

CHAPTER 7.5

AIRCRAFT ARMAMENT EQUIPMENT (AAE) PLANNING FACTORS

7.5.1 Introduction. Procurement objectives and inventory reporting requirements

7.5.2 Purpose.

g. To specify the planned quantities of end item aircraft bomb racks and guided missile launchers (AAE) required for U.S. Navy and Marine aircraft.

h. To specify fleet AAE inventory reporting requirements.

i. To outline general policies for procurement and reprocurement of AAE.

7.5.3 Scope. Responsibilities assigned herein apply to the in-service inventory management of type commander controlled AAE. This instruction supercedes and takes precedence over OPNAVINST 8380.1C.

7.5.4 Background.

a. The mission essential nature of AAE material dictates that ship and shorebased inventories be maintained at specific levels based on the numbers of aircraft supported, their missions, roles and weapon capabilities. Out year requirements and attrition losses must be accurately predicted in order for realistic procurement planning and budgeting to take place.

b. AAE for new production aircraft is normally procured with the aircraft by the responsible aircraft program manager, in quantities dependant on the number of aircraft being delivered in a given fiscal year. Contractor furnished AAE is usually unique to a particular type aircraft, and is normally delivered installed on the new aircraft.

c. Government furnished AAE required for production aircraft is procured separately and delivered to the aircraft manufacturer for further transfer to fleet activities with the new aircraft.

d. New or reconfigured AAE may be required when existing aircraft acquire new weapon capabilities. In that event the program manager responsible for the upgrade is responsible for budgeting for procurement of the new AAE, or the upgrade to existing AAE.

e. Re-procurement becomes necessary when inventory losses occur thru attrition or age, or when material is damaged beyond economical depot level repair.

7.5.5 Responsibilities.

a. NAVSURFWARCEN Crane, IN stores War Reserve AAE, and certain AAE having Foreign Military applications. Reporting requirements for this material is separately governed.

b. Type Commanders will collect, consolidate and submit quarterly AAE Inventory Reports to COMNAV-AIRSYSCOM, PMA•201C. Reports will be transmitted by Naval Message, due 15 October, 15 January, 15 April, and 15 July. See Chapter 7.6 Inventory Reporting.

c. NAVAIR PMA•201/AIR 3.1.1K will consolidate the Tycom reports and utilize the worldwide inventory data as the basis for preparing the AAE Asset Status Matrix. The matrix will project the current inventory 10 years into the future. The projected inventory will be weighed against then year aircraft populations to identify out year shortages or excesses. The most current model detail of the Aircraft Program Data File is the sole source document to be used for planning out year Program Active Aircraft Inventories. Data contained in the U.S. Navy Aircraft Budget Exhibit A•II will be used to determine numbers of aircraft in roles other than tactical, training or research and development for which certain AAE may be required. The Asset Status Matrix will be produced at least annually, or more often should circumstances warrant, and distributed to concerned officials.

d. When the AAE Asset Status Matrix identifies an out-year shortage, PMA•201C will advise the cognizant type aircraft Program Manager of the impending shortfall, in order for a timely procurement decision to be made.

e. When the AAE Asset Status Matrix identifies GFE material in excess to operational requirements, as may occur when an aircraft model is being phased out of service, PMA•201 will advise production aircraft Program Managers that the excess may be made available in lieu of new procurement.

7.5.6 Actions.

a. Type commanders shall continuously review the planning factors to ensure that the quantities of AAE listed are adequate to meet current operational needs. Recommended changes shall be submitted to Chief of Naval Operations (CNO) N881C, with copies to Commander Naval Air Systems Command (COMNAVAIRSYSCOM) (PMA-201 and AIR-3.1.1K).

b. COMNAVAIRSYSCOM shall ensure planning factors and inventory report remain current by submitting recommended changes to CNO N881 when technical directive incorporation affects part numbers, when emergent weapon capabilities add or change AAE requirements, or when an item is deleted for obsolescence.

7.5.7 Definitions.

a. AIRCRAFT ARMAMENT EQUIPMENT (AAE): Generic term for end item Aircraft Missile Launchers and Bomb Racks.

b. AIRCRAFT MODEL: The complete designation of an aircraft, independent of its role, i.e., F•18E, AV•8B.

c. AIRCRAFT ROLE: The current use of an operational aircraft, i.e., Tactical, Trainer, Patrol.

d. INVENTORY AAE: Those items of AAE that normally remain installed on an aircraft, i.e., BRU-32, BRU-36, LAU-116.

e. MISSION AAE: Those items of AAE that are installed on an aircraft for a specific mission purpose and normally removed on completion of that mission, i.e., LAU-118, BRU-33, BRU-42.

f. SUPPLY COGNIZANCE SYMBOL 4Z: 4Z COG material is comprized of war consumable external fuel tanks, in•flight refueling stores, aircraft guided missile launchers and aircraft bomb racks. AAE is budgeted for and procured by the Naval Air Systems Command, and maintained by type commander controlled pools for use by assigned tactical squadrons.

7.5.8 AAE Inventory Reporting Requirements.

7.5.8.1 Background. An AAE Inventory Reporting System has been in effect within the Aviation Ordnance community for 30 plus years. Type commander reports form the basis for projecting readiness posture, justifying new procurements, monitoring technical directive incorporation status, change kit procurement quantities and numerous other details requiring specific inventory data.

7.5.8.2 Format. The following pages list item numbers for each uniquely part numbered item of AAE. The listing contains only those items for which CNO/NAVAIR requires inventory data. Certain Non•4Z COG items such as F/A•18 Pylons and F•14 Weapon Rails are included, as these directly affect readiness. Reporting TYCOM's may require additional item reporting from subordinate units and may add line items for their individual feeder reports as required. Report cutoff date is the last day of each calendar quarter and due at NAVAIR fifteen days later. Reports will be in column format, A thru E as follows:

- a. A-Line Item Number
- b. B-Total quantity of installed and uninstalled items, all condition codes.
- c. C-Total quantity in Condition Code (A).
- d. D-Total quantity of combat, non•combat losses.
- e. E-Notes. Use numerics and amplify column B gains over the reporting period, and column D losses such as transfers to other custodians, BCMs, combat loss, etc.

7.5.8.3 Obsolete material without a line item number assigned, will be reported by nomenclature and part number. A sample of the NAVAIR Consolidated Report is contained in figure 7-5-1.

7.5.9 AAE PLanning Factors.

7.5.9.1 General. The following pages list quantities of end item bomb racks and missile launchers authorized per airframe. Aircraft Controlling Custodians may use this data to compute total requirements based on the number and types of aircraft supported and their mission roles.

7.5.9.2 COMNAVAIRSYSCOM shall use these quantities to compute worldwide inventory objectives.

7.5.9.3 Quantities of 4Z Cognizance material listed herein may be used to derive requirements for other inter-related non•4Z COG material needed to install the bomb rack or launcher such as pylons, fairings, adapters, electrical interface harnesses, etc. Figures 7-5-2 through 7-5-13 provides a listing of Aircraft Applications for the various AAE items.

7.5.10 AAE Asset Status Matrix.

7.5.10.1 The AAE Asset Status Matrix presents inventory status projected 10 years into the future, as a tool to determine readiness posture and identify shortfalls in sufficient lead time to allow the procurement process to take place.

ITEM		NOMENCLATURE	PART NO.	NSN	CNAP	CNAL	CNAVRES	CNATRA	CRANE	NAVAIR	TOTAL
1	A	TER*7 A/A37B*5E	292AS500*201	4ZH1095*01*055*8923FZ	0	17	0	0	68	9	94
	B		292AS100*201	4ZH1095*01*055*8923FZ	0	0	0	0	0	0	0
TOTALS:					0	17	0	0	68	9	94
PREVIOUS QUARTER: 200											
MAINTENANCE PIPELINE: .057											
ITEM		NOMENCLATURE	PART NO.	NSN	CNAP	CNAL	CNAVRES	CNATRA	CRANE	NAVAIR	TOTAL
2	A	MER*7 A/A37B*6E	291AS500*201	4ZE1095*01*053*7225FZ	1	63	18	0	187	10	279
	B	MER*7	291AS100*201	4ZE1095*01*053*7225FZ	0	13	0	0	0	0	13
TOTALS:					1	76	18	0	187	10	292
PREVIOUS QUARTER: 269											
MAINTENANCE PIPELINE: 0.04											
ITEM		NOMENCLATURE	PART NO.	NSN	CNAP	CNAL	CNAVRES	CNATRA	CRANE	NAVAIR	TOTAL
3	A	ITER (BRU*42/A)	1348AS500	4ZH1095*01*257*1967F A	721	954	35	0	625	46	2381
TOTALS:					721	954	35	0	625	46	2381
PREVIOUS QUARTER: 2417											
MAINTENANCE PIPELINE: 0.04											
ITEM		NOMENCLATURE	PART NO.	NSN	CNAP	CNAL	CNAVRES	CNATRA	CRANE	NAVAIR	TOTAL
4	A	IMER (BRU*41/A)	1348AS100	4ZH1095*01*257*1968F A	563	402	100	0	175	25	1265
TOTALS:					563	402	100	0	175	25	1265
PREVIOUS QUARTER: 1264											
MAINTENANCE PIPELINE: 0.04											

Figure 7-5-1. Sample Navair Consolidated Inventory Report

ITEM		NOMENCLATURE	PART NO.	NSN	CNAP	CNAL	CNAVRES	CNATRA	CRANE	NAVAIR	TOTAL
5	A	BRU*33/A	J014000*525	4ZE1095*01*209*0665GF	171	119	68	0	0	11	369
	B	BRU*33/A	J014000*529	4ZE1095*01*314*8688GF	4	63	56	0	0	0	123
	C	BRU*33A/A	J014000*541	(IAAC*911)	408	405	76	0	0	27	916
	D	BRU*33A/A	3036AS100		114	163	0	0	0	0	277
TOTALS:					697	750	200	0	0	38	1685
PREVIOUS QUARTER: 1509											
MAINTENANCE PIPELINE:0.06											
ITEM		NOMENCLATURE	PART NO.	NSN	CNAP	CNAL	CNAVRES	CNATRA	CRANE	NAVAIR	TOTAL
6	A	A*4 MER*7 ADAPTER KIT	5821500*523	4ZD1095*00*909*2799DA	0	12	0	0	15	0	27
	B		5821500*543	4ZD1095*00*408*5658DA	0	0	0	0	0	0	0
TOTALS:					0	12	0	0	15	0	27
PREVIOUS QUARTER: 12											
MAINTENANCE PIPELINE: 0.000											
ITEM		NOMENCLATURE	PART NO.	NSN	CNAP	CNAL	CNAVRES	CNATRA	CRANE	NAVAIR	TOTAL
7	A	A*4 TER*7 ADAPTER SET	5821520*523	4ZD1095*00*909*2756DA	0	12	0	0	0	0	12
TOTALS:					0	12	0	0	0	0	12
PREVIOUS QUARTER: 12											
MAINTENANCE PIPELINE: 0.000											
ITEM		NOMENCLATURE	PART NO.	NSN	CNAP	CNAL	CNAVRES	CNATRA	CRANE	NAVAIR	TOTAL
8	A	A*6 MER*7 ADAPTER KIT	291AS394*1	4ZM1095*01*024*6515F A	0	125	0	0	109	0	234
TOTALS:					0	125	0	0	109	0	234
PREVIOUS QUARTER: 125											
MAINTENANCE PIPELINE: 0.000											

Figure 7-5-1 Sample Navair Consolidated Inventory Report (Cont'd)

Aircraft Mission Armament Equipment	EA-6B
LAU-7A7	.5 (a)
ADU-299B/A	.5 (a)
LAU-118	2 (a)
NOTES: (a) Required for tacts pod use only. Aircraft Inventory Armament Equipment: AERO-7A Four for each model. AERO-7B One for each model.	

Figure 7-5-2. AAE Planning Factors for EA-6B Aircraft

Aircraft Mission Armament Equipment	AV-8B	TAV-8B AND AV-8B TRNR
BRU-42	4	2
LAU-7C/A (a)	2.5	2
ADU-299	0.5	0
LAU-117	2	0
Practice Bomb Kit	9	6
NOTE: (a) LAU-7A6 or LAU-7/A7 suitable substitute pending upgrade to C/A configuration. Aircraft Inventory Armament Equipment: BRU-36 Seven for each model.		

Figure 7-5-3. AAE Planning Factors for AV-8B Aircraft

Aircraft Mission Armament Equipment	F-14A			F-14B / F-14D		
	Tactical	Trainer	Reconnais- sance	Tactical	Trainer	Reconnais- sance
LAU-138/A	4	2	2	4	2	2
LAU-92C/A (Pylon STA)	2	0	0	2	0	0
LAU-93B/A	4	4	4	0	0	0
LAU-132	0	0	0	4	4	4
BRU-32A/A	4	2	2	4	2	2
BRU-42/A	2	2	2	2	2	2
Practice Bomb Kit	6	6	6	6	6	6
MXU-611 LH	1	1	1	0	0	0
MXU-611 RH	1	1	1	0	0	0
MXU-776 LH	0	0	0	1	1	1
MXU-777 RH	0	0	0	1	1	1
<p>Aircraft Inventory Armament Equipment :</p> <p>LAU-92B/A or C/A. Four for each aircraft. (Fuselage Stations)</p>						

Figure 7-5-4. AAE Planning Factors for F-14 Aircraft

AIRCRAFT INVENTORY ARMAMENT EQUIPMENT:	F/A-18 A, B, C, &D	F/A-18 E &F
BRU-32A/A	5	0
BRU-32B/A	0	7
LAU-7B/A-1	2 (a)	0
LAU-116A/A LEFT	1	0
LAU-116A/A RIGHT	1	0
LAU-116B/A LEFT	0	1
LAU-116B/A RIGHT	0	1
LAU-127A/A	0	2
ADU-773/A	0	2

Figure 7-5-5. AAE Planning Factors for F/A-18 Aircraft

AIRCRAFT MISSION ARMAMENT EQUIPMENT:	F/A-18 A, B, C, & D		F/A-18 E & F	
	<u>TACTICAL</u>	<u>TRAINER</u>	<u>TACTICAL</u>	<u>TRAINER</u>
BRU-33A/A, BRU-33/A	4 (b)	2 (b)	4 (b)	2 (b)
BRU-41/A	1	1	1	1
BRU-42/A	0.33	0	0.33	0
LAU-7B/A-1	1 (a)	1 (a)	2	2
LAU-115C/A	1	0	0	0
LAU-115D/A	0	0	2	0
LAU-117A	1	0	1	0
LAU-118/A	1	0.02	1	0.02
LAU-127A/A	1 (c)	0	2	0
PRAC BOMB KIT	6	6	6	6

NOTES:

- (a) LOT XII and above C and D A/C. Lower lots use LAU-7/A-7
- (b) Optimum mix of VER/CVER mission dependant.
- (c) LOT X and above C and D A/C. Lower lots none

Figure 7-5-5. AAE Planning Factors for F/A-18 Aircraft (Cont'd)

Aircraft Mission Armament Equipment :	T-45
Practice Multiple Bomb Rack (PMBR)	1
Aircraft Inventory Armament Equipment : ERU-119 Two for each aircraft.	

Figure 7-5-6. AAE Planning Factors for T-45 Aircraft

Aircraft Mission Armament Equipment :	P-3B	P-3C
BRU-14	3	3
AERO-1A	6	6
AERO-1B	6	6
LAU-117	0	2 (a)
NOTE: (a) Applies to the (planned) 60 MAVERICK capable aircraft only.		
Aircraft Inventory Armament Equipment : BRU-12. Eight for each model. BRU-15. Six for each model.		

Figure 7-5-7. AAE Planning Factors for P-3 Aircraft

Aircraft Mission Armament Equipment :	S-3B
BUR-42/A	1
Practice Bomb Kit	3
LAU-117	1 (a)
ADU-299A/A	.5 (b)
LAU-7A7	.5 (b)
NOTE: (a) Applies to MAVERICK capable aircraft only (b) Tacts pod use only	
Aircraft Inventory Armament Equipment : BRU-11 Two for each model. BRU-14 Four for each S-3A AND S-3B aircraft	

Figure 7-5-8. AAE Planning Factors for S-3B Aircraft

Aircraft Mission Armament Equipment :	SH-2G
None	
NOTE: SH-2G out of service FY 01 Aircraft Inventory Armament Equipment : MK-8 Bomb Shackle Two for each model	

Figure 7-5-9. AAE Planning Factors for SH-2G Aircraft

Aircraft Mission Armament Equipment :	SH-3H, UH-3H
None	
NOTE: SH-3H out of service FY-00 Aircraft Inventory Armament Equipment : MK-8 Bomb Shackle Three for each SH-3H, Two for each UH-3H model.	

Figure 7-5-10. AAE Planning Factors for SH-3H, UH-3H Aircraft

Aircraft Mission Armament Equipment :	AH-1W	AH-1Z	UH-1N	UH-1Y
M-272	2	0	0	0
M-299	0	4	0	0
LAU-7C/A (a)	2	2	0	0
TML	2	0	0	0
ADU-299A/A	2	2	0	0
BRU-20/A	0	0	1	0
BRU-21/A	0	0	1	0
BRU-22/A	0	0	0	1
BRU-23/A	0	0	0	1
NOTE: (a) LAU-7/A6 OR LAU-7/A7 suitable substitute pending completion of upgrade to LAU-7C/A Aircraft Inventory Armament Equipment : TOW Ejector Rack Two for each AH-1W. BRU-22/A One for each AH-1Z, One for each AH-1W. BRU-23 Two for each AH-1Z, One for each AH-1W.				

Figure 7-5-11. AAE Planning Factors for AH-1 / UH-1 Aircraft

Aircraft Mission Armament Equipment:	SH-60B	SH-60R	HH-60H
M-299	1	1	1
Aircraft Inventory Armament Equipment: BRU-14 Three for each model.			

Figure 7-5-12. AAE Planning Factors for SH-60B, SH-60F, SH-60R and HH-60H Aircraft

Aircraft Mission Armament Equipment:	CNATRA
PMBR	0.5
NOTE: TA-4J out of service FY-00 Aircraft Inventory Armament Equipment: AERO-7A. One for each model. AERO-20B. Two for each model.	

Figure 7-5-13. AAE Planning Factors for TA-4J Aircraft

7.5.10.2 A matrix will be prepared for each end item of AAE and certain critical sub-assemblies such as LAU-7 Power Supplies, Nitrogen Receivers, or any other related components when the need arises.

7.5.10.3 The Matrix is an 11 column spreadsheet, columns headed and defined as follows: (See figure 7-5-14 for sample AAE Asset Status Matrix)

a. COLUMN 1, Date-The last day of each fiscal year.

b. COLUMN 2, Procurements-The contracted quantity. First line includes all prior year quantities yet to be delivered. For CFE material delivered with new aircraft, use the amount to be delivered with each production lot.

c. COLUMN 3, Scheduled Delivery-The quantity to be delivered during each fiscal year.

d. COLUMN 4, Attrition-Planned losses caused by jettison or other irreparable damage.

e. COLUMN 5, Projected Inventory-Line 1 is the actual on hand inventory. Subsequent lines add gains from column 3 minus losses column 4.

f. COLUMN 6 & 7, Requirements for Primary Mission and Backup Aircraft-The quantity of an item listed in planning factors multiplied by the number of user aircraft as contained in the APDF & Exhibit A II.

g. COLUMN 8, Requirement for Reconstitution Reserve Aircraft-The quantity of an item listed in planning factors multiplied by the number of aircraft held in Reconstitution Reserve category.

h. COLUMN 9, Requirement for a Maintenance Pipeline-The percentage of the column 3 inventory expected to be out of service for scheduled or unscheduled maintenance at any given time.

i. COLUMN 10, Total Inventory Objective-The sum of the preceding four requirements columns.

j. COLUMN 11, Net Asset Status-The difference between the projected inventory quantity and the total inventory objective. Negative numbers indicate the procurement quantity required to meet the inventory objective, positive numbers indicate excesses.

7.5.11 ATTRITION AND MAINTENANCE PIPELINE PERCENTAGES (See figure 7-5-15)

AAE Net Asset Status Matrix LAU•7C/A Missile Launcher										
FY Ending Date	Procurements	Scheduled Delivery	Attrition	Projected Inventory	Requirement for Primary Mission & Backup A/C PMAI/BAI		Requirement for Reconst Reserve Aircraft	Requirements for Maint. Pipeline Spares	Total Inventory Objective	Net Asset Status
30-SEP-98	30			242	689	80	4	62	835	-593
30-SEP-99	35	30	5	267	619	67	0	55	741	-474
30-SEP-00	40	35	6	296	625	55	0	54	734	-439
30-SEP-01	54	40	7	329	625	51	0	54	730	-401
30-SEP-02	60	54	8	375	625	47	0	54	726	-351
30-SEP-03	100	60	9	426	625	35	0	53	713	-286
30-SEP-04	100	100	11	516	623	26	0	52	701	-185
30-SEP-05		100	12	604	623	22	0	52	697	-93
30-SEP-06			12	592	623	22	0	52	697	-105
30-SEP-07			12	580	579	22	0	48	649	-69

Figure 7-5-14. Format for AAE Net Asset Status Matrix LAU•7C/A Missile Launcher

Attrition and Maintenance Pipeline Percentages

<u>Missile Launchers</u>	<u>Attrition</u>	<u>Maintenance Pipeline</u>
LAU-7	.01	.08
Power Supply LAU-7	.035	.10
N2 Receiver LAU-7	.05	.15
LAU-92	.02	.105
LAU-93	.011	.084
LAU-132	.011	.084
LAU-115C/A	.02	.02
LAU-116A/A	.01	.04
LAU-117	.005	.04
LAU-118	.03	.04
LAU-127	.04	.05
LAU-138	.02	.105
M272	.02	.04
M299	.02	.04
TOW Missile Launcher	.01	.01
ADU-299 Adapter	.01	N/A
LAU-138 Nitrogen Receiver	.05	.30
LAU-127 Nitrogen Receiver	.05	.30
<u>Bomb Racks</u>	<u>Attrition</u>	<u>Maintenance Pipeline</u>
AERO-7A	.014	.063
AERO-7B	.047	.063
AERO-20	.01	.054
BRU-11	.01	.165
BRU-12	.005	.051
BRU-14	.004	.06
BRU-15	.008	.052
BRU-20-21-22-23	.02	.073
BRU-32	.01	.04
BRU-33	.025	.06
BRU-36	.01	.04
IMER/BRU-41A	.03	.04
ITER/BRU-42A	.06	.057
MK Shackle	.01	.01
PMBR	.06	.04
TOW Ejector Rack	.02	.04
AERO-1A Adapter	.01	.01
AERO-1B Adapter	.01	.01
Practice Bomb Kit	.045	N/A

Figure 7-5-15 Attrition and Maintenance Pipeline Percentages