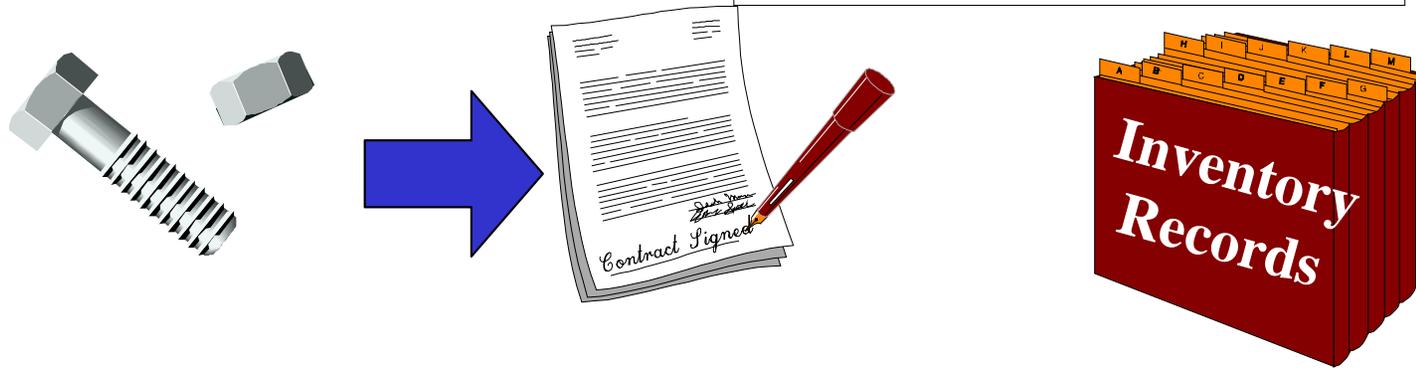
- Ensure timely availability of minimum initial stocks at each appropriate level until normal replenishment at least cost



Cataloging & Screening

Cataloging - writing an item description of each part and getting NSNs assigned

Screening - checking the DoD inventory records to determine if the part description and NSN already exists



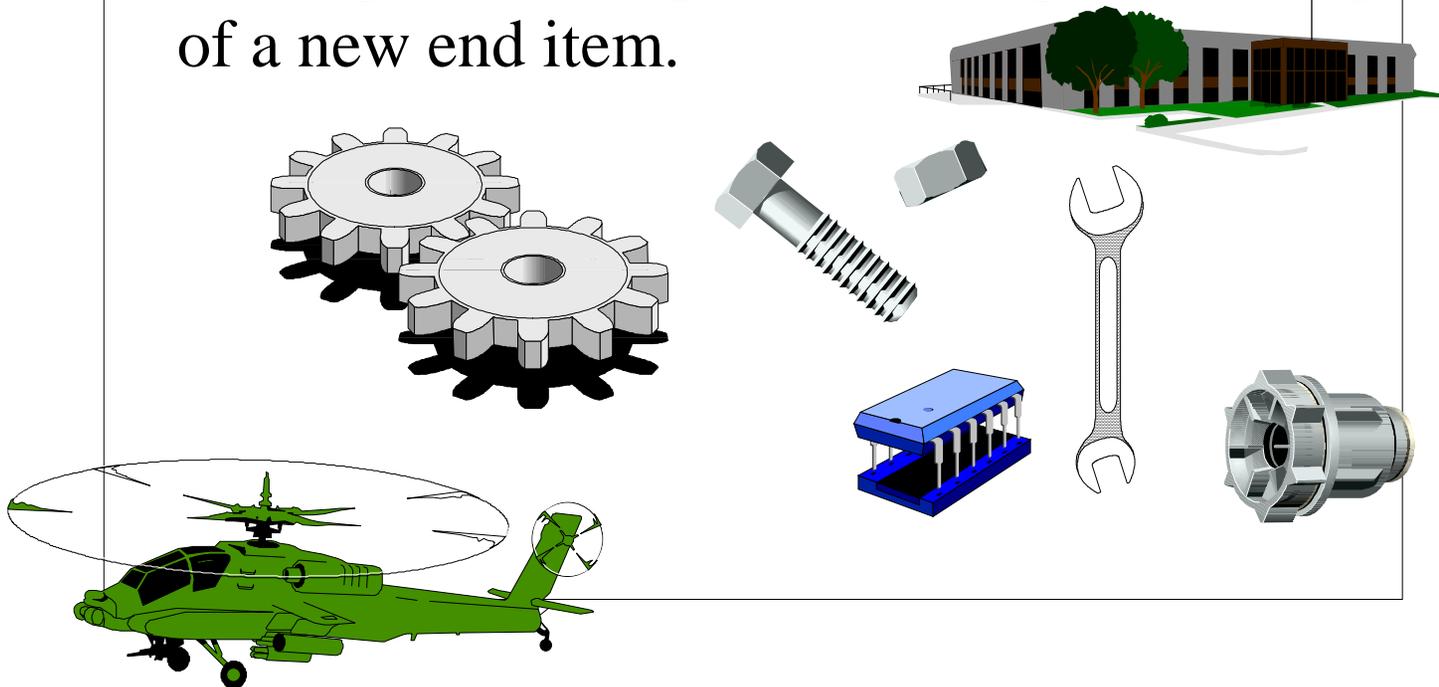
System Support Package

- ◆ Draft equipment publications (TM's)
- ◆ Personnel & training requirements (MOS's)
- ◆ TMDE & common support equipment
- ◆ Calibration requirements
- ◆ Tools (common, peculiar & special)
- ◆ Maintenance concept
- ◆ Spare & repair parts
- ◆ Facilities



Types of Provisioning

- Initial provisioning - First time provisioning of a new end item.



Types of Provisioning

- Phased Provisioning - Contractor required to hold provisioned parts until ordered by the Government.



Support Item Distribution

