DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON, DC 20350-2000

CH-1 of 18 AUG 1988

IN REPLY REFER TO

OPNAVINST 4423.4A
OP-412E
3 Jun 1988

OPNAV INSTRUCTION 4423.4A

From: Chief of Naval Operations

Subj: PROVISIONING OF END ITEMS OF MATERIAL

Ref: (a) OPNAVINST 5000.49A
(b) ASN(S&L) memo of 31 Mar 86 (NOTAL)
(c) CNO ltr 4400 Ser 412E/6U394562 of 12 Aug 86
(d) DoDD 5000.1 of 1 Sep 87 (NOTAL)
(e) CNO ltr Ser 412/394582 of 16 Mar 81 (NOTAL)
(f) CNO ltr Ser 4066 Ser 412E/7U394482 of 7 Jul 87
(g) Secondary Item Weapon System Management Concept and Implementation Plans, Apr 86, Department of Defense (NOTAL)

Encl: (1) DODD 4140.40 of 28 Jun 83
(2) DODINST 4140.42 of 28 Jul 87
(3) DODD 4140.59 of 13 Jun 88 (A

1. Purpose. To implement enclosures (1) through (3) which (R establish and disseminate policy and responsibilities pertaining to the provisioning of end items of material and the determination of secondary item spare and repair parts requirements. Secondary items are defined by Department of Defense (DoD) as "End items, consumable and reparable items other than principal items".

2. Cancellation. OPNAVINST 4423.4 and OPNAVINST 4423.5.

3. Discussion. The basic objectives and policies of the DoD governing the provisioning and follow-on spares support of end items are set forth in enclosures (1) and (2).

4. Scope. The provisions of this instruction:

a. Apply to all Navy claimants procuring equipment and components requiring U. S. Navy or Security Assistance Program secondary item spare and repair parts support.

b. Include all end items of material acquired by Navy components for which a Navy or contractor maintenance capability is anticipated.

c. Set forth DoD policy on stockage criteria and determining requirements for secondary item spare and repair parts beginning with initial provisioning and continuing through the demand

A) development period, which may not exceed two years, as defined in enclosure (2). Enclosure (3) prescribes wholesale level stockage policies, procedures, and responsibilities.

5. Policy. As stated in reference (a), system readiness is the final measure of ILS effectiveness. Readiness thresholds are established for all platforms and mission essential systems, subsystems and equipment. In implementing enclosures (1) and (2), activities will participate in Navy programs designed to enhance weapon system readiness at all levels of supply support. These programs include:

a. Secondary Item Weapon System Management (SIWSM) as outlined in reference (b).

b. Readiness Based Sparing (RBS): Required for all new, non-nuclear and non-strategic, Acquisition Category (ACAT) I, II, and III programs as directed in reference (c). System acquisition programs achieving Milestone II, as defined in reference (d), after 12 August 1986 are considered "new". The Availability Centered Inventory Model (ACIM), approved for use by reference (e), and the Aviation Readiness Requirements Oriented to Weapons Replaceable Assemblies Model (ARROWS), approved for use by reference (f), are the Navy standard RBS models and will be utilized for all approved systems. If pursuing RBS is deemed uneconomical or infeasible, it is the responsibility of logistics managers to pursue approval for waiver. Fully justified waiver requests are to be submitted to CNO (OP-41) for consideration/ approval.

c. Multi-Echelon Optimization Modeling: In support of reference (g), multi-echelon optimization models will be developed and utilized to ensure coordinated stockage of repair parts at all inventory levels to support weapon system operational availability goals. Navy Inventory Control Points (ICPs) will develop secondary item allowances considering the following:

(1) End item quantity

(2) Period of time requiring coverage

(3) Phasing of end item delivery to fleet

(4) System readiness goals/item essentiality

(5) Forecasted demands

d. Nuclear and Strategic: Requirements for Navy Nuclear Propulsion Plant items shall be issued by the Director, Naval Nuclear Propulsion Program (OP-00N). Models developed by the Director, Strategic Systems Project Office, will be used for strategic applications.

reuse, transfer, donation or sale must be accompanied by a DD

Department of Defense
DIRECTIVE

June 13, 1988
NUMBER 4140.59

USD(A)

SUBJECT: Determination of Requirements for Secondary Items After the Demand Development Period

References: (a) DoD Instruction 4140.42, "Determination of Requirements for Spare and Repair Parts Through the Demand Development Period," July 28, 1987
(b) DoD Instruction 4230.4, "Standard Method for Development of Spare Engine Requirements," November 14, 1983
(c) "Secondary Item Weapon System Management Concept," May 1985[1]
(d) DoD Instruction 4140.39, "Procurement Cycles and Safety Levels of Supply for Secondary Items," July 17, 1970
(e) through (g), see enclosure 1

A. PURPOSE

This Directive establishes DoD stockage policies, prescribes procedures, and assigns responsibilities for secondary items at the wholesale level.

B. APPLICABILITY AND SCOPE

This Directive:

1. Applies to the Office of the Secretary of Defense (OSD), the Military Departments, the Organization of the Joint Chiefs of Staff (OJCS), and the Defense Agencies. The term "DoD Components," as used herein, refers to the Military Departments and Defense Agencies.

2. Prescribes policy for determining requirements for reparable, consumable, stocked, and nonstocked centrally managed secondary items. It takes effect with the completion of the demand development period specified in reference (a) and continues through the life cycle of the items.

3. Excludes spare aircraft engines that are covered in reference (b) and cryptologic items managed by the Director, National Security Agency/Chief, Central Security Service (NSA/CSS).

C. DEFINITIONS

The terms used in this Directive are defined in enclosure 2.

[1]Available from Director, Supply Management Policy, Office of Assistant Secretary of Defense (Production & Logistics), Washington, DC 20301-8000.

D. POLICY

1. It is DoD policy to ensure the stockage of secondary items in quantities of sufficient range and depth that provide the optimum contribution to weapon system readiness goals for the least cost or that optimize weapon system readiness for a specified cost. Management intensity shall be varied and resources applied accordingly.

2. DoD Components shall determine secondary item requirements utilizing the principles and objectives of the Secretary of Defense-approved "Secondary Item Weapon System Management Concept" (reference (c)).

3. Consistent with weapon system readiness goals, just-in-time inventory concepts shall be used to determine secondary item requirements and to minimize inventory levels. Optimum reliance shall be placed on satisfying demands by placing orders with manufacturers for direct shipment to customers.

4. Mathematical models relating stockage decisions to their effect on the operational readiness of weapon systems normally shall be used for the computation of secondary item requirements.

a. The models shall be compatible with those developed to achieve optimum stockage before completing the demand development period. They should share similar target objective functions, data elements, and computational techniques.

b. The models shall permit analysis of the effect of changes among procurement, repair, and distribution resources. The objective is to enable logistics managers to contribute to better weapon systems readiness capabilities by improved allocation of limited resources.

5. When this Directive takes effect at the completion of the demand development period specified in DoD Instruction 4140.42 (reference (a)), actual demand data normally shall be used for inventory management decisions. However, the use of engineering estimates is permitted when:

a. An item has had no demand and estimated initial requirements and assets remain unchanged.

b. An engineering problem or forthcoming design change has resulted in past demands not being indicative of future demands.

6. When the type of models described in subsection D.4., above, are not applied, techniques to stock materiel for achieving specific objectives other than operational readiness of weapon systems (e.g., materiel availability backorder targets and item-specific supply response times) shall be used as alternatives. When these techniques are used instead of optimization models, DoD Components shall allocate resources and shall vary the intensity of management based on a military mission essentiality (MME) code.

a. Using Military Services shall assign MME codes to secondary items with national stock numbers in accordance with the definitions in enclosure 2 and the matrix in enclosure 3. The DoD inventory manager shall record the MME in the federal catalog system.

b. Military Departments shall maintain application files with the applicable secondary item, assembly and/or component, and weapon system and/or end item essentiality codes. If a secondary item has multiple applications, it shall be assigned the highest essentiality code. DoD Components periodically shall review the assignment of essentiality codes to ensure that they reflect the current status of the item. Application data shall be provided to DoD integrated managers, as required.

c. DoD Components may establish tailored categories of essentiality codes. However, such codes shall be consistent with the MME matrix in enclosure 3. For intercomponent data exchange of essentiality information, the MME coding structure in enclosure 3 shall be used.

d. The using DoD Component shall include the current MME code on supply support requests to other DoD Components.

7. Serviceable returns shall be considered in requirements computations from both the asset and requirements perspective. (See enclosure 4.)

E. PROCEDURES

1. Items shall be coded initially as stocked (either demand-based or nondemand-based) or nonstocked in accordance with the criteria established in DoD Instruction 4140.42 (reference (a)). Items that are managed on the basis of optimization models are authorized a stockage objective quantity as determined by the models. Items that are managed on the basis of techniques described in subsection D.6., above, shall not exceed the stockage objective quantities described in paragraphs E.1.a. and E.1.b., below. Minimum buy quantities based on the administrative costs to purchase shall consider the constraints on procurement cycles and safety levels in DoD Instruction 4140.39 (reference (d)), before exceeding the maximum authorized levels. Stockage quantities shall be projected to satisfy U.S. and international (Cooperative Logistics Supply Support Arrangement) item requirements.

a. Demand-based. Stockage objective quantities shall be the sum of the variable safety level, incorporating MME; repair cycle quantity if applicable; production lead time; administrative lead time; and the procurement cycle. Any protectable war-reserve or planned program requirements are additive. The procurement cycle normally shall be constrained to 3 years demand, as specified in reference (d). Demand-based items may be procured when the assets on-hand and on-order are equal to or less than the sum of the safety level, the leadtimes, and applicable protectable war-reserve and planned program requirements. Demand and lead time forecasting techniques shall identify and shall exclude atypical data that unduly might influence forecasts.

b. Nondemand-based

(1) Insurance Items. Normally, a quantity not exceeding two replacement units for which no safety level or lead times are authorized. Insurance items may be replenished when issued. Quantities greater than two are authorized when analysis of factors such as item cost, essentiality, and procurement difficulty indicate that additional quantities are in the best interests of the Department of Defense.

(2) Numeric Stockage Objective (NSO) Items. The sum of the production lead time; administrative lead time; repair cycle, if applicable; and procurement cycle. Any protectable war-reserve or planned program requirements are additive. The procurement cycle shall be limited to 1 year. NSO items may be procured when the assets on-hand and on-order are equal to or less than the sum of the lead times.

(3) Program Stocks. The sum of the approved programmed requirements only. No safety level or lead time quantities are authorized. Procurement shall occur one lead time away. Planned program requirements are additive to the recurring requirement objective (demand-based or NSO) for an item. The life-of-type requirements reflect the total requirements for an item.

(4) Nonstocked Items. No stockage level is authorized. The procurement quantity is initiated on receipt of a valid requisition and normally is limited to the requisition quantity. Exceptions are permitted after consideration of the constraints in DoD Instruction 4140.39 (reference (d)).

2. Secondary items shall be reviewed to ensure applicability of the existing category classification, as follows:

a. Demand-based items shall be reviewed annually. Items failing to meet the criteria for demand-based stockage shall be reclassified to NSO or to nonstocked.

b. Insurance items shall be reviewed when replenished.

c. NSO items shall be reviewed when the stock level reaches the reorder point quantity.

d. Program stocks shall be reviewed at the scheduled completion of the program, but not less than annually. Program requirements shall be reduced to zero at program completion.

e. Nonstocked items with demands shall be reviewed annually.

F. RESPONSIBILITIES

1. The Assistant Secretary of Defense (Production and Logistics) (ASD(P&L)) shall provide policy and procedures governing this Directive.

2. The Heads of DoD Components shall comply with this Directive.

3. The Director of the Defense Logistics Agency (DLA) shall maintain the MME code as part of the Federal catalog management data by using DoD Component.

levels;

G. EFFECTIVE DATE AND IMPLEMENTATION

This Directive is effective immediately. Forward two copies of implementing documents to the Assistant Secretary of Defense (Production and Logistics) within 120 days.

William H. Taft, IV
Deputy Secretary of Defense

Enclosures - 4
1. References
2. Definitions
3. Essentiality Matrix
4. Serviceable Returns

REFERENCES, continued

(e) DoD Directive 4100.37, "Retention and Transfer of Materiel Assets," November 12, 1981
(f) DoD 4000.25-1-M, "Military Standard Requisitioning and Issue Procedures (MILSTRIP)," May 1987, authorized by DoD Directive 4000.25, November 18, 1983
(g) DoD Instruction 4140.33, "Grouping of Secondary Items for Supply Management Purposes," June 12, 1968

DEFINITIONS

1. Assembly. An item forming a portion of an equipment that can be provisioned and replaced as an entity and incorporates replaceable parts or groups of parts.

2. Assembly and/or Component Essentiality. This code indicates the essentiality of the assembly or component to the performance of the primary and/or secondary missions of the weapon system and/or end item. The degrees of assembly and/or component essentiality depend on the effect their failure would have on weapon system and/or end item readiness.

a. Code D--Not Mission Capable. Materiel whose failure shall prevent performance of any wartime and/or peacetime missions; e.g., total loss of mobility, propulsion, or life support and shall not be safe to fly.

b. Code E--Severe Degradation of Primary Mission. Materiel whose failure severely shall limit intended or designed primary mission or function.

c. Code F--Not Fully Mission Capable. Materiel whose failure shall render the weapon system or end item incapable of fully performing all missions although some missions might continue to be performed; includes total loss or severe degradation of secondary mission.

d. Code G--Fully Mission Capable. Materiel whose failure shall have no mission impact.

3. Component. A part or combination of parts, having a specific function, which only can be installed or replaced as a whole, and also generally is expendable.

4. Demand-Based. An item for which the decision to stock is based on anticipated recurring demands and an economic analysis of the cost of stocking versus the cost of not stocking (as prescribed in DoD Instruction 4140.42, reference (a)).

5. Demand Development Period (DDP). The DDP is that period of time extending from the date of preliminary operational capability to a point in time (not exceeding 2 years) beyond the preliminary operational capability date when the requirements are forecast entirely on actual demands or other empirical data indicating the need for spare and repair parts.

6. Initial Operational Capability. The first attainment of the capability to employ effectively a weapon, an item of equipment, or a system of approved specific characteristics, which is manned or operated by an adequately trained, equipped, and supported military unit or force.

7. Item Essentiality. This code indicates the degree to which the failure of the part affects the ability of the end item to perform its intended operation. There are five levels of item essentiality:

a. Code 1. Failure of this part shall render the end item inoperable.

b. Code 3. Failure of this part shall not render the end item inoperable.

c. Code 5. Item does not qualify for the assignment of code 1, but is needed for personal safety.

d. Code 6. Item does not qualify for the assignment of code 1, but is needed for legal, climatic, or other requirements peculiar to the planned operational environment of the end item.

e. Code 7. Item does not qualify for assignment of code 1, but is needed to prevent impairment of, or the temporary reduction of, operational effectiveness of the end item.

8. Military Mission Essentiality (MME). This code indicates the composite effect of an item on the overall military mission based on the most critical significant application of the item. This code shall be used in determining resource allocations, determining degree of management intensity, and communicating essentiality among DoD Components. There are four levels of MME determined by the matrix in enclosure 3:

a. Code I. Most essential to military mission.

b. Code II. Highly essential to military mission.

c. Code III. Less essential to military mission.

d. Code IV. Not military mission-essential.

9. Nondemand-Based. An item that fails the economic criteria for demand-based stockage, but qualifies for stockage based on other criteria. The two types of nondemand-based items are essentiality-based and program-based:

a. Essentiality-Based. An item that fails the economic criteria for demand-based stockage, but is stocked specifically because of its high degree of essentiality, to the mission. There are two types of essentiality-based items, as follows:

(1) Insurance. An item that fails the economic criteria for demand-based stockage, but qualifies as both a source code PB (PB means an item procured and stocked for insurance purposes because essentiality dictates that a minimum quantity shall be available in the supply system) and a MME code I, II, or III for which no failure is predicted through normal usage, but if a failure is experienced or a loss occurs through accident, abnormal equipment or system failure, or other unexpected occurrences, lack of a replacement shall hamper seriously the operational readiness of a weapon system.

(2) Numeric Stockage Objective (NSO). An item that fails the economic criteria for demand-based stockage because the probability of demand is low, but qualifies as an MME code I, II, or III and the lack of a replacement item seriously shall hamper the operational readiness of a weapon system.

b. Program-based. Inventory maintained to fill a specified approved program requirement. There are two types of program requirements, as follows:

(1) Life-of-Type. Items that are procured on a one-time basis, when all cost-effective and prudent alternatives have been exhausted, for the total future requirement of an item no longer to be produced. The procurement quantity shall be based on demand or on engineering estimates of mortality sufficient to support the applicable equipment until phased out.

(2) Planned Program Stocks. Quantities of an item needed over and above recurring requirements to meet approved programs of a nonrecurring or a sporadic nature (e.g., set assembly and nonrepetitive overhaul programs) for which requirements may not be predicted by normal forecasting methods.

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

11. Principal Items. End items and replacement assemblies of such importance that management techniques require centralized individual item management throughout the supply system to include depot level, base level, and items in the hands of using units. These specifically include the items where, in the judgement of the Services, there is a need for central inventory control including centralized computation of requirements, central procurement, central direction of distribution, and central knowledge and control of all assets owned by the Military Services.

12. Secondary Items. End items, consumable items, and reparable items other than principal items.

13. Weapon System and/or End Item Mission Essentiality Code. This code indicates whether the weapon system or end item is essential to the military mission of the Service. Weapon systems and/or end items are classifed as either mission-essential or not mission-essential.

a. Mission-Essential. That Service-designated materiel authorized for combat, combat support, combat service support, and combat readiness training forces and activities, including Reserve and National Guard activities, which is required to support approved emergency and/or war plans, and when the materiel is used to:

(1) Destroy the enemy's capability to continue war.

(2) Provide battlefield protection of personnel.

(3) Communicate under war conditions.

(4) Detect, locate, or maintain surveillance over the enemy.

(5) Provide combat transportation and support of personnel and materiel.

(6) Support training functions, but is suitable for employment under emergency plans to meet the purposes enumerated, herein. Mission-essential materiel is divided into two categories, as follows:

(a) Code A--Highest Priority Mission-Essential. That mission-essential materiel required to accomplish the military mission of activities assigned FAD I or FAD II.

(b) Code B--Lower Priority Mission-Essential. That mission-essential materiel required to accomplish the military mission of activities assigned FAD III, FAD IV, or FAD V.

b. Not Mission-Essential. Materiel that does not qualify as mission-essential.

(1) Code C--Not Mission-Essential.

ESSENTIALITY MATRIX

The military mission essentiality (MME) is determined by assessing the degree of essentiality based on the hierarchical relationship, as applicable, of the part to the assembly and/or components, the assembly and/or component to the weapon system and/or end item, and the weapon system and/or end item to the military mission of the using activity. The following matrix displays the combinations of the weapon system and/or component and item essentiality codes as defined in enclosure 2 and the corresponding composite MME Code.

WEAPON SYSTEM AND/OR END ITEM ESSENTIALITY CODE		ASSEMBLY AND/OR COMPONENT ESSENTIALITY CODE		ITEM ESSENTIALITY CODE		MILITARY MISSION ESSENTIALITY CODE
A	+	D	+	1,5	=	I
A	+	D	+	6,7	=	II
A	+	D	+	3	=	IV
A	+	E	+	1,5	=	I
A	+	E	+	6,7	=	III
A	+	E	+	3	=	IV
A	+	F	+	1,5	=	II
A	+	F	+	6,7	=	III
A	+	F	+	3	=	IV
A	+	G	+	1,3,5,6,7	=	IV
B	+	D	+	1,5	=	II
B	+	D	+	6,7	=	III
B	+	D	+	3	=	IV
B	+	E	+	1,5	=	II
B	+	E	+	6,7	=	III
B	+	E	+	3	=	IV
B	+	F	+	1,5	=	III
B	+	F	+	6,7	=	IV
B	+	F	+	3	=	IV
B	+	G	+	1,3,5,6,7	=	IV
C	+	D,E,F,G	+	1,3,5,6,7	=	IV

SERVICEABLE RETURNS

A. General Policy. When serviceable materiel is authorized for return by the wholesale manager in DoD Directive 4100.37 and DoD 4000.25-1-M references (e) and (f), returned assets shall be considered in determining future requirements for selected items whose forecasted requirements are dependent on previous demands.

B. Priority of Assets. When excess serviceable materiel is directed for return to wholesale stock or confirmed as shipped, an asset due-in shall be established. The priority sequencing for application of these assets to requirements shall be second only to serviceable on-hand assets. They shall be considered before unserviceable items scheduled or not scheduled for repair, items on-order under contract, and items on-order committed. The same priority of application shall be used in determining whether offers of serviceable returns should be accepted.

C. Adjustment of Demands. In requirements computation systems that consider customer requisitions as demands, demand data shall be adjusted for returns. The reason for this is that the nature of the return often makes the original demand inappropriate for the forecast of future demands; e.g., when a customer orders the wrong item and then returns it. There are instances when returns should not be subtracted from demands; e.g., the demand for the item occurred before to the period of time being used as the demand base or the return of an item for which the demand had been recorded as nonrecurring. Returns for which the demands were not in the demand base shall not be subtracted from the demand base. Adjusted demands, rather than gross demands, shall be used in the development of requirements or stockage levels; e.g., procurement lead time.

D. Item-by-item Adjustment. Returned assets shall be used as a basis for adjusting future requirements on an item-by-item basis, not on across-the-board averages or universally applied factors. The adjustment of individual item demand by serviceable returns shall not be constrained to a percentage of demand.

E. Selective Item Management. Consideration of serviceable returns in requirements computations shall be in accordance with selective item management principles. Applicable thresholds in terms of value of annual demand, management intensity, and/or serviceable return volume shall be established for consideration of returns. Items in the lowest demand value groups have too few demands or returns to consider effectively returns in the development of the requirement. Minimally, serviceable returns shall be considered for items with supply management group codes A through D and M through Q assigned in accordance with DoD Instruction 4140.33 (reference (g)).

F. Exceptions. There shall be no exceptions to the policy on priority of assets. An exception to the policy on adjustment of demands and item-by-item adjustment is allowed where systemic deficiencies preclude the obtaining of the information on returns that is necessary for implementation. In those cases, the DoD Component may use percentage factors or other applicable methods in the adjustment of demands until the systemic deficiencies are resolved. If a DoD Component desires an exception, it shall request it from the ASD(P&L). In the request for exception, the DoD Component shall identify the systemic deficiencies preventing full implementation and provide a milestone plan for correction with an estimated date for full compliance with the policy.