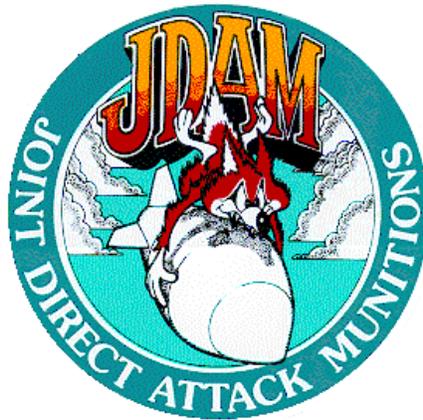


**NAVY TRAINING SYSTEM PLAN**

**FOR THE**

**JOINT DIRECT ATTACK MUNITION**

**GBU-31(V)2/B, GBU-31(V)4/B,**  
**GBU-32(V)2/B, GBU-38/B**



**N78-NTSP-A-50-9104A/D**

**January 2004**

**JOINT DIRECT ATTACK MUNITION****EXECUTIVE SUMMARY**

This Draft Navy Training System Plan (NTSP) has been developed in accordance with Office of the Chief of Naval Operations Instruction (OPNAVINST) 1500.76 to identify the life-cycle manpower, personnel, and training requirements associated with the Joint Direct Attack Munition (JDAM) system.

JDAM is a family of guided air-to-surface weapons that is comprised of the GBU-31(V)2/B, GBU-31(V)4/B, GBU-32(V)2/B and GBU-38/B for the United States Navy (USN) and United States Marine Corps (USMC). Other JDAM configurations exist for the United States Air Force (USAF). The JDAM concept repurposes bombs in the inventory by adding guidance sets to increase accuracy and lethality. JDAM uses the MK 84/BLU-117, BLU-109, MK 83/BLU-110 and MK 82/BLU-111 warheads, respectively, as the payload. Guidance sets are tailored to each payload and include a tail control system and a Global Positioning System (GPS)-aided Inertial Navigation System (INS). Once released from the aircraft, JDAM autonomously navigates from the release point to the target. When GPS data is available during free flight, JDAM provides a weapon Circular Error Probable (CEP) of 13 meters or less. If GPS data is denied during free flight, JDAM achieves a 30 meter CEP or less for time of flight up to 100 seconds. JDAM can be launched from very low to very high altitudes during dive, toss, and loft maneuvers or can be launched from straight and level flight with an on-axis or off-axis delivery.

The JDAM maintenance concept is based upon the three levels of maintenance, Organizational, Intermediate, and Depot, identified in the Naval Ordnance Maintenance Management Program (NOMMP), OPNAVINST 8000.16.

JDAM will not alter the operator (pilot) manning requirements at any organizational activity (aircraft squadron). No new skills are required for operation of JDAM. The skills required to operate the JDAM are compatible with the skills required to operate existing precision guided, weapons; therefore, no new Naval Officer Billet Code, Naval Enlisted Classification (NEC), or Military Occupational Specialty (MOS) are required.

The JDAM System will not alter the manning requirements at any organizational or intermediate level maintenance activity. No new skills are required for maintenance of JDAM at the organizational or intermediate levels of maintenance. The skills required to perform maintenance on JDAM are compatible with existing skills required to perform maintenance on existing weapon systems; therefore, no new NECs or MOSs are required. Boeing Company will perform warranty and/or depot level maintenance throughout the JDAM life cycle. Therefore, JDAM will not alter the manning requirements at organic depot level maintenance activities.

Existing operator and maintenance training courses have been modified to include JDAM information without changing course lengths, instructor or student billets.

**JOINT DIRECT ATTACK MUNITION**

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## JOINT DIRECT ATTACK MUNITION

### LIST OF ACRONYMS

ABF	Advanced Bomb Family
ACDU	Active Duty
AESA	Active Electronically Scanned Array
AMTCS	Aviation Maintenance Training Continuum System
AO	Aviation Ordnanceman
AOB	Average On Board
AT	Aviation Electronics Technician
ATA	Autonomous Target Acquisition
ATFLIR	Advanced Targeting Forward Looking Infrared
BIT	Built-In Test
BRU	Bomb Rack Unit
CAI	Computer Aided Instruction
CATM	Captive Air Training Missile
CBT	Computer Based Training
CEP	Circular Error Probable
CIN	Course Identification Number
CJCS	Commander Joint Chiefs of Staff
CJCSI	Commander Joint Chiefs of Staff Instruction
CMBRE	Common Munitions BIT/Reprogramming Equipment
CMC	Commandant of the Marine Corps
CMI	Computer Managed Instruction
CNATT	Center for Naval Aviation Technical Training
CNO	Chief of Naval Operations
COMLANTFLT	Commander U.S. Atlantic Fleet
COMNAVAIRESFOR	Commander Naval Air Reserve Force
COMNAVRESFOR	Commander Naval Reserve Force
COMOPTEVFOR	Commander Operational Test and Evaluation Force
COMPACFLT	Commander U.S. Pacific Fleet
CONOPS	Concept of Operations
COTS	Commercial Off The Shelf
CV	Aircraft Carrier
CVN	Aircraft Carrier Nuclear
CWTPI	Conventional Weapons Technical Proficiency Inspection
DAB	Defense Acquisition Board
DD	Department of Defense (Form)
DMPI	Desired Mean Point of Impact
DoD	Department of Defense

## JOINT DIRECT ATTACK MUNITION

### LIST OF ACRONYMS

DT	Developmental Test
DTG	Date Time Group
ECR	Electronic Classrooms
EGTV	Environmental Guided Test Vehicle
EMD	Engineering & Manufacturing Development
EMI	Electro-Magnetic Interference
EOD	Explosive Ordnance Disposal
EODTEU	Explosive Ordnance Disposal Training and Evaluation Unit
ETJ	Electronic Training Jacket
FCR	Formal Course Review
FLD	Fin Lock Device
FMS	Foreign Military Sales
FMU	Fuze Mechanical Unit
FOT&E	Follow-On Operational Test & Evaluation
FRP	Full Rate Production
FRS	Fleet Replacement Squadron
FTD	Fleet Training Device
FY	Fiscal Year
GBU	Guided Bomb Unit
GCU	Guidance Control Unit
GPS	Global Positioning System
GPSRM	Guidance Positioning System Receiver Module
GTV	Guided Test Vehicle
HSI	Human Systems Integration
IBIT	Initiated Built In Test
ICW	Interactive Courseware
IIR	Imaging infrared
ILT	Inert Load Trainer
IMU	Inertial Measurement Unit
INS	Inertial Navigation Systems
IOC	Initial Operational Capability
IOT&E	Initial Operational Test & Evaluation
IPT	Integrated Product Team
IRRS	Improved Rearming Rate System
ISD	Instructional System Design

## JOINT DIRECT ATTACK MUNITION

### LIST OF ACRONYMS

JASSM	Joint Air-to-Surface Standoff Missile
JDAM	Joint Direct Attack Munitions
JHMCS	Joint Helmet Mounted Cueing System
JILS	Jointed Integrated Logistics Support
JILSP	Jointed Integrated Logistics Support Plan
JMPS	Joint Mission Planning System
JPF	Joint Programmable Fuze
JSOW	Joint Standoff Weapon
JTX	Joint Training Exercise
LALS	Linkless Ammunition Loading System
LAR	Launch Acceptable Region
LAT	Lot Acceptance Test
LDT	Load Drill Trainer
LRC	Learning Resource Center
LRIP	Low-Rate Initial Production
MALS	Marine Aviation Logistics Squadron
MAP	Munitions Application Program
MATMEP	Maintenance Training Management & Evaluation Program
MAWTS	Medium Attack Weapon & Tactics School
MCAS	Marine Corps Air Station
MCCDC	Marine Corps Combat Development Center
MCO	Marine Corps Order
MIL STD	Military Standard
MNS	Mission Needs Statement
MOS	Military Occupational Specialty
MPCU	Mobile Power Conditioning Unit
MS	Milestone
MTIP	Maintenance Training Improvement Program
MTL	Master Task List
MTTA	Mean Time To Assemble
MTTBO	Mean Time To Break Out
MTU	Maintenance Training Unit
NA	Not Applicable
NALC	Naval Ammunition Logistic Code
NAMTRAGRU	Naval Air Maintenance Training Group
NAMTRAGRU DET	Naval Air Maintenance Training Group Detachment

## JOINT DIRECT ATTACK MUNITION

### LIST OF ACRONYMS

NAMTRAU	Naval Air Maintenance Training Unit
NAS	Naval Air Station
NATEC	Naval Air Technical Engineering Center
NATSAG	Naval Aviation Training Systems Advisory Group
NATTC	Naval Air Technical Training Center
NAVAIR	Naval Air Systems Command
NAVAIRSYSCOM	Naval Air Systems Command
NAVPERSCOM	Commander Naval Personnel
NAVSCOLEOD	Naval Explosive Ordnance Disposal School
NAWCAD	Naval Air Warfare Center Aircraft Division
NAWCWD	Naval Air Warfare Center Weapons Division
NCEA	Non Combat Expenditure Allowance
NEC	Navy Enlisted Classification
NETC	Naval Education and Training Command
NFO	Naval Flight Officer
NOBC	Naval Officer Billet Code
NOMMP	Naval Ordnance Maintenance Management Program
NS	Naval Station
NSAWC	Naval Strike Air Warfare Center
NTD	Navy Technical Directive
NTP	Navy Training Plan
NTSP	Navy Training System Plan
NTRDM	Navy Training Requirements Documentation Manual
NWS	Naval Weapons Station
OATMS	OPNAV Aviation Training Management System
OFP	Operational Flight Plan
OPEVAL	Operational Evaluation
OPNAV	Office of the Chief of Naval Operations
OPNAVINST	Office of the Chief of Naval Operations Instruction
OPO	OPNAV Principal Official
ORD	Operational Requirements Doctrine
OT	Operational Test
PCMCIA	Personal Computer Memory Card International Association
PDA	Principal Development Activity
PEO	Program Executive Officer
PEST	Practical Explosive Ordnance Disposal System Trainer
PGM	Precision Guided Munitions
PGMTDB	Precision Guided Munitions Target Data Base

## JOINT DIRECT ATTACK MUNITION

### LIST OF ACRONYMS

PMA	Program Manager, Air
PPS	Precise Positioning Service
QRA	Quick Reaction Assessment
QUAL/CERT	Qualification and Certification
RFT	Ready For Training
RIO	Radar Intercept Officer
RLG	Ring Laser Gyro
RSP	Render Safe Procedures
SAASM	Selective Availability Anti-Spoofing Module
SAMP	Single Acquisition Management Plan
SCORM	Shareable Content Object Reference Model
SFARP	Strike Fighter Advanced Readiness Program
SFTI	Strike Fighter Training Instructor
SFTP	Strike Fighter Training Program
SFTS	Strike Fighter Training System
SFWE	Strike Fighter Weapons Employment
SFWS	Strike Fighter Weapon School
SFWSL	Strike Fighter Weapon School Atlantic
SFWSP	Strike Fighter Weapon School Pacific
SFWT	Strike Fighter Weapons & Tactics
SHIPALT	Ship Alteration
SHOLS	Single Hoist Ordnance Loading System
STRKFTRWING	Strike Fighter Wing
STV	Separation Test Vehicle
SWATSLANT	Strike Weapons And Tactics School Atlantic
T&R	Training & Readiness
TAMPS	Tactical Aircraft Mission Planning System
TAS	Tail Actuator Subsystem
TAU	Test Adapter Unit
TD	Training Device or Technical Directive
TECHEVAL	Technical Evaluation
TEE	Training Effectiveness Evaluation
TEMP	Test and Evaluation Master Plan
TEV	Test & Evaluation
TOFT	Tactical Operational Flight Trainer
TOMA	Technical Order Management Agency

## JOINT DIRECT ATTACK MUNITION

### LIST OF ACRONYMS

TTE	Technical Training Equipment
TSPI	Time, Space, Position Information
TYCOM	Type Commander
UIC	Unit Identification Code
USAF	United States Air Force
USMC	United States Marine Corps
USN	United States Navy
UUT	Unit Under Test
VCD	Verification of Correction of Deficiencies
VMAT	Marine Corps Attack Training Squadron
WCMD	Wind Corrected Munitions Dispenser
WSEP	Weapon System Evaluation Program
WSO	Weapon Sensor Operator
WST	Weapon Systems Trainer
WTT	Weapon Training Team

**JOINT DIRECT ATTACK MUNITION****PREFACE**

This Draft Navy Training System Plan (NTSP) for the Joint Direct Attack Munition (JDAM) is an update of the baseline Navy Training Plan (NTP) that was approved 12 December 1995. A previous Draft NTSP, N78-NTSP-A-50-9104A/D dated November 2000, was routed for Fleet comment in November 2000, updated and submitted as a Proposed NTSP in 2001, but subsequently expired during the approval process in 2003. This Draft NTSP complies with Office of the Chief of Naval Operations Instruction (OPNAVINST) 1500.76 and the guidelines set forth in the Navy Training Requirements Documentation Manual (NTRDM), P-751-1-9-97.

The major changes and updates to this NTSP consist of:

- PART I Updated to include the GBU-38/B (MK82/BLU-111 JDAM) and to reflect progress made during the design, development, and testing of the JDAM System.
- PART II Recalculated to depict current billet requirements of fleet support units through Fiscal Year (FY) 08.
- PART III Recalculated to depict chargeable student billets through FY08.
- PART IV Updated to current the training and training logistics support requirements.
- PART V Updated to reflect programmatic and technical schedule changes.
- PART VI Updated to include new/open action/watch items.
- PART VII Updated to reflect current Points of Contact.

**PART I - TECHNICAL PROGRAM DATA**

**A. TITLE-NOMENCLATURE-PROGRAM**

**1. Title-Nomenclature-Acronym.** Joint Direct Attack Munition (JDAM)  
GBU-31(V)2/B, GBU-31(V)4/B, GBU-32(V)2/B, and GBU-38/B.

**2. Program Element.** 0204162N

**B. SECURITY CLASSIFICATION**

- 1. System Characteristics** ..... Unclassified
- 2. Capabilities** ..... Unclassified
- 3. Functions** ..... Confidential
- 4. Navy Training System Plan** ..... Unclassified

**C. NTSP PRINCIPALS**

- OPNAV Principal Official (OPO) Program Sponsor ..... CNO (N78)
- OPO Resource Sponsor ..... CNO (N780D)
- Marine Corps Program Sponsor ..... CMC (ASL-30)
- Developing Agency ..... PEO (W) (PMA201)
- Training Agency ..... COMLANTFLT/COMPACFLT  
CNATT  
CMC (ASM)  
COMNAVRESFOR  
NSAWC (N7)  
MAWTS-1
- Training Support Agency ..... NAVAIR (PMA205)  
COMNAVVAIRESFOR (N3W)
- Manpower and Personnel Mission Sponsor ..... CNO (N12)  
NAVPERSCOM (PERS-21, PERS-4, PERS-404)
- Director of Naval Education and Training ..... CNO (N00T)
- Commander, Reserve Program Manager ..... COMNAVVAIRESFOR (N3W)
- Marine Corps Total Force Structure ..... MCCDC (C-5352)

## D. SYSTEM DESCRIPTION

**1. Operational Uses.** The JDAM program is a joint-service program with United States Air Force (USAF) as the lead, executive service and USN as the participating service. Naval Air Systems Command, Program Manager for Conventional Strike Weapons, Program Manager, Air (PMA)-201, is the developing activity for the Navy and Marine Corps. The program evolved to support Mission Need Statement (MNS) TAF 401-91 for an adverse weather, accurate strike capability. Adverse weather is defined as natural/man-made conditions such as rain, haze, dust, smoke, fog, snow, ice, wind, and/or clouds that preclude the use of current inventory weapons. This need is shared by both fighter/attack and bomber aircraft engaged in conventional warfare. The JDAM program satisfies this need by providing guidance sets for current inventory warheads, fuzes and associated components. This NTSP addresses the Navy and Marine Corps F/A-18, AV-8 and F-14 aircraft platforms and associated JDAM configurations: GBU-31(V)2/B, GBU-31(V)4/B, GBU-32(V)2/B, and GBU-38/B. The GBU-31(V)2/B uses the MK 84 or BLU-117 2,000 pound (lb.) warhead, while the GBU-31(V)4/B uses the BLU-109 2,000 lb. warhead. The GBU-32(V)2/B uses the MK 83 or BLU-110 1,000 lb. warhead. The GBU-38/B uses the MK82 or BLU-111 500 lb. warhead. The 2,000 lb. warhead JDAM variants are currently in Full-Rate Production after a successful Milestone (MS) III decision on 23 March 2001. The 1,000 lb. warhead JDAM variant went into Full-Rate Production in March 2003 at the direction of the Navy to support ongoing operations. The 500 lb. warhead JDAM variant is currently in Engineering & Manufacturing Development (EMD) undergoing Operational Evaluation (OPEVAL), and Full-Rate Production is scheduled to begin in the March 2004.

**a. Joint Direct Attack Munitions.** The JDAM program provides low cost guidance sets for the MK 84/BLU-117, BLU-109, MK 83/BLU-110 and MK 82/BLU-111 warheads. JDAM enables employment of accurate air-to-surface munitions from fighter/attack and bomber aircraft against high priority fixed and relocatable targets. Transfer alignment from the aircraft to JDAM provides Global Positioning System (GPS) quality position and velocity state vectors that initialize the JDAM navigation system. Once released from the aircraft, JDAM autonomously guides to the designated target coordinates using its GPS-aided Inertial Navigation System (INS). Navigation errors are used to generate guidance commands for the tail fins that maneuver the weapon along the optimum flight path. Target coordinates can be mission planned and loaded into the aircraft before takeoff, manually altered by the aircrew prior to weapon release via MIL-STD 1760 Interface, and/or automatically entered through target designation with onboard aircraft sensors. Multiple JDAM can be directed against a single target or multiple JDAM can be directed against multiple targets on a single pass.

**b. Fuzes.** JDAM uses the existing FMU-139 and FMU-143 fuzes, as well as the FMU-152/B Joint Programmable Fuze (JPF). The JPF allows its arm time and delay time to be programmed from the cockpit for a variety of general purpose and penetrator warheads. The JPF program is an independent development program apart from the JDAM program.

**c. Joint Direct Attack Munitions Product Improvement Program.** The JDAM Product Improvement Program objective is to provide an enhanced precision capability

for the JDAM family of weapons. Several options are being examined including GPS-related improvements and guidance sets for additional warheads.

**2. Foreign Military Sales.** The Joint Program Office is currently pursuing Foreign Military Sales (FMS) opportunities with the United Kingdom, Italy, Israel, Canada, Australia, Greece, United Arab Emirates, and Spain.

**E. DEVELOPMENTAL TEST AND OPERATIONAL TEST.** The JDAM Program Test and Evaluation Master Plan (TEMP), draft dated July 2003, contains the government's detailed test and evaluation requirements. The JDAM TEMP covers test objectives, issues, and associated risks for the Air Force and Navy. Navy F/A-18C/D Developmental Test (DT), Technical Evaluation (TECHEVAL), Operational Test (OT) and OPEVAL have been completed for the GBU-31(V)2/B, GBU-31(V)4/B and GBU-32(V)2/B. DT and TECHEVAL have been completed for the GBU-38/B and OT and OPEVAL will begin in May 2004. Follow-On Operational Test & Evaluation (FOT&E) for JDAM variants on other aircraft (F/A-18E/F, F-14B/D and AV-8B) are ongoing or planned.

### **1. DT/OT Not Completed**

#### **a. F/A-18C/D Integration**

**(1) GBU-38/B.** OT and OPEVAL will begin in May 2004. The primary purpose of OT/OPEVAL is to test and evaluate characteristics unique to the 500 lb JDAM system (MK 82/BLU-111), not to re-test or re-evaluate characteristics common to all JDAM variants. Operational test and evaluation will determine the operational effectiveness and suitability of the MK-82 JDAM system in realistic environments operated by representative users. A total of 84 flights are planned; 60 captive carry and 24 Guided Test Vehicle (GTV) flights. Thirty GTVs will be released. FA-18C/D testing is dependent upon SCS-19C1 development.

**b. F/A-18E/F Integration.** The F/A-18E/F is an objective JDAM fighter/attack aircraft. Investigation of the F/A-18E/F JDAM captive carry environment was satisfactorily completed with GBU-31(V)2/B and GBU-31(V)4/B Environmental GTV (EGTV) flights at the Naval Air Warfare Center, Aircraft Division (NAWCAD), Patuxent River, MD. Fifty Separation Test Vehicles (STV) will be released at NAWCAD to investigate weapon separation characteristics and generate a full envelope release clearance. Six GTVs will be captive carried and released at the Naval Air Warfare Center, Weapons Division (NAWCWD) to evaluate full system integration and weapon system performance. Test missions will be replanned using the latest Tactical Aircraft Mission Planning System (TAMPS) mission planning software. Test scenarios will cover a limited spectrum of JDAM requirements and mission profiles for the fighter mission. Aircraft telemetry, range Time, Space, Position Information (TSPI), JDAM telemetry and impact scoring data will be collected and analyzed to assess aircraft system compatibility and overall weapon performance.

The F/A-18E/F is an objective JDAM attack aircraft for GBU-38/B integration. A separate OT for FA-18E/F integration testing is planned.

**c. F-14B/D Integration.** The F-14B and the F-14D are objective JDAM fighter aircraft. Investigation of the F-14B/D JDAM captive carry environment was satisfactorily completed with GBU-31(V)2/B EGTV flights at NAWCAD, Patuxent River, MD. Four STVs were released at NAWCAD to investigate weapon separation characteristics and generate a limited envelope release clearance. Two GTVs were captive carried and released from the F-14B and a quantity of GTVs were captive carried and released from the F-14D to evaluate full system integration and weapon system performance. Test missions were preplanned using the latest TAMPS mission planning software. Test scenarios covered a limited spectrum of JDAM requirements and mission profiles for the fighter mission. Aircraft telemetry, range TSPI, JDAM telemetry and impact scoring data were collected and analyzed to assess aircraft system compatibility and overall weapon performance. Plans are currently underway to clear a second JDAM variant (i.e., GBU-31(V)4/B, GBU-32(V)2/B and GBU-38/B) on the F-14. FOT&E of the GBU-31(V)2/B on the F-14 aircraft began in FY00. Other JDAM configurations are expected to be integrated/evaluated in the future.

**d. AV-8B Integration.** The AV-8B is an objective JDAM attack aircraft for GBU-32(V)2/B integration. Sixteen STVs are planned to evaluate the GBU-32(V)2/B release envelope on the AV-8B. Eight GBU-32(V)2/B GTVs will be dropped to complete design, development, and validation and verification of the AV-8B OFP software, OC1.2. This will be followed by an FOT&E with 25 GBU-32(V)2/B. Aircraft handoff, weapon impact, and other data will be collected to assess system accuracy, maneuverability, and compatibility. FOT&E of the GBU-32(V)2/B on the AV-8B aircraft began 4<sup>th</sup> quarter FY01. DT began 4<sup>th</sup> quarter FY01 and was completed 4<sup>th</sup> quarter FY02. OT began 1<sup>st</sup> quarter FY03 and is expected to complete 1<sup>st</sup> quarter FY04.

The AV-8B is an objective JDAM attack aircraft for GBU-38/B integration. The DT integration/test effort will be limited to only fit checks, loading and handling tests. OT for AV-8B integration testing will be conducted separate from other platforms.

## **2. DT and OT completed**

### **a. F/A-18C/D Integration**

**(1) GBU-31(V)2/B & GBU-31(V)4/B.** DT objectives of the GBU-31(V)2/B and GBU-31(V)4/B have been met, with the exception of GBU-31(V)4/B compatibility with the FMU-152 JPF. Post MS III GBU-31(V)2/B and GBU-31(V)4/B DT objectives will involve resolution of the GBU-31(V)4/B FMU-152 JPF incompatibility, Lot Acceptance Test/Weapon System Evaluation Program (LAT/WSEP), integration on the Operational Requirements Doctrine (ORD) objective aircraft, and technology insertion. Initial OT of the JDAM was conducted in 3 phases: Combined DT/OT-IIA, OT-IIB, (the independent phase of OPEVAL), and OT-IIB (Verification of Correction of Deficiencies (VCD)). The purpose of the combined DT/OT-IIA phase was to reduce the required number of assets for DT and OT testing and gather data for the independent phase (OT-IIB). Results based on combined

DT/OT data were only used when accomplished or monitored by operational aircrews and maintenance personnel and at the discretion of the Operational Test Director. OT-IIB determined operational effectiveness and operational suitability of JDAM. Data from DT/OT-IIA was used in conjunction with OT-IIB to resolve JDAM Critical Operational Issues. OT-IIB (VCD) verified correction of deficiencies identified both prior and subsequent to the OPEVAL. This phase was conducted on the F/A-18C/D with the GBU-31(V)2/B in the entire JDAM operational envelope with no flight restrictions. FOT&E (OT-III) will verify the operational effectiveness and operational suitability of the production JDAM. DT/OT-IIA, OT-IIB, and OT-IIB (VCD) were conducted by VX-9 personnel under various environmental conditions. JDAM was operated and maintained by fleet representative personnel. DT/OT-IIA was completed in October 1998. OT-IIB was completed in August 1999. OT-IIB (VCD) was completed in August 2000. Initial Operational Capability (IOC) was achieved in May 2001.

VX-9 personnel at NAWCWD China Lake conducted combined DT/OT-IIA between July 1998 and October 1998. Production representative weapons were released from operationally representative F/A-18C/D aircraft utilizing production representative OFP13C software. The purpose of DT/OT-IIA was to gather data to be used in OPEVAL to determine operational effectiveness and operational suitability of JDAM. DT/OT-IIA was accomplished in conjunction with DT with results being utilized toward satisfying both DT and OT test plans. Combined DT/OT-IIA results were utilized in OT-IIB OPEVAL to support the MS III decision and recommendation for fleet introduction, where applicable. DT/OT-IIA included captive carriage and release of 14 certified JDAM weapons (six GBU-31(V)2/B configured with JPF and eight GBU-31(V)4/B) against fleet representative targets from F/A-18C/D aircraft. USN and USMC operationally representative personnel operated and maintained JDAM

VX-9 personnel at NAWCWD China Lake and on board aircraft carriers conducted OT-IIB OPEVAL between November 1998 and August 1999. Production representative weapons were released from operationally representative F/A-18C/D aircraft utilizing production representative OFP 13C/C+ software. Thirty-two weapons were configured with the FMU-152/B JPF LRIP-II fuzes and four weapons with DSU-33. Eleven weapons were configured with FMU-139 fuzes and two weapons were configured with FMU-143 fuzes. The purpose of OT-IIB was to determine the operational effectiveness and operational suitability of JDAM. Results were provided to support the MS III decision. OT-IIB included employment of the JDAM against threat representative targets and emitters. OT-IIB included captive carriage and release of 58 JDAM weapons against operationally representative targets from F/A-18C/D aircraft. Approximately 100 total flights were completed, including Field Carrier Landing Practice, carrier suitability, and 200 dedicated captive carriage flight hours. Forty-five catapult and arrested landings were completed. Fleet representative personnel operated and maintained the JDAM.

VX-9 personnel at NAWCWD China Lake and on board aircraft carriers conducted OT-IIB (VCD) in the third quarter of FY00. A VCD phase was conducted on the F/A-18C/D with the GBU-31(V)2/B in the entire JDAM operational envelope. Production representative and production identical weapons were released from operationally representative F/A-18C/D aircraft utilizing the most current production representative OFP SCS 15C software. Ten

weapons were configured with FMU-139 fuzes. The purpose of OT-IIB (VCD) was to determine the operational effectiveness and operational suitability of the JDAM in its full tactical flight envelope. OT-IIB (VCD) included employment of the JDAM against threat representative targets and emitters. OT-IIB (VCD) included captive carriage of 10 and release of 9 JDAM weapons with production representative pin lock Tail Actuator Subsystem (TAS). Approximately 80 total flight hours were completed which included Field Carrier Landing Practice (12.5 hrs.), carrier suitability (24 hrs.), dedicated captive carriage (32.5 hrs.), and range missions (10.4 hrs.). Twenty-five catapult and arrested landings were conducted. Fleet representative personnel operated and maintained the JDAM.

The JDAM Program Office submitted a request to declare IOC in March 2001, which was granted in May 2001 by Naval Message R 171311Z MAY 01 ZYB PSN 939302I26. These dates coincided with the deployment of the USS Harry S. Truman, Aircraft Carrier Nuclear (CVN)-75, which included a load out of GBU-31(V)2/B.

**(2) GBU-32(V)2/B.** Laboratory, ground, and flight testing have produced satisfactory progress toward meeting GBU-32(V)2/B DT objectives. Because the GBU-32(V)2/B shares common hardware and software components with the GBU-31(V)2/B (JDAM MK 84/BLU-117) and GBU-31(V)4/B (JDAM BLU-109), qualification testing was completed concurrently with the GBU-31(V)2/B and GBU-31(V)4/B qualification testing. Aircraft integration, captive carry, and free flight testing was initiated using the F-16C/D as a risk reduction aircraft. Risk reduction testing results demonstrated aircraft compatibility, free flight performance, reliability, and maintainability similar to the 2000 lb. warhead variants.

COMOPTEVFOR completed a Quick Reaction Assessment (QRA) to support Operation Enduring Freedom. The purpose of the QRA was to assess the potential operational effectiveness and potential operational suitability of the JDAM (1000 lb) weapon system based on testing 10 MK-83 JDAMs off the F/A-18C/D. All weapons utilized the in-production Pin Lock TAS. Aircraft software was SCS-15C+. The QRA was successful, and the findings were documented in Naval message Date Time Group (DTG) 222301Z MAR 02. The weapon system was used extensively and successfully in Operations Enduring Freedom and Iraqi Freedom. Beyond the QRA, 20 additional production representative JDAM (1000 lb) weapons were captive carried and released against operationally representative targets. All were released from F/A-18C/D aircraft using either SCS-15C+ or SCS-17C software. Fuzing was provided by the DSU-33 proximity sensor, and FMU-139 fuze. Test assets were subjected to captive carriage, catapult take-offs, arrested landings, GPS jamming, shipboard and other operationally representative environments. Fleet representative personnel operated and maintained the JDAM (1000 lb). The MK-83 JDAM was deemed operationally effective and suitable. As tested, JDAM was found to be an adverse weather weapon with an accuracy that maximizes sortie effectiveness and target destruction.

**b. F/A-18E/F Integration.** The F/A-18E/F is an objective JDAM fighter/attack aircraft. Investigation of the F/A-18E/F JDAM captive carry environment was satisfactorily completed with GBU-31(V)2/B and GBU-31(V)4/B Environmental GTV (EGTV) flights at NAWCAD, Patuxent River, MD.

**c. F-14B/D Integration.** The F-14B and the F-14D are objective JDAM fighter aircraft. Investigation of the F-14B/D JDAM captive carry environment was satisfactorily completed with GBU-31(V)2/B EGTV flights at NAWCAD, Patuxent River, MD. Four STVs were released at NAWCAD to investigate weapon separation characteristics and generate a limited envelope release clearance. Two GTVs were captive carried and released from the F-14B. FOT&E of the GBU-31(V)2/B on the F-14 aircraft began in FY00. F-14A/B DT began 1<sup>st</sup> quarter FY00 and was completed 1<sup>st</sup> quarter FY01. F-14D DT began 1<sup>st</sup> quarter FY01 and was completed 3<sup>rd</sup> quarter FY01. F-14A/B OT began 1<sup>st</sup> quarter FY01 and was completed 3<sup>rd</sup> quarter FY01. F-14D DT began 1<sup>st</sup> quarter FY01 and was completed 4<sup>th</sup> quarter FY01. F-14D OT began 1<sup>st</sup> quarter FY03 and completed 3<sup>rd</sup> quarter FY03.

**d. AV-8B Integration.** The AV-8B is an objective JDAM attack aircraft for GBU-32(V)2/B and GBU-38/B integration. The AV-8B completed wind tunnel testing with GBU-32(V)2/B in June 1996. DT began 4<sup>th</sup> quarter FY01 and was completed 4<sup>th</sup> quarter FY02. OT began 1<sup>st</sup> quarter FY03 and is expected to complete 1<sup>st</sup> quarter FY04. Four Enhanced Instrumented GTVs were used to characterize the AV-8B flight environment with the GBU-38/B.

**F. AIRCRAFT AND/OR EQUIPMENT/SYSTEM/SUBSYSTEM REPLACED.** The JDAM system will complement existing accurate and precision guided munitions (Laser Guided Bombs), direct attack weapons (MK-80 series) and cluster munitions (MK-20/CBU-52/59). Because JDAM builds upon current inventory bombs, it does not replace any weapon system outright.

**G. DESCRIPTION OF NEW DEVELOPMENT**

**1. Functional Description.** JDAM provides precision guidance capability to existing munitions with the addition of Guidance Sets. The official nomenclatures for the USN/USMC Guidance Sets and their relationship to GBUs, warheads, fuzes, proximity sensors, and initiators are as follows:

**Table 1. JDAM Configurations.**

<u>JDAM Variant</u>	<u>Guidance Set</u>	<u>Warhead</u>	<u>Fuze</u>	<u>Proximity Sensor<sup>1</sup></u>	<u>Arm Switch/ Initiators</u>
GBU-31(V)2/B	KMU-556A/B or KMU-556/B	MK 84 or BLU-117	FMU-152/B or FMU-139B/B	DSU-33B/B	MK 122 or FZU-48/B
GBU-31(V)4/B	KMU-558A/B or KMU-558/B	BLU-109	FMU-152/B or FMU-143E/B	None	MK 122 or FZU-32B/B
GBU-32(V)2/B	KMU-559A/B	MK 83 or BLU-110	FMU-152/B or FMU-139B/B	DSU-33B/B	MK 122 or FZU-48/B
GBU-38/B	KMU-572A/B	MK 82 or BLU-111	FMU-152/B or FMU-139B/B	DSU-33B/B	MK 122 or FZU-48/B

**Note 1:** When the DSU-33B/B is not used, a nose plug/support cup is used.

Other components such as initiator cables and initiator extenders are used as applicable. The JDAM variants are built-up by installing the Guidance Sets to MK 82/BLU-111, MK 83/BLU-110, MK 84/BLU-117, and BLU-109 bombs along with the required fuzing, initiators, sensors, and/or nose plugs/support cups. The Guidance Sets are functionally the same but are not interchangeable because the guidance software and physical interfaces are peculiar to each warhead type. Guidance Set physical differences correspond primarily to the different warhead interfaces.

JDAM is deployed from fighter, attack, and bomber aircraft. It can be released at low to high altitudes and release maneuvers include dive, dive-toss, lateral toss, loft, or straight and level, within a release envelope that includes off-axis delivery options as well. JDAM uses a GPS-aided INS to guide to preplanned precision target location coordinates achieving planned terminal impact parameters such as impact angle and azimuth. JDAM automatically begins its initialization process during captive carry when the aircraft applies power. It performs a Built-In Test (BIT) and aligns its INS with that of the aircraft. Targeting data is automatically down loaded to JDAM. When the aircraft reaches the release point within the Launch Acceptable Region (LAR), JDAM can be released. The LAR is displayed to the aircrew while en route to the target. The aircraft onboard computers can handle JDAM release automatically or the aircrew can handle it manually. When released, JDAM begins its free flight operation. Free flight operations involve separation from the aircraft, fuze arming, GPS satellite acquisition, guidance optimization, terminal trajectory adjustment, and target impact. Weapon free flight is further divided into three phases: Separation Phase, Optimal Guidance Phase, and Impact Phase.

The Separation Phase begins with weapon release. The weapon is released with the fins locked to prevent any control actions that could jeopardize safe separation from the aircraft. The fins remain locked for one second after release. After the one second delay, the fins are unlocked, electrical power from the initiator is applied to the fuze and the autopilot provides fin commands to damp angular rates and control the flight attitude.

The Optimal Guidance Phase takes place from the completion of the Separation Phase, when full guidance authority is achieved, until initiation of the Impact phase, which is the last second before weapon impact. During this phase, there are two functions that happen simultaneously. These functions consist of GPS satellite acquisition and optimal guidance computation. The satellite acquisition process begins three seconds after release so JDAM is not shadowed by the aircraft and to minimize the possibility of receiving multipath GPS signals. The first satellite is acquired in approximately one second after the search begins; after two more seconds, the second satellite is acquired and the third satellite in about four more seconds. JDAM then continues to acquire additional satellites, make position measurement corrections, and achieve navigation accuracy. The time to first fix for the first valid navigation update is achieved in a maximum of 27 seconds after release. Simultaneous to this activity, JDAM employs an optimal guidance algorithm that adaptively computes, in real time, the minimal control maneuvers required to go from the present position and velocity state to impacting the target at the desired flight path and approach angle. These computations are continuously made throughout this phase and the resulting commands are executed by JDAM's autopilot. The optimal guidance algorithm is used for both horizontal and vertical targets with level, dive, loft

and toss release conditions. The guidance algorithm continually computes the optimal trajectory from the current position to the target, to achieve an impact vector at the planned impact point, with the planned impact angle and impact azimuth. If all planned impact conditions are not achievable, the guidance law trades off impact velocity first, then impact angle/azimuth and finally impact point. By applying the algorithm in this manner, the weapon effectively optimizes the impact point. During the later portion of this phase, as JDAM nears its target, it will roll 180 degrees and pull down on the target to align its angle of attack with its velocity vector. For horizontal targets, this pull down results in a steep descent in order to maximize warhead penetration and to improve fuze and warhead reliability. For vertical targets, the weapon performs the same roll- and pull-down maneuver, but the resulting descent is not as steep. As previously indicated the, proper descent angle for both types of targets is continually computed by the guidance algorithm throughout JDAM's entire flight, until it enters the Impact Phase.

The Impact Phase is the last, one second of flight, during which, the JDAM flight attitude is actively controlled, to zero the total angle of attack. This is done to align the warhead longitudinal axis to the velocity vector to prevent warhead breakup. The navigation system estimates the time to impact and the angle of attack. At one second prior to impact the guidance commands are zeroed and an attitude command equal to the velocity vector orientation is sent to the autopilot. This results in zeroing JDAM's angle of attack before impact. The resulting descent and minimum angle of attack results in maximum impact velocity for effective penetration of hardened targets. In summary, the weapon's autonomous guidance system acquires GPS, which provides accurate position data to aid the INS and Mission Computer in computing the GPS optimum navigation solution to the target and guides the weapon to achieve the specified impact parameters. JDAM's current guidance system provides the capability to hit a target within 13 meters.

**a. Guidance Set (KMU-55X series and KMU-572A/B).** KMU-55X series Guidance Sets consist of a tail assembly, aerosurfaces, umbilical cover (KMU-556, KMU-559), and for the KMU-558 only, also contain a hardback, lug sleeves, suspension lugs, FZU Extender and SHOLS lugs. The KMU-572A/B consists of a tail assembly, aerosurface assembly, nose extension, DSU extension adapter, and a strake setscrew. The nose extension and DSU extension adapter are provided for USAF GBU configurations. The strake setscrew is provided for USN/USMC GBU configurations.

**(1) Tail Assembly.** Each tail assembly consists of a tail fairing, TAS, wire harness, Guidance Control Unit (GCU), GPS antenna, three moveable control fins, and one fixed control fin. The tail assembly has Built-In Test (BIT) capability which can be initiated both on and off the aircraft by both maintenance and aircrew personnel. The aircrew can perform IBIT while the aircraft is in flight. IBIT and reprogramming are accomplished using the AN/GYQ-79 Common Munitions Bit and Reprogramming Equipment (CMBRE).

**(a) Tail Fairing.** The tail fairing is the forward structural member of the tail assembly. It mates to the TAS at a faying surface using a radial screw/nut plate configuration. The tail fairing has a fuze access door to facilitate assembly/disassembly operations.

**(b) Tail Actuator Subsystem.** The TAS consists of the aft tail assembly structure, three electromechanical actuators to power the three movable control fins, a Lithium Thermal Battery, and the associated controlling electronics. The aft structure provides a mounting surface for the GPS Antenna and mounting surfaces for the control fins. The actuators contain either electrically released motor brakes (used in KMU-55X/B Guidance Sets) or a fin lock device (FLD) (used in KMU-55XA/B and KMU-572A/B Guidance Sets) that unlocks the tail control fins in flight. On Guidance Sets with the KMU-55X/B designation, markings are applied to the TAS to aid in determining proper fin positions. The TAS marking applies to electrically released, motor brakes only. When the aft end of the fins is within the boundaries of the alignment marks, the fins are properly positioned for use. On Guidance Sets with the KMU-55XA/B or KMU-572A/B designation, control fins are secured with the FLD that uses retractable locking pins designed to eliminate fin movement during high speed, low altitude captive flight. TAS with the FLD is not subject to captive carry flight restrictions. The controlling electronics process digital commands into independent fin control movements, provide fin position feedback, battery initiation, brake unlock commands, and BIT status. TAS for the KMU-556 and KMU-558 are physically identical; however, they are not interchangeable due to differences in the guidance software contained within the GCU.

**(c) Wire Harness.** The Wire Harness consists of the MIL-STD 1760 umbilical connector, the FMU-152/B fuze connector, GCU connectors, and a shielded wiring harness. A protective Electro-Magnetic Interference (EMI) cover is provided on the umbilical connector. The FMU-152/B fuze connector is connected to a stowage receptacle on the inside surface of the tail structure, when not in use.

**(d) Guidance Control Unit.** The GCU consists of an integrated electronics assembly that includes the Mission Computer, INS, Guidance Positioning System Receiver Module (GPSRM), and other power conditioning electronics integrated into a common chassis. The INS uses a Ring Laser Gyro (RLG) inertial measurement unit (IMU). The GCU is form factored to fit into the tail assembly of the 2,000 lb., 1,000 lb. and 500 lb. guidance kits.

**(i) Mission Computer.** Mission computer software implements the autopilot, guidance, and navigation functions. Guidance software uses an adaptive optimal guidance law. The guidance law develops guidance commands based on weapon position and velocity state vector updates, target location, and desired impact parameters. The guidance law continually computes the optimal trajectory from the current position to the target to achieve an impact vector at the planned impact point, with the planned impact angle and impact azimuth, at the highest possible velocity. Different OFP are utilized for the MK 84/ BLU-117, BLU-109, MK 83/BLU-110 and MK 82/BLU-111 variants to account for different mass properties and aerodynamic characteristics.

**(ii) GPS Receiver Module.** The GPSRM implements continuous P (Y) code tracking on L1 or L2 band for up to five satellites. A planned upgrade will incorporate a GPS receiver that can track all satellites in view. GPSRM software incorporates a fast acquisition mode that uses GPS position, velocity, time, and ephemeris data

provided by the aircraft. Using this data, the GPS receiver can achieve full position and velocity acquisition within 27 seconds and full GPS navigation accuracy within 28 seconds after release.

**(iii) GPS Selective Availability Anti-Spoofing Module**

**Receiver.** Beginning with the delivery of Lot 9 JDAM assets in 2006, all JDAM Guidance Sets will have a GPS Selective Availability Anti-Spoofing Module (SAASM) Receiver in place of the current GPS receiver module. The implementation of SAASM is in response to the original mandate by Commander Joint Chiefs of Staff (CJCS) Instruction (CJCSI) 6410.01. SAASM is the security architecture selected by the CJCS to implement the next generation security functions for all GPS Precise Positioning Service (PPS) users. It is intended to enhance significantly the combatant commanders' ability to use GPS precise positioning, velocity, time, and other GPS sensor information in all environments. SAASM receivers will make use of the SAASM Black Key Algorithm, which allows for unclassified or black GPS keys, establishes cryptonets for additional system level security, and enables Fast Acquisition Direct Y receivers without distribution of the red weekly key to all users. There are also three additional "extended functions" of SAASM; however, these will remain dormant until the GPS Space and Control Segments have been upgraded and made operational. The United States Space Command (J33) will be responsible for the Concept of Operations (CONOPS) for these functions.

**(e) GPS Antenna.** The GPS antenna is located on the aft end of the TAS. The antenna is connected to the GCU by a cable that runs along the exterior of the tail assembly and is protected by a cover.

**(f) Control Fins.** Four control fins are attached TAS. Three of the control fins are moveable. The fourth control fin is fixed.

**(2) Aerosurfaces.** Aerosurfaces are fixed, mid body strakes (KMU-55X) that are attached to the warhead using steel bands and T-bolts, and in the case of the KMU-558, require a hardback.

**(a) KMU-556 Strakes.** Aerosurfaces consist of three formed steel "strakes" that are strapped around the bomb body. The upper strake is positioned over the suspension lugs. Right and Left strakes attach to slots in the upper strake and are fastened around the bomb with three metal straps that are tensioned with T-Bolt adjusting nuts. The left and right strakes are fabricated in both stamped and riveted configurations that are interchangeable. The strakes provide aerodynamic lifting surfaces around the exterior of the bomb body to enhance weapon maneuverability and range.

**(b) KMU-558 Strakes/Hardback.** Aerosurfaces consist of right and left side formed steel "strakes" that attach to hooks on the hardback and strapped around the bomb body. The hardback is an aluminum casting that is positioned over a set of lug sleeves and attached with bolts. The strakes attach to hooks that are hung from the hardback and are fastened around the bomb with two metal straps (primary configuration) or three metal straps (alternate configuration). The straps are tensioned with T-Bolt adjusting nuts. The strakes provide aerodynamic lift, maneuverability and other needed flight characteristics. The hardback provides the necessary physical interface to the delivery aircraft.

**(c) KMU-559 Strakes.** Aerosurfaces consist of three formed steel “strakes” that are strapped around the bomb body. The upper strake is positioned over the suspension lugs. Right and left strakes attach to buckles on the upper strake and are fastened around the bomb with two metal straps that are tensioned with T-Bolt adjusting nuts.

**(d) KMU-572 Strakes.** Aerosurfaces consist of two formed steel "strakes" that are strapped around the forward portion of the bomb body just aft of the nose. Upper and lower strakes are fastened around the bomb with two metal straps that are tensioned with bolts through barrel nuts.

**(3) Hardback.** The hardback is used in the KMU-558 only. It provides the necessary physical interface to the delivery aircraft. It is an aluminum casting that is positioned over a set of lug sleeves and attached with bolts. Because it adds a significant amount of additional space between the bomb body and the interface to the delivery aircraft, additional lug sleeves and suspension lugs are provided. Additionally, a FZU Extender is provided for use when the FMU-143E/B and FZU-32B/B configuration is built. The FZU extender compensates for the height of the hardback and permits the FZU-32B/B initiator to physically interface with the bomb rack.

**(4) Umbilical Cover.** The umbilical cover (KMU-556 and KMU-558) is a formed steel part that attaches to the tail assembly by inserting the tab on the aft end of the cover into the harness exit hole. The umbilical cover for the KMU-559 is physically attached to the tail assembly. The umbilical cover for the KMU-572 is adjustable to accommodate different aircraft. The forward end of the umbilical cover is positioned and captured by a slot in the upper strake. The umbilical cover positions the umbilical connector to mate correctly with the delivery aircraft MIL-STD 1760 interface and retains the umbilical connector during separation. The cover also provides protection for the wire harness during weapon handling operations.

**(5) SHOLS Lugs.** SHOLS lugs are used in the KMU-558 only. The SHOLS lugs are high strength steel parts that are installed under the hardback assembly and include the interfacing features to attach the SHOLS lifting trolleys with a single locking pin. SHOLS lugs provide the pin attach points for rapid attachment of the lift trolley assemblies to the weapon to facilitate weapon loading with the SHOLS loading equipment.

**b. Fuzes.** JDAM is compatible with the existing FMU-139 and FMU-143 fuzes. It is also compatible with the FMU-152/B JPF, which is still in development.

**c. Proximity Sensors.** JDAM tail assemblies are compatible with the DSU-33B/B proximity sensor. The DSU-33B/B provides general-purpose warheads with an air burst capability. The DSU-33B/B can be used in GBU-31(V)2/B, GBU-32(V)2/B and GBU-38/B configurations to provide an accurate air burst capability against appropriate targets. The DSU-33B/B is not compatible with the GBU-31(V)4/B. When the DSU-33B/B is not used, a nose plug/support cup or MXU-735 is used.

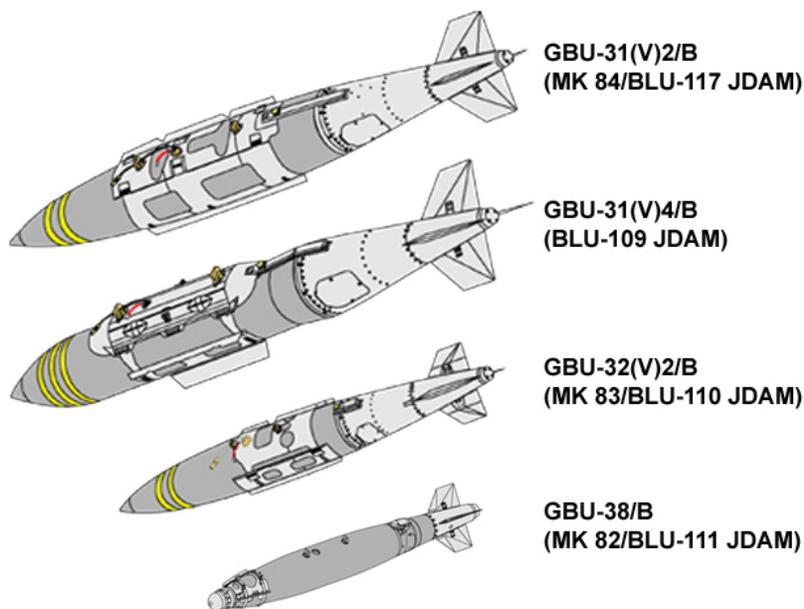
**d. Arming Switch.** A MK 122 Mod 0 arming switch can be used in any MK 80 series configuration. It is used in lieu of an initiator and its corresponding cable.

**e. Initiators.** When an arming switch is not used, either the FZU-32B/B (GBU-31(V)4/B) or the FZU-48/B (GBU-31(V)2/B, GBU-32(V)2/B and GBU-38/B) initiator and their corresponding cables can be used.

**f. Nose Plug/Support Cup.** Whenever the DSU-33B/B is not used, a nose plug/support cup is used, either the OGIVE or the MXU-735.

**2. Physical Description.** The JDAM System consists of the GBU-31(V)2/B, GBU-31(V)4/B, GBU-32(V)2/B, GBU-38/B, support equipment, test equipment and training equipment.

**a. GBU Variants.** JDAM GBU variants are illustrated in Figure I-1. JDAM GBU leading particulars, along with those of the CNU-589/E and CNU-589A/E containers are listed in Table I-1. Two Guidance Sets are packed per container except for the KMU-572, which is packed six per container.



**Figure I- 1. Joint Direct Attack Munitions GBU Variants**

**Table I-2. Joint Direct Attack Munitions GBU Variants Leading Particulars**

<b>GBU Designation</b>	<b>GBU-31(V)2/B</b>	<b>GBU-31(V)4/B</b>	<b>GBU-32(V)2/B</b>	<b>GBU-38/B</b>
Warhead	2,000 lb. MK-84/ BLU-117	2,000 lb. BLU-109	1,000 lb. MK-83/ BLU-110	500 lb. MK-82/ BLU-111
GBU Length	152.46"	148.32"	119.31"	92.64"
Tail Assembly Length	51.04"	51.04"	42.93"	30.88"
Tail Assembly Diameter	25.32"	25.32"	19.62"	8.78"
Aerosurface Length (Strakes)	48"	35.93"	40.37"	10.00"
Lug Suspension	30"	30"	14"	14"
Weights:				
-Standard Warhead	1,919 lbs.	1,942 lbs.	921 lbs.	460 lbs.
-Thermal Coated	1,939 lbs.	1,962 lbs.	936 lbs.	475 lbs.
-Guidance Set	120 lbs.	176 lbs.	93 lbs.	70 lbs.
Total:	2,039 – 2,059 lbs.	2,118 – 2,138 lbs.	1,014 – 1,029 lbs.	558 lbs.
CNU-589/E (packed)	459 lbs.	567 lbs.	372 lbs.	
CNU-589/E (empty)	159 lbs.	159 lbs..	161 lbs.	
CNU-589/E Dimensions	L 65" W 42" H 32.3"	L 65" W 42" H 32.3"	L 65" W 42" H 32.3"	
CNU-589A/E (packed)	515 lbs.	619 lbs.	424 lbs.	606 lbs.
CNU-589A/E (empty)	211 lbs.	211 lbs..	213 lbs.	197 lbs.
CNU-589A/E Dimensions	L 65.2" W 42" H 31.7"	L 65.2" W 42" H 31.7"	L 65.2" W 42" H 31.7"	L 65.2" W 42" H 31.7"

**b. Training Equipment.** Training equipment requirements for JDAM include a Load Drill Trainer (LDT), a Practical Explosive Ordnance Disposal (EOD) System Trainer (PEST), and a JPF Inert Load Trainer (ILT).

**(1) Load Drill Trainer.** LDTs are inert and have the same physical appearance, size, weight, and center of gravity as the actual weapon. Similar to tactical JDAM variants, the JDAM LDTs are issued as Guidance Sets that are installed on inert MK 84, BLU-109, MK 83, and MK 82 training bombs. They are used at loading schools, such as the Strike Fighter Weapons School Atlantic (SFWSL) and Strike Fighter Weapons School Pacific (SFWSP), to train organizational level personnel aircraft loading procedures. The LDT Guidance Sets are also provided to the Maintenance Training Units (MTUs) under the auspices of the Center for Naval Aviation Technical Training (CNATT) for the purpose of training intermediate level maintenance personnel in JDAM build-up, maintenance, and BIT/Reprogramming procedures. The official nomenclature for the training equipment are:

Load Trainer GBU-31(V)2(D-2)/B, Load Trainer GBU-31(V)4(D-2)/B, Load Trainer GBU-32(V)2(D-2)/B, Load Trainer GBU-38(D-2)/B, Load Trainer KMU-556(D-2)/B, Load Trainer KMU-558(D-2)/B, Load Trainer KMU-559(D-2)/B and Load Trainer KMU-572(D-2)/B. The Navy has developed a “dual purpose” Load Trainer Kit, KMU-XXX, that incorporates components from both the KMU-556(D-2)/B and the KMU-558(D-2)/B. This consolidation allows training for both the MK 84 and BLU-109 JDAM variants while conserving valuable stowage space aboard fleet Aircraft Carriers. The KMU-XXX Kit consists of KMU-556(D-2)/B Tail Assembly, Aero-surfaces, KMU-558(D-2)/B Hardback, Aero-surfaces, and attaching hardware.

**(2) Practical Explosive Ordnance Disposal System Trainer.** The PEST is an inert three dimensional, full-scale model that has the same weight, center of gravity, and external configurations and markings as the actual weapon. The PEST has a complete simulated fuzing and firing train to allow for Render Safe Procedure (RSP) training of EOD personnel.

**(3) Joint Programmable Fuze Inert Load Trainer.** The JPF Inert Load Trainer (ILT) is the only new inert fuze to be developed. It has the same physical appearance, functional characteristics, size, and weight as the tactical JPF (FMU-152) and will be certified inert and carry an inert Naval Ammunition Logistic Code (NALC). This inert fuze will be made available through the JPF program.

**3. New Development Introduction.** JDAM is being introduced to fleet activities through a phase-in concept. Early operational fielding occurred during Operation Southern Watch, where over 51 GBU-31(V)2/B were employed from carrier-based F/A-18C/D aircraft with a mission success rate of greater than 90%. The JDAM Program achieved IOC for the GBU-31(V)2/B in May 2001. This date coincided with the deployment of the USS Truman, CVN-75, which included a load out of GBU-31(V)2/B. COMOPTEVFOR completed a Quick Reaction Assessment (QRA) on the GBU-32(V)2/B to support Operation Enduring Freedom. The QRA was successful and the findings were documented in Naval message Date Time Group (DTG) 222301Z MAR 02. The weapon system was used extensively and successfully in Operations Enduring Freedom and Iraqi Freedom. Other JDAM variants will be introduced as OPEVAL and Low-Rate Initial Production (LRIP) demonstrate that the designs are ready for operational use.

**4. Significant Interfaces.** JDAM interfaces with a variety of aircraft, suspension equipment, standard aircraft interfaces, common support equipment, and test equipment. On the subsystem level, it also interfaces with existing warheads, fuzes, proximity sensors, arming switches, and initiators.

**a. Aircraft.** The F/A-18C/D is the threshold aircraft for USN/USMC JDAM integration (except for JDAM HART where the F/A-18E/F is the threshold aircraft). Other USN/USMC objective aircraft are currently planned to interface with other JDAM variants and are shown in Table I-2 along with the F/A-18C/D.

**Table I-3. Navy/Marine Corps JDAM Objective Aircraft**

AIRCRAFT	GBU-31(V)2/B	GBU-31(V)4/B	GBU-32(V)2/B	GBU-38/B
F/A-18C/D	X	X	X	X
F/A-18E/F	X	X		X
F-14B	X	1	1	
F-14D	X	1	1	
AV-8B			X	X

**Note 1:** A second configuration is being considered for the F-14B/D.

Other aircraft being considered for later integration are the S-3 and the P-3. JDAM requires the MIL-STD-1553 data bus and MIL-STD-1760 digital interface.

**b. Bomb Rack Units.** On the threshold aircraft, the JDAM will interface with the F/A-18C/D's Bomb Rack Unit (BRU)-32 and BRU-55 Smart Rack. Each of these units possesses MIL-STD-1760 capability, which provides the means to transfer alignment of the aircraft's GPS-aided position and inertial velocities to the JDAM guidance unit. GPS quality handoff is critical for JDAM to meet accuracy requirements. The MIL-STD-1760 communications capability will also allow transfer of fuze settings when the Joint Programmable Fuze (JPF), Fuze Mechanical Unit (FMU)-152, is used.

**(1) BRU-32.** On the threshold aircraft, the JDAM will interface with the F/A-18C/D's Bomb Rack Unit (BRU)-32. The F/A-18C/D BRU-32 provides MIL-STD-1760 capability to each of the four (4) available weapon locations (one per weapon station).

**(2) BRU-55.** On the threshold aircraft, the JDAM will interface with the F/A-18C/D's Bomb Rack Unit (BRU)-55 Smart Rack. The F/A-18C/D BRU-55 provides MIL-STD-1760 capability to each of the eight (8) available weapon locations (two per weapon station). The BRU-55 allows carriage of two smart weapons (up to 1000lb class) on a single aircraft station. BRU-55 weapons currently consist of JSOW, 1000 lb JDAM, 500 lb JDAM and WCMD. The BRU-55 consists of the BRU-33 strongback, two (2) BRU-46 ejector units, and electronics currently under development. The BRU-55 is 70" long, 26" wide, and weighs 240 pounds. Its aircraft interface is 30" lugs and single -1760 umbilical. Its weapons interface is 14" lugs and one -1760 umbilical each.

**c. Mission Planning Systems.** JDAM is compatible with the Navy TAMPS and is planned to be compatible with the Joint Mission Planning System (JMPS). In preparation for GBU-38/B OPEVAL and in response to previous OT recommendations, an enhanced mission planning interface has been developed to facilitate usability while decreasing the amount of time

to perform mission planning. Generally, the TAMPS interface is a joint JDAM/JSOW interface and it allows the user to import Desired Mean Point of Impact (DMPI) from the Precision Guided Munitions Target Data Base (PGMTDB). The mission planning includes generation and display of aircraft LAR for each DMPI among other features.

#### **d. Containers.**

**(1) Container, CNU-589/E.** The CNU-589/E shipping/storage container consists of a reusable fiberglass reinforced plastic outer shell with internal foam dunnage. All KMU-55X Guidance Sets can be packed in the CNU-589/E container, which holds two Guidance Sets. The KMU-559/B requires the use of a foam spacer to accommodate the shorter tail assembly. The KMU-572A/B cannot be packed in the CNU-589/E; it must be packed in the CNU-589A/E. Each Guidance Set tail assembly is individually packaged in a polystyrene foam cushion and enclosed in a heat-sealable foil laminate vapor barrier bag. Thirty-two units of desiccant are placed inside the vapor barrier bag prior to sealing to maintain the environment required to achieve a 20-year shelf life. The tail assembly cushions are placed on polyethylene foam pads attached to an internal shelf for shock isolation. The aerosurfaces are packed in the container base using foam sheets to prevent scratching and secured with factory installed friction welded or buckled polyester banding. Handholds are molded into the lid flange on each end to facilitate two person lift and removal of the container lid. The container lid is secured using factory installed friction welded polyester banding. Four hoisting and tie-down attach fittings are located on the container base.

**(2) Container, CNU-589A/E.** The container construction for the CNU-589A/E is the same as the CNU-589/E. The CNU-589A/E container may be used for all guidance sets including the KMU-572A/B. The interior packing components for the KMU-55X guidance sets are the same as explained for the CNU-589/E. Interior packing components for the KMU-572A/B guidance sets consist of two strake foam packs and three main foam packs. Both foam pack components are made from formed polystyrene foam cushions. The upper and lower sections of the two strake foam packs are interchangeable. The same is true for the three main foam packs. Each strake foam pack houses three pre-assembled aerosurface assemblies. Each main foam pack houses two tail assemblies, two nose extensions, two DSU extension adapters, and two strake set screws. Sixteen (16) units of desiccant will be placed on the fin of each assembly. Air channels are manufactured into the upper and lower sections of the main foam pack to assure effective moisture control is maintained throughout the pack. Each main foam pack is enclosed in a heat sealable foil laminate vapor barrier bag. A cushioned panel assembly with three 1.5 inch foam pieces is placed within the base assembly to provide shock isolation. Handholds are molded into the lid flange on each end to facilitate two person lift and removal of the container lid. The container lid is secured using factory installed friction welded polyester banding. The CNU-589A/E container is 65.2 inches long x 42 inches wide x 31.7 inches high and has a cube measurement of approximately 50.2 cubic feet. The empty weight of the container is approximately 197 to 213 pounds, dependent upon dunnage. For the KMU-572A/B configuration, six guidance sets of the same type are packaged in each container.

**e. AN/GYQ-79, Common Munitions IBIT Reprogrammable Equipment.**

The AN/GYQ-79 CMBRE interfaces with all JDAM variants including the LDT configurations. No additional cables beyond those supplied with CMBRE are required for this compatibility. This compatibility extends to JDAM Tail Assemblies as well, where IBIT/Reprogramming can be performed prior to GBU build-up. AN/GYQ-79 CMBRE were procured by PMA-201 through Alliant Defense Electronics Systems, Inc., Clearwater Florida, and provided to aircraft carriers, MALS, NAS and intermediate level maintenance training schools.

**(1) Mobile Power Conditioning Unit.** The AN/GYQ-79 CMBRE requires a 3-phase 400 Hz power source. For shore activities without a 3-phase 400 Hz power source and ships without Ship Alteration (SHIPALT) CV 8734 or CVN 8735, a Mobile Power Conditioning Unit (MPCU) was developed to satisfy the CMBRE power source requirement. The MPCU is an ASX-315 power-conditioning unit mounted on a mobile steel frame cart. MPCUs were procured by PMA-201 and provided to certain aircraft carriers on an interim basis and to intermediate level maintenance training schools on a permanent basis.

**(2) Joint Direct Attack Munitions Application Program.** CMBRE is delivered from the manufacturer with Common Executive Software on a write-protected Personal Computer Memory Card International Association (PCMCIA) memory card mounted internally in the computer. The Common Executive Software provides Power Up, Self-Test, Fault Isolation (for the CMBRE), MIL-STD-1553 drivers, drivers for control and monitoring of Test Adapter Unit (TAU) functions, and a Menu. The Boeing Company developed JDAM-specific software called the JDAM Munitions Application Program (MAP) to interface with CMBRE to control all MIL-STD-1553 communications with the Unit under test (UUT), initiate BIT, and reprogram the UUT with JDAM OFP software. The JDAM MAP software is provided on a removable 40 MB (minimum) PCMCIA memory card. A second PCMCIA memory card is used to download and store logistics data as part of the IBIT/reprogramming operation. Because OFP updates will be automatic during the IBIT/reprogramming performed in the JDAM assembly process, OFP update TDs will not be required to be complied with against stored JDAM assets.

**5. New Features, Configurations, or Material.** JDAM introduced four new GBU configurations for the USN/USMC: GBU-31(V)2/B, GBU-31(V)4/B, GBU-32(V)2/B, and GBU-38/B. New GBU features that we introduced on these JDAM variants include autonomous GPS-aided INS guidance, preflight target assignment, inflight captive carry retargeting using both manual entry and onboard sensor retargeting, and munitions IBIT/reprogramming. Beginning with the delivery of Lot 9 JDAM assets in 2006, all JDAM Guidance Sets will have a GPS Selective Availability Anti-Spoofing Module (SAASM) Receiver module in place of the current GPS receiver module. It is intended to enhance significantly the combatant commanders' ability to use GPS precise positioning, velocity, time, and other GPS sensor information in all environments. SAASM receivers will make use of the SAASM Black Key Algorithm, which allows for unclassified or black GPS keys, establishes cryptonets for additional system level security, and enables Fast Acquisition Direct Y receivers without distribution of the red weekly key to all users. There are also three additional "extended functions" of SAASM; however, these will remain dormant until the GPS Space and Control Segments have been upgraded and made operational

## H. CONCEPTS

**1. Operational Concept.** JDAM is used worldwide against medium to high valued fixed targets in adverse weather conditions. JDAM is deployed from fighter, attack, and bomber aircraft. It can be released at low to high altitudes and release maneuvers include dive, dive-toss, lateral toss, loft, or straight and level, within a release envelope that includes off-axis delivery options as well. An off-axis delivery is where the weapon glides toward its intended target on a flight path that curves away from the flight path of the releasing aircraft. This allows JDAM to reach a target without requiring the aircraft to fly over that target directly. The capability for off-axis attack provides increased aircraft and aircrew survivability. JDAM enables both single-pass multiple-target engagements with individual weapons, and single-pass single-target engagements with multiple weapons. JDAM also provides flexible targeting and retargeting capability by accepting target coordinates that are mission planned and loaded before takeoff or by determining target coordinates and entering the data in-flight, prior to weapon release. Mission plans are loaded prior to takeoff and include release envelope, target coordinates, and weapon terminal parameters. JDAM uses a GPS-aided INS to guide the weapon to preplanned precision target location coordinates achieving planned terminal impact parameters such as impact angle and azimuth. JDAM automatically begins its initialization process during captive carry when the aircraft applies power. It performs BIT, and aligns its INS with that of the aircraft. Targeting data is automatically down loaded to JDAM. When the aircraft reaches the release point within the LAR, JDAM can be released. The LAR depicts the area from which JDAM can be released and reach its target with the planned impact parameters. It is displayed to the aircrew while en route to the target. The aircraft onboard computers can handle JDAM release automatically or the aircrew can handle it manually. When released, JDAM begins its free flight operation. JDAM free flight operations involve separation from the aircraft, fuze arming, GPS satellite acquisition, guidance optimization, terminal trajectory adjustment, and target impact. JDAM free flight is further divided into three phases: Separation Phase, Optimal Guidance Phase, and Impact Phase.

A joint Navy/Air Force Operational Concept, currently classified SECRET, identifies the specific operational concept. The Operational Concept serves as an umbrella document for future Concepts of Operation development. The expected operational warranty life (out-of-container) of the system is 5 years and the expected warranty life (in container) is 20 years.

**2. Maintenance Concept.** The Navy uses a three level maintenance concept, which includes organizational, intermediate, and depot. Depot level maintenance is provided by the contractor and includes a 20-year extended maintenance/repair warranty.

**a. Organizational.** Navy organizational level maintenance is performed on the flight deck, flight line, and Marine Corps forward deployed sites. Organizational level maintenance consists of aircraft interface checkout, uploading, visual inspection, arming, dearming, and downloading. If JDAM fails aircraft BIT after uploading, it is returned to the Weapons Department for IBIT and/or reprogramming.

**b. Intermediate.** Navy intermediate level maintenance is performed within the Weapons Department facilities (afloat and ashore) and consist of receipt, storage, issue,

unpacking/packing, visual inspections, assembly, removal and replacement of ancillary equipment (e.g. bomb, cables, fuzes, etc.), minor corrosion control, touch-up painting, restoration of markings, transportation, BIT and software reprogramming via CMBRE, and if required, shipment to the Naval Weapons Station (NWS) for return to the Depot for repair.

**c. Depot.** No organic depot level maintenance is planned for JDAM. The contractor has provided an extended 20-year repair/replacement warranty. The warranty covers repair or replacement of any Guidance Set failures (tail assembly, associated hardware, and software) and container failures from the DD 250 date. This warranty includes parts, labor, failure analysis, disposal of failed kits, warranty tracking, and round trip transportation costs from the point of origination in the United States. The government will exercise due diligence in testing, storing, and maintaining the Guidance Set. Also, the government will not track captive carry flight hours or aircraft catapults and traps. Exclusions to the warranty include upgrades, induced failures, loss or damage from natural disaster, accident, or war. Warranty disputes will be resolved through an alternative dispute resolution process.

**d. Interim Maintenance.** All logistics elements are in place. Interim maintenance support is not required.

**e. Life Cycle Maintenance Plan.** The Boeing Company is responsible for component level repair of the JDAM Guidance Sets through the 20-year warranty program.

**3. Manning Concept.** JDAM does not impact existing manpower requirements at Government organizational, intermediate, or depot level activities. Seat factor, crew ratio, and total aircraft per squadron drive the pilot, Weapon Sensor Operator (WSO), and Radar Intercept Operator (RIO) manpower requirements. The number of weapon pylons/stations per aircraft and total per squadron drive the load crew manpower requirements for USN and USMC operational squadrons and Fleet Replacement Squadrons (FRS). Enlisted manning for USN and USMC Intermediate maintenance activities Aircraft Carrier (CV), CVN, Naval Air Station (NAS), Marine Corps Air Station (MCAS), and Marine Aviation Logistics Squadron (MALS) is based on the total assigned ordnance workload, and not on specific JDAM requirements. Skills required to support the JDAM are within the capability of existing Navy Enlisted Classification (NEC) and Military Occupational Specialties (MOS). Refer to Part II for existing USN and USMC Intermediate maintenance manpower requirements. Manning requirements for the JDAM are operator, maintainer, and instructor.

**a. Operator.** Navy and Marine Corps aircrew personnel deploy JDAM from fixed-wing aircraft. Manning requirements for specific aircraft are determined from OPNAV directed aircraft crew ratios and seat factors. JDAM does not require a dedicated operator. Crew ratios and seat factors will not change. Additional aircrew is not required.

**b. Maintainer.** Navy and Marine Corps personnel will perform organizational and intermediate level maintenance on JDAM. Manning requirements for organizational and intermediate level maintenance activities are based on the total workload of the work centers within the activities. JDAM minimizes organizational and intermediate level maintenance

actions. Because JDAM will be used in lieu of other weapons and fuzes, it will not affect existing manning levels.

**c. Instructor.** JDAM has been integrated into existing USN/USMC schools and existing curricula. New training tracks and/or courses were not required, and existing Instructor manning levels were not impacted by the introduction of JDAM.

**4. Training Concept.** The JDAM training concept is based upon providing an organic training capability to appropriate USN and USMC training activities. The JDAM contractor determined, via the Instructional System Design (ISD) process, training and training support requirements for the JDAM Program. By providing source data, training aids, training equipment, and initial training services to USN and USMC schoolhouses and operational activities, the organic capability was achieved. A joint Navy, Air Force, and Contractor Integrated Product Team (IPT), was established to define requirements and to ensure the development and implementation of training. The IPT was established with Navy, Marine Corp and Air Force representation from testing, training, and operational activities. The contractor provided DT training to TECHEVAL personnel. The JDAM Training IPT provided initial training for OPEVAL personnel, CNATT MTUs and Strike Fighter Weapon Schools, Atlantic/Pacific (SFWSL/SFWSP) instructors. Training activities updated curricula to include JDAM and began conduct of follow-on training.

**a. Initial Training.** The JDAM Training IPT began initial training in September 1997. Aircraft carriers deploying with JDAM during Early Operational Fielding required classroom and hands-on training for their Weapons Department personnel (G-3 Division). F/A-18C/D squadrons deploying to the aircraft carriers received JDAM familiarization at SFWSL/SFWSP during pre-deployment work-ups. CNATT MTUs received initial training in advance of training equipment deliveries, and have been provided refresher training following delivery of their LDT, CMBRE, and MPCU.

For the introduction of the GBU-38/B (MK 82/BLU-111) variant, the JDAM Training IPT will produce a new Smart Pack, which consists of an In-flight guide and Mission Planning guide. The GBU-38/B Smart Pack is provided to NSAWC, TOPGUN, MAWTS, SFWSP, SFWSL, and it will be posted on the NSAWC and MAWTS web sites. The Advanced Weapons Lab produces the F/A-18 SCS 19C1 differences brief. This brief covers the changes in mechanization for JDAM, which will consist of one display change. Every squadron that loads 19C1 will get the 19C1 differences brief provided by VX31 aircrew. The JDAM portion of the differences brief will be provided directly to the JDAM SME's at NSAWC, TOPGUN, MAWTS, SFWSP and SFWSL for incorporation into their JDAM training materials. Because of the similarity of the GBU-38/B to other JDAM variants, additional initial training for organizational and intermediate level maintenance training is not necessary.

**b. Follow-on Training.** USN/USMC instructors at formal training activities provide follow-on training. This includes formal training for fleet operators, maintenance personnel, and EOD technicians. The following paragraphs list the follow-on training tracks or courses that were affected by the introduction of JDAM.

**(1) Operator Training.** Pilots, RIOs, and WSOs are trained at the appropriate FRS for specific aircraft operation and weapons. Pilot, RIO and WSO skills in tactics and ordnance delivery are further enhanced at SFWS, Strike Weapons and Tactics School Atlantic (SWATSLANT), Naval Strike Air Warfare Center (NSAWC), Medium Attack Weapon & Tactics School (MAWTS)-1 and through on-board proficiency training.

**(a) Training Devices.** Currently, the JDAM program does not use a captive carry training configuration for aircrew training. The F/A-18 aircraft's mission computer, when operating in SIM mode, is capable of providing JDAM mission rehearsal. Tactical JDAM assets are required for live-fire exercises, which are part of the annual Non-Combat Expenditure Allowance (NCEA).

**(b) Courses.** The following table lists the applicable operator training courses. JDAM lectures/briefs have been provided to Tactics Instructors at NSAWC (Topgun), SFWSL/SFWSP, and MAWTS-1. JDAM source material was incorporated in these courses with minimal impact; GBU-38/B source material will similarly be incorporated. The addition of JDAM material did not change student throughput or chargeable student billets, and, therefore, these courses do not appear in Parts II and III. See the AV-8, F-14, and F/A-18 NTSPs for course details. Refer to element I.M for information on these related NTSPs.

**Table I-2. F/A-18C/D Operator Courses**

<b>COURSE NUMBER</b>	<b>COURSE TITLE</b>	<b>RFT DATE</b>
D/E-2A-0601	F/A-18 Fleet Replacement Pilot Category 1	Available
D/E-2A-0602	F/A-18 Fleet Replacement Pilot Category 2A	Available
D/E-2A-0603	F/A-18 Fleet Replacement Pilot Category 2H	Available
D/E-2A-0605	F/A-18 Fleet Replacement Pilot Category 2F	Available
D/E-2A-0604	F/A-18 Fleet Replacement Pilot Category 3	Available
D/E-2A-0606	F/A-18 Fleet Replacement Pilot Category 4	Available
M13P4B3	F/A-18 Fleet Replacement Pilot Basic and Transition	Available
M13P3V3	F/A-18 Fleet Replacement Pilot Refresher	Available
M13P3W3	F/A-18 Fleet Replacement Pilot Modified Refresher	Available
M13P4C3	F/A-18 WSO Basic and Transition	Available
M13P3R3	F/A-18 WSO Refresher	Available
M13P3S3	F/A-18 WSO Modified Refresher	Available

**Table I-3. F-14 Operator Courses**

<b>COURSE NUMBER</b>	<b>COURSE TITLE</b>	<b>RFT DATE</b>
D-2A-1601	F-14 Fleet Replacement Pilot Category 1	Available
D-2A-1602	F-14 Fleet Replacement Pilot Category 2	Available
D-2A-1603	F-14 Fleet Replacement Pilot Category 3	Available
D-2A-1604	F-14 Fleet Replacement Pilot Category 4	Available
D-2A-1605	F-14 Fleet Replacement Pilot Category 5	Available
D-2D-1601	F-14 Naval Flight Officer (NFO) Category 1	Available
D-2D-1602	F-14 Naval Flight Officer (NFO) Category 2	Available
D-2D-1603	F-14 Naval Flight Officer (NFO) Category 3	Available
D-2D-1604	F-14 Naval Flight Officer (NFO) Category 4	Available
D-2D-1605	F-14 Naval Flight Officer (NFO) Category 5	Available

**Table I-4. AV-8B Operator Courses**

<b>COURSE NUMBER</b>	<b>COURSE TITLE</b>	<b>RFT DATE</b>
M04P4H4	AV-8B Fleet Replacement Pilot Basic and Transition	Available
M04P4Q4	AV-8B Fleet Replacement Pilot Refresher	Available
M04P4R4	AV-8B Fleet Replacement Pilot Modified Refresher	Available

**(2) Initial Skills - Maintenance.** The Aviation Ordnanceman (AO) “A1” School at NAS Pensacola, Florida provides JDAM initial skills training for the AO rating.

**(a) Training Devices**

• **Joint Direct Attack Munitions Load Drill Trainer.**

The JDAM LDT is physically representative of the JDAM. It is a Training Device that facilitates instruction and familiarization for organizational and intermediate level maintenance personnel in JDAM assembly, disassembly, loading, transportation, and stowage procedures and techniques. All components are training items (completely inert). The LDT is used for training purposes and is not certified for flight. The KMU-556(D-2)/B, KMU-558(D-2)/B, KMU-559(D-2)/B, and KMU-572(D-2)/B are required. For detailed information on LDT description refer to element I.G.2.b.(1). For detailed information on LDT requirements, refer to element IV.A.2.

• **Joint Programmable Fuze Inert Load Trainer.**

The JPF ILT facilitates familiarization and procedural training for the JPF. The JPF ILT is certified inert. For detailed information on JPF ILT description refer to element I.G.2.b.(3). For detailed information on JPF ILT requirements, refer to element IV.A.2.

**(b) Technical Training Equipment**

• **CNU-589/E and CNU-589A/E.**

Technical Training Equipment (TTE) required is the CNU-589/E and CNU-589A/E Containers. JDAM containers are required to teach AO personnel packing/unpacking procedures and container maintenance. For detailed information on the CNU-589/E and CNU-589A/E description refer to element I.G.4.d. For detailed information on CNU-589 requirements, refer to element IV.A.1.

**(c) Courses.**

The addition of JDAM did not affect the training course length at the AO A1 School, and therefore there were no changes in student throughput or chargeable student billets. JDAM was incorporated into these courses in October 2001. Updates to include GBU-38/B will be similarly incorporated. These courses are listed for reference only and will not appear in Parts II and III of this document.

**Table I-5. Initial Skills - Maintenance Courses**

<b>COURSE NUMBER</b>	<b>COURSE TITLE</b>	<b>RFT DATE FOR JDAM</b>
C-646-2011	Aviation Ordnanceman Class A1 Common Core	Available
C-646-2012	Aviation Ordnanceman Class A1 Navy Difference Training	Available

**(3) Organizational-Level Maintenance.** Organizational level maintenance personnel are trained at the appropriate aircraft platform school. SFWSL/SFWSP provides weapons loading and launcher release and control checks training for F/A-18. CNATT MTU provides weapons loading and launcher release and control checks for F-14. VMAT-203 provides weapons loading and launcher release and control checks for AV-8. Weapon loading skills for F-14 are further enhanced through SWATSLANT on-board proficiency training.

**(a) Training Devices**

• **Joint Direct Attack Munitions Load Drill Trainer.**

The JDAM LDT is used for Weapons inspection, Loading/Unloading, Arm and De-Arm procedures. The KMU-556(D-2)/B, KMU-558(D-2)/B, KMU-559(D-2)/B, and KMU-572(D-2)/B are required. For detailed information on LDT description refer to element I.G.2.b.(1). For detailed information on LDT requirements, refer to element IV.A.2.

• **Joint Programmable Fuze Inert Load Trainer.**

The JPF ILT facilitates familiarization and procedural training for the JPF. The JPF ILT is certified inert. For detailed information on JPF ILT description refer to element I.G.2.b.(3). For detailed information on JPF ILT requirements, refer to element IV.A.2.

**(b) Courses.** JDAM is taught in the following organizational level maintenance training courses. The incorporation of JDAM did not affect the maintenance, release and control checks, or conventional weapons loading at organizational level maintenance activities. Associated training course content and course lengths were not affected, and therefore there were no changes in student throughput or chargeable student billets. Updates to include GBU-38/B will be similarly incorporated. These courses are listed for reference only and do not appear in Parts II and III of this document. See AV-8, F-14, and F/A-18 NTSPs for course details. Refer to element I.M for information on these related NTSPs. Organizational level maintenance courses are listed in the following table.

**TABLE I-6. Organizational Level Maintenance Courses**

<b>COURSE NUMBER</b>	<b>COURSE TITLE</b>	<b>RFT DATE FOR JDAM</b>
C-646-3893	AV-8B Conventional Weapons Loading	Available
C-646-9962	F-14 Armament Systems Organizational Maintenance (Initial)	Available
D/E-646-0640	F/A-18 Conventional Weapons Loading	Available
D/E-646-0647	F/A-18 Conventional Release Systems Test	Available

**(4) Intermediate-Level Maintenance.** Intermediate-level maintenance training is available for USN and USMC AOs through CNATT MTUs.

**(a) Training Devices**

• **Joint Direct Attack Munitions Load Drill Trainer.**

The JDAM LDT is used to train intermediate level maintenance personnel in Receiving Inspection, Storage and Handling, Packaging / Unpacking, Cleaning, Paint Touch-Up, Replacement of Specified Components, and BIT/Re-Programming procedures. The KMU-556(D-2)/B, KMU-558(D-2)/B, KMU-559(D-2)/B, and KMU-572(D-2)/B are required. For detailed information on LDT description refer to element I.G.2.b.(1). For detailed information on LDT requirements, refer to element IV.A.2.

• **Joint Programmable Fuze Inert Load Trainer.**

The JPF ILT facilitates familiarization and procedural training for the JPF. The JPF ILT is certified inert. For detailed information on JPF ILT description refer to element I.G.2.b.(3). For detailed information on JPF ILT requirements, refer to element IV.A.2.

**(b) Technical Training Equipment**

• **CNU-589/E, CNU-589A/E Container.**

The JDAM container is required to teach and practice unpacking/packing evolutions, as well as, container maintenance. For detailed information on the CNU-589 description refer to element I.G.4.d. For detailed information on CNU-589 requirements, refer to element IV.A.1.

• **Common Munitions Bit Reprogrammable Equipment**

**(AN/GYQ-79).** A properly configured CMBRE is required to teach and practice IBIT/Reprogramming procedures to intermediate level personnel. For detailed information on the CMBRE description refer to element I.G.4.e. For detailed information on CMBRE requirements, refer to element IV.A.1.

• **Mobile Power Conditioning Unit.**

The MPCU converts 60 Hz, single-phase power (Standard wall outlet) into the 400 Hz, 3-phase power that is required

to operate CMBRE. The MPCU is required where 400 Hz, 3-phase power is not available. For detailed information on the MPCU description refer to element I.G.4.e.(1). For detailed information on MPCU requirements, refer to element IV.A.1.

• **Joint Direct Attack Munitions, Munitions Application**

**Program.** The JDAM MAP software resides on a PCMCIA card and is required to operate CMBRE with JDAM. A second PCMCIA card is required to download logistics files from JDAM. For detailed information on the JDAM MAP description refer to element I.G.4.e.(2). For detailed information on JDAM MAP requirements, refer to element IV.A.1.

**(c) Training Aids.**

• **Joint Direct Attack Munitions Intermediate**

**Maintenance Training Interactive Courseware.** The JDAM Program Office PMA 201, in conjunction with the Aviation Training Systems Program Office PMA 205, developed the JDAM Intermediate Maintenance Training ICW. Version 1.0 was released in July 2003 and has since been distributed to Intermediate-level maintenance activities that perform JDAM Weapons Department tasks. The ICW is distributed on CD-ROM to facilitate use aboard ship and at forward-deployed sites. The ICW is in modular format, in anticipation of Reusable Learning Object standards and is capable of being ported to web-based delivery and made Shareable Content Object Reference Model (SCORM) compliant. For detailed information on JDAM MAP requirements, refer to element IV.B.2.

**(d) Courses.** The incorporation of JDAM did not affect the intermediate level maintenance training course length. Updates to include GBU-38/B will be similarly incorporated. JDAM is taught in the following intermediate level maintenance training courses.

**Table I-7. Intermediate-Level Maintenance Courses**

<b>COURSE NUMBER</b>	<b>COURSE TITLE</b>	<b>RFT DATE FOR JDAM</b>
C-646-3113	Precision Guided Weapons Intermediate Maintenance	Available
C-646-3105	Aviation Ordnance Intermediate Maintenance Technician	Available
C-646-4108	Weapons Department General Aviation Ordnance Supervisor	Available
C-646-4109	Weapons Department General Aviation Ordnance	Available

Detailed information for each of the courses listed in Table I-7 follows.

<b>Title .....</b>	<b>Precision Guided Weapons Intermediate Maintenance</b>
CIN .....	C-646-3113 (part of D/E-646-7007)
Model Manager.	MTU 4035, NAMTRAU, NAS Whidbey Island, Wa.
Description.....	<p>This course covers:</p> <ol style="list-style-type: none"> <li>1. Introduction to Publications, Safety, Handling Shipping and Storage</li> <li>2. Paveway II/III and Laser Guided Training Round (LGTR)</li> <li>3. Joint Direct Attack Munitions (JDAM)</li> </ol> <p>Upon completion of this course, Aviation Ordnancemen will have acquired sufficient skills and knowledge of the Paveway II/III (Series) Guided Bomb Units, Laser Guided Training Rounds and Joint Direct Attack Munitions to correctly identify safety policies and procedures, components used for proper configuration, shipping/storage containers and support equipment needed to perform, as an Ordnance Assembly Crew Member, component unpacking, inspection, preparation and maintenance procedures to assemble and disassemble guided weapons in accordance with applicable Airborne Weapons Assembly Manual, while working in bomb assembly areas afloat and ashore.</p>
Locations .....	<p>MTU 4030, NAMTRAGRU DET, Naval Station (NS) Mayport            MTU 4032, NAMTRAU, NAS Norfolk            MTU 4033, NAMTRAU, NAS North Island            MTU 4035, NAMTRAU, NAS Whidbey Island</p>
Length.....	5 days
RFT date .....	Currently available
Skill identifier...	AO 6801
TD/TTE .....	KMU-556(D-2)/B, KMU-558(D-2)/B, KMU-559(D-2)/B, KMU-572(D-2)/B, JPF ILT, CNU-589/E, CNU-589A/E, AN/GYQ-79, MPCU, JDAM MAP
Prerequisite .....	C-646-2011 Aviation Ordnanceman Common Core Class A1

**Title .....** **Aviation Ordnance Intermediate Maintenance Technician**

**CIN .....** C-646-3105 (part of M-646-7026)

**Model Manager..** MTU 4034 MCAS Cherry Point, North Carolina

**Description.....** This course provides training to the USMC ordnanceman, including:

- Basic theory
- Safety precautions
- Technical publications
- Missile/launcher reporting procedures

Upon completion, the student will have sufficient knowledge/theory to be able to work on ordnance/armament in the MALS environment.

**Locations .....** MTU-4034, NAMTRAU, MCAS Cherry Point, North Carolina

**Length.....** 81 days

**RFT date .....** Currently available

**Skill identifier ...** MOS 6541

**TD.....** KMU-556(D-2)/B, KMU-558(D-2)/B, KMU-559(D-2)/B, KMU-572(D-2)/B, JPF ILT, CNU-589/E, CNU-589A/E, AN/GYQ-79, MPCU, JDAM MAP, BRU-32, BRU-55, A/E37T-35

**Prerequisite .....** C-646-2011 Aviation Ordnanceman Common Core Class A1

<b>Title .....</b>	<b>Air Launched Weapons Ordnance Supervisor Course</b>
CIN .....	C-646-4108 (part of D/E-646-7007)
Model Manager..	MTU 4032 NAMTRAU Norfolk
Description.....	<p>This course provides training to the USN ordnanceman, including:</p> <ul style="list-style-type: none"> <li>• Introduction to Weapons Department Administration</li> <li>• Introduction to IRRS, Magazines and Armament/Weapons</li> <li>• Support Equipment</li> <li>• Air Launched Weapons Configurations and Equipment</li> <li>• Introduction to Rockets, Cluster Bombs, Mines and Sound</li> <li>• Underwater Signals</li> <li>• Introduction to Pyrotechnics, Linkless Ammunition Loading</li> <li>• System (LALS) and Missiles</li> </ul> <p>Upon completion of this course, officers and senior enlisted personnel will have sufficient knowledge of NAS, CV/CVN and Amphibious Aviation Ordnance administration and the Improved Rearing Rate System (IRRS), including all conventional munitions, associated equipment, magazines, handling procedures and related safety precautions to perform as supervisors on a NAS, CV/CVN or Amphibious Weapons Department.</p>
Locations .....	<p>MTU 4030, NAMTRAGRU DET, NS Mayport            MTU 4032, NAMTRAU, NAS Norfolk            MTU 4033, NAMTRAU, NAS North Island            MTU 4035, NAMTRAU, NAS Whidbey Island</p>
Length.....	17 Days
RFT date .....	Currently available
Skill identifier...	6801
TD/TTE .....	KMU-556(D-2)/B, KMU-558(D-2)/B, KMU-559(D-2)/B, KMU-572(D-2)/B, JPF ILT, CNU-589/E, CNU-589A/E, AN/GYQ-79, MPCU, JDAM MAP
Prerequisite .....	C-646-2011 Aviation Ordnanceman Common Core Class A1 OR EQUIVALENT FLEET EXPERIENCE

<b>Title .....</b>	<b>Weapons Department General Aviation Ordnance</b>
CIN .....	C-646-4109 (stand-alone course)
Model Manager..	MTU 4033, NAMTRAU NAS North Island
Description.....	<p>This course provides training to the first tour Aviation Ordnanceman, Gunner's Mates and Torpedoman's Mates, including:</p> <ul style="list-style-type: none"> <li>• Basic theory</li> <li>• Safety precautions</li> <li>• Technical publications</li> <li>• Missile reporting procedures</li> <li>• Introduction to Weapons Department, Ammunition Magazines, Shoring, Stowage and Handling Equipment</li> <li>• Introduction to Air Launched Weapons</li> </ul> <p>The course content will include the following Units of Instruction:</p> <ol style="list-style-type: none"> <li>1. Introduction to Weapons Department, Ammunition Magazines, Shoring, Stowage and Handling Equipment</li> <li>2. Introduction to Air Launched Weapons</li> </ol> <p>Upon completion of this course, the Aviation Ordnanceman assigned to Shipboard, Shoreboard, and Shore Combatant Weapons Departments as conventional weapons handlers, will have the sufficient knowledge and skills of procedures and safety requirements for receiving, transferring and storing conventional weapons, assembly and disassembly of bombs and rockets, loading and unloading flare and rocket launchers and the linkless ammunition loading system, and the canning and decanning of miscellaneous ordnance, in accordance with applicable publications, while working under minimum supervision in a shipboard or shore environment.</p>
Locations .....	<p>MTU 4030, NAMTRAGRU DET, NS Mayport            MTU 4032, NAMTRAU, NAS Norfolk            MTU 4033, NAMTRAU, NAS North Island            MTU 4035, NAMTRAU, NAS Whidbey Island</p>
Length.....	10 days
RFT date .....	Currently Available
Skill identifier ...	Not Applicable (NA)
TD.....	KMU-556(D-2)/B, KMU-558(D-2)/B, KMU-559(D-2)/B, KMU-572(D-2)/B, JPF ILT, CNU-589/E, CNU-589A/E, AN/GYQ-79, MPCU, JDAM MAP
Prerequisite .....	C-646-2011 Aviation Ordnanceman Common Core Class A1

**(5) Explosive Ordnance Disposal Training.** EOD training is conducted at the Naval Explosive Ordnance Disposal School (NAVSCOLEOD) at Eglin Air Force Base, Florida. Additional advanced and specialized EOD training is provided by EOD Technical Evaluation Units (EODTEUs) at Fort Story, Virginia and San Diego, California.

**(a) Training Devices.** The training device required for EOD training is the PEST.

- **Practical EOD System Trainer.** A PEST is a full-scale model of the JDAM assembly, containing inert versions of all explosive train components. The PEST possesses the same weight and center of gravity characteristics as the tactical JDAM. The PEST is used to teach and practice the missile’s RSP. It is used in the identification line, the outdoor practice area, and the outdoor test area. The JDAM Guidance Set is classified as an INERT item; therefore there are no RSPs for the JDAM Guidance Set itself. However the PEST is provided to allow recognition of JDAM GBU variants. For detailed information on the PEST description refer to element I.G.2.b.(2). For detailed information on PEST requirements, refer to element IV.A.2.

- **Joint Programmable Fuze Inert Load Trainer.** The JPF ILT facilitates familiarization and procedural training for the JPF. The JPF ILT is certified inert. For detailed information on JPF ILT description refer to element I.G.2.b.(3). For detailed information on JPF ILT requirements, refer to element IV.A.2.

**(b) Courses.** JDAM is taught in the following EOD training courses. JDAM training material did not change student throughput or chargeable student billets, and, therefore, these courses do not appear in Parts II and III. Updates to include GBU-38/B and HART will be similarly incorporated.

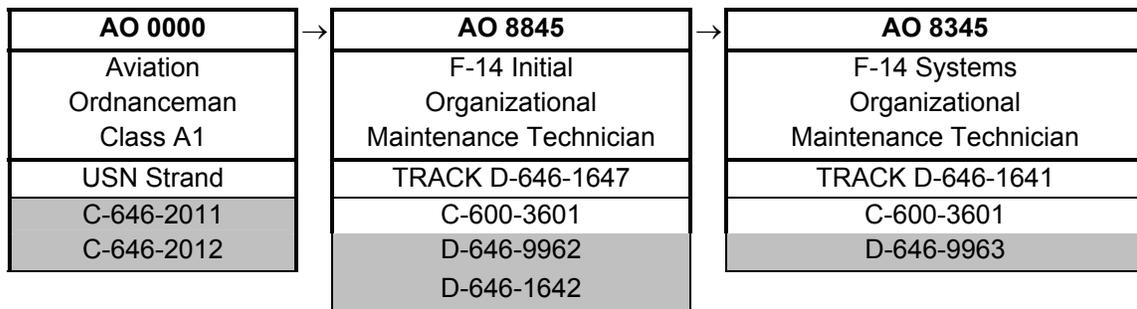
**Table I-8. EOD Courses**

<b>COURSE NUMBER</b>	<b>COURSE TITLE</b>	<b>RFT DATE FOR JDAM</b>
A-431-0011	Explosive Ordnance Disposal (EOD) Phase II (Navy)	Available
A-431-0012	Explosive Ordnance Disposal (EOD) Phase II	Available
G-431-0001	EOD Pre-deployment Team Training	Available

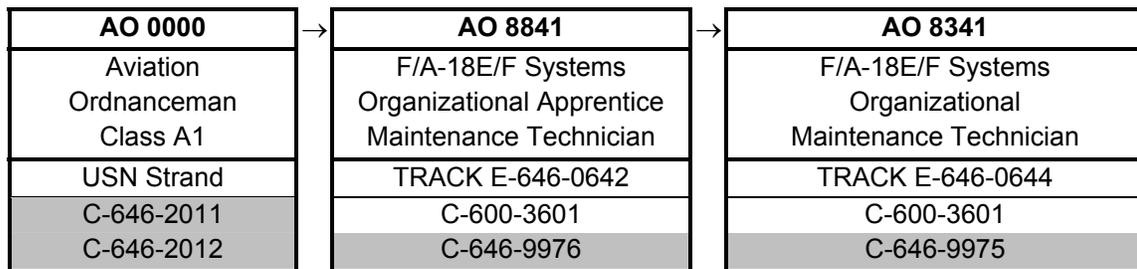
**c. Student Profiles.** The following lists the enlisted manpower and personnel classifications required to support JDAM. In many instances, AO personnel who will support JDAM will not possess the component NEC because they attained their primary NEC prior to the recent A School and C School changes. See Figure I-2 through I-8 for more information.

<b>RATING and NEC or MOS</b>	<b>TITLE</b>	<b>COMPONENT NEC or MOS</b>
AO 8841	F/A-18E/F System Organizational Apprentice Maintenance Technician	AO 0000
AO 8341	F/A-18E/F System Organizational Maintenance Technician	AO 8841
AO 8842	F/A-18 Armament System Organizational Apprentice Maintenance Technician	AO 0000
AO 8342	F/A-18 System Organizational Maintenance Technician	AO 8842
AO 8845	F-14 Initial Organizational Maintenance Technician	AO 0000
AO 8345	F-14 System Organizational Maintenance Technician	AO 8845
MOS 6531	Aircraft Ordnance Technician (AV-8)	MOS 6511
MOS 6531	Aircraft Ordnance Technician (F/A-18)	MOS 6511
MOS 6541	Aviation Ordnance Intermediate Maintenance Technician	MOS 6511
AO 6801	Air Launched Weapons Technician	AO 0000
AO 6802	Strike/Armament Intermediate Repair	AO 0000

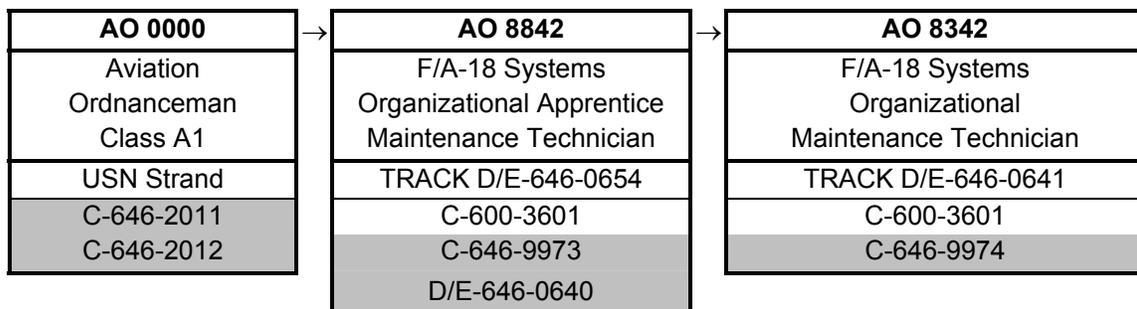
**d. Training Pipelines.** New training tracks were not required for JDAM. The following training pipelines and tracks correspond to student profiles listed above. These pipelines and tracks are based on the training system that is in place today, and may not reflect actual progressions for personnel who completed formal training prior to the recent A School and C School changes. Shaded courses contain JDAM content. Introduction of the JDAM did not affect any organizational or intermediate level maintenance functions. Training tracks and associated courses are available in the OPNAV Aviation Training Management System (OATMS). The following training tracks apply and are available in the OATMS.



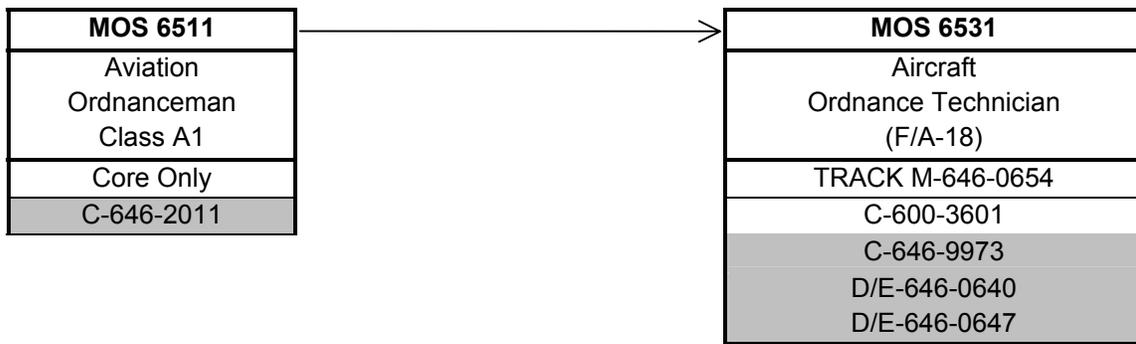
**Figure I-2** F-14 Systems Organizational Maintenance Technician Career Progression



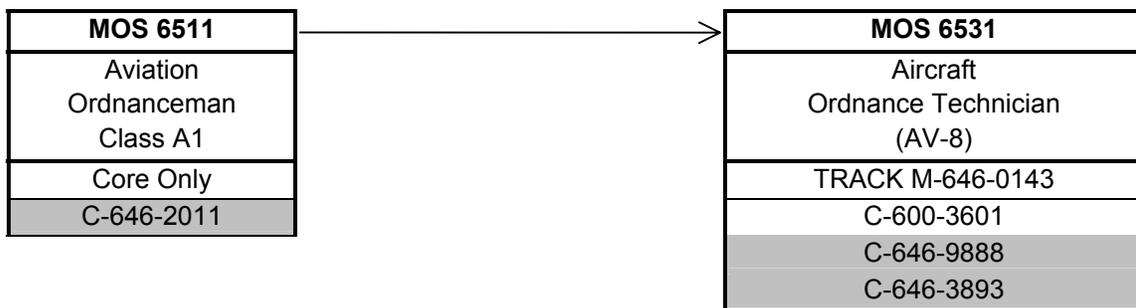
**Figure I-3** USN F/A-18E/F Systems Organizational Maintenance Technician Career Progression



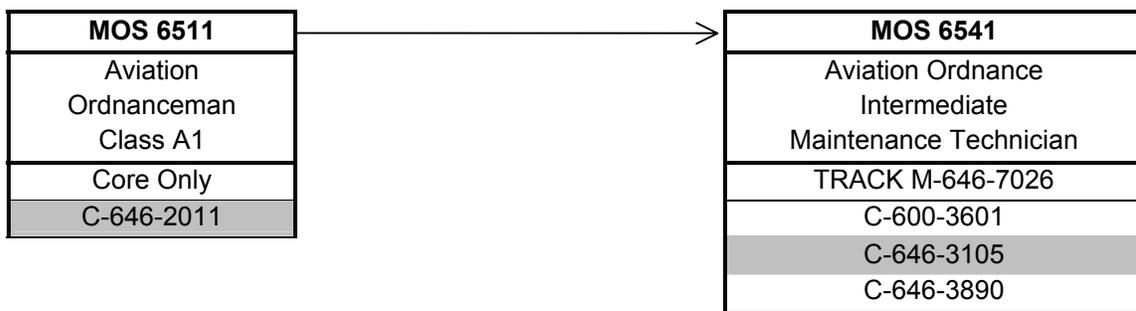
**Figure I-4** USN F/A-18 Systems Organizational Maintenance Technician Career Progression



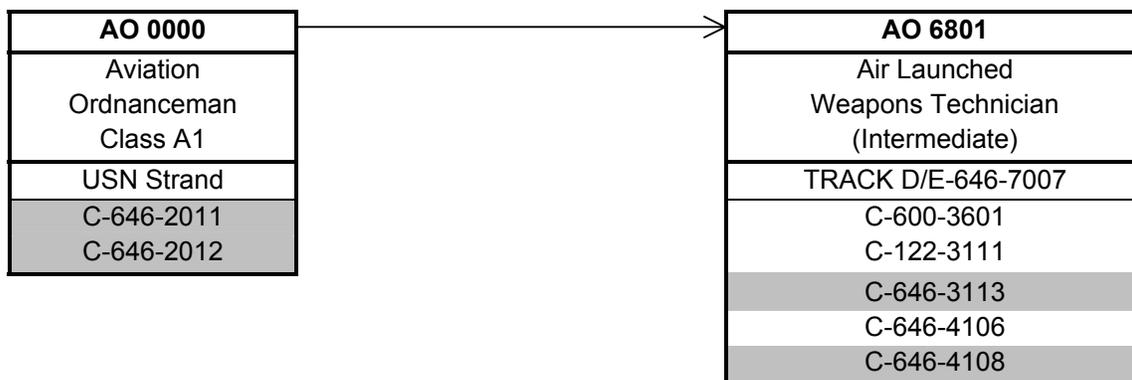
**Figure I-5** USMC F/A-18 Aircraft Ordnance Technician Career Progression



**Figure I-6** AV-8 Aircraft Ordnance Technician Career Progression



**Figure I-7** Aviation Ordnance Intermediate Maintenance Technician Career Progression



**Figure I-8** Air Launched Weapons Technician Career Progression



**Figure I-9** Strike Intermediate Armament Maintenance Career Progression

**e. Training Effectiveness Evaluations.** An individual Training Effectiveness Evaluation (TEE) plan is not required for JDAM courses. For air-launched weapons, the TEE is addressed by each user community as follows:

**(1) Aircrew/pilot Training.** The Strike Fighter Training Program (SFTP) (see paragraph I.1.c) drives training and readiness for aircrew/pilot weapons employment. Within this program, various means are used to evaluate training effectiveness including events from the Training & Readiness (T&R) matrix. These events include JDAM employment, both onboard embedded simulation and live fire, and are used to evaluate the combat readiness of aircrew, squadron and air wing. See the SFTP NTSP, N88-NTSP-A-50-9906, for more information. The training effectiveness of JDAM employment is further evaluated during Fleet and Joint-Service exercises, e.g., Marine Corps Combat Readiness Evaluation (see paragraph I.3.c), Joint Training Exercise (JTX), etc. Ultimately, when significant training deficiencies are identified, they are communicated at the annual Naval Aviation Training Systems Advisory Group (NATSAG) meetings and prioritized.

**(2) Squadron/Organizational-level Maintenance.** AOs at the organizational-level use several training effectiveness tools. The first tool is the Conventional Weapon Technical Proficiency Inspection (CWTPI) (see paragraph I.3.b). These inspections evaluate how well the individual, load crew, and squadron performs weapon loading. The second tool is the Explosive Handling Qualification and Certification Program (see paragraph I.3.d). The program is implemented to minimize the probability of mishap. The potential for personnel errors are controlled through training (qualification) coupled with a management

process designed to prevent inadequately trained personnel from performing ammunition and explosives jobs/tasks (certification). Ultimately, the Maintenance Training Improvement Program (MTIP) (see paragraph I.1.a), Marine Aviation Training Management Evaluation Program (MATMEP) (see paragraph I.3.a), and Aviation Maintenance Training Continuum System (AMTCS) (see paragraph I.1.b) are used to collect data and identify training deficiencies.

**(3) Weapons Department/Intermediate-level Maintenance.** AOs at the intermediate-level use several training effectiveness tools. The first tool is the Explosive Handling Qualification and Certification Program (see paragraph I.3.d). The program is implemented to minimize the probability of mishap. The potential for personnel errors are controlled through training (qualification) coupled with a management process designed to prevent inadequately trained personnel from performing ammunition and explosives jobs/tasks (certification). Ultimately, the Aviation Maintenance Training Continuum System (AMTCS) (see paragraph I.1.b) is used to collect data and identify training deficiencies. Additionally, courses go through an annual Formal Course Review (FCR) and are further improved via the Training Feedback System.

## I. ON-BOARD (IN-SERVICE) TRAINING

### 1. Proficiency or Other Training Organic to the New Development

**a. Maintenance Training Improvement Program.** The Maintenance Training Improvement Program (MTIP) is used to establish an effective and efficient training system responsive to fleet training requirements. MTIP is a training management tool that, through diagnostic testing, identifies individual training deficiencies at the organizational and intermediate levels of maintenance. MTIP is the comprehensive testing of one's knowledge. It consists of a bank of test questions managed through automated data processing. The Deputy Chief of Staff for Training assisted in development of MTIP by providing those question banks (software) already developed by the Navy. MTIP was implemented per OPNAVINST 4790.2 series. MTIP allows increased effectiveness in the application of training resources through identification of skills and knowledge deficiencies at the activity, work center, or individual technician level. Refresher training is concentrated where needed to improve identified skill and knowledge shortfalls. The Aviation Maintenance Training Continuum System (AMTCS) will replace MTIP.

**b. Aviation Maintenance Training Continuum System.** AMTCS will provide career path training to the Sailor or Marine from their initial service entry to the end of their military career. AMTCS is planned to be an integrated system that will satisfy the training and administrative requirements of both the individual and the organization. The benefits will be manifested in the increased effectiveness of the technicians and the increased efficiencies of the management of the training business process. Where appropriate, capitalizing on technological advances and integrating systems and processes can provide the right amount of training at the right time, thus meeting the CNO's mandated "just-in-time" training approach.

Technology investments enable the development of several state-of-the-art training and administrative tools: Computer Based Training (CBT) for the technicians in the Fleet in the form of Interactive Courseware (ICW) with Computer Managed Instruction (CMI) and Computer Aided Instruction (CAI) for the schoolhouse.

Included in the AMTCS development effort is the Aviation Maintenance Training Continuum System - Software Module (ASM), which provides testing [Test and Evaluation (TEV)], recording [Electronic Training Jacket (ETJ)], and a Feedback system. The core functionality of these AMTCS tools are based and designed around the actual maintenance-related tasks the technicians perform, and the tasks are stored and maintained in a Master Task List (MTL) data bank. These tools are procured and fielded with appropriate Commercial Off The Shelf (COTS) hardware and software, i.e., Fleet Training Devices (FTD) - Laptops, PCs, Electronic Classrooms (ECR), Learning Resource Centers (LRC), operating software, and network software and hardware.

Upon receipt of direction from OPNAV (N789H), AMTCS is to be implemented and the new tools integrated into the daily training environment of all participating aviation activities and supporting elements. AMTCS will serve as the standard training system for aviation maintenance training within the Navy and Marine Corps, and is planned to supersede the existing MTIP and Maintenance Training Management and Evaluation Program (MATMEP) programs.

The Ammunition and Explosive Handling Qualification and Certification (QUAL/CERT) Program requires periodic, local QUAL/CERT events to be documented in a QUAL/CERT Record. These QUAL/CERT Records will be maintained physically at the local activity, but will be entered electronically into the ETJ for tracking purposes.

**c. Strike Fighter Training Program.** NSAWC, which includes Topgun (N7), SFWSL, SFWSP, and the SWATSLANT, is developing post-FRS training at the squadron level for Navy Strike Fighter aircraft (F-14 and F/A-18). This post-FRS training continuum is known as the Strike Fighter Training Program (SFTP), and is composed of three equally critical elements: The Strike Fighter Weapons & Tactics (SFWT) curricula, the Strike Fighter Training Instructor (SFTI), and the Strike Fighter Training System (SFTS). The SFWT curricula will be taught by each squadron's SFTI, who will be supported by the SFTS, a multimedia computer-based training system that will host CMI, CAI, CBT, and ICW. Aircrew weapons proficiency training will continue to be accomplished using existing methods: Academic, Simulator (Tactical Operational Flight Trainer (TOFT) Weapon Tactics Trainer (WTT), Weapon Systems Trainer (WST) and/or embedded aircraft simulation, and NCEA; but capability ratings will be performance-based rather than completion-based, i.e., it will not be based simply upon completing the training events, but upon how well they are completed. Training events will be measured using defined metrics, and collectively these events will be evaluated to determine actual combat readiness, quantitatively (objectively) rather than qualitatively (subjectively). See the SFTP NTSP, N88-NTSP-A-50-9906, for more information.

## **2. Personnel Qualification Standards. NA**

## **3. Other On-Board or In-service Training Packages.**

**a. Marine Aviation Training Management Evaluation Program.** Marine Corps on-board training is based on the current series of Marine Corps Order (MCO) P4790.12, Individual Training Standards System, and MATMEP. This program is designed to meet Marine Corps, as well as Navy OPNAVINST 4790.2 (series) maintenance training requirements. It is a performance-based, standardized, level-progressive training management and evaluation program. It identifies and prioritizes task inventories by MOS through a front-end analysis process that identifies task, skill, and knowledge requirements of each MOS. MTIP questions coupled to MATMEP tasks will help identify training deficiencies that can be addressed with remedial training. (AMTCS is planned to replace MATMEP.)

**b. Conventional Weapon Technical Proficiency Inspection.** The Conventional Weapons Technical Proficiency Inspection (CWTPI) is a graded inspection administered by Strike Fighter Wing (STRKFTRWING). It is governed by the policy and procedures established by each Type Commander (TYCOM). The inspection team is made up of SFWS instructors under the direction of the Wing Ordnance Officer. The CWTPI covers all areas of conventional weapon load and release, and control systems checks. The inspection evaluates the squadron's ability to wire-check, upload and download conventional ordnance correctly, use applicable publications, and place ordnance on its designated target. The squadron inspection is conducted annually, six months prior to deployment, or at the request of the squadron's Commanding Officer. All personnel, including squadron pilots, directly involved in the inspection, require a written examination. A 72-hour time limit is granted for the completion of the entire evolution. The final grade is an average score derived from the written exams, ordnance loads, wire checks, and the pilot's proficiency to deliver weapons on target. Pre-inspection training is provided by the appropriate SFWS followed by the CWTPI. The CWTPI determines the need for further conventional weapons load training of squadron AO and Aviation Electronics Technician (AT) personnel at the appropriate SFWS.

**c. Marine Corps Combat Readiness Evaluation.** Marine Corps Headquarters schedules the USMC fighter and attack wings for a yearly Combat Readiness Evaluation. This is part of the Marine Corps Combat Readiness Evaluation System. An entire Marine Corps activity is moved to another location to participate in war exercises and to be evaluated. Training is an on-going Marine Corps evolution that culminates with the Combat Readiness Evaluation. The evaluation determines the need for further conventional weapons load training of squadron personnel.

**d. Explosive Handling Qualification and Certification Program.** OPNAVINST 8020.14 and MCO P8020.11 implement the Ammunition and Explosive Handling QUAL/CERT Program. To minimize the probability of mishap, the potential for personnel errors are controlled through training (qualification) coupled with a management process designed to prevent inadequately trained personnel from performing ammunition and explosives jobs/tasks (certification). Aviation Ordnancemen are required to perform periodic, local QUAL/CERT events in order to be authorized to handle ordnance. Results of these QUAL/CERT events are documented in a hardcopy QUAL/CERT Record and kept on file by the local activity.

## J. LOGISTICS SUPPORT

**1. Manufacturer/Contract Numbers.** The Boeing Company EMD Contract, F08626-94-C-0003, was awarded 11 October 1995. Since that time, four LRIP Lots have been exercised against that contract. An MS III decision for the GBU-31(V)2/B was granted on 23 March 2001 and a Full-Rate Production (FRP) contract was awarded shortly thereafter.

**2. Program Documentation.** The JDAM ORD, document number CAF/UAN-401-91-I-A, sets forth user requirements for the JDAM program. The latest approved JDAM ORD is dated 10 March 2001. The JDAM Single Acquisition Management Plan (SAMP) contains all essential programmatic information and is the primary document for Defense Acquisition Board (DAB) milestone decisions. The latest approved JDAM SAMP is dated April 2002. The JDAM TEMP contains the details for joint service test and evaluation for JDAM configurations. The latest approved TEMP is dated 14 November 2002. The JDAM Joint Integrated Logistic Support Plan (JILSP) contains essential joint service logistics management and technical information for JDAM configurations. The latest approved JDAM JILSP (Revision B) is dated May 2002.

**3. Technical Data Plan.** The Air Force Technical Order Management Agency (TOMA) for the JDAM Program is ASC/YU at Eglin Air Force Base, FL. Under the pilot plan concept, the TOMA will be part of the Joint Integrated Logistic Support (JILS) IPT. The IPT is composed of Air Force, Navy/Marine Corps, and Contractor personnel and will jointly be responsible for development of required technical data to support Air Force, Navy, and Marine operations. There will be no Navy unique technical data for JPF. The Navy will use Air Force procured technical orders and source data to update existing Navy manuals as required. A Naval Air Technical Engineering Center (NATEC) representative will be part of the IPT to ensure Navy technical manual requirements are met. Current philosophy is:

- To develop Joint Technical Orders/Technical Manuals where possible.
- To incorporate Technical Data Planning into the JILSP and eliminate the need for duplicate planning documents.

**4. Test Sets, Tools, and Test Equipment.** JDAM was designed and developed with the objective to not introduce any peculiar support equipment, tools, test sets, or test equipment requirements. No peculiar support equipment, tools, test sets, or test equipment are required for JDAM. The development of JDAM ran in parallel with the development of CMBRE, which was being developed, as its name implies, to facilitate BIT and reprogramming for a variety of air launched munitions and guided missiles. JDAM requires CMBRE for off-aircraft BIT and reprogramming. A software interface written specifically for JDAM, the JDAM MAP, is required to operate CMBRE with JDAM. For detailed information on the CMBRE and JDAM MAP refer to element I.G.4.e. For detailed information on CMBRE and JDAM MAP requirements, refer to element IV.A.1.

**5. Repair Parts.** Repair and replacement parts for tactical and trainer Guidance Sets are listed in NAVAIR 11-140-10, Section V. Source, Maintenance and Recoverability codes are

provided for these items, as well as, part numbers and other significant information in 11-5A-37 WP 998 00.

**6. Human Systems Integration.** Human Systems Integration (HSI) elements include manpower, personnel, training, habitability, personnel survivability, health, safety, environmental, and human factors. This NTSP addresses manpower, personnel, and training in detail. Habitability is not an applicable HSI element for JDAM; however, the remaining HSI elements are addressed in the following paragraphs.

**a. Personnel Survivability.** Air-launched missile systems generally affect personnel survivability in two broad categories: handling (ordnance personnel) and employment (aircrew).

**(1) Handling.** JDAM uses existing FMU-139 and FMU-143 fuzes, existing DSU-33B/B proximity sensor, existing MK 122 Mod 0 arming switch, and FZU-32B/B and FZU-48/B initiators. JDAM will also be compatible with the FMU-152/B JPF, which is still in development. These fuzes, sensors, switches, and initiators are used in the build-up of other Precision Guided Munitions as well as conventional free-fall bomb configurations. They have been in use long enough to demonstrate safe operation. Additionally, JDAM uses existing bombs (MK 82, MK 83, MK 84, BLU-109, BLU-110, BLU-111, and BLU-117) that have a protective thermal coating for added safety aboard ship.

**(2) Employment.** The primary concern for survivability during JDAM employment involves potential fratricide. Because JDAM is a bomb-on-coordinates weapon, it can be employed without visual identification or designation of the target. Theater commanders must consider this when addressing rules of engagement. To prevent fratricide of ground troops, especially where there are troops in close combat, target positions must be verified before being passed to aircrews, either for preplanned missions or in-flight retargeting.

Another concern when employing JDAM is when it is within a global positioning system (GPS) jamming environment. In this condition, the host platform may not be able to provide a "GPS quality hand-off" from the aircraft. If this occurs, the aircraft may not release the weapon, which will result in degraded mission effectiveness. Procedures for hung missiles are in place, as well as emergency jettison procedures.

**b. Health.** Health factors generated by missiles are generally categorized into direct-contact health hazards, e.g., solvents, lubricants, etc., and proximity health hazardous material, e.g., heavy metals, irradiated metals, etc. The JDAM program has minimized the number of direct-contact health hazards for maintenance personnel, and these hazards are readily identified in the loading and maintenance manuals. JDAM does not contain any proximity health hazardous materials.

**c. Safety.** Air-launched missile systems generally affect safety in two broad categories: handling (ordnance personnel) and employment (aircrew).

**(1) Handling.** There are no special hazards involved with handling or storing JDAM. During handling operations, general ordnance safety standards (NAVSEA OP 4 OP5, OP 2165 and OP 3347 and OPNAVINST 8023.3) are employed. Inspections have been designed to detect potential problems and resolve them. JDAM uses existing FMU-139 and FMU-143 fuzes, existing DSU-33B/B proximity sensor, existing MK 122 Mod 0 arming switch, and FZU-32B/B and FZU-48/B initiators. JDAM will also be compatible with the FMU-152/B JPF, which is still in development. These fuzes, sensors, switches, and initiators are used in the build-up of other Precision Guided Munitions as well as conventional free-fall bomb configurations. They have been in use long enough to demonstrate safe operation. Additionally, JDAM uses existing bombs (MK 82, MK 83, MK 84, BLU-109, BLU-110, BLU-111, and BLU-117) that have a protective thermal coating for added safety aboard ship. In the event of a fire, cook-off times and evacuation (withdrawal) distances have been developed.

**(2) Employment.** The aircrew safety concerns include fratricide and hung missiles. Because JDAM is a bomb-on-coordinates weapon, it can be employed without visual identification or designation of the target. Theater commanders must consider this when addressing rules of engagement. To prevent fratricide of ground troops, especially where there are troops in close combat, target positions must be verified before being passed to aircrews, either for preplanned missions or in-flight retargeting.

Another safety concern when employing JDAM is when it is within a global positioning system (GPS) jamming environment. In this condition, the host platform may not be able to provide a "GPS quality hand-off" from the aircraft. If this occurs, the aircraft may not release the weapon, which will result in degraded mission effectiveness. Procedures for hung missiles are in place, as well as emergency jettison procedures.

**d. Environmental.** The JDAM program employs a contractor depot for missile repairs and includes demilitarization. Boeing is responsible for meeting any federal/state environmental requirements/compliance. Other than these situations, only live-fire exercises present environmental concerns.

**e. Human Factors.** Human interaction with air-launched missile systems generally fall into three categories: unpacking/assembly, loading and employment.

**(1) Unpacking/Assembly.** The JDAM design provides for a consistent approach to unpacking and assembling Guidance Sections to warheads. The tail assemblies are similar in design, but scaled to the appropriate bomb body. Other components associated with the JDAM assembly (bombs, fuzes, nose plugs, proximity sensors, arming switches, and initiators) are used in a consistent manner with other free-fall bomb and PGM configurations.

**(2) Loading.** Human factors analysis for JDAM loading was minimal because they are loaded identically to their free-fall bomb and PGM counterparts.

**(3) Employment.** The aircrew interface with the missile largely through the digital displays and readouts in the cockpit. The original JDAM symbology incorporated into FA-18 was designed in conjunction with input from a pilot-formed design advisory group.

Since its inception, the JDAM symbology has been reviewed and adjusted as needed as aircraft software loads have been updated.

During OPEVAL of the GBU-31(V)2/B, COMOPTEVFOR identified longer than desirable mission planning times when using the joint JDAM/JSOW TAMPS interface. PMA 201 corrected this by developing an enhanced JDAM interface, which will be tested during GBU-38/B OPEVAL.

## K. SCHEDULES

### 1. Schedule of Events

**a. Installation/Delivery Schedule.** Navy IOC for the GBU-31(V)2/B and GBU-31(V)4/B was achieved May 2001. Production lots 1 through 5 have been delivered and lot 6 deliveries are underway. The Navy acquired 547 Guidance Sets on Lot 2, 745 Guidance Sets on Lot 3, and 916 Guidance Sets on Lot 4. Production Lot 5 deliveries were completed 4<sup>th</sup> quarter FY 02, and were a combination of 948 KMU-556A/B and 672 KMU-558A/B Guidance Sets. Lot 6 deliveries include the KMU-559/B Guidance Set and lot 7 deliveries will include the KMU-572A/B Guidance Set. See Figure I-10 for more information.

In 1999, the USS Kitty Hawk, USS John F. Kennedy, and MAG-31 Beaufort received JDAM Guidance Sets. In 2000, the USS John C. Stennis, MAG-11 Miramar, USS George Washington, and USS Abraham Lincoln received JDAM Guidance Sets. In 2001, the USS Harry S. Truman, USS Enterprise, and USS Constellation received JDAM Guidance Sets. In 2002 and 2003, carrier groups deployed in support of Operations Allied Force, Northern Watch, Southern Watch, Enduring Freedom, and Iraqi Freedom received JDAM Guidance Sets.

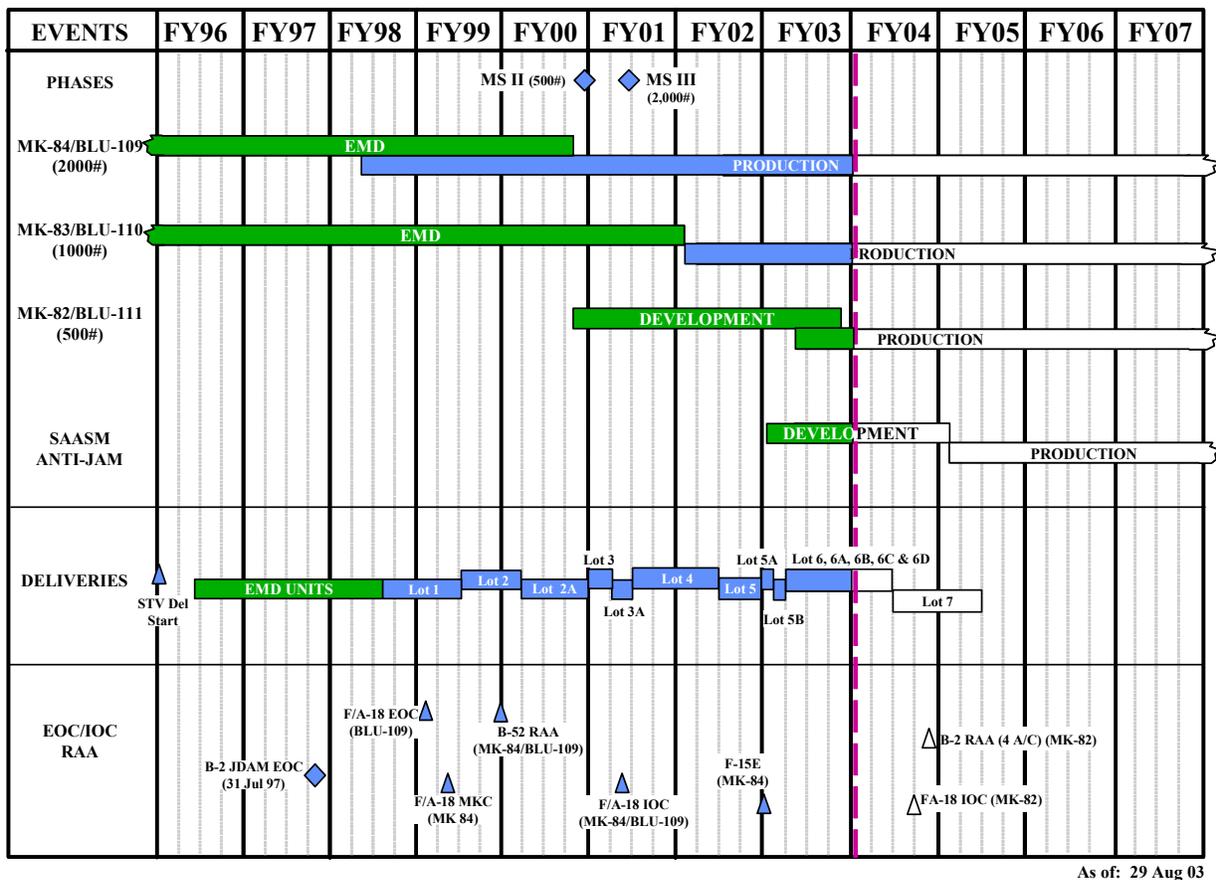


Figure I-10. JDAM Master Schedule

**b. Ready for Operational Use Schedule.** JDAM is Ready For Operational Use at the time of delivery. Routine break out and assembly procedures apply.

**c. Time Required to Install at Operational Sites.** Time limits for break out, assembly and load JDAM configured weapons is included in the Joint ORD. The Mean Time To Break Out (MTTBO) is 15 minutes for four Guidance Sets. The Mean Time To Assemble (MTTA) without performing BIT is 25 minutes for one Guidance Set. The MTTA with performing BIT is 30 minutes for one Guidance Set.

**d. Foreign Military Sales and Other Source Delivery Schedule.** Contact PMA 201 for details on Foreign Military Sales.

**e. Training Device and Technical Training Equipment Delivery Schedule.**

**(1) LDTs.** JDAM Combination LDTs (1 Tail Assembly and 2 sets of Strakes) that support training for the GBU-31(V)2/B and GBU-31(V)4/B configurations were received from production lot 1 deliveries. JDAM LDTs for GBU-32(V)2/B were received during production lot 5/6 deliveries. JDAM LDTs for GBU-38/B will be received during production lot 7 deliveries. LDTs for schools that support the F-14 and AV-8 AO community

will be required if JDAM integration on those platforms is executed. Future updates to this NTSP will reflect the delivery schedules as they become available.

(2) **AN-GYQ-79 CMBRE.** AN-GYQ-79 CMBRE has been delivered to Navy and Marine Corps Schools that support the AO Intermediate Maintenance community (refer to Part IV.A.1).

(3) **MPCU.** MPCU have been delivered to Navy and Marine Corps Schools that support the AO Intermediate Maintenance community (refer to Part IV.A.1).

**L. GOVERNMENT FURNISHED EQUIPMENT AND CONTRACTOR FURNISHED EQUIPMENT TRAINING REQUIREMENTS. NA**

**M. RELATED NTSPs AND OTHER APPLICABLE DOCUMENTS**

DOCUMENT TITLE	DOCUMENT NUMBER	PDA CODE	STATUS
F/A-18 Aircraft NTSP	N88-NTSPA-50-7703H/A	PMA265	Approved Dec 2001
AV-8B Harrier II Weapon System NTSP	N88-NTSP-A-50-8210D/A	PMA257	Approved Sep 2001
F-14A, F-14B, F-14D Aircraft NTSP	N88-NTSP-A-50-8511C/A	PMA241	Approved Feb 2002
Strike Fighter Training Program NTSP	N88-NTSP-A-50-9906/A	PMA205	Approved May 2002
JDAM Joint ORD	CAF/UAN-401-91-I-A	PMA 201	Approved Mar 2001
JDAM SAMP	NA	PMA 201	Approved Apr 2002
JDAM TEMP	MK-82 JDAM TEMP v 6.0	PMA 201	Approved Nov 2002
JDAM JILSP	ARM-200 Revision B	AIR-3.1.1K	Approved May 2002

## PART II - BILLET AND PERSONNEL REQUIREMENTS

The following elements are not affected by JDAM and, therefore, are not included in Part II of this NTSP:

### II.A. Billet Requirements

- II.A.2.a. Operational and Fleet Support Activity Deactivation Schedule
- II.A.2.b. Billets to be Deleted in Operational and Fleet Support Activities
- II.A.2.c. Total Billets to be Deleted in Operational and Fleet Support Activities

### II.B. Personnel Requirements

- II.B.3. Foreign, Other Service, and Non-Military Personnel Annual Training Input Requirement

**NOTE 1:** This section of the JDAM NTSP reflects intermediate-level maintenance billet and personnel requirements for JDAM. It is a compilation of one Navy NECs, AO 6801, and one Marine Corps MOS, 6541. JDAM operator billets are programmed through the applicable aircraft NTSP, e.g., F/A-18 NTSP, as are JDAM organizational-level billets. The addition of JDAM to the intermediate-level workload is only a small percentage of the required workload for those NECs and MOS. The NECs and MOS are not dedicated to JDAM and, therefore, the overall training throughput for the NEC and MOS will remain the same, i.e., it accounts for the total NEC/MOS community, and not just activities receiving JDAM.

**NOTE 2:** All billets identified in this section are programmed through other NTSPs, e.g., F/A-18 NTSP, applicable CV/CVN Class Total Ship NTSP, or applicable Shore Activity Manning Documents. The activities and associated billets are listed to assist the weapons training community in identifying and managing training requirements throughout the development, production, and deployment of JDAM.



**PART II - BILLET AND PERSONNEL REQUIREMENTS**

**II.A. BILLET REQUIREMENTS**

**II.A.1.a. OPERATIONAL AND FLEET SUPPORT ACTIVITY ACTIVATION SCHEDULE**

**SOURCE:** NAVAIR PMA201/PMA205

**DATE:** 10/2003

ACTIVITY	UIC	PFYs	CFY04	FY05	FY06	FY07	FY08
<b>OPERATIONAL</b>	<b>NAVY</b>						
NAVWPNTSTRON CL	39787	1	0	0	0	0	0
NAVWPNTSTRON PM	39788	1	0	0	0	0	0
NAVSTKAIRSTRON	39783	1	0	0	0	0	0
VX-9	55646	1	0	0	0	0	0
NSAWC N7	69190	1	0	0	0	0	0
SFWSL	47084	1	0	0	0	0	0
SFWSP	35185	1	0	0	0	0	0
VFA-106	09679	1	0	0	0	0	0
VFA-125	09485	1	0	0	0	0	0
VFA-15	09015	1	0	0	0	0	0
VFA-34	09070	1	0	0	0	0	0
VFA-37	09478	1	0	0	0	0	0
VFA-83	09223	1	0	0	0	0	0
VFA-87	63922	1	0	0	0	0	0
VFA-105	65183	1	0	0	0	0	0
VFA-131	63934	1	0	0	0	0	0
VFA-136	55141	1	0	0	0	0	0
VFA-82	09122	1	0	0	0	0	0
VFA-86	09943	1	0	0	0	0	0
VFA-127	08956	1	0	0	0	0	0
VFA-25	09637	1	0	0	0	0	0
VFA-94	09295	1	0	0	0	0	0
VFA-97	63923	1	0	0	0	0	0
VFA-113	09092	1	0	0	0	0	0
VFA-146	09063	1	0	0	0	0	0
VFA-147	63925	1	0	0	0	0	0
VFA-151	09558	1	0	0	0	0	0
VFA-192	55179	1	0	0	0	0	0
VFA-195	09706	1	0	0	0	0	0
VFA-201	09309	1	0	0	0	0	0
VFA-203	09030	1	0	0	0	0	0
VFA-204	09032	1	0	0	0	0	0
VFC-12	52994	1	0	0	0	0	0
VFC-13	52995	1	0	0	0	0	0
VFA-122 (E/F)	TBD	0	1	0	0	0	0
SWATSLANT (E/F)	47157	1	1	0	0	0	0
VFA-115 (E)	09604	1	1	0	0	0	0
VF-14/VFA-14 (E)	09084	1	1	0	0	0	0
VF-41/VFA-41 (F)	09774	1	1	0	0	0	0
VFA-102 (F)	09717	1	1	0	0	0	0
VFA-137 (E)	55142	1	1	0	0	0	0
VF-2/VFA-2 (F)	09113	1	0	0	0	0	0
VFA-22 (E)	09561	1	1	0	0	0	0



**II.A.1.a. OPERATIONAL AND FLEET SUPPORT ACTIVITY ACTIVATION SCHEDULE**

**SOURCE:** NAVAIR PMA201/PMA205

**DATE:** 10/2003

ACTIVITY	UIC	PFYs	CFY04	FY05	FY06	FY07	FY08
VF-154/VFA-154 (F)	09678	1	1	0	0	0	0
VFA-27 (E)	65185	1	1	0	0	0	0
VFA-81 (E)	09221	1	0	1	0	0	0
VF-103/VFA-103 (F)	09718	1	0	1	0	0	0
VF-211	09086	1	0	0	0	0	0
VF-32	09053	1	0	0	0	0	0
<b>TOTAL:</b>		48	10	2	0	0	0

<b>OPERATIONAL</b>	<b>USMC</b>						
MAWTS-1	55167	1	0	0	0	0	0
VMFAT-101	09965	1	0	0	0	0	0
VMFA-115	09234	1	0	0	0	0	0
VMFA-122	09407	1	0	0	0	0	0
VMFA-251	09241	1	0	0	0	0	0
VMFA-312	09253	1	0	0	0	0	0
VMFA (AW)-224	01224	1	0	0	0	0	0
VMFA (AW)-332	09501	1	0	0	0	0	0
VMFA (AW)-533	09193	1	0	0	0	0	0
VMFA-212	09434	1	0	0	0	0	0
VMFA-232	09242	1	0	0	0	0	0
VMFA-314	09230	1	0	0	0	0	0
VMFA-323	09235	1	0	0	0	0	0
VMFA (AW)-121	09257	1	0	0	0	0	0
VMFA (AW)-225	09232	1	0	0	0	0	0
VMFA (AW)-242	09668	1	0	0	0	0	0
VMFA-112	08954	1	0	0	0	0	0
VMFA-134	09365	1	0	0	0	0	0
VMFA-142	67243	1	0	0	0	0	0
VMFA-321	67235	1	0	0	0	0	0
MALS Augment Beaufort	67863	1	0	0	0	0	0
MALS Augment Miramar	09116	1	0	0	0	0	0
<b>TOTAL:</b>		22	0	0	0	0	0

<b>FLEET SUPPORT</b>	<b>NAVY</b>						
NAWS Point Mugu	0429A	1	0	0	0	0	0
NAWS China Lake	68937	1	0	0	0	0	0
NAF Atsugi	62507	1	0	0	0	0	0
NAS Fallon	60495	1	0	0	0	0	0
NAS Lemoore	63042	1	0	0	0	0	0
NAS Oceana	60191	1	0	0	0	0	0
NS Roosevelt Roads	00389	1	0	0	0	0	0
COMNAVAIRLANT	57012	1	0	0	0	0	0
CV-63 USS Kitty Hawk	03363	1	0	0	0	0	0
CV-64 USS Constellation	03364	1	0	0	0	0	0
CV-67 USS Kennedy	03367	1	0	0	0	0	0
CVN-65 USS Enterprise	03365	1	0	0	0	0	0



II.A.1.a. OPERATIONAL AND FLEET SUPPORT ACTIVITY ACTIVATION SCHEDULE

SOURCE: NAVAIR PMA201/PMA205

DATE: 10/2003

ACTIVITY	UIC	PFYs	CFY04	FY05	FY06	FY07	FY08
CVN-68 USS Nimitz	03368	1	0	0	0	0	0
CVN-69 USS Eisenhower	03369	1	0	0	0	0	0
CVN-70 USS Vinson	20993	1	0	0	0	0	0
CVN-71 USS Roosevelt	21247	1	0	0	0	0	0
CVN-72 USS Lincoln	21297	1	0	0	0	0	0
CVN-73 USS Washington	21412	1	0	0	0	0	0
CVN-74 USS Stennis	21847	1	0	0	0	0	0
CVN-75 USS Truman	21853	1	0	0	0	0	0
CVN-76 USS Reagan	22178	1	0	0	0	0	0
NAWMU-1	52821	1	0	0	0	0	0
NAWCAD Patuxent River	00421	1	0	0	0	0	0
NAWCWD Point Mugu	63126	1	0	0	0	0	0
<b>TOTAL:</b>		24	0	0	0	0	0
<b>FLEET SUPPORT</b>	<b>USMC</b>						
MAD China Lake	67852	1	0	0	0	0	0
MAD Patuxent River	67356	1	0	0	0	0	0
MALS-11 Miramar	09111	1	0	0	0	0	0
MALS-12 Iwakuni	09377	1	0	0	0	0	0
MALS-13 Yuma	09041	1	0	0	0	0	0
MALS-31 Beaufort	09384	1	0	0	0	0	0
MAG-41 Det B Fort Worth	67241	1	0	0	0	0	0
MAG-42 Marietta	67236	1	0	0	0	0	0
MAG-46 Miramar	67244	1	0	0	0	0	0
MASD Andrews	04801	1	0	0	0	0	0
<b>TOTAL:</b>		10	0	0	0	0	0

II.A.1.b. BILLETTS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES<sup>1</sup>

ACTIVITY	UIC	PHASING INCR.	BILLETTS OFF	ENL	DESIGN RATING	PNEC/SNEC PMOS/SMOS
<b>OPERATIONAL</b>	<b>NAVY</b>					
VFA-106	09679					
USMC			0	1	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	1		
VFA-125	09485					
USMC			0	1	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	1		
VAQ-129	09995					
USMC			0	1	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	1		
<b>OPERATIONAL</b>	<b>USMC</b>					
VMFA-115	09234					
USMC			0	1	GYSGT	6541
USMC			0	6	LCPL	6541
USMC			0	2	SGT	6541
USMC			0	1	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	10		
VMFA-122	09407					
USMC			0	1	GYSGT	6541
USMC			0	6	LCPL	6541
USMC			0	2	SGT	6541
USMC			0	1	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	10		
VMFA-251	09241					
USMC			0	1	GYSGT	6541
USMC			0	6	LCPL	6541
USMC			0	2	SGT	6541
USMC			0	1	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	10		
VMFA-312	09253					
USMC			0	1	GYSGT	6541
USMC			0	6	LCPL	6541
USMC			0	2	SGT	6541
USMC			0	1	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	17		

<sup>1</sup>All billet requirements shown are programmed in the F/A-18 NTSP, the applicable CV/CVN Class Total Ship NTSP, or applicable Shore Activity Manning Document, and are shown for planning of initial training requirements. Most initial training requirements for JDAM were phased in FY99-FY03 to coincide with Fleet introduction. These activities are highlighted in yellow to distinguish them from the rest of the billet community.



II.A.1.b. BILLETTS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES<sup>1</sup>

ACTIVITY	UIC	PHASING INCR.	BILLETTS OFF	ENL	DESIGN RATING	PNEC/SNEC PMOS/SMOS
<b>VMFA (AW)-224</b>	01224					
USMC			0	1	CPL	6541
USMC			0	5	LCPL	6541
USMC			0	3	SGT	6541
USMC			0	2	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	11		
<b>VMFA (AW)-332</b>	09501					
USMC			0	1	CPL	6541
USMC			0	5	LCPL	6541
USMC			0	3	SGT	6541
USMC			0	2	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	11		
<b>VMFA (AW)-533</b>	09193					
USMC			0	1	CPL	6541
USMC			0	5	LCPL	6541
USMC			0	3	SGT	6541
USMC			0	2	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	11		
<b>VMFA-212</b>	09434					
USMC			0	1	GYSGT	6541
USMC			0	6	LCPL	6541
USMC			0	2	SGT	6541
USMC			0	1	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	10		
<b>VMFA-232</b>	09242					
USMC			0	1	GYSGT	6541
USMC			0	6	LCPL	6541
USMC			0	2	SGT	6541
USMC			0	1	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	10		
<b>VMFA-235</b>	09237					
USMC			0	1	GYSGT	6541
USMC			0	6	LCPL	6541
USMC			0	2	SGT	6541
USMC			0	1	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	10		
<b>VMFA-314</b>	09230					
USMC			0	1	GYSGT	6541
USMC			0	6	LCPL	6541
USMC			0	2	SGT	6541
USMC			0	1	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	10		

II.A.1.b. BILLETTS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES<sup>1</sup>

ACTIVITY	UIC	PHASING INCR.	BILLETTS OFF	ENL	DESIGN RATING	PNEC/SNEC PMOS/SMOS
<b>VMFA-323</b>	09235					
USMC			0	1	GYSGT	6541
USMC			0	6	LCPL	6541
USMC			0	2	SGT	6541
USMC			0	1	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	10		
<b>VMFA (AW)-121</b>	09257					
USMC			0	1	CPL	6541
USMC			0	5	LCPL	6541
USMC			0	3	SGT	6541
USMC			0	2	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	11		
<b>VMFA (AW)-225</b>	09232					
USMC			0	1	CPL	6541
USMC			0	5	LCPL	6541
USMC			0	3	SGT	6541
USMC			0	2	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	11		
<b>VMFA (AW)-242</b>	09668					
USMC			0	1	CPL	6541
USMC			0	5	LCPL	6541
USMC			0	3	SGT	6541
USMC			0	2	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	11		
<b>VMFA-112</b>	08954					
USMC			0	1	GYSGT	6541
USMC			0	6	LCPL	6541
USMC			0	2	SGT	6541
USMC			0	1	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	10		
<b>VMFA-134</b>	09365					
USMC			0	1	GYSGT	6541
USMC			0	6	LCPL	6541
USMC			0	2	SGT	6541
USMC			0	1	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	10		
<b>VMFA-321</b>	67235					
USMC			0	1	GYSGT	6541
USMC			0	6	LCPL	6541
USMC			0	2	SGT	6541
USMC			0	1	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	10		

II.A.1.b. BILLETTS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES<sup>1</sup>

ACTIVITY	UIC	PHASING INCR.	BILLETTS OFF	ENL	DESIGN RATING	PNEC/SNEC PMOS/SMOS
<b>VMFA-142</b>	67243					
USMC			0	1	GYSGT	6541
USMC			0	6	LCPL	6541
USMC			0	2	SGT	6541
USMC			0	1	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	10		
<b>MALS Aug Beaufort</b>	67863					
USMC			0	11		6541
<b>ACTIVITY TOTAL:</b>			0	11		
<b>MALS Aug Miramar</b>	09116					
USMC			0	4		6541
<b>ACTIVITY TOTAL:</b>			0	4		
<b>MAWTS-1</b>	55167					
USMC			0	1	GYSGT	6541
USMC			0	1	LCPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
<b>VMFAT-101</b>	09965					
USMC			0	3	CPL	6541
USMC			0	6	LCPL	6541
<b>ACTIVITY TOTAL:</b>			0	9		
HMH-461	09582					
USMC			0	5	CPL	6541
USMC			0	1	LCPL	6541
<b>ACTIVITY TOTAL:</b>			0	6		
HMH-464	53935					
USMC			0	5	CPL	6541
USMC			0	1	LCPL	6541
<b>ACTIVITY TOTAL:</b>			0	6		
HMH-772	09490					
USMC			0	1	CPL	6541
USMC			0	1	LCPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMLA-167	09898					
USMC			0	6	CPL	6541
USMC			0	9	LCPL	6541
USMC			0	3	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	18		
HMLA-269	08998					
USMC			0	18		6541
<b>ACTIVITY TOTAL:</b>			0	18		
HMLA-773	09431					
USMC			0	4	CPL	6541
USMC			0	6	LCPL	6541
USMC			0	2	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	12		



II.A.1.b. BILLETTS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES<sup>1</sup>

ACTIVITY	UIC	PHASING INCR.	BILLETTS OFF	ENL	DESIGN RATING	PNEC/SNEC PMOS/SMOS
HMLA-773 DET	09431					
USMC			0	2	CPL	6541
USMC			0	3	LCPL	6541
USMC			0	1	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	6		
HMLA-775	55252					
USMC			0	4	CPL	6541
USMC			0	6	LCPL	6541
USMC			0	2	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	12		
HMLA-775 DET A	09415					
USMC			0	2	CPL	6541
USMC			0	3	LCPL	6541
USMC			0	1	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	6		
HMM-162	09492					
USMC			0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMM-261	09441					
USMC			0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMM-263	09445					
USMC			0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMM-264	09374					
USMC			0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMM-266	53972					
USMC			0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMM-365	53923					
USMC			0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMM-774	09430					
USMC			0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMT-303	55176					
USMC			0	3	LCPL	6541
USMC			0	3	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	6		
VMA-223	09438					
USMC			0	3	CPL	6541
USMC			0	7	LCPL	6541
USMC			0	2	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	12		



II.A.1.b. BILLETTS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES<sup>1</sup>

ACTIVITY	UIC	PHASING INCR.	BILLETS OFF	ENL	DESIGN RATING	PNEC/SNEC PMOS/SMOS
VMA-231	52948					
	USMC		0	3	CPL	6541
	USMC		0	7	LCPL	6541
	USMC		0	2	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	12		
VMA-542	52847					
	USMC		0	3	CPL	6541
	USMC		0	7	LCPL	6541
	USMC		0	2	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	12		
VMAQ-1	41345					
	USMC		0	1	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	1		
VMAQ-2	42362					
	USMC		0	1	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	1		
VMAQ-3	42362					
	USMC		0	1	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	1		
VMAQ-4	67837					
	USMC		0	1	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	1		
VMAT-203	45483					
	USMC		0	3	GYSGT	6541
	USMC		0	1	LCPL	6541
	USMC		0	20	SGT	6541
	USMC		0	4	SSGT	6541
<b>ACTIVITY TOTAL:</b>			0	28		
HMH-361	09446					
	USMC		0	5	CPL	6541
	USMC		0	1	LCPL	6541
<b>ACTIVITY TOTAL:</b>			0	6		
HMH-362	09495					
	USMC		0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMH-363	09496					
	USMC		0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMH-366	55650					
	USMC		0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMH-462	09349					
	USMC		0	5	CPL	6541
	USMC		0	1	LCPL	6541
<b>ACTIVITY TOTAL:</b>			0	6		

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES<sup>1</sup>

ACTIVITY	UIC	PHASING INCR.	BILLETS OFF	ENL	DESIGN RATING	PNEC/SNEC PMOS/SMOS
HMH-463	09010					
USMC			0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMH-465	53936					
USMC			0	5	CPL	6541
USMC			0	1	LCPL	6541
<b>ACTIVITY TOTAL:</b>			0	6		
HMH-466	53998					
USMC			0	5	CPL	6541
USMC			0	1	LCPL	6541
<b>ACTIVITY TOTAL:</b>			0	6		
HMH-769	09487					
USMC			0	1	CPL	6541
USMC			0	1	LCPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMLA-169	09202					
USMC			0	6	CPL	6541
USMC			0	9	LCPL	6541
USMC			0	3	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	18		
HMLA-267	09159					
USMC			0	6	CPL	6541
USMC			0	9	LCPL	6541
USMC			0	3	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	18		
HMLA-367	09079					
USMC			0	6	CPL	6541
USMC			0	9	LCPL	6541
USMC			0	3	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	18		
HMLA-369	09361					
USMC			0	6	CPL	6541
USMC			0	9	LCPL	6541
USMC			0	3	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	18		
HMM-161	09440					
USMC			0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMM-163	09405					
USMC			0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMM-164	09408					
USMC			0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		



II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES<sup>1</sup>

ACTIVITY	UIC	PHASING INCR.	BILLETS OFF	ENL	DESIGN RATING	PNEC/SNEC PMOS/SMOS
HMM-165	09343					
USMC			0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMM-166	53973					
USMC			0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMM-262	09442					
USMC			0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMM-265	09404					
USMC			0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMM-268	52790					
USMC			0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMM-364	09793					
USMC			0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
HMM-764	09402					
USMC			0	2	CPL	6541
<b>ACTIVITY TOTAL:</b>			0	2		
VMA-211	09412					
USMC			0	3	CPL	6541
USMC			0	7	LCPL	6541
USMC			0	2	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	12		
VMA-214	09436					
USMC			0	3	CPL	6541
USMC			0	7	LCPL	6541
USMC			0	2	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	12		
VMA-311	09416					
USMC			0	3	CPL	6541
USMC			0	7	LCPL	6541
USMC			0	2	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	12		
VMA-513	09231					
USMC			0	3	CPL	6541
USMC			0	7	LCPL	6541
USMC			0	2	SGT	6541
<b>ACTIVITY TOTAL:</b>			0	12		
<b>VMFA-124</b>	<b>52998</b>					
USMC			0	10		6541
<b>ACTIVITY TOTAL:</b>			0	10		

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES<sup>1</sup>

ACTIVITY	UIC	PHASING INCR.	BILLETS OFF	ENL	DESIGN RATING	PNEC/SNEC PMOS/SMOS
<b>FLEET SUPPORT</b>	<b>NAVY</b>					
<b>COMNAVAIRLANT</b>	57012					
ACDU			0	2	AOC	6801
<b>ACTIVITY TOTAL:</b>			0	2		
<b>CV-63 USS Kitty Hawk</b>	03363					
ACDU			0	11	AO	6801
<b>ACTIVITY TOTAL:</b>			0	11		
<b>CV-67 USS Kennedy</b>	03367					
ACDU			0	11	AO	6801
TAR			0	1	AO	6801
<b>ACTIVITY TOTAL:</b>			0	12		
<b>CVN-65 USS Enterprise</b>	03365					
ACDU			0	11	AO	6801
<b>ACTIVITY TOTAL:</b>			0	11		
<b>CVN-68 USS Nimitz</b>	03368					
ACDU			0	11	AO	6801
<b>ACTIVITY TOTAL:</b>			0	11		
<b>CVN-69 USS Eisenhower</b>	03369					
ACDU			0	11	AO	6801
<b>ACTIVITY TOTAL:</b>			0	11		
<b>CVN-70 USS Vinson</b>	20993					
ACDU			0	11	AO	6801
<b>ACTIVITY TOTAL:</b>			0	11		
<b>CVN-71 USS Roosevelt</b>	21247					
ACDU			0	11	AO	6801
<b>ACTIVITY TOTAL:</b>			0	11		
<b>CVN-72 USS Lincoln</b>	21297					
ACDU			0	11	AO	6801
<b>ACTIVITY TOTAL:</b>			0	11		
<b>CVN-73 USS Washington</b>	21412					
ACDU			0	11	AO	6801
<b>ACTIVITY TOTAL:</b>			0	11		
<b>CVN-74 USS Stennis</b>	21847					
ACDU			0	11	AO	6801
<b>ACTIVITY TOTAL:</b>			0	11		
<b>CVN-75 USS Truman</b>	21853					
ACDU			0	10	AO	6801
<b>ACTIVITY TOTAL:</b>			0	10		
<b>CVN-76 USS Reagan</b>	22178					
ACDU		FY04	0	10	AO	6801
<b>ACTIVITY TOTAL:</b>			0	10		
AFLOATRAGRU Norfolk CSTG	49085					
ACDU			0	2	AO	6801
<b>ACTIVITY TOTAL:</b>			0	2		

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES<sup>1</sup>

ACTIVITY	UIC	PHASING INCR.	BILLETS OFF	ENL	DESIGN RATING	PNEC/SNEC PMOS/SMOS
<b>COMSTKFIGHTWINGLAN</b> <b>T Det Beaufort</b>	3006A					
ACDU			0	16	AO	6801
<b>ACTIVITY TOTAL:</b>			0	16		
FASOTRAGRULANT	09810					
ACDU			0	2	AO	6801/ 9502
<b>ACTIVITY TOTAL:</b>			0	2		
LHA-2 USS Saipan	20632					
ACDU			0	2	AO	6801
<b>ACTIVITY TOTAL:</b>			0	2		
LHA-4 USS Nassau	20725					
ACDU			0	2	AO	6801
<b>ACTIVITY TOTAL:</b>			0	2		
LHD-1 USS Wasp	21560					
ACDU			0	2	AO	6801
<b>ACTIVITY TOTAL:</b>			0	2		
LHD-3 USS Kearsarge	21700					
ACDU			0	2	AO	6801
<b>ACTIVITY TOTAL:</b>			0	2		
LHD-5 USS Bataan	21879					
ACDU			0	2	AO	6801
<b>ACTIVITY TOTAL:</b>			0	2		
MCS-12 USS Inchon	20009					
ACDU			0	1	AO	6801
<b>ACTIVITY TOTAL:</b>			0	1		
NAF Mildenhall	57032					
SELRES			0	1	AO	6801
<b>ACTIVITY TOTAL:</b>			0	1		
NAS Brunswick	60087					
ACDU			0	8	AO	6801
ACDU			0	1	AO	6810/ 6801
<b>ACTIVITY TOTAL:</b>			0	9		
NAS Cecil Field	60200					
ACDU			0	23	AO	6801
<b>ACTIVITY TOTAL:</b>			0	23		
NAS Keflavik	63032					
ACDU			0	3	AO	6801
ACDU			0	1	AO	6810/ 6801
ACDU			0	1	AO	0812/ 6801
<b>ACTIVITY TOTAL:</b>			0	5		
<b>NAS Oceana</b>	60191					
ACDU			0	3	AO	6801
<b>ACTIVITY TOTAL:</b>			0	3		

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES<sup>1</sup>

ACTIVITY	UIC	PHASING INCR.	BILLETS OFF	ENL	DESIGN RATING	PNEC/SNEC PMOS/SMOS
NATMSACT Kingsville	49149					
ACDU			0	1	AO	6801
<b>ACTIVITY TOTAL:</b>			0	1		
<b>NAWMU-1</b>	52821					
ACDU			0	23	AO	6801
<b>ACTIVITY TOTAL:</b>			0	23		
<b>NAVSTKAIRSTRON</b>	39783					
ACDU			0	12	AO	6801
ACDU			0	2	AO	6801/ 8845
ACDU			0	1	AO	6801/ 9590
<b>ACTIVITY TOTAL:</b>			0	15		
<b>Ordnance DET Oceana</b>	31279					
ACDU			0	33	AO	6801
<b>ACTIVITY TOTAL:</b>			0	33		
<b>SURFLANTAVORD/MTT Norfolk</b>	48764					
ACDU			0	5	AO	6801
<b>ACTIVITY TOTAL:</b>			0	5		
<b>AIRMAINTTRSGRPDET Whidbey Island</b>	66058					
ACDU			0	5	AO	6801/ 9502
<b>ACTIVITY TOTAL:</b>			0	5		
COMFLTACT Okinawa	62254					
ACDU			0	2	AO	6801
<b>ACTIVITY TOTAL:</b>			0	2		
LHA-1 USS Tarawa	20550					
ACDU			0	2	AO	6801
<b>ACTIVITY TOTAL:</b>			0	2		
LHA-3 USS Belleau Wood	20633					
ACDU			0	2	AO	6801
<b>ACTIVITY TOTAL:</b>			0	2		
LHA-5 Peleliu	20748					
ACDU			0	2	AO	6801
<b>ACTIVITY TOTAL:</b>			0	2		
LHD-2 USS Essex	21533					
ACDU			0	2	AO	6801
<b>ACTIVITY TOTAL:</b>			0	2		
LHD-4 USS Boxer	21808					
ACDU			0	2	AO	6801
<b>ACTIVITY TOTAL:</b>			0	2		
LHD-6 USS Bonhomme Richard	22202					
ACDU			0	2	AO	6801
<b>ACTIVITY TOTAL:</b>			0	2		

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES<sup>1</sup>

ACTIVITY	UIC	PHASING INCR.	BILLETS OFF	BILLETS ENL	DESIGN RATING	PNEC/SNEC PMOS/SMOS
LHD-7 USS Iwo Jima	23027					
ACDU			0	2	AO	6801
<b>ACTIVITY TOTAL:</b>			0	2		
NAF El Centro	60042					
ACDU			0	7	AO	6801
<b>ACTIVITY TOTAL:</b>			0	7		
NAS Lemoore	63042					
ACDU			0	3	AO	6801
<b>ACTIVITY TOTAL:</b>			0	3		
NAS Point Mugu	0429A					
ACDU			0	18	AO	6801
ACDU			0	1	AO	8345/6801
<b>ACTIVITY TOTAL:</b>			0	19		
NAWCWD Point Mugu	63126					
ACDU			0	1	AO	6801
<b>ACTIVITY TOTAL:</b>			0	1		
<b>FLEET SUPPORT</b>	<b>USMC</b>					
MAD China Lake	67852					
USMC			0	2		6541
<b>ACTIVITY TOTAL:</b>			0	2		
MALS-11 Miramar	09233					
USMC			0	44		6541
<b>ACTIVITY TOTAL:</b>			0	44		
MALS-12 Iwakuni	09377					
USMC			0	44		6541
<b>ACTIVITY TOTAL:</b>			0	44		
MALS-13 Yuma	09041					
USMC			0	44		6541
<b>ACTIVITY TOTAL:</b>			0	44		
MALS-31 Beaufort	09384					
USMC			0	44		6541
<b>ACTIVITY TOTAL:</b>			0	44		
MALS-42 Marietta	09513					
USMC			0	2		6541
AR			0	10		6541
<b>ACTIVITY TOTAL:</b>			0	12		
MALS-41 Fort Worth	67239					
USMC			0	5		6541
AR			0	39		6541
<b>ACTIVITY TOTAL:</b>			0	44		
MALS-46 Miramar	67244					
USMC			0	2		6541
AR			0	42		6541
<b>ACTIVITY TOTAL:</b>			0	44		

II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES<sup>1</sup>

ACTIVITY	UIC	PHASING INCR.	BILLETS OFF	ENL	DESIGN RATING	PNEC/SNEC PMOS/SMOS
MASD Andrews	04801					
USMC			0	1		6541
<b>ACTIVITY TOTAL:</b>			0	1		
2 <sup>nd</sup> MAW Cherry Point	00201					
USMC			0	1		6541
<b>ACTIVITY TOTAL:</b>			0	1		
4 <sup>th</sup> MAW New Orleans	00400					
USMC			0	1		6541
<b>ACTIVITY TOTAL:</b>			0	1		
Blount Island	38450					
USMC			0	2		6541
<b>ACTIVITY TOTAL:</b>			0	2		
H&HS Beaufort	02031					
USMC			0	5		6541
<b>ACTIVITY TOTAL:</b>			0	5		
H&HS Cherry Point	02002					
USMC			0	17		6541
<b>ACTIVITY TOTAL:</b>			0	17		
H&HS New River	02021					
USMC			0	5		6541
<b>ACTIVITY TOTAL:</b>			0	5		
MALS-14 Cherry Point	09378					
USMC			0	44		6541
<b>ACTIVITY TOTAL:</b>			0	44		
MALS-26 New River	09167					
USMC			0	12		6541
<b>ACTIVITY TOTAL:</b>			0	12		
MALS-29 New River	52841					
USMC			0	12		6541
<b>ACTIVITY TOTAL:</b>			0	12		
MALS-49 Stewart New York	55555					
USMC			0	4		6541
AR			0	8		6541
<b>ACTIVITY TOTAL:</b>			0	12		
1 <sup>st</sup> MAW Futenma	00101					
USMC			0	1		6541
<b>ACTIVITY TOTAL:</b>			0	1		
3 <sup>rd</sup> MAW Miramar	00300					
USMC			0	1		6541
<b>ACTIVITY TOTAL:</b>			0	1		
H&HS Camp Pendleton	02208					
USMC			0	9		6541
<b>ACTIVITY TOTAL:</b>			0	9		

**II.A.1.b. BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES<sup>1</sup>**

ACTIVITY	UIC	PHASING INCR.	BILLETS		DESIGN RATING	PNEC/SNEC PMOS/SMOS
			OFF	ENL		
H&HS Miramar	02201					
USMC			0	8		6541
<b>ACTIVITY TOTAL:</b>			0	8		
H&HS Futenma	02601					
USMC			0	1		6541
<b>ACTIVITY TOTAL:</b>			0	1		
H&HS Iwakuni	02501					
USMC			0	7		6541
<b>ACTIVITY TOTAL:</b>			0	7		
H&HS Yuma	02230					
USMC			0	18		6541
<b>ACTIVITY TOTAL:</b>			0	18		
MALS-16 Tustin	09243					
USMC			0	12		6541
<b>ACTIVITY TOTAL:</b>			0	12		
MALS-36 Futenma	09260					
USMC			0	12		6541
<b>ACTIVITY TOTAL:</b>			0	12		
MALS-39 Camp Pendleton	09808					
USMC			0	12		6541
<b>ACTIVITY TOTAL:</b>			0	12		
MALSE Kaneohe	02300					
USMC			0	4		6541
<b>ACTIVITY TOTAL:</b>			0	4		
MCAF Kaneohe	02303					
USMC			0	7		6541
<b>ACTIVITY TOTAL:</b>			0	7		

**II.A.1.c. TOTAL BILLETS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES<sup>2</sup>**

DESIGN RATING	PNEC/SNEC PMOS/SMOS	PFYs		CY04		FY05		FY06		FY07		FY08	
		OFF	ENL										
OPERATIONAL ACTIVITY – ACDU													
OPERATIONAL ACTIVITY – TAR													
OPERATIONAL ACTIVITY – SELRES													
OPERATIONAL ACTIVITY – USMC													
	6541	0	546	0	0	0	0	0	0	0	0	0	0
OPERATIONAL ACTIVITY – AR													
FLEET SUPPORT ACTIVITY – ACDU													
	0812/6801	0	1	0	0	0	0	0	0	0	0	0	0

<sup>2</sup> All billet requirements shown are programmed in the F/A-18 NTSP, the applicable CV/CVN Class Total Ship NTSP, or applicable Shore Activity Manning Document, and are shown for planning of initial training requirements. Most initial training requirements for JDAM are phased in FY99-FY04 to coincide with Fleet introduction.

II.A.1.c. TOTAL BILLETTS REQUIRED FOR OPERATIONAL AND FLEET SUPPORT ACTIVITIES<sup>2</sup>

DESIGN RATING	PNEC/SNEC PMOS/SMOS	PFYs		CY04		FY05		FY06		FY07		FY08	
		OFF	ENL										
	6801	0	308	0	10	0	0	0	0	0	0	0	0
	6801/8845	0	2	0	0	0	0	0	0	0	0	0	0
	6801/9502	0	7	0	0	0	0	0	0	0	0	0	0
	6801/9590	0	1	0	0	0	0	0	0	0	0	0	0
	6810/6801	0	2	0	0	0	0	0	0	0	0	0	0
	8345/6801	0	1	0	0	0	0	0	0	0	0	0	0
FLEET SUPPORT ACTIVITY – TAR													
AO	6801	0	1	0	0	0	0	0	0	0	0	0	0
FLEET SUPPORT ACTIVITY – SELRES													
AO	6801	0	1	0	0	0	0	0	0	0	0	0	0
FLEET SUPPORT ACTIVITY – USMC													
	6541	0	383	0	0	0	0	0	0	0	0	0	0
FLEET SUPPORT ACTIVITY – AR													
	6541	0	60	0	0	0	0	0	0	0	0	0	0
<b>SUMMARY TOTAL:</b>													
OPERATIONAL ACTIVITY – ACDU													
		0	0	0	0	0	0	0	0	0	0	0	0
OPERATIONAL ACTIVITY – TAR													
		0	0	0	0	0	0	0	0	0	0	0	0
OPERATIONAL ACTIVITY – SELRES													
		0	0	0	0	0	0	0	0	0	0	0	0
OPERATIONAL ACTIVITY – USMC													
		0	546	0	0	0	0	0	0	0	0	0	0
OPERATIONAL ACTIVITY – AR													
		0	0	0	0	0	0	0	0	0	0	0	0
FLEET SUPPORT ACTIVITY – ACDU													
		0	322	0	10	0	0	0	0	0	0	0	0
FLEET SUPPORT ACTIVITY – TAR													
		0	1	0	0	0	0	0	0	0	0	0	0
FLEET SUPPORT ACTIVITY – SELRES													
		0	1	0	0	0	0	0	0	0	0	0	0
FLEET SUPPORT ACTIVITY – USMC													
		0	383	0	0	0	0	0	0	0	0	0	0
FLEET SUPPORT ACTIVITY – AR													
		0	60	0	0	0	0	0	0	0	0	0	0
<b>GRAND TOTAL:</b>													
	ACDU	0	322	0	10	0	0	0	0	0	0	0	0
	TAR	0	1	0	0	0	0	0	0	0	0	0	0
	SELRES	0	1	0	0	0	0	0	0	0	0	0	0
	USMC	0	929	0	0	0	0	0	0	0	0	0	0
	AR	0	60	0	0	0	0	0	0	0	0	0	0

II.A.3. TRAINING ACTIVITIES INSTRUCTOR AND SUPPORT BILLET REQUIREMENTS<sup>3</sup>

**INSTRUCTOR BILLETS**

TRAINING ACTIVITY, LOCATION, UIC: MTU-4030 NAMTRAGRUDET NS Mayport 66069													
DESIGN RATING	PNEC/SNEC PMOS/SMOS	PFYs		CY04		FY05		FY06		FY07		FY08	
		OFF	ENL										
ACDU													
AO	6801/9502	0	4	0	4	0	4	0	4	0	4	0	4
SELRES													
AO	6801/9502	0	1	0	1	0	1	0	1	0	1	0	1
<b>TOTAL:</b>		0	5	0	5	0	5	0	5	0	5	0	5

TRAINING ACTIVITY, LOCATION, UIC: MTU-4032 NAMTRAU NAS Norfolk 66046													
DESIGN RATING	PNEC/SNEC PMOS/SMOS	PFYs		CY04		FY05		FY06		FY07		FY08	
		OFF	ENL										
ACDU													
AO	6801/9502	0	7	0	7	0	7	0	7	0	7	0	7
SELRES													
AO	6801/9502	0	2	0	2	0	2	0	2	0	2	0	2
<b>TOTAL:</b>		0	9	0	9	0	9	0	9	0	9	0	9

TRAINING ACTIVITY, LOCATION, UIC: MTU-4033 NAMTRAU NAS North Island 66065													
DESIGN RATING	PNEC/SNEC PMOS/SMOS	PFYs		CY04		FY05		FY06		FY07		FY08	
		OFF	ENL										
ACDU													
AO	6801/9502	0	4	0	4	0	4	0	4	0	4	0	4

TRAINING ACTIVITY, LOCATION, UIC: MTU-4034 NAMTRAMARU MCAS Cherry Point 66047													
DESIGN RATING	PNEC/SNEC PMOS/SMOS	PFYs		CY04		FY05		FY06		FY07		FY08	
		OFF	ENL										
USMC													
MOS	6541	0	21	0	21	0	21	0	21	0	21	0	21

TRAINING ACTIVITY, LOCATION, UIC: MTU-4035 NAMTRAU NAS Whidbey Island 66058													
DESIGN RATING	PNEC/SNEC PMOS/SMOS	PFYs		CY04		FY05		FY06		FY07		FY08	
		OFF	ENL										
ACDU													
AO	6801/9502	0	4	0	4	0	4	0	4	0	4	0	4

<sup>3</sup> Instructor billet requirements shown are for the total course throughput for applicable NEC/MOS, not just throughput required to support JDAM.

**II.A.4. CHARGEABLE STUDENT BILLET REQUIREMENTS <sup>4</sup>**

ACTIVITY, LOCATION, UIC	USN/ USMC	PFYs		CY04		FY05		FY06		FY07		FY08	
		OFF	ENL										
MTU 4030 NAMTRAGRUDET, NS Mayport, 66069	USN	0	10	0	10	0	10	0	10	0	10	0	10
MTU 4032 NAMTRAU, NAS Norfolk, 66046	USN	0	16	0	16	0	16	0	16	0	16	0	16
MTU 4033 NAMTRAU, NAS North Island, 66065	USN	0	22	0	22	0	22	0	22	0	22	0	22
MTU 4034, NAMTRAMARU MCAS Cherry Point, 66047	USMC	0	48	0	48	0	48	0	48	0	48	0	48
MTU 4035 NAMTRAU, NAS Whidbey Island, 66058	USN	0	11	0	11	0	11	0	11	0	11	0	11
SUMMARY TOTAL:													
	USN	0	59	0	59	0	59	0	59	0	59	0	59
	USMC	0	48	0	48	0	48	0	48	0	48	0	48
<b>GRAND TOTAL:</b>		0	107	0	107	0	107	0	107	0	107	0	107

<sup>4</sup> Chargeable student billet requirements shown are for the total course throughput for applicable NEC/MOS, not just throughput required to support JDAM.

**II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS<sup>5</sup>**

**a. OFFICER - USN: NA**

**b. ENLISTED - USN:**

RATING	PNEC/SNEC	BILLET BASE	CY04		FY05		FY06		FY07		FY08	
			+/-	CUM								
Operational Billets ACDU and TAR												
Fleet Support Billets ACDU and TAR												
AO	0812/6801	1	0	1	0	1	0	1	0	1	0	1
AO	6801	308	0	308	+10	318	0	318	0	318	0	318
AO	6801/8845	2	0	2	0	2	0	2	0	2	0	2
AO	6801/9502	7	0	7	0	7	0	7	0	7	0	7
AO	6801/9590	1	0	1	0	1	0	1	0	1	0	1
AO	6810/6801	2	0	2	0	2	0	2	0	2	0	2
AO	8345/6801	1	0	1	0	1	0	1	0	1	0	1
Instructor and Support (Staff) Billets ACDU and TAR												
AO	6801/9502	19	0	19	0	19	0	19	0	19	0	19
Chargeable Student Billets ACDU and TAR												
		59	1	59	0	59	0	59	0	59	0	59
<b>TOTAL USN ENLISTED BILLETS:</b>												
Operational		0	0	0	0	0	0	0	0	0	0	0
Fleet Support		326	0	326	+10	336	0	336	0	336	0	336
Staff		19	0	19	0	19	0	19	0	19	0	19
Student		59	0	59	0	59	0	59	0	59	0	59
SELRES		14	0	14	0	14	0	14	0	14	0	14

<sup>5</sup> Billets are programmed through applicable CV/CVN Class Total Ship NTSPs and Shore Activity Manning Documents.

**II.A.5. ANNUAL INCREMENTAL AND CUMULATIVE BILLETS<sup>5</sup>**

**c. OFFICER - USMC: NA**

**b. ENLISTED - USMC:**

RATING	PMOS/SMOS	BILLET BASE	CY04		FY05		FY06		FY07		FY08	
			+/-	CUM								
Operational Billets USMC and AR												
	6541	546	0	546	0	546	0	546	0	546	0	546
Fleet Support Billets USMC and AR												
	6541	443	0	443	0	443	0	443	0	443	0	443
Instructor and Support (Staff) Billets USMC and AR												
	6541	21	0	21	0	21	0	21	0	21	0	21
Chargeable Student Billets USMC and AR												
		48	0	48	0	48	0	48	0	48	0	48
<b>TOTAL USMC ENLISTED BILLETS:</b>												
Operational		546	0	546	0	546	0	546	0	546	0	546
Fleet Support		443	0	443	0	443	0	443	0	443	0	443
Staff		21	0	21	0	21	0	21	0	21	0	21
Student		48	0	48	0	48	0	48	0	48	0	48
SMCR		0	0	0	0	0	0	0	0	0	0	0

**II.B. PERSONNEL REQUIREMENTS**

**II.B.1. ANNUAL TRAINING INPUT REQUIREMENTS<sup>6</sup>**

**CIN, COURSE TITLE:** D-646-7001, Strike Armament Equipment Intermediate Maintenance  
**COURSE LENGTH:** 9.0 Weeks **SEA TOUR LENGTH:** Navy: 60 Months  
**ATTRITION FACTOR:** Navy: 10 % **BACKOUT FACTOR:** 0.12

TRAINING ACTIVITY	SOURCE	ACDU-TAR SELRES	CY04		FY05		FY06		FY07		FY08	
			OFF	ENL	OFF	ENL	OFF	ENL	OF	ENL	OFF	ENL
MTU-4032 NAMTRAU, NAS Norfolk												
	USN	ACDU-TAR	0	40	0	40	0	40	0	40	0	40
	USN	SELRES	0	0	0	0	0	0	0	0	0	0
		TOTAL	0	40	0	40	0	40	0	40	0	40

**CIN, COURSE TITLE:** D-646-7007, General Shipboard/NAS Weapons Department AVORD Maintenance  
**COURSE LENGTH:** 6.0 Weeks **SEA TOUR LENGTH:** Navy: 60 Months  
**ATTRITION FACTOR:** Navy: 10 % **BACKOUT FACTOR:** 0.12

TRAINING ACTIVITY	SOURCE	ACDU-TAR SELRES	CY04		FY05		FY06		FY07		FY08	
			OFF	ENL	OFF	ENL	OFF	ENL	OF	ENL	OFF	ENL
MTU-4030 NAMTRAGRUDET, NS Mayport												
	USN	ACDU-TAR	0	72	0	72	0	72	0	72	0	72
MTU-4032 NAMTRAU, NAS Norfolk												
	USN	ACDU-TAR	0	60	0	60	0	60	0	60	0	60
	USN	SELRES	0	0	0	1	0	0	0	0	0	0
		TOTAL	0	60	0	61	0	60	0	60	0	60

**CIN, COURSE TITLE:** E-646-7001, Strike Armament Equipment Intermediate Maintenance  
**COURSE LENGTH:** 9.0 Weeks **SEA TOUR LENGTH:** Navy: 60 Months  
**ATTRITION FACTOR:** Navy: 10 % **BACKOUT FACTOR:** 0.12

TRAINING ACTIVITY	SOURCE	ACDU-TAR SELRES	CY04		FY05		FY06		FY07		FY08	
			OFF	ENL	OFF	ENL	OFF	ENL	OF	ENL	OFF	ENL
MTU-4033 NAMTRAU, NAS North Island												
	USN	ACDU-TAR	0	64	0	64	0	64	0	64	0	64
	USN	SELRES	0	0	0	0	0	0	0	0	0	0
		TOTAL	0	64	0	64	0	64	0	64	0	64

<sup>6</sup> ATIR shown are for the total course throughput for applicable NEC/MOS, not just throughput required to support JDAM.

**II.B.1. ANNUAL TRAINING INPUT REQUIREMENTS (Continued)<sup>6</sup>**

**CIN, COURSE TITLE:** E-646-7007, General Shipboard/NAS Weapons Department AVORD Maintenance  
**COURSE LENGTH:** 6.0 Weeks **SEA TOUR LENGTH:** Navy: 60 Months  
**ATTRITION FACTOR:** Navy: 10 % **BACKOUT FACTOR:** 0.12

TRAINING ACTIVITY	SOURCE	ACDU-TAR SELRES	CY04		FY05		FY06		FY07		FY08	
			OFF	ENL								
MTU-4033 NAMTRAU, NAS North Island												
	USN	ACDU-TAR	0	72	0	72	0	72	0	72	0	72
	USN	SELRES	0	1	0	1	0	1	0	1	0	1
		TOTAL	0	73	0	73	0	73	0	73	0	73
MTU-4035 NAMTRAU, NAS Whidbey Island <sup>7</sup>												
	USN	ACDU-TAR	0	72	0	72	0	72	0	72	0	72

**CIN, COURSE TITLE:** C-646-4109, Weapons Department General Aviation Ordnance  
**COURSE LENGTH:** 2.0 Weeks **SEA TOUR LENGTH:** Navy: 60 Months  
**ATTRITION FACTOR:** Navy: 10 % **BACKOUT FACTOR:** 0.12

TRAINING ACTIVITY	SOURCE	ACDU-TAR SELRES	CY04		FY05		FY06		FY07		FY08	
			OFF	ENL								
MTU-4030 NAMTRAGRUDET, NS Mayport												
	USN	ACDU-TAR	0	60	0	60	0	60	0	60	0	60
MTU-4032 NAMTRAU, NAS Norfolk												
	USN	ACDU-TAR	0	50	0	50	0	50	0	50	0	50
MTU-4033 NAMTRAU, NAS North Island												
	USN	ACDU-TAR	0	72	0	72	0	72	0	72	0	72
MTU-4035 NAMTRAU, NAS Whidbey Island												
	USN	ACDU-TAR	0	72	0	72	0	72	0	72	0	72

**CIN, COURSE TITLE:** M-646-7026, Aircraft Ordnance Intermediate Maintenance  
**COURSE LENGTH:** 11 Weeks **SEA TOUR LENGTH:** NA  
**ATTRITION FACTOR:** Marine: 0 % **BACKOUT FACTOR:** 0.21

TRAINING ACTIVITY	SOURCE	USMC-AR SMCR	CY04		FY05		FY06		FY07		FY08	
			OFF	ENL								
MTU-4034, NAMTRAMARU MCAS Cherry Point												
	USMC	USMC-AR	0	240	0	240	0	240	0	240	0	240



**ACTIVITY TOTAL:**

MTU-4030 NAMTRAGRU DET	0	132	0	132	0	132	0	132	0	132
MTU-4032 NAMTRAU	0	150	0	151	0	150	0	150	0	150
MTU-4033 NAMTRAU	0	209	0	209	0	209	0	209	0	209
MTU-4034 NAMTRAMARU	0	240	0	240	0	240	0	240	0	240
MTU-4035 NAMTRAU	0	144	0	144	0	144	0	144	0	144

### **PART III - TRAINING REQUIREMENTS**

The following elements are not affected by JDAM and, therefore, are not included in this NTSP.

- III.A. Training Course Requirements
  - III.A.2 Follow-on Training
    - III.A.2.b. Planned Courses
    - III.A.2.c. Unique Courses
  - III.A.3. Existing Training Phased Out
- III.B. Total Ship Training Course Summary
- III.C. Inactive Duty Training Travel and Annual Training Summary

**III.A. TRAINING COURSE REQUIREMENTS**

**III.A.1. INITIAL TRAINING REQUIREMENTS**

**COURSE TITLE:** GBU-38/B Differences Training (Smart Pack & SCS 19C1 Differences)  
**COURSE DEVELOPER:** PMA 201/VX-31  
**INSTRUCTOR:** JDAM Project Officer (Currently CDR Les Makepeace)  
**COURSE LENGTH:** 1 day

<u>LOCATION, UIC</u>	<u>DATE BEGIN</u>	<u>STUDENTS</u>				<u>ACTIVITY DESTINATION</u>
		<u>OFF</u>	<u>ENL</u>	<u>CIV</u>		
NSAWC (Topgun), NAS Fallon , 69190	TBD	3	0	0	Input	NSAWC, (Topgun)
		0.03	0	0	AOB	
		0.03	0	0	Chargeable	
MAWTS-1, MCAS Yuma , 55167	TBD	3	0	0	Input	MAWTS-1
		0.03	0	0	AOB	
		0.03	0	0	Chargeable	
SFWSP, NAS Lemoore, 35185	TBD	3	0	0	Input	SFWSP
		0.03	0	0	AOB	
		0.03	0	0	Chargeable	
SFWSL, NAS Oceana , 47084	TBD	3	0	0	Input	SFWSL
		0.03	0	0	AOB	
		0.03	0	0	Chargeable	



**COURSE TITLE:** GBU-38/B Packaging and Storing, Inspections, Assembly and Disassembly,  
**COURSE DEVELOPER:** PMA 201  
**INSTRUCTOR:** Electronic  
**COURSE LENGTH:** 2 days

<u>LOCATION, UIC</u>	<u>DATE BEGIN</u>	<u>STUDENTS</u>				<u>ACTIVITY DESTINATION</u>
		<u>OFF</u>	<u>ENL</u>	<u>CIV</u>		
Weapons Det, NAS Fallon, 60495	TBD	0	20	0	Input	MTU-4030, 66069
		0	0.05	0	AOB	MTU-4032, 66046
		0	0.05	0	Chargeable	MTU-4033, 66065 MTU-4034, 66047 MTU-4035, 66058 FASOTRAGRULANT, AIRPAC MOTT, FWST Miramar, FWST Lemoore, FWST Oceana, FWST Beaufort, FWST Atsugi, FWST Iwakuni NAWMU-1, 52821

**COURSE TITLE:** GBU-38/B Intermediate Maintenance  
**COURSE DEVELOPER:** FWST/NAMTRAU MTU-4033/40355  
**INSTRUCTOR:** TBD  
**COURSE LENGTH:** 2 days

<u>LOCATION, UIC</u>	<u>DATE BEGIN</u>	<u>STUDENTS</u>				<u>ACTIVITY DESTINATION</u>
		<u>OFF</u>	<u>ENL</u>	<u>CIV</u>		
CV/CVN TBD (West Coast)	TBD	0	20	0	Input	CV/CVN TBD (West Coast)
		0	0.05	0	AOB	
		0	0.05	0	Chargeable	
CV/CVN TBD (East Coast)	TBD	0	20	0	Input	CV/CVN TBD (East Coast)
		0	0.05	0	AOB	
		0	0.05	0	Chargeable	

**NOTE:** Updated information on initial training will be incorporated into this NTSP, as it becomes available.

**III.A.2. FOLLOW-ON TRAINING**

**III.A.2.a. EXISTING COURSES**

**TRAINING ACTIVITY:** MTU-4030 NAMTRAGRUDET

**LOCATION, UIC:** NS Mayport, 66069

**CIN, COURSE TITLE:** D-646-7007, General Shipboard/NAS Weapons Department AVORD Maintenance

**SOURCE:** NAVY **STUDENT CATEGORY:** ACDU-TAR

CY04		FY05		FY06		FY07		FY08		
OFF	ENL									
0	72.0	0	72.0	0	72.0	0	72.0	0	72.0	ATIR
0	64.8	0	64.8	0	64.8	0	64.8	0	64.8	Output
0	7.9	0	7.9	0	7.9	0	7.9	0	7.9	AOB
0	7.9	0	7.9	0	7.9	0	7.9	0	7.9	Chargeable

**CIN, COURSE TITLE:** C-646-4109, Weapons Department General Aviation Ordnance

**SOURCE:** NAVY **STUDENT CATEGORY:** ACDU-TAR

CY04		FY05		FY06		FY07		FY08		
OFF	ENL									
0	60.0	0	60.0	0	60.0	0	60.0	0	60.0	ATIR
0	54.0	0	54.0	0	54.0	0	54.0	0	54.0	Output
0	2.2	0	2.2	0	2.2	0	2.2	0	2.2	AOB
0	2.2	0	2.2	0	2.2	0	2.2	0	2.2	Chargeable

**TRAINING ACTIVITY:** MTU-4032 NAMTRAU

**LOCATION, UIC:** NAS Norfolk, 66046

**CIN, COURSE TITLE:** D-646-7007, General Shipboard/NAS Weapons Department AVORD Maintenance

**SOURCE:** NAVY **STUDENT CATEGORY:** ACDU-TAR

CY04		FY05		FY06		FY07		FY08		
OFF	ENL									
0	60.0	0	60.0	0	60.0	0	60.0	0	60.0	ATIR
0	54.0	0	54.0	0	54.0	0	54.0	0	54.0	Output
0	6.6	0	6.6	0	6.6	0	6.6	0	6.6	AOB
0	6.6	0	6.6	0	6.6	0	6.6	0	6.6	Chargeable

**CIN, COURSE TITLE:** C-646-4109, Weapons Department General Aviation Ordnance

**SOURCE:** NAVY **STUDENT CATEGORY:** ACDU-TAR

CY04		FY05		FY06		FY07		FY08		
OFF	ENL									
0	50.0	0	50.0	0	50.0	0	50.0	0	50.0	ATIR
0	45.0	0	45.0	0	45.0	0	45.0	0	45.0	Output
0	1.8	0	1.8	0	1.8	0	1.8	0	1.8	AOB
0	1.8	0	1.8	0	1.8	0	1.8	0	1.8	Chargeable

III.A.2.a. EXISTING COURSES

**TRAINING ACTIVITY:** MTU-4033 NAMTRAU  
**LOCATION, UIC:** NAS North Island, 66065

**CIN, COURSE TITLE:** E-646-7007, General Shipboard/NAS Weapons Department AVORD Maintenance

**SOURCE:** NAVY **STUDENT CATEGORY:** ACDU-TAR

CY04		FY05		FY06		FY07		FY08		
OFF	ENL									
0	72.0	0	72.0	0	72.0	0	72.0	0	72.0	ATIR
0	64.8	0	64.8	0	64.8	0	64.8	0	64.8	Output
0	7.9	0	7.9	0	7.9	0	7.9	0	7.9	AOB
0	7.9	0	7.9	0	7.9	0	7.9	0	7.9	Chargeable

**CIN, COURSE TITLE:** C-646-4109, Weapons Department General Aviation Ordnance

**SOURCE:** NAVY **STUDENT CATEGORY:** ACDU-TAR

CY04		FY05		FY06		FY07		FY08		
OFF	ENL									
0	72.0	0	72.0	0	72.0	0	72.0	0	72.0	ATIR
0	64.8	0	64.8	0	64.8	0	64.8	0	64.8	Output
0	2.6	0	2.6	0	2.6	0	2.6	0	2.6	AOB
0	2.6	0	2.6	0	2.6	0	2.6	0	2.6	Chargeable

**TRAINING ACTIVITY:** MTU-4034 NAMTRAMARU  
**LOCATION, UIC:** MCAS Cherry Point, 66047

**CIN, COURSE TITLE:** M-646-7026, Aircraft Ordnance Intermediate Maintenance

**SOURCE:** USMC **STUDENT CATEGORY:** USMC - AR

CY04		FY05		FY06		FY07		FY08		
OFF	ENL									
0	240	0	240	0	240	0	240	0	240	ATIR
0	216	0	216	0	216	0	216	0	216	Output
0	48.1	0	48.1	0	48.1	0	48.1	0	48.1	AOB
0	48.1	0	48.1	0	48.1	0	48.1	0	48.1	Chargeable

III.A.2.a. EXISTING COURSES

**TRAINING ACTIVITY:** MTU-4035 NAMTRAU

**LOCATION, UIC:** NAS Whidbey Island, 66058

**CIN, COURSE TITLE:** E-646-7007, General Shipboard/NAS Weapons Department AVORD Maintenance

**SOURCE:** NAVY **STUDENT CATEGORY:** ACDU-TAR

CY04		FY05		FY06		FY07		FY08		
OFF	ENL									
0	72.0	0	72.0	0	72.0	0	72.0	0	72.0	ATIR
0	64.8	0	64.8	0	64.8	0	64.8	0	64.8	Output
0	7.9	0	7.9	0	7.9	0	7.9	0	7.9	AOB
0	7.9	0	7.9	0	7.9	0	7.9	0	7.9	Chargeable

**CIN, COURSE TITLE:** C-646-4109, Weapons Department General Aviation Ordnance

**SOURCE:** NAVY **STUDENT CATEGORY:** ACDU-TAR

CY04		FY05		FY06		FY07		FY08		
OFF	ENL									
0	72.0	0	72.0	0	72.0	0	72.0	0	72.0	ATIR
0	64.8	0	64.8	0	64.8	0	64.8	0	64.8	Output
0	2.6	0	2.6	0	2.6	0	2.6	0	2.6	AOB
0	2.6	0	2.6	0	2.6	0	2.6	0	2.6	Chargeable

## PART IV - TRAINING LOGISTICS SUPPORT REQUIREMENTS

The following elements are not affected by JDAM, and therefore, are not included in this NTSP:

### IV.B. Courseware Requirements

#### IV.B.1. Training Services

### IV.C. Facility Requirements

#### IV.C.1. Facility Requirements Summary (Space/Support) by Activity

#### IV.C.2. Facility Requirements Detailed by Activity and Course

#### IV.C.2. Facility project Summary by Program

**IV.A. TRAINING HARDWARE**

**IV.A.1. TTE/GPTE/SPTE/ST/GPETE/SPETE**

**TRAINING ACTIVITY:** NATTC  
**LOCATION, UIC:** NAS Pensacola, 63082  
**CIN, COURSE TITLE:** C-646-2011, AO A1 School (Core)  
 C-646-2012, AO A1 School (Navy Difference Strand)

<u>ITEM NUMBER</u>	<u>EQUIPMENT</u>	<u>TYPE OR RANGE OF REPAIR PARTS</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>GFE CFE</u>	<u>STATUS</u>
TTE						
001	CNU-589/E	NA	1	FY01	CFE	On Hand
005	CNU-589A/E	NA	1	FY04	CFE	On Contract

**TRAINING ACTIVITY:** MTU-4030 NAMTRAGRUDET  
**LOCATION, UIC:** NS Mayport, 66069  
**CIN, COURSE TITLE:** C-646-3113, Precision Guided Weapons  
 C-646-4108, Weapons Department Air Launched Weapons Supervisors  
 C-646-4109, Weapons Department Air Launched Weapons General Ordnance

<u>ITEM NUMBER</u>	<u>EQUIPMENT</u>	<u>TYPE OR RANGE OF REPAIR PARTS</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>GFE CFE</u>	<u>STATUS</u>
TTE						
001	CNU-589/E	NA	1	FY01	CFE	On Hand
002	AN-GYQ79 CMBRE	NA	1	FY01	CFE	On Hand
003	MPCU	NA	1	FY01	CFE	On Hand
004	JDAM MAP	NA	1	FY01	CFE	On Hand
005	CNU-589A/E	NA	1	FY04	CFE	On Contract

**TRAINING ACTIVITY:** MTU-4032 NAMTRAU  
**LOCATION, UIC:** NAS Norfolk, 66046  
**CIN, COURSE TITLE:** C-646-3113, Precision Guided Weapons  
 C-646-4108, Weapons Department Air Launched Weapons Supervisors  
 C-646-4109, Weapons Department Air Launched Weapons General Ordnance

<u>ITEM NUMBER</u>	<u>EQUIPMENT</u>	<u>TYPE OR RANGE OF REPAIR PARTS</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>GFE CFE</u>	<u>STATUS</u>
TTE						
001	CNU-589/E	NA	1	FY01	CFE	On Hand
002	AN-GYQ79 CMBRE	NA	1	FY01	CFE	On Hand
003	MPCU	NA	1	FY01	CFE	On Hand
004	JDAM MAP	NA	1	FY01	CFE	On Hand
005	CNU-589A/E	NA	1	FY04	CFE	On Contract

IV.A.1. TTE/GPTE/SPTE/ST/GPETE/SPETE

**TRAINING ACTIVITY:** MTU-4033 NAMTRAU  
**LOCATION, UIC:** NAS North Island, 66065  
**CIN, COURSE TITLE:** C-646-3113, Precision Guided Weapons  
 C-646-4108, Weapons Department Air Launched Weapons Supervisors  
 C-646-4109, Weapons Department Air Launched Weapons General Ordnance

<u>ITEM NUMBER</u>	<u>EQUIPMENT</u>	<u>TYPE OR RANGE OF REPAIR PARTS</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>GFE CFE</u>	<u>STATUS</u>
TTE						
001	CNU-589/E	NA	1	FY01	CFE	On Hand
002	AN-GYQ79 CMBRE	NA	1	FY01	CFE	On Hand
003	MPCU	NA	1	FY01	CFE	On Hand
004	JDAM MAP	NA	1	FY01	CFE	On Hand
005	CNU-589A/E	NA	1	FY04	CFE	On Contract

**TRAINING ACTIVITY:** MTU-4034 NAMTRAMARU  
**LOCATION, UIC:** MCAS Cherry Point, 66047  
**CIN, COURSE TITLE:** C-646-3105, Aviation Ordnance Munitions Technician

<u>ITEM NUMBER</u>	<u>EQUIPMENT</u>	<u>TYPE OR RANGE OF REPAIR PARTS</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>GFE CFE</u>	<u>STATUS</u>
TTE						
001	CNU-589/E	NA	1	FY01	CFE	On Hand
002	AN-GYQ79 CMBRE	NA	1	FY01	CFE	On Hand
003	MPCU	NA	1	FY01	CFE	On Hand
004	JDAM MAP	NA	1	FY01	CFE	On Hand
005	CNU-589A/E	NA	1	FY04	CFE	On Contract

**TRAINING ACTIVITY:** MTU-4035 NAMTRAU  
**LOCATION, UIC:** NAS Whidbey Island, 66058  
**CIN, COURSE TITLE:** C-646-3113, Precision Guided Weapons  
 C-646-4108, Weapons Department Air Launched Weapons Supervisors  
 C-646-4109, Weapons Department Air Launched Weapons General Ordnance

<u>ITEM NUMBER</u>	<u>EQUIPMENT</u>	<u>TYPE OR RANGE OF REPAIR PARTS</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>GFE CFE</u>	<u>STATUS</u>
TTE						
001	CNU-589/E	NA	1	FY01	CFE	On Hand
002	AN-GYQ79 CMBRE	NA	1	FY01	CFE	On Hand
003	MPCU	NA	1	FY01	CFE	On Hand
004	JDAM MAP	NA	1	FY01	CFE	On Hand
005	CNU-589A/E	NA	1	FY04	CFE	On Contract

**IV.A.2. TRAINING DEVICES**

**DEVICE:** Training Guidance Sets **KMU-XXX(D-2)/B, or KMU-556(D-2)/B and KMU-558(D-2)/B** for JDAM Load Drill Trainer(LDT) **GBU-31(D-2)2/B, and GBU-31(D-2)4/B**

**DESCRIPTION OF DEVICE:** The LDT is inert and will have the same physical appearance, size, center of gravity, and weight as the actual weapon. The LDTs will be issued as Training Guidance Sets to be installed on the MK 84/BLU-117 and BLU-109 bombs, as appropriate.

**MANUFACTURER:** Boeing Company

**CONTRACT NUMBER:** NA

**TEE STATUS:** NA

<b>TRAINING ACTIVITY LOCATION, UIC</b>	<b>QUANT REQD</b>	<b>DATE REQD</b>	<b>RFT DATE</b>	<b>STATUS</b>	<b>COURSES SUPPORTED</b>
NATTC, NAS Pensacola AO"A" School, 63082	2	06/01	08/01	On Hand	C-646-2011 C-646-2012
Strike Fighter Weapons School Atlantic NAS Oceana, 40784	1	03/99	03/00	On Hand	D-646-0640 D-646-0647
Strike Fighter Weapons School Pacific NAS Lemoore, 35185	1	03/99	03/00	On Hand	E-646-0640 E-646-0647
MTU 1007, NAMTRAU NAS Oceana, 66045	2	10/01	01/02	At China Lake	C-646-9962
SWATSLANT NAS Oceana, 47157	2	01/01	01/02	On Hand	D-646-1644 D-646-1645 D-646-1648
MTU 4030, NAMTRAGRUDET NS Mayport, 66069	2	06/01	07/01	On Hand	C-646-3113 C-646-4108 C-646-4109
MTU 4032, NAMTRAU NAS Norfolk, 66046	2	06/01	07/01	On Hand	C-646-3113 C-646-4108 C-646-4109
MTU 4033, NAMTRAU NAS North Island, 66065	2	06/01	07/01	On Hand	C-646-3113 C-646-4108 C-646-4109
MTU 4034, NAMTRAU MCAS Cherry Pt, 66047	2	06/01	07/01	On Hand	C-646-3105
MTU 4035, NAMTRAU NAS Whidbey Island, 66058	2	06/01	07/01	On Hand	C-646-3113 C-646-4108 C-646-4109
VMAT 203 FREST MCAS Cherry Pt, 57080	2	06/01	07/01	On Hand	C-646-3893
<b>TOTAL:</b>	20				

**IV.A.2. TRAINING DEVICES**

**DEVICE:** Training Guidance Set **KMU-559(D-2)/B** for JDAM Load Drill Trainer (LDT) **GBU-32(D-2)2/B**

**DESCRIPTION OF DEVICE:** The LDT is inert and will have the same physical appearance, size, center of gravity, and weight as the actual weapon. The LDT will be issued as Training Guidance Sets to be installed on the MK 83/BLU-110 bombs, as appropriate.

**MANUFACTURER:** Boeing Company

**CONTRACT NUMBER:** NA

**TEE STATUS:** NA

<b>TRAINING ACTIVITY LOCATION, UIC</b>	<b>QUANT REQD</b>	<b>DATE REQD</b>	<b>RFT DATE</b>	<b>STATUS</b>	<b>COURSES SUPPORTED</b>
NATTC, NAS Pensacola AO"A" School, 63082	2	06/03	06/03	On Hand	C-646-2011 C-646-2012
Strike Fighter Weapons School Atlantic NAS Oceana, 40784	1	06/03	06/03	On Hand	D-646-0640 D-646-0647
Strike Fighter Weapons School Pacific NAS Lemoore, 35185	1	06/03	06/03	On Hand	E-646-0640 E-646-0647
MTU 4030, NAMTRAGRUDET NS Mayport, 66069	2	06/03	06/03	On Hand	C-646-3113 C-646-4108 C-646-4109
MTU 4032, NAMTRAU NAS Norfolk, 66046	2	06/03	06/03	On Hand	C-646-3113 C-646-4108 C-646-4109
MTU 4033, NAMTRAU NAS North Island, 66065	2	06/03	06/03	On Hand	C-646-3113 C-646-4108 C-646-4109
MTU 4034, NAMTRAU MCAS Cherry Pt, 66047	2	06/03	06/03	On Hand	C-646-3105
MTU 4035, NAMTRAU NAS Whidbey Island, 66058	2	06/03	06/03	On Hand	C-646-3113 C-646-4108 C-646-4109
VMAT 203 FREST MCAS Cherry Pt, 57080	2	06/03	06/03	TBD	C-646-3893
<b>TOTAL:</b>	20				

**IV.A.2. TRAINING DEVICES**

**DEVICE:** Training Guidance Set **KMU-572(D-2)/B** for JDAM Load Drill Trainer (LDT) **GBU-38/B**

**DESCRIPTION OF DEVICE:** The LDT is inert and will have the same physical appearance, size, center of gravity, and weight as the actual weapon. The LDT will be issued as Training Guidance Sets to be installed on the MK 82/BLU-111 bombs, as appropriate.

**MANUFACTURER:** Boeing Company

**CONTRACT NUMBER:** NA

**TEE STATUS:** NA

<u>TRAINING ACTIVITY LOCATION, UIC</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>RFT DATE</u>	<u>STATUS</u>	<u>COURSES SUPPORTED</u>
NATTC, NAS Pensacola AO"A" School, 63082	2	06/04	06/04	On Contract	C-646-2011 C-646-2012
Strike Fighter Weapons School Atlantic NAS Oceana, 40784	1	06/04	06/04	On Contract	D-646-0640 D-646-0647
Strike Fighter Weapons School Pacific NAS Lemoore, 35185	1	06/04	06/04	On Contract	E-646-0640 E-646-0647
MTU 1007, NAMTRAU NAS Oceana, 66045	2	TBD	TBD	TBD	C-646-9962
SWATSLANT NAS Oceana, 47157	2	06/04	06/04	On Contract	D-646-1644 D-646-1645 D-646-1648
MTU 4030, NAMTRAGRUDET NS Mayport, 66069	2	06/04	06/04	On Contract	C-646-3113 C-646-4108 C-646-4109
MTU 4032, NAMTRAU NAS Norfolk, 66046	2	06/04	06/04	On Contract	C-646-3113 C-646-4108 C-646-4109
MTU 4033, NAMTRAU NAS North Island, 66065	2	06/04	06/04	On Contract	C-646-3113 C-646-4108 C-646-4109
MTU 4034, NAMTRAU MCAS Cherry Pt, 66047	2	06/04	06/04	On Contract	C-646-3105
MTU 4035, NAMTRAU NAS Whidbey Island, 66058	2	06/04	06/04	On Contract	C-646-3113 C-646-4108 C-646-4109
VMAT 203 FREST MCAS Cherry Pt, 57080	2	06/04	06/04	TBD	C-646-3893
<b>TOTAL:</b>	20				

**IV.A.2. TRAINING DEVICES**

**DEVICE:** JPF Inert Load Trainer (ILT)

**DESCRIPTION OF DEVICE:** The ILT is inert and will have the same physical appearance, size, and weight as the actual JPF. The ILT is used for aircraft load drill training and weapon assembly training. The JPF is currently in the Developmental Test phase. Upon successful OPEVAL, the ILTs will be forwarded to all training commands.

**MANUFACTURER:** Aliant

**CONTRACT NUMBER:** TBD

**TEE STATUS:** TBD

<b>TRAINING ACTIVITY LOCATION, UIC</b>	<b>QUANT REQD</b>	<b>DATE REQD</b>	<b>RFT DATE</b>	<b>STATUS</b>	<b>COURSES SUPPORTED</b>
NATTC, NAS Pensacola AO"A" School, 63082	2	TBD	TBD	DT	C-646-2011 C-646-2012
Strike Fighter Weapons School Atlantic NAS Oceana, 40784	1	TBD	TBD	DT	D-646-0640 D-646-0647
Strike Fighter Weapons School Pacific NAS Lemoore, 35185	1	TBD	TBD	DT	E-646-0640 E-646-0647
MTU 1007, NAMTRAU NAS Oceana, 66045	2	TBD	TBD	DT	C-646-9962
SWATSLANT NAS Oceana, 47157	1	TBD	TBD	DT	D-646-1644 D-646-1645 D-646-1648
MTU 4030, NAMTRAGRUDET NS Mayport, 66069	2	TBD	TBD	DT	C-646-3113 C-646-4108 C-646-4109
MTU 4032, NAMTRAU NAS Norfolk, 66046	2	TBD	TBD	DT	C-646-3113 C-646-4108 C-646-4109
MTU 4033, NAMTRAU NAS North Island, 66065	2	TBD	TBD	DT	C-646-3113 C-646-4108 C-646-4109
MTU 4034, NAMTRAU MCAS Cherry Pt, 66047	1	TBD	TBD	DT	C-646-3105
MTU 4035, NAMTRAU NAS Whidbey Island, 66058	2	TBD	TBD	DT	C-646-3113 C-646-4108 C-646-4109
VMAT 203 FREST MCAS Cherry Pt, 57080	1	TBD	TBD	DT	C-646-3893
NAVSCOLEOD Eglin AFB, 62640	2	TBD	TBD	DT	A-431-0011 A-431-0012
EODTEU ONE San Diego, 30202	1	TBD	TBD	DT	G-431-0001
EODTEU TWO Fort Story, 43505	1	TBD	TBD	DT	G-431-0001
<b>TOTAL:</b>	21				

**IV.A.2. TRAINING DEVICES**

**DEVICE:** Practice EOD System Trainer, (PEST)

**DESCRIPTION OF DEVICE:** The Practice EOD System Trainer will be used for recognition and demonstration of Render Safe Procedures (RSPs).

**MANUFACTURER:** Boeing

**CONTRACT NUMBER:** NA

**TEE STATUS:** NA

<b>TRAINING ACTIVITY LOCATION, UIC</b>	<b><u>QUANT REQD</u></b>	<b><u>DATE REQD</u></b>	<b><u>RFT DATE</u></b>	<b><u>STATUS</u></b>	<b><u>COURSES SUPPORTED</u></b>
NAVSCOLEOD Eglin AFB, 62640	2	NA	Available	On Hand	A-431-0011 A-431-0012
EODTEU ONE San Diego, 30202	1	NA	Available	On Hand	G-431-0001
EODTEU TWO Fort Story, 43505	1	NA	Available	On Hand	G-431-0001
<b>TOTAL:</b>	4				

**IV.B.2. CURRICULA MATERIALS AND TRAINING AIDS**

**TRAINING ACTIVITY:** VFA-106  
**LOCATION, UIC:** NAS Oceana, 09679  
**CIN, COURSE TITLE:** D-2A-0601, F/A-18 Fleet Replacement Pilot Cat 1  
 D-2A-0602, F/A-18 Fleet Replacement Pilot Cat 2A  
 D-2A-0604, F/A-18 Fleet Replacement Pilot Cat 3A  
 D-2A-0606, F/A-18 Fleet Replacement Pilot Cat 4

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
SFTS JDAM ICW	1 Set		On Hand
SFTS JDAM Familiarization Brief	1 Set		On Hand

**TRAINING ACTIVITY:** VFA-125  
**LOCATION, UIC:** NAS Lemoore, 09485  
**CIN, COURSE TITLE:** E-2A-0601, F/A-18 Fleet Replacement Pilot Cat 1  
 E-2A-0602, F/A-18 Fleet Replacement Pilot Cat 2A  
 E-2A-0604, F/A-18 Fleet Replacement Pilot Cat 3A  
 E-2A-0606, F/A-18 Fleet Replacement Pilot Cat 4

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
SFTS JDAM ICW	1 Set		On Hand
SFTS JDAM Familiarization Brief	1 Set		On Hand

**TRAINING ACTIVITY:** VMFAT-101  
**LOCATION, UIC:** MCAS Miramar, 45526  
**CIN, COURSE TITLE:** M13P4B3, F/A-18 Fleet Replacement Pilot Basic and Transition  
 M13P3V3, F/A-18 Fleet Replacement Pilot Refresher  
 M13P3W3, F/A-18 Fleet Replacement Pilot Modified Refresher  
 M13P4C3, F/A-18 WSO Basic and Transition  
 M13P3R3, F/A-18 WSO Refresher  
 M13P3S3, F/A-18 WSO Modified Refresher

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
SFTS JDAM ICW	1 Set		On Hand
SFTS JDAM Familiarization Brief	1 Set		On Hand

**TRAINING ACTIVITY:** VMAT-203  
**LOCATION, UIC:** MCAS Cherry Point, 45483  
**CIN, COURSE TITLE:** M04P4H4, AV-8B Fleet Replacement Pilot Basic and Transition  
 M04P4Q4, AV-8B Fleet Replacement Pilot Refresher  
 M04P4R4, AV-8B Fleet Replacement Pilot Modified Refresher

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
SFTS JDAM ICW	1 Set		TBD
SFTS JDAM Familiarization Brief	1 Set		TBD

**TRAINING ACTIVITY:** Strike Fighter Weapons School Atlantic  
**LOCATION, UIC:** NAS Oceana, 40784  
**CIN, COURSE TITLE:** Strike Fighter Advanced Readiness Program (SFARP)  
 Strike Fighter Weapons Employment (SFWE)

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
SFTS JDAM ICW	1 Set		On Hand
SFTS JDAM Familiarization Brief	1 Set		On Hand

**IV.B.2. CURRICULA MATERIALS AND TRAINING AIDS**

JDAM GBU-38/B Smart Pack (In-flight Guide & Mission Planning Guide)	1 Set	In Development
F/A-18 OFP 19C1 Differences Brief	1 Set	In Development

**TRAINING ACTIVITY:** Strike Fighter Weapons School Pacific  
**LOCATION, UIC:** NAS Lemoore, 35185  
**CIN, COURSE TITLE:** Strike Fighter Advanced Readiness Program (SFARP)  
 Strike Fighter Weapons Employment (SFWE)

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
SFTS JDAM ICW	1 Set		On Hand
SFTS JDAM Familiarization Brief	1 Set		On Hand
JDAM GBU-38/B Smart Pack (In-flight Guide & Mission Planning Guide)	1 Set		In Development
F/A-18 OFP 19C1 Differences Brief	1 Set		In Development

**TRAINING ACTIVITY:** VF-101  
**LOCATION, UIC:** NAS Oceana, 09067  
**CIN, COURSE TITLE:** D-2A-1601, F-14 Fleet Replacement Pilot Cat 1  
 D-2A-1602, F-14 Fleet Replacement Pilot Cat 2  
 D-2A-1603, F-14 Fleet Replacement Pilot Cat 3  
 D-2A-1604, F-14 Fleet Replacement Pilot Cat 4  
 D-2A-1605, F-14 Fleet Replacement Pilot Cat 5  
 D-2D-1601, F-14 Naval Flight Officer Cat 1  
 D-2D-1602, F-14 Naval Flight Officer Cat 2  
 D-2D-1603, F-14 Naval Flight Officer Cat 3  
 D-2D-1604, F-14 Naval Flight Officer Cat 4  
 D-2D-1605, F-14 Naval Flight Officer Cat 5

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
SFTS JDAM ICW	1 Set		On Hand
SFTS JDAM Familiarization Brief	1 Set		On Hand

**TRAINING ACTIVITY:** Strike Weapons And Tactics School Atlantic  
**LOCATION, UIC:** NAS Oceana, 47157  
**CIN, COURSE TITLE:** D-2D-1620, F-14 Strike Fighter Advanced Readiness Program (SFARP)  
 D-2D-1622, Strike Fighter (Air-to-Air) Weapons Employment (SFWE)

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
SFTS JDAM ICW	1 Set		On Hand
SFTS JDAM Familiarization Brief	1 Set		On Hand

**TRAINING ACTIVITY:** Naval Strike and Air Warfare Center N7 (Topgun)  
**LOCATION, UIC:** NAS Fallon, 69190  
**CIN, COURSE TITLE:** Strike Fighter Training Program (SFTP)  
 Strike Fighter Tactics Instructor (SFTI)  
 Strike Fighter Weapons and Tactics (SFWT)

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
SFTS JDAM ICW	1 Set		On Hand
SFTS JDAM Familiarization Brief	1 Set		On Hand
JDAM GBU-38/B Smart Pack (In-flight Guide & Mission Planning Guide)	1 Set		In Development
F/A-18 OFP 19C1 Differences Brief	1 Set		In Development

**IV.B.2. CURRICULA MATERIALS AND TRAINING AIDS**

**TRAINING ACTIVITY:** MAWTS 1  
**LOCATION, UIC:** MCAS Yuma, 55167  
**CIN, COURSE TITLE:** Air Combat Maneuvering Instructor (ACMI)  
 Weapons and Tactics Instructor (WTI)

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
SFTS JDAM ICW	1 Set		On Hand
SFTS JDAM Familiarization Brief	1 Set		On Hand
JDAM GBU-38/B Smart Pack (In-flight Guide & Mission Planning Guide)	1 Set		In Development
F/A-18 OFP 19C1 Differences Brief	1 Set		In Development

**TRAINING ACTIVITY:** NATTC, AO "A" School  
**LOCATION, UIC:** NAS Pensacola, 63082  
**CIN, COURSE TITLE:** C-646-2011, Aviation Ordnance Common Core Class A1  
 C-646-2012, Aviation Ordnanceman Navy Difference Training Strand

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
JDAM Training Package	1 Set		On Hand
JDAM Intermediate Maintenance ICW	5 CDs		On Hand

**TRAINING ACTIVITY:** SFWS Atlantic  
**LOCATION, UIC:** NAS Oceana, 47084  
**CIN, COURSE TITLE:** D-646-0640, F/A-18 Conventional Weapons Loading  
 D-646-0647, F/A-18 Conventional Release System Test

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
JDAM Training Package	1 Set		On Hand

**TRAINING ACTIVITY:** SFWS Pacific  
**LOCATION, UIC:** NAS Lemoore, 35185  
**CIN, COURSE TITLE:** E-646-0640, F/A-18 Conventional Weapons Loading  
 E-646-0647, F/A-18 Conventional Release System Test

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
JDAM Training Package	1 Set		On Hand

**TRAINING ACTIVITY:** SWATSLANT  
**LOCATION, UIC:** NAS Oceana, 47084  
**CIN, COURSE TITLE:** D-646-1644, F-14A/B Conventional Weapons Loading  
 D-646-1645, F-14A/B Integrated Weapons Team Refresher Training  
 D-646-0648, F-14D Integrated Weapons Team Refresher Training

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
JDAM Training Package	1 Set		On Hand

**IV.B.2. CURRICULA MATERIALS AND TRAINING AIDS**

**TRAINING ACTIVITY:** MTU-1007 NAMTRAGRUDET  
**LOCATION, UIC:** NAS Oceana, 66045  
**CIN, COURSE TITLE:** C-646-9962, F-14 Armament Systems Organizational Maintenance (Initial)  
 C-646-9963, F-14 Armament Systems Organizational Maintenance (Career)

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
JDAM Training Package	1 Set		On Hand

**TRAINING ACTIVITY:** VMAT-203 FREST  
**LOCATION, UIC:** MCAS Cherry Point, 57080  
**CIN, COURSE TITLE:** C-646-3893, AV-8B Conventional Weapons Loading  
 C-646-9888, AV-8B Aircraft Ordnance Technician Integrated Organizational Maintenance

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
JDAM Training Package	1 Set		On Hand

**TRAINING ACTIVITY:** MTU-4030 NAMTRAGRUDET  
**LOCATION, UIC:** NS Mayport, 66069  
**CIN, COURSE TITLE:** C-646-3113, Precision Guided Weapons  
 C-646-4108, Weapons Department General Aviation Ordnance Supervisor  
 C-646-4109, Weapons Department General Aviation Ordnance

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
JDAM Training Package	1 Set		On Hand
JDAM Intermediate Maintenance ICW	10 CDs		On Hand

**TRAINING ACTIVITY:** MTU-4032 NAMTRAU  
**LOCATION, UIC:** NAS Norfolk, 66046  
**CIN, COURSE TITLE:** C-646-3113, Precision Guided Weapons  
 C-646-4108, Weapons Department General Aviation Ordnance Supervisor  
 C-646-4109, Weapons Department General Aviation Ordnance

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
JDAM Training Package	1 Set		On Hand
JDAM Intermediate Maintenance ICW	10 CDs		On Hand

**TRAINING ACTIVITY:** MTU-4033 NAMTRAU  
**LOCATION, UIC:** NAS North Island, 66065  
**CIN, COURSE TITLE:** C-646-3113, Precision Guided Weapons  
 C-646-4108, Weapons Department General Aviation Ordnance Supervisor  
 C-646-4109, Weapons Department General Aviation Ordnance

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
JDAM Training Package	1 Set		On Hand
JDAM Intermediate Maintenance ICW	10 CDs		On Hand

**TRAINING ACTIVITY:** MTU-4034 NAMTRAU  
**LOCATION, UIC:** MCAS Cherry Point, 66047  
**CIN, COURSE TITLE:** C-646-3105, Aviation Ordnance Intermediate Maintenance Technician

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
JDAM Training Package	1 Set		On Hand
JDAM Intermediate Maintenance ICW	10 CDs		On Hand

**IV.B.2. CURRICULA MATERIALS AND TRAINING AIDS**

**TRAINING ACTIVITY:** MTU-4035 NAMTRAU  
**LOCATION, UIC:** NAS Whidbey Island, 66058  
**CIN, COURSE TITLE:** C-646-3113, Precision Guided Weapons  
 C-646-4108, Weapons Department General Aviation Ordnance Supervisor  
 C-646-4109, Weapons Department General Aviation Ordnance

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
JDAM Training Package	1 Set		On Hand
JDAM Intermediate Maintenance ICW	10 CDs		On Hand

**TRAINING ACTIVITY:** NAVSCOLEOD  
**LOCATION, UIC:** Eglin AFB, 62640  
**CIN, COURSE TITLE:** A-431-0011, EOD Phase II (Navy)  
 A-431-0012, EOD Phase II

<u>TYPE OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
JDAM Source Data	1 Set		On Hand

**TRAINING ACTIVITY:** Weapons Department  
**LOCATION, UIC:** See Below

**CIN, COURSE TITLE:** Inter-Deployment Training Cycle(IDTC)

<u>TYPES OF MATERIAL OR AID</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
JDAM Intermediate Maintenance ICW			
COMNAVAIRLANT, NAS Norfolk, 57012	10 CDs		On Hand
COMNAVAIRPAC, NAS North Island, 57025	10 CDs		On Hand
COMNAVRESFOR, JRB New Orleans	10 CDs		On Hand
NSAWC, NAS Fallon	10 CDs		On Hand
MAWTS-1, MCAS Yuma, 55167	10 CDs		On Hand
NAS Fallon, 60495	10 CDs		On Hand
NAS Key West, 00213	0 CDs		No action
NAS Lemoore, 63042	10 CDs		On Hand
NAS North Island, 00246	0 CDs		No action
NAS Oceana, 60191	0 CDs		No action
NAS Patuxent River, 0428A	0 CDs		No action
NAS Point Mugu, 0429A	0 CDs		No action
NS Roosevelt Roads, 00389	0 CDs		No action
NAS Whidbey Island, 00620	0 CDs		No action
NAF Atsugi, 62507	0 CDs		No action
NAF El Centro, 60042	0 CDs		No action
NAWS China Lake, 68937	10 CDs		On Hand
NAWS Point Mugu, 0429A	10 CDs		On Hand
NAWMU-1, 52821	10 CDs		On Hand
NAVSUPPFAC Diego Garcia, 68539	0 CDs		No action
NAWCAD Patuxent River, 00421	0 CDs		No action
NAWCWD Point Mugu, 63126	10 CDs		On Hand

**IV.B.2. CURRICULA MATERIALS AND TRAINING AIDS**

**TRAINING ACTIVITY:** Weapons Department  
**LOCATION, UIC:** See Below

**CIN, COURSE TITLE:** Inter-Deployment Training Cycle(IDTC)

<b><u>TYPES OF MATERIAL OR AID:</u></b>	<b><u>QUANT REQD</u></b>	<b><u>DATE REQD</u></b>	<b><u>STATUS</u></b>
JDAM Intermediate Maintenance ICW			
NWTS, China Lake, 39787	10 CDs		On Hand
NWTS, Point Mug, 39788	10 CDs		On Hand
JRB/NAS Atlanta, 00196	10 CDs		On Hand
JRB/NAS Fort Worth, 83447	10 CDs		On Hand
JRB/NAS New Orleans, 00206	10 CDs		On Hand
NAF Washington (Andrews AFB), 00166	10 CDs		On Hand
FASOTRAGRULANT (MOTT), NAS Norfolk, 09810	10 CDs		On Hand
FASOTRAGRUPAC DET Fallon (MOTT), NAS Fallon, 39937	0 CDs		No action
FASOTRAGRUPAC DET Lemoore, NAS Lemoore, 0347A	0 CDs		No action
CV-63 USS Kitty Hawk, 03363	10 CDs		On Hand
CV-64 USS Constellation, 03364	10 CDs		On Hand
CVN-65 USS Enterprise, 03365	10 CDs		On Hand
CV-67 USS Kennedy, 03367	10 CDs		On Hand
CVN-68 USS Nimitz, 03368	10 CDs		On Hand
CVN-69 USS Eisenhower, 03369	10 CDs		On Hand
CVN-70 USS Vinson, 20993	10 CDs		On Hand
CVN-71 USS Roosevelt, 21247	10 CDs		On Hand
CVN-72 USS Lincoln, 21297	10 CDs		On Hand
CVN-73 USS Washington, 21412	10 CDs		On Hand
CVN-74 USS Stennis, 21847	10 CDs		On Hand
CVN-75 USS Truman, 21853	10 CDs		On Hand
CVN-76 USS Reagan, 22178	10 CDs		On Hand
COMMARFORLANT, NOB Norfolk, 67025	0 CDs		No action
COMMARFORPAC, Camp Smith Hawaii, 67026	0 CDs		No action
COMMARFORRES, JRB New Orleans, 67861	10 CDs		On Hand
MCAS Beaufort, 60169	10 CDs		On Hand
MCAS Miramar, 67865	10 CDs		On Hand
MCAS Yuma, 62974	10 CDs		On Hand
MAD China Lake, 67852	0 CDs		No action
MAD Patuxent River, 67356	0 CDs		No action
MAD Point Mugu, 67414	10 CDs		On Hand
MALS-11 Miramar, 09111	10 CDs		On Hand
MALS-12 Iwakuni, 09377	10 CDs		On Hand
MALS-13 Yuma, 09041	10 CDs		On Hand
MALS-14 Cherry Point, 09044	10 CDs		On Hand
MALS-31 Beaufort, 09384	10 CDs		On Hand
MALS-41 Fort Worth, 67239	10 CDs		On Hand
MALS-42 Marietta, 67236	0 CDs		No action

**IV.B.2. CURRICULA MATERIALS AND TRAINING AIDS**

**TRAINING ACTIVITY:** Weapons Department  
**LOCATION, UIC:** See Below

**CIN, COURSE TITLE:** Inter-Deployment Training Cycle(IDTC)

<b><u>TYPES OF MATERIAL OR AID:</u></b>	<b><u>QUANT REQD</u></b>	<b><u>DATE REQD</u></b>	<b><u>STATUS</u></b>
JDAM Intermediate Maintenance ICW			
MALS-46 Miramar, 67244	0 CDs		No action
MASD Andrews, 04801	0 CDs		No action

### IV.B.3. TECHNICAL MANUALS

**TRAINING ACTIVITY:** VFA-106  
**LOCATION, UIC:** NAS Oceana, 09679  
**CIN, COURSE TITLE:** D-2A-0601, F/A-18 Fleet Replacement Pilot Cat 1  
 D-2A-0602, F/A-18 Fleet Replacement Pilot Cat 2A  
 D-2A-0604, F/A-18 Fleet Replacement Pilot Cat 3A  
 D-2A-0606, F/A-18 Fleet Replacement Pilot Cat 4

<u>TECHNICAL MANUAL TITLE, NUMBER</u>	<u>MEDIUM</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
NATOPS Flight Manual Navy Model F/A-18A/B/C/D, A1-F18AC-NFM-000	Hard copy	6		On Board
NATOPS Pocket Checklist, A1-F18AC-NFM-500	Hard copy	6		On Board
Tactical Manual, A1-F18AC-TAC-000	Hard copy	6		On Board
Tactical Manual Pocket Guide, A1-F18AC-TAC-300	Hard copy	6		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**TRAINING ACTIVITY:** VFA-125  
**LOCATION, UIC:** NAS Lemoore, 09485  
**CIN, COURSE TITLE:** E-2A-0601, F/A-18 Fleet Replacement Pilot Cat 1  
 E-2A-0602, F/A-18 Fleet Replacement Pilot Cat 2A  
 E-2A-0604, F/A-18 Fleet Replacement Pilot Cat 3A  
 E-2A-0606, F/A-18 Fleet Replacement Pilot Cat 4

NATOPS Flight Manual Navy Model F/A-18A/B/C/D, A1-F18AC-NFM-000	Hard copy	6		On Board
NATOPS Pocket Checklist, A1-F18AC-NFM-500	Hard copy	6		On Board
Tactical Manual, A1-F18AC-TAC-000	Hard copy	6		On Board
Tactical Manual Pocket Guide, A1-F18AC-TAC-300	Hard copy	6		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**TRAINING ACTIVITY:** SFWS Atlantic  
**LOCATION, UIC:** NAS Oceana, 40784  
**CIN, COURSE TITLE:** SFARP  
 SFWE

<u>TECHNICAL MANUAL TITLE, NUMBER</u>	<u>MEDIUM</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
NATOPS Flight Manual Navy Model F/A-18A/B/C/D, A1-F18AC-NFM-000	Hard copy	6		On Board
NATOPS Pocket Checklist, A1-F18AC-NFM-500	Hard copy	6		On Board
Tactical Manual, A1-F18AC-TAC-000	Hard copy	6		On Board
Tactical Manual Pocket Guide, A1-F18AC-TAC-300	Hard copy	6		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**IV.B.3. TECHNICAL MANUALS**

**TRAINING ACTIVITY:** SFWS Pacific  
**LOCATION, UIC:** NAS Lemoore, 35185  
**CIN, COURSE TITLE:** SFARP  
 SFWE

<u>TECHNICAL MANUAL TITLE, NUMBER</u>	<u>MEDIUM</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
NATOPS Flight Manual Navy Model F/A-18A/B/C/D, A1-F18AC-NFM-000	Hard copy	6		On Board
NATOPS Pocket Checklist, A1-F18AC-NFM-500	Hard copy	6		On Board
Tactical Manual, A1-F18AC-TAC-000	Hard copy	6		On Board
Tactical Manual Pocket Guide, A1-F18AC-TAC-300	Hard copy	6		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**TRAINING ACTIVITY:** VMFAT-101  
**LOCATION, UIC:** MCAS Miramar, 45526  
**CIN, COURSE TITLE:** M13P4B3, F/A-18 Fleet Replacement Pilot Basic and Transition  
 M13P3V3, F/A-18 Fleet Replacement Pilot Refresher  
 M13P3W3, F/A-18 Fleet Replacement Pilot Modified Refresher  
 M13P4C3, F/A-18 WSO Basic and Transition  
 M13P3R3, F/A-18 WSO Refresher  
 M13P3S3, F/A-18 WSO Modified Refresher

NATOPS Flight Manual Navy Model F/A-18A/B/C/D, A1-F18AC-NFM-000	Hard copy	6		On Board
NATOPS Pocket Checklist, A1-F18AC-NFM-500	Hard copy	6		On Board
Tactical Manual, A1-F18AC-TAC-000	Hard copy	6		On Board
Tactical Manual Pocket Guide, A1-F18AC-TAC-300	Hard copy	6		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**IV.B.3. TECHNICAL MANUALS**

**TRAINING ACTIVITY:** VF-101  
**LOCATION, UIC:** NAS Oceana, 09067  
**CIN, COURSE TITLE:** D-2A-1601, F-14 Fleet Replacement Pilot Cat 1  
 D-2A-1602, F-14 Fleet Replacement Pilot Cat 2  
 D-2A-1603, F-14 Fleet Replacement Pilot Cat 3  
 D-2A-1604, F-14 Fleet Replacement Pilot Cat 4  
 D-2A-1605, F-14 Fleet Replacement Pilot Cat 5  
 D-2D-1601, F-14 Naval Flight Officer Cat 1  
 D-2D-1602, F-14 Naval Flight Officer Cat 2  
 D-2D-1603, F-14 Naval Flight Officer Cat 3  
 D-2D-1604, F-14 Naval Flight Officer Cat 4  
 D-2D-1605, F-14 Naval Flight Officer Cat 5

<u>TECHNICAL MANUAL TITLE, NUMBER</u>	<u>MEDIUM</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
NATOPS Flight Manual Navy Model F-14 A/B/D, 01-F14AAA-1	Hard copy	6		On Board
NATOPS Pocket Checklist, 01-F14AAA-1B	Hard copy	6		On Board
Tactical Manual, NA-01-F14AAA-1T (Air to Air)	Hard copy	6		On Board
Tactical Manual, NA-01-F14AAA-1T-1 (Air to Ground)	Hard copy	6		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**TRAINING ACTIVITY:** Strike Weapons And Tactics School Atlantic  
**LOCATION, UIC:** NAS Oceana, 47157  
**CIN, COURSE TITLE:** D-2D-1620, F-14 Strike Fighter Advanced Readiness Program (SFARP)  
 D-2D-1622, Strike Fighter (Air-to-Air) Weapons Employment (SFWE)

<u>TECHNICAL MANUAL TITLE, NUMBER</u>	<u>MEDIUM</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
NATOPS Flight Manual Navy Model F-14 A/B/D, 01-F14AAA-1	Hard copy	6		On Board
NATOPS Pocket Checklist, 01-F14AAA-1B	Hard copy	6		On Board
Tactical Manual, NA-01-F14AAA-1T (Air to Air)	Hard copy	6		On Board
Tactical Manual, NA-01-F14AAA-1T-1 (Air to Ground)	Hard copy	6		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

### IV.B.3. TECHNICAL MANUALS

**TRAINING ACTIVITY:** MAWTS 1  
**LOCATION, UIC:** MCAS Yuma, 55167  
**CIN, COURSE TITLE:** Air Combat Maneuvering Instructor (ACMI)  
 Weapons and Tactics Instructor (WTI)

NATOPS Flight Manual, A1-AV8BB-NFM-000	Hard copy	6	On Board
NATOPS Pocket Checklist, A1-AV8BB-NFM-500	Hard copy	6	On Board
Tactical Manual, A1-AV8BB-TAC-000 VOL 1	Hard copy	6	On Board
Tactical Manual, A1-AV8BB-TAC-050 VOL 2	Hard copy	6	On Board
Tactical Manual Pocket Guide, A1-AV8BB-TAC-300	Hard copy	6	On Board
NATOPS Flight Manual Navy Model F/A-18A/B/C/D, A1-F18AC-NFM-000	Hard copy	6	On Board
NATOPS Pocket Checklist, A1-F18AC-NFM-500	Hard copy	6	On Board
Tactical Manual, A1-F18AC-TAC-000	Hard copy	6	On Board
Tactical Manual Pocket Guide, A1-F18AC-TAC-300	Hard copy	6	On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**TRAINING ACTIVITY:** SFWS Atlantic  
**LOCATION, UIC:** NAS Oceana, 47084  
**CIN, COURSE TITLE:** D-646-0640, F/A-18 Conventional Weapons Loading  
 D-646-0647, F/A-18 Conventional Release System Test

<u>TECHNICAL MANUAL TITLE, NUMBER</u>	<u>MEDIUM</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
Airborne Weapons/Stores Loading Manual, A1-F18AE-LWS-000	Hard copy	10		On Board
Airborne Weapons Maintenance Manual Mk 80/BLU Series Bombs, MK 77 Fire Bombs and Practice Bombs Intermediate and Organizational Level Activities	Hard copy	10		On Board
Airborne Weapons Assembly Manual Guided Bomb Units (GBU) Fleet Maintenance Activities NAVAIR-11-140-10	Hard copy	13		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**IV.B.3. TECHNICAL MANUALS**

**TRAINING ACTIVITY:** SFWS Pacific  
**LOCATION, UIC:** NAS Lemoore, 35185  
**CIN, COURSE TITLE:** E-646-0640, F/A-18 Conventional Weapons Loading  
 E-646-0647, F/A-18 Conventional Release System Test

<u>TECHNICAL MANUAL TITLE, NUMBER</u>	<u>MEDIUM</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
Airborne Weapons/Stores Loading Manual, A1-F18AE-LWS-000	Hard copy	10		On Board
Airborne Weapons Maintenance Manual Mk 80/BLU Series Bombs, MK 77 Fire Bombs and Practice Bombs Intermediate and Organizational Level Activities	Hard copy	10		On Board
Airborne Weapons Assembly Manual Guided Bomb Units (GBU) Fleet Maintenance Activities NAVAIR-11-140-10	Hard copy	13		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**TRAINING ACTIVITY:** SWATSLANT  
**LOCATION, UIC:** NAS Oceana, 47084  
**CIN, COURSE TITLE:** D-646-1644, F-14A/B Conventional Weapons Loading  
 D-646-1645, F-14A/B Integrated Weapons Team Refresher Training  
 D-646-0648, F-14D Integrated Weapons Team Refresher Training

<u>TECHNICAL MANUAL TITLE, NUMBER</u>	<u>MEDIUM</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
Airborne Weapons/Stores Loading Manual, F-14 A/B/D, 01-F14AAA-75	Hard copy	10		On Board
Release & Control F-14 A/B (Basic), 01-F14AAA-75-1A1	Hard copy	10		On Board
Release & Control F-14 A/B (Missiles), 01-F14AAA-75-1A2	Hard copy	10		On Board
Release & Control F-14 D (Basic), 01-F14AAD-75-1A1	Hard copy	10		On Board
Release & Control F-14 D (Missiles), 01-F14AAD-75-1A2	Hard copy	10		On Board
Airborne Weapons Maintenance Manual Mk 80/BLU Series Bombs, MK 77 Fire Bombs and Practice Bombs Intermediate and Organizational Level Activities	Hard copy	10		On Board
Airborne Weapons Assembly Manual Guided Bomb Units (GBU) Fleet Maintenance Activities NAVAIR-11-140-10	Hard copy	13		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**IV.B.3. TECHNICAL MANUALS**

**TRAINING ACTIVITY:** MTU-1007 NAMTRAGRUDET  
**LOCATION, UIC:** NAS Oceana, 66045  
**CIN, COURSE TITLE:** C-646-9962, F-14 Armament Systems Organizational Maintenance (Initial)  
 C-646-9963, F-14 Armament Systems Organizational Maintenance (Career)

<u>TECHNICAL MANUAL TITLE, NUMBER</u>	<u>MEDIUM</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
Airborne Weapons/Stores Loading Manual, F-14 A/B/D, 01-F14AAA-75	Hard copy	10		On Board
Release & Control F-14 A/B (Basic), 01-F14AAA-75-1A1	Hard copy	10		On Board
Release & Control F-14 A/B (Missiles), 01-F14AAA-75-1A2	Hard copy	10		On Board
Release & Control F-14 D (Basic), 01-F14AAD-75-1A1	Hard copy	10		On Board
Release & Control F-14 D (Missiles), 01-F14AAD-75-1A2	Hard copy	10		On Board
Airborne Weapons Maintenance Manual Mk 80/BLU Series Bombs, MK 77 Fire Bombs and Practice Bombs Intermediate and Organizational Level Activities	Hard copy	10		On Board
Airborne Weapons Assembly Manual Guided Bomb Units (GBU) Fleet Maintenance Activities NAVAIR-11-140-10	Hard copy	13		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**TRAINING ACTIVITY:** VMAT-203 FREST  
**LOCATION, UIC:** MCAS Cherry Point, 57080  
**CIN, COURSE TITLE:** C-646-3893, AV-8B Conventional Weapons Loading  
 C-646-9888, AV-8B Aircraft Ordnance Technician Integrated Organizational Maintenance

<u>TECHNICAL MANUAL TITLE, NUMBER</u>	<u>MEDIUM</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
Airborne Weapons Stores Loading Manual, A1-AV8BB-LWS-000	Hard copy	10		On Board
Release & Control (Basic), A1-AV8BB-LWS-200	Hard copy	10		On Board
Release & Control (Missiles), Air to Air A1-AV8BB-LWS-210	Hard copy	10		On Board
Airborne Weapons Maintenance Manual Mk 80/BLU Series Bombs, MK 77 Fire Bombs and Practice Bombs Intermediate and Organizational Level Activities	Hard copy	10		On Board
Airborne Weapons Assembly Manual Guided Bomb Units (GBU) Fleet Maintenance Activities NAVAIR-11-140-10	Hard copy	13		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**IV.B.3. TECHNICAL MANUALS**

**TRAINING ACTIVITY:** MTU-4030 NAMTRAGRUDET  
**LOCATION, UIC:** NS Mayport, 66069  
**CIN, COURSE TITLE:** C-646-3113, Precision Guided Weapons  
 C-646-4108, Weapons Department General Aviation Ordnance Supervisor  
 C-646-4109, Weapons Department General Aviation Ordnance

<u>TECHNICAL MANUAL TITLE, NUMBER</u>	<u>MEDIUM</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
Airborne Weapons Maintenance Manual Mk 80/BLU Series Bombs, MK 77 Fire Bombs and Practice Bombs Intermediate and Organizational Level Activities	Hard copy	13		On Board
Airborne Weapons Assembly Manual Guided Bomb Units (GBU) Fleet Maintenance Activities NAVAIR-11-140-10	Hard copy	13		On Board
Airborne Weapons Packaging/Handling/ Stowage (Shipboard) Volume I, NA 11-120A-1.1	Hard copy	13		On Board
Airborne Weapons Packaging/Handling/ Stowage (Shipboard) Volume II, NA 11-120A-1.2	Hard copy	13		On Board
Airborne Weapons Handling Equipment (Shipboard), NAVAIR 19-100-2	Hard copy	13		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**TRAINING ACTIVITY:** MTU-4032 NAMTRAU  
**LOCATION, UIC:** NAS Norfolk, 66046  
**CIN, COURSE TITLE:** C-646-3113, Precision Guided Weapons  
 C-646-4108, Weapons Department General Aviation Ordnance Supervisor  
 C-646-4109, Weapons Department General Aviation Ordnance

<u>TECHNICAL MANUAL TITLE, NUMBER</u>	<u>MEDIUM</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
Airborne Weapons Maintenance Manual Mk 80/BLU Series Bombs, MK 77 Fire Bombs and Practice Bombs Intermediate and Organizational Level Activities	Hard copy	13		On Board
Airborne Weapons Assembly Manual Guided Bomb Units (GBU) Fleet Maintenance Activities NAVAIR-11-140-10	Hard copy	13		On Board
Airborne Weapons Packaging/Handling/ Stowage (Shipboard) Volume I, NA 11-120A-1.1	Hard copy	13		On Board
Airborne Weapons Packaging/Handling/ Stowage (Shipboard) Volume II, NA 11-120A-1.2	Hard copy	13		On Board
Airborne Weapons Handling Equipment (Shipboard), NAVAIR 19-100-2	Hard copy	13		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**IV.B.3. TECHNICAL MANUALS**

**TRAINING ACTIVITY:** MTU-4033 NAMTRAU  
**LOCATION, UIC:** NAS North Island, 66065  
**CIN, COURSE TITLE:** C-646-3113, Precision Guided Weapons  
 C-646-4108, Weapons Department General Aviation Ordnance Supervisor  
 C-646-4109, Weapons Department General Aviation Ordnance

<u>TECHNICAL MANUAL TITLE, NUMBER</u>	<u>MEDIUM</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
Airborne Weapons Maintenance Manual Mk 80/BLU Series Bombs, MK 77 Fire Bombs and Practice Bombs Intermediate and Organizational Level Activities	Hard copy	13		On Board
Airborne Weapons Assembly Manual Guided Bomb Units (GBU) Fleet Maintenance Activities NAVAIR-11-140-10	Hard copy	13		On Board
Airborne Weapons Packaging/Handling/ Stowage (Shipboard) Volume I, NA 11-120A-1.1	Hard copy	13		On Board
Airborne Weapons Packaging/Handling/ Stowage (Shipboard) Volume II, NA 11-120A-1.2	Hard copy	13		On Board
Airborne Weapons Handling Equipment (Shipboard), NAVAIR 19-100-2	Hard copy	13		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**TRAINING ACTIVITY:** MTU-4034 NAMTRAU  
**LOCATION, UIC:** MCAS Cherry Point, 66047  
**CIN, COURSE TITLE:** C-646-3105, Aviation Ordnance Intermediate Maintenance Technician

<u>TECHNICAL MANUAL TITLE, NUMBER</u>	<u>MEDIUM</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
Airborne Weapons Maintenance Manual Mk 80/BLU Series Bombs, MK 77 Fire Bombs and Practice Bombs Intermediate and Organizational Level Activities	Hard copy	13		On Board
Airborne Weapons Assembly Manual Guided Bomb Units (GBU) Fleet Maintenance Activities NAVAIR-11-140-10	Hard copy	13		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**IV.B.3. TECHNICAL MANUALS**

**TRAINING ACTIVITY:** MTU-4035 NAMTRAU  
**LOCATION, UIC:** NAS Whidbey Island, 66058  
**CIN, COURSE TITLE:** C-646-3113, Precision Guided Weapons  
 C-646-4108, Weapons Department General Aviation Ordnance Supervisor  
 C-646-4109, Weapons Department General Aviation Ordnance

<u>TECHNICAL MANUAL TITLE, NUMBER</u>	<u>MEDIUM</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
Airborne Weapons Maintenance Manual Mk 80/BLU Series Bombs, MK 77 Fire Bombs and Practice Bombs Intermediate and Organizational Level Activities	Hard copy	13		On Board
Airborne Weapons Assembly Manual Guided Bomb Units (GBU) Fleet Maintenance Activities NAVAIR-11-140-10	Hard copy	13		On Board
Airborne Weapons Packaging/Handling/ Stowage (Shipboard) Volume I, NA 11-120A-1.1	Hard copy	13		On Board
Airborne Weapons Packaging/Handling/ Stowage (Shipboard) Volume II, NA 11-120A-1.2	Hard copy	13		On Board
Airborne Weapons Handling Equipment (Shipboard), NAVAIR 19-100-2	Hard copy	13		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**TRAINING ACTIVITY:** NAVSCOLEOD  
**LOCATION, UIC:** Eglin AFB FL, 62640  
**CIN, COURSE TITLE:** A-431-0011, EOD Phase II (Navy)  
 A-431-0012, EOD Phase II

<u>TECHNICAL MANUAL TITLE, NUMBER</u>	<u>MEDIUM</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
Explosive Ordnance Disposal Book, EODB6OG-02-2-34-5	CD-ROM	150		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**TRAINING ACTIVITY:** EODTEU ONE  
**LOCATION, UIC:** San Diego CA, 30202  
**CIN, COURSE TITLE:** G-431-0001, EOD Pre-deployment Team Training

<u>TECHNICAL MANUAL TITLE, NUMBER</u>	<u>MEDIUM</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
Explosive Ordnance Disposal Book, EODB6OG-02-2-34-5	CD-ROM	4		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**TRAINING ACTIVITY:** EODTEU TWO  
**LOCATION, UIC:** Fort Story VA, 43505  
**CIN, COURSE TITLE:** G-431-0001, EOD Pre-deployment Team Training

<u>TECHNICAL MANUAL TITLE, NUMBER</u>	<u>MEDIUM</u>	<u>QUANT REQD</u>	<u>DATE REQD</u>	<u>STATUS</u>
Explosive Ordnance Disposal Book, EODB6OG-02-2-34-5	CD-ROM	4		On Board

**NOTE:** For a complete listing of required technical manuals refer to applicable training course control document.

**PART V - MPT MILESTONES**

COG CODE	MPT MILESTONES	DATE	STATUS
PMA 205	Commence Analysis of Manpower, Personnel & Training Requirements (Advanced Bomb Family)	Jan 90	Completed
PMA 201	ILSP Promulgated	May 90	Completed
Boeing	Commence Contractor (DT) Training Services	Jul 95	Completed
PMA 201/NAWC-WD	Commence TECHEVAL Training	Jul 96	Completed
PMA 201/NAWC-WD	Commence OPEVAL Training	Sep 97	Completed
COMOPTEVFOR	Commence OPEVAL	Oct 97	Completed
PMA 201/NAWC-WD	Curricula Materials Delivered	Jul 98	Completed
NAVPERS	Commence Programming for Officer Training	Nov 98	Completed
SFWS/NAMTRA	Commence Follow-On/Replacement Training	Jan 99	In Place
PMA 201	Commence Early Operational Fielding (Operation Southern Watch)		Completed
PMA 205	Begin NTSP Update	Oct 00	Completed
PMA 201	Fleet Introduction	Mar 01	Completed
PMA 205	Promulgate Draft NTSP to ALCON for Review & Comment	Jun 01	Completed
PMA 201	Commence KMU-559 Production/Fielding (Operation Enduring Freedom)		Completed
PMA 205	Submit Proposed NTSP to OPNAV for Approval	Jan 03	Completed
PMA 201/PMA 205	Release/Distribute JDAM Intermediate Maintenance ICW v1	Jun 03	Completed
CNO N789	Disapproved NTSP	Jun 03	Completed
PMA 205	Update NTSP with GBU-38/B data	Aug 03	Completed
PMA 201/PMA 205	Add Hornet Autonomous Real-time Targeting data to NTSP	Oct 03	Completed
PMA 201/PMA 205	Remove Hornet Autonomous Real-time Targeting data	Jan 04	Completed
PMA 205	Promulgate Draft NTSP to ALCON for Review & Comment	Jan 04	Completed

**PART VI - DECISION ITEMS/ACTION REQUIRED**

DECISION ITEM OR ACTION REQUIRED	COMMAND ACTION	DUE DATE	STATUS
No Action Items Pending.			

PART VII - POINTS OF CONTACT

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