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March 2002

**MANAGEMENT AND PROCEDURES
MANUAL**

**NAVAL AIR SYSTEMS COMMAND
TECHNICAL DIRECTIVES SYSTEM**

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SECTION 1

INTRODUCTION

1.1 PURPOSE.

This manual provides detailed instructions to implement NAVAIRINST 5215.12, The Naval Air Systems Command (NAVAIR) Technical Directives System. It supports the Technical Directive (TD) provisions of OPNAVINST 4790.2, The Naval Aviation Maintenance Program (NAMMP), and OPNAVINST 8000.16, Naval Ordnance Maintenance Management Program (NOMMP). It establishes the policies, responsibilities, and procedures for using TDs in support of Naval aviation.

1.2 SCOPE AND APPLICABILITY.

This manual is applicable to all aviation systems procured by or for NAVAIR, including items manufactured or procured by field activities and inventory control points. The term "aviation systems", for the purpose of this manual, includes all naval aircraft, airborne systems and system components, air launched weapons and munitions, aircraft launch and recovery systems, aviation support equipment, aviation training systems, and the computer hardware and software embedded in those aircraft, weapons, systems and equipment.

1.3 BACKGROUND.

Engineering changes and one-time inspections are often required to maintain or enhance safety and/or effectiveness of aviation systems. One-time inspections are used primarily to verify the existence of reported conditions and to initiate appropriate corrective maintenance actions. Engineering changes are used to affect configuration changes that correct deficiencies, enhance safety, reduce life cycle costs, prevent production delays, and/or improve operational capabilities or material readiness. Engineering changes are implemented by forward-fit and/or retrofit depending on whether implementation is before and/or after affected systems are delivered to, and accepted by, the Navy. Forward-fit changes are made in production and implemented by contract. The TD system described in this manual is applicable to retrofit changes. The TD system described in this manual is the NAVAIR vehicle for implementing and documenting one-time inspections, retrofit changes, and the retrofit parts of combined forward-fit and retrofit changes.

1.4 POLICY.

The policy of the Commander, Naval Air Systems Command (COMNAVAIRSYSCOM) is to:

1.4.1 Deliver aviation systems to the fleet with effective configuration control, adequate supply support, operating and maintenance instructions, support equipment, and training for operators and maintenance personnel.

1.4.2 Achieve continuing improvements in productivity, performance, and quality of in-service aviation systems through retrofit change programs.

1.4.3 Maintain configuration control over in-service aviation systems by implementing retrofit changes via approved TDs accompanied by appropriate changes to supporting supply, maintenance, technical publications, and training systems. Change TDs shall only be issued as approved by a Change Control Board (CCB).

1.4.4 Use TDs to:

- a. Authorize and direct incorporation of approved retrofit changes.

- b. Issue directions for one-time inspections and for precautionary instructions regarding personnel safety or equipment limitations.
- c. Provide detailed instructions necessary to perform inspections or install retrofit changes and to report/record compliances.
- d. Provide the official record of inspections and retrofit changes for purposes of technical directive status accounting.
- e. Respond rapidly to safety or urgent operational requirements to incorporate retrofit changes.
- f. Expediently implement minor (self-help) changes requested by the fleet or NAVAIR Fleet Support Teams (FST).

1.4.5 Test changes before they are approved for incorporation to ensure they satisfy established requirements and the new or changed systems can be effectively operated and supported by the intended users (e.g., the fleet) in a deployed/operating environment.

1.4.6 Require TDs that are proposed for incorporation by Navy activities be verified before they are approved.

1.4.7 Require changes which are proposed for incorporation by Organizational or Intermediate maintenance activities, or using resources (e.g., facilities and support equipment) of those activities, be concurred with by affected Type Commanders (TYCOMs)/controlling custodians before they are approved.

1.5 PROCEDURES.

The following sections of this manual contain instructions for processing, approving, and implementing TDs. They are supplemented by appendices, which provide details for preparing and processing each type of TD.

1.5.1 **SECTION II** assigns responsibilities for processing, approving, implementing, and managing TDs.

1.5.2 **SECTION III** describes TD system requirements and procedures.

1.5.3 **SECTION IV** describes the Technical Directive Status Accounting (TDSA) system requirements and procedures.

1.5.4 **SECTION V** describes procedures for managing modification material (i.e., TD change kits).

1.5.5 **APPENDICES A through D** provide detailed information for preparing and processing the four types of TDs. Appendix A contains preparation and processing instructions for the Formal Change TD. Appendices B, C and D contain preparation and processing guidelines for the Interim Change TD (ITD), the Bulletin TD, and the Rapid Action Minor Engineering Change (RAMEC) TD respectively. Appendix E is a glossary of acronyms used in this manual.

1.6 SUPPLEMENTARY PUBLICATIONS.

The most current versions of the following supplement this manual:

- 1.6.1 OPNAVINST 4790.2, The Naval Aviation Maintenance Program (NAMP).
- 1.6.2 OPNAVINST 8000.16, Naval Ordnance Maintenance Management Program (NOMMP).
- 1.6.3 OPNAVINST 4790.15, The Aircraft Launch and Recovery Equipment Maintenance Program.
- 1.6.4 NAVAIRINST 4130.1, Naval Air Systems Command Configuration Management Policy.

- 1.6.5 SECNAVINST 5510.36, Information Security Program Regulation.
- 1.6.6 NAVAIRINST 5215.12, Naval Air Systems Command Technical Directives System.
- 1.6.7 NAVAIRINST 5400.70, Weapon System Management at Field Activities.
- 1.6.8 NAVAIRINST 5605.3, Distribution of TDs and RAMECs to Foreign Governments.
- 1.6.9 NAVSUPPUB 485, Navy Supply Procedures
- 1.6.10 DOD Directive 4140.1, Material Management Policy.
- 1.6.11 DOD 51005.38-M, Security Assistance Management Manual (SAMM).

1.7 ACTION.

All cognizant activities/personnel shall take appropriate action to assure compliance with the requirements and procedures of the NAVAIR TD system defined in this manual. Specific approval/authorization from Head, Logistics Management Department (AIR-3.1) is required in order to deviate from any of the requirements or procedures of the TD system as set forth in this manual. Comments, critiques, problems and/or suggested changes to this manual are solicited from all NAVAIR TD system users. The Comment/Critique Sheet on the next page is provided to facilitate communicating problems, comments, etc. regarding this manual.

SECTION II

TECHNICAL DIRECTIVE PROCESSING RESPONSIBILITIES

2.1 ASSISTANT COMMANDER FOR LOGISTICS (AIR-3.0).

AIR-3.0 has overall responsibility for managing and implementing the NAVAIR Technical Directives (TDs) system. Specific responsibilities associated with processing, approving, and implementing TDs are defined and assigned in the following paragraphs of this section.

2.2 ASSISTANT COMMANDER FOR ENGINEERING (AIR-4.0).

AIR-4.0 has cognizance over, and overall responsibility for, the technical content of NAVAIR TDs.

2.3 CONFIGURATION/DATA MANAGEMENT DIVISION (AIR-1.1.3).

AIR-1.1.3 convenes and chairs the NAVAIR Change Control Board (CCB) which reviews and approves proposed Class I engineering changes, including Engineering Change Proposals (ECPs), Software Change Proposals (SCPs), and proposed Rapid Action Minor Engineering Changes (RAMECs). AIR-1.1.3 also charters decentralized CCBs. All retrofit engineering changes, including ITDs and RAMECs, must be approved by the NAVAIR CCB or a chartered CCB before change TDs are approved/issued.

2.4 LOGISTICS MANAGEMENT DEPARTMENT (AIR-3.1).

2.4.1 Manages the NAVAIR Technical Directives system.

2.4.2 Establishes TD system training/certification requirements. Certifies Program Managers (PMAs), Assistant Program Managers for Logistics (APMLs), and Logistics Managers (LMs) on the TD system.

2.4.3 Delegates TD approval authority, as appropriate, to personnel who have been certified on the TD system.

2.4.4 Approves formal change technical directives where approval authority has not been delegated. When applicable, concurrently signs DD-250s formally accepting TD delivery for the Government. Before approving TDs, carefully reviews them to ensure:

- a. The resources required for TD compliance (e.g., TD change kits, Government Furnished Equipment (GFE)) are available.
 - b. Adequate logistics resources will be available to support new or modified system(s), when delivered.
 - c. Appropriate PMA and AIR-4.0 concurrences have been obtained.
 - d. Chief of Naval Operations (CNO)/Commandant of the Marine Corps (CMC) concurrence(s) and AIR-00 approval are obtained for Immediate Action category TDs.
- 2.4.5 Approves waivers to permit TD change kit shipment and/or installation of TDs with preliminary vice approved TDs.
- 2.4.6 Approves waivers of TD verification requirements when urgent safety or operational factors outweigh the need for verified accuracy.
- 2.4.7 Approves concurrent VAL/VER performed by contractors or by the Navy with contractor participation.

2.5 CONFIGURATION MANAGEMENT (LOGISTICS) DIVISION (AIR-3.1.8).

- 2.5.1 Establishes a training program for PMAs, APMLs, LMs, and other Integrated Process/Program Team (IPT) members to qualify them for certification on the TD system.
- 2.5.2 Conducts AIR-3.0 Configuration Management Supportability and Executability Assessments (COMSEA) of proposed engineering changes in support of the NAVAIR CCB and Chartered PMA CCBs.
- 2.5.3 Establishes TD titles and codes.
- 2.5.4 Establishes and maintains TD format and style in accordance with the requirements set forth in Appendices A thru D of this manual. Ensures digital copy of TD is formatted in accordance with the requirements posted on the NATEC web site.
- 2.5.5 Approves requests to deviate from established TD format and style requirements and provides information copies of deviation requests to Naval Air Technical Data and Engineering Service Command (NATEC).
- 2.5.6 Assists APMLs and LMs in planning and managing TD installations.
- 2.5.7 Manages the NAVAIR Modification Management Information System (MODMIS).
- 2.5.8 Establishes policy for the management of 6V cognizance modification material (i.e., TD change kits).
- 2.5.9 Manages the Central Kitting Activity (CKA).
- 2.5.10 Assigns Kit Identification Numbers (KINs) and provides TD change kit shipping and marking instructions.
- 2.5.11 Assembles TD change kits according to the directions of approved CCB Directives or TDs, as requested and funded by PMAs, acquisition managers, or APMLs/LMs.
- 2.5.12 Maintains transaction history for all TD change kits based on 6V cognizance material Transaction Item Records (TIRs) and keeps the APMLs/LMs informed of requisition/transaction status.
- 2.5.13 Allocates and distributes TD change kits as necessary to provide for optimum installation support.
- 2.5.14 Reviews proposed TDs during the verification process and informs APMLs/LMs of any discrepancies.
- 2.5.15 Manages the Technical Directive Status Accounting (TDSA) system. Ensures computer programs required to store, process, and retrieve configuration status information in the TDSA databases, are maintained. Ensures the accuracy of the configuration status information in the databases. Distributes scheduled Incorporated/Not Incorporated (INC/NINC) reports to fleet reporting custodians. Distributes other standard and tailored reports to fleet and management activities when requested.
- 2.5.16 Provides TDSA system training and assistance to all users.
- 2.5.17 Provides notification of TDs with expiring target completion dates to cognizant APMLs/LMs at least 90 days prior to target completion date.
- 2.5.18 Monitors TD compliance actions and ensures they are recorded in TDSA.
- 2.5.19 Coordinates identification and reclamation of excess TD change kits with cognizant APMLs/LMs.

2.6 PROGRAM MANAGERS AIR (PMAs).

- 2.6.1 Plan and execute engineering change programs for assigned aviation systems.

- 2.6.2 Exercise effective configuration control by ensuring engineering changes that require retrofit are incorporated via approved TDs.
- 2.6.3 Assure engineering changes are tested before they are approved for implementation to ensure they satisfy established requirements and to ensure they can be effectively operated and supported by the intended users (e.g., the fleet) in an operating/deployed environment.
- 2.6.4 Assure adequate funding is provided to procure all change elements necessary to accomplish timely TD compliances/incorporations in affected systems, and to support new/changed systems after they are delivered.
- 2.6.5 Approve and transmit "Red Stripe" memoranda to notify CNO/CMC of impending requirements for Immediate Action TDs or other TDs involving aircraft grounding or flight restrictions.
- 2.6.6 Approve Interim Changes, RAMECs and grounding Bulletins. Before approving these, carefully review them to ensure:
- a. Resources required for TD compliance (e.g., TD change kits, GFE) are available.
 - b. Adequate logistics resources will be available to support new or modified system(s) upon delivery.
 - c. Appropriate certified AIR-3.0 and AIR-4.0 concurrence(s) have been obtained.
 - d. CNO/CMC concurrence(s) and AIR-00 approval are obtained for Immediate Action TDs, or when aircraft grounding or flight restrictions are involved.

CAUTION

Careful and thorough review of TDs prior to approval is essential to avoid error and omissions that can have long-term negative consequences upon fleet operations and/or readiness, and to ensure TD executability and supportability.

- 2.6.7 Ensure ECPs, required to formalize Interim TDs, are submitted to NAVAIR for review and approval within 180 days of issuance of Interim TD.
- 2.6.8 Ensure availability of accurate, auditable record of engineering change program implementation, from CCB approval through the last installation and subsequent TD completion.

2.7 ASSISTANT PROGRAM MANAGERS FOR LOGISTICS (APMLs) AND LOGISTICS MANAGERS (LMs).

- 2.7.1 Plan and manage TD implementation.
- 2.7.2 Ensure appropriate TD titles and corresponding codes are assigned.
- 2.7.3 Assure supportability of TDs. Coordinate timely development and delivery of Integrated Logistic Support (ILS) elements. Plan and provide interim support whenever delivery of support elements is delayed beyond delivery of new or changed systems.
- 2.7.4 Coordinate TD compliance plans with PMA-205 for trainers, PMA-260/cognizant Support Equipment Program Office (SEPO) for support equipment, Naval Inventory Control Point (NAVICP) for spares, and cognizant PMAs.
- 2.7.5 Manage TD compliance schedules. Coordinate weapon systems availability with TYCOMs/controlling custodians. Also, coordinate installation workload with installing activities and/or AIR-6.0, and installation funding with cognizant Requiring Financial Managers (RFMs).
- 2.7.6 Ensure the coordination of TD change kit requirements (distribution, shortages, excesses, cannibalization, and reclamation) with AIR-3.1.8.

- 2.7.7 Ensure TD numbers, including amendment and revision numbers, are obtained from NATEC.
- 2.7.8 Complete TD Detail Data Sheets (TDDDSs) form NA5215/10, and include them with orders for TDs to convey essential TD information.
- 2.7.9 Provide appropriate provisions for all required TD related data items to be included in procurement orders for TDs. TD related data deliverables include the TD, the Technical Directive Kit Shipment Report (TDKSR), Technical Directive Compliance Reports, Technical Directive Status Accounting Reports (TDSARs), and requests for KINs and shipping and marking instructions from AIR-3.1.8 instructions.
- 2.7.10 Plan for and coordinate TD verifications at the maintenance level(s) designated for TD compliance including consolidating and forwarding verification comments to the TD preparing activity for incorporation into the TD. Coordinate shipment of verification kits to designated TD verifying activities. Assure this coordination includes the NAVAIR kit manager, AIR-3.1.8. When TD change kit suppliers and TD preparers are different vendors, assure concurrent delivery of proposed TDs and verification kits.
- 2.7.11 Review TDs submitted for approval and complete a Technical Directive Logistics Support Checklist (Attachment A-1 to Appendix A) to document this TD review. Completed TD Logistics Support Checklists shall be included with each TD submitted to the approval authority for signature. TD Logistics Support Checklists shall also be required for TD amendments and revisions when ILS elements are affected.
- 2.7.12 Assign TD issue date, target completion dates, and Work Unit Code (WUC).
- 2.7.13 Ensure that the signed Formal TD, accompanied by an exact digital duplicate prepared in accordance with the requirements posted on the NATEC web site, are provided to NATEC for publication and inclusion in the master repository. Monitor publication and distribution of approved TDs, and notify TD change kit manufacturers/suppliers and other concerned parties when TD distribution will be delayed beyond the projected issue dates.
- 2.7.14 Ensure that TD change kits are not shipped to installation activities unless the TD has been approved and published or a TD waiver has been obtained from the NAVAIR Logistics Management Department (AIR-3.1).
- 2.7.15 Ensure TD incorporations/compliances are accomplished in a timely manner according to approved compliance schedules and/or within specified compliance time periods. Adjust on-going TD compliance schedules as necessary, in response to material shortages, deployment, etc., in coordination with TYCOMs/controlling custodians, installing activities, and AIR-3.1.8.
- 2.7.16 Grant authorization to Depot activities to defer or withhold TD compliance when required.
- 2.7.17 Review TD incorporation status and TD change kit inventories. Coordinate issuance of appropriate TD amendments or revisions to extend target completion dates when program delays occur causing incorporations/compliances to extend beyond target completion dates. Notify AIR-3.1.8 of TD completion status and identify excess TD change kits available for reclamation.

2.8 ASSISTANT PROGRAM MANAGERS FOR SYSTEMS ENGINEERING (APMSEs) AND COGNIZANT ENGINEERS.

- 2.8.1 Review proposed ITDs and proposed RAMECs for technical content, and coordinate engineering technical approval/disapproval. Engineering technical reviews shall include evaluation of impacts on performance, airworthiness, structure, service life, weight and balance, reliability and maintainability, combat survivability, electromagnetic emissions, ozone depletion, human factors, and shipboard compatibility. The APMSE shall also determine requirements for weighing aircraft after installation and ensure requirements are appropriately reflected in TDs.
- 2.8.2 Coordinate engineering reviews and concurrences/non-concurrences with Immediate Action TDs and other TDs involving aircraft grounding or flight restrictions.

- 2.8.3 Coordinate with the NAVAIR Aviation Safety Officer to evaluate the impact of TDs that involve safety-of-flight.
- 2.8.4 Prepare "Red Stripe" memoranda for approval and release by PMAs to formally notify CNO/CMC of TD requirements involving aircraft grounding or flight restrictions and to obtain formal CNO/CMC concurrences.
- 2.8.5 Plan and coordinate Developmental and Operational testing of proposed changes to ensure they satisfy established requirements, and can be effectively operated and supported by the fleet in a deployed/operating environment.

2.9 ASSISTANT PROGRAM MANAGERS FOR CONTRACTING (APMCs) AND CONTRACTING OFFICERS.

APMCs and contracting officers shall ensure contractual orders for TDs include Technical Directive Detail Data Sheets (TDDDSs) form NA5215/10, and appropriate Contract Data Requirements List (CDRL) (DD Form 1423) data items. TD data requirements should call for delivery of TDs to appropriate NAVAIR approval authorities for acceptance at destination.

2.10 NAVAIR SYSTEMS SAFETY DIVISION.

NAVAIR Systems Safety Division shall assist PMAs and APMSEs in obtaining CNO/CMC concurrences with TDs that involve safety of flight resulting in grounding of aircraft or flight restrictions.

2.11 ASSISTANT COMMANDER FOR INDUSTRIAL OPERATIONS (AIR-6.0).

- 2.11.1 Plans for TD installations at organic Depots in coordination with APMLs and AIR-3.1.8.
- 2.11.2 Assists APMLs in planning and executing TD verifications at organic Depots, including designation of verifying activities.

2.12 NAVAL AIR TECHNICAL DATA AND ENGINEERING SERVICE COMMAND (NATEC).

NATEC supports APMLs and LMs as the Logistics Element Manager (LEM) for technical data, including publications and TDs.

- 2.12.1 Assigns all TD numbers and alphanumeric designations to TD amendments and revisions.
- 2.12.2 Maintains the only official NAVAIR master repository of active, superseded, completed, and cancelled TDs, including TDs issued by message.
- 2.12.3 Provides/distributes copies of TDs to Naval Air Systems Team activities and fleet units.
- 2.12.4 Provides TD information input to maintain Naval Logistics Library (NLL).
- 2.12.5 Reviews Formal Change TDs for completeness and format.
- 2.12.6 Verifies/enters Work Unit Code (WUC) for TDs as appropriate.
- 2.12.7 Administers publication of Formal Change TDs.
- 2.12.8 Processes Technical Publications Deficiency Reports (TPDRs) concerning TDs.

2.12.9 Provides address labels to NAVAIR, PMAs, FSTs, and TYCOMs/controlling custodians for distribution of RAMEC TDs by mail, when requested.

2.12.10 Issues weekly summary messages of TDs issued.

2.13 FLEET SUPPORT TEAMS (FSTs).

NAVAIR Systems Team activities/billets assigned engineering and logistics technical cognizance over specified aircraft platforms and/or associated aviation systems are designated NAVAIR FSTs. Specific FST membership and role are determined by individual PMAs and encompass the functional disciplines needed to provide life cycle technical and logistic support to assigned in-service aircraft/systems(s). FST TD responsibilities include but are not limited to:

2.13.1 Reviewing FAA Airworthiness Directives (ADs), Air Force Time Compliance Technical Orders (TCTOs), Army Maintenance Work Orders (MWOs), and Manufacturer Service Bulletins for applicability to Naval aircraft/systems. When applicable to Naval aircraft systems, FSTs shall initiate processing for compliance under NAVAIR cover. Documents issued in this manner require the same concurrences and approvals as comparable NAVAIR TDs and shall be issued with NAVAIR TD numbers.

2.13.2 Keeping PMAs, APMSEs, APMLs, and LMs informed of anticipated and pending bulletins. Preparing proposed bulletins and submitting them to cognizant PMAs or LMs. Releasing bulletins (except grounding or potentially grounding) when authorized by PMA.

2.13.3 Preparing and submitting proposed change TDs when requested by PMAs or APMLs/LMs.

2.14 TYPE COMMANDERS (TYCOMs) /CONTROLLING CUSTODIANS.

2.14.1 Re-address and disseminate RAMEC, Bulletin, and ITDs to subordinate activities.

2.14.2 Grant authorization to subordinate operating activities to defer or withhold TD compliance when required due to operational commitments or technical circumstances. Deferment of Immediate Action TDs will require concurrence/approval from NAVAIR and CNO/CMC. Notify the cognizant NAVAIR APML/LM whenever it is necessary to defer, withhold, or deviate from compliance requirements of any TD due to technical circumstances.

2.14.3 Review all TDs received and notify cognizant APMLs/LMs of any instances where they appear to be incomplete, inaccurate, and/or not supportable.

2.14.4 Establish compliance priorities as may be required to support operational requirements, and coordinate with subordinate operating activities and APML/AIR-3.1.8 to control the ordering and issuance of TD change kits/materials according to those priorities.

2.15 TYPE/FUNCTIONAL WINGS.

2.15.1 Coordinate with assigned Aircraft Intermediate Maintenance Departments (AIMDs) and Marine Aviation Logistics Squadrons (MALs) to ensure that TDs calling for compliance at Intermediate level maintenance are complied with according to the approved scheduled.

2.15.2 Notify the supervising TYCOM/controlling custodian of any TD problems or deficiencies, including appropriate recommendations for resolution.

2.15.3 Validate requests from subordinate operating activities to defer, withhold, or deviate from TD compliance requirements before forwarding them on to the supervising TYCOM/controlling custodian for approval.

2.15.4 Assist subordinate operating activities in obtaining copies of TDs.

2.16 TECHNICAL DIRECTIVE PREPARING ACTIVITIES/CHANGE KIT SUPPLIERS.

- 2.16.1 Request TD change KIN assignment, and TD change kit shipping and marking instructions from AIR-3.1.8.
- 2.16.2 Ship proposed TDs and/or TD change verification kits to verifying activities as directed by the cognizant APML/LM.
- 2.16.3 Incorporate verification comments and submit reproducible copies of verified and updated Formal Change TDs to NAVAIR for approval.
- 2.16.4 Commence recurring shipments of TD change kits after the TD has been approved and published.
- 2.16.5 Submit TDKSRs to AIR-3.1.8 and cognizant APML/LM.

2.17 VERIFYING ACTIVITIES.

- 2.17.1 Comply with the “detailed instructions” contained in proposed TDs on applicable equipment to ensure the change can be installed following those instructions and using the materials provided in the TD change verification kit(s).
- 2.17.2 Verify the accuracy and adequacy of the “Detailed Instructions”, “Application”, “Supply Data”, “Re-identification of Items of Supply”, “Man-Hours Required”, and “Weight and Balance” data.
- 2.17.3 Verify that all affected “Documentation” and “Records” are identified.
- 2.17.4 Verify that TD compliance is within the capabilities of the maintenance level prescribed.
- 2.17.5 Verify that items identified to be procured or provided by installing activities from supply or other sources, are easily obtainable, do not unnecessarily extend installation time, and/or do not impose an undue cost burden. Recommendations to include such items in the NAVAIR procured TD change kits should be made when any of the problems cited above exist.
- 2.17.6 Submit verification results, including any deficiencies, problems, recommended changes, etc. to the cognizant APML/LM via the TYCOM/controlling custodian, as directed, within the prescribed time period.

2.18 INSTALLING ACTIVITIES.

- 2.18.1 Requisition TD change kits via procedures set forth in SECTION V of this manual.
- 2.18.2 Comply with TDs within the time periods prescribed or obtain deferrals from appropriate authority.
- 2.18.3 Report TD compliances through procedures established by OPNAVINST 4790.2, OPNAVINST 8000.16, the TD, SECTION IV of this manual, or contract, as applicable.

2.19 NAVAL AIR MAINTENANCE TRAINING GROUP (NAMTRAGRU).

Provides the AIR-3.1.8 TDSA manager with maintenance trainer inventory information. This information shall include type equipment code, military serial number, nomenclature, and the Naval Air Maintenance Training Unit (NAMTRAU) having physical custody.

SECTION III

TECHNICAL DIRECTIVE REQUIREMENTS AND PROCEDURES

3.1 INTRODUCTION.

3.1.1 Retrofit configuration changes to naval aviation systems including aircraft, airborne weapons, airborne systems and system components, aircraft launch and recovery equipment, aviation support equipment and training systems shall be made only upon receipt of an approved TD, with the following exceptions:

- a. Operating commanders are authorized to take actions deemed necessary to ensure safe operation of assigned aviation systems per OPNAVINST 4790.2 and 8000.16.
- b. TYCOMs/controlling custodians may authorize one prototype installation of a proposed change per OPNAVINST 4790.2 and 8000.16.
- c. NAVAIR may waive an approved TD in extraordinary situations to permit change installations to be accomplished using a proposed or preliminary TD.
- d. Record Purpose category TDs are authorized for installation prior to approval of the formal TD.
- e. Installation and removal of mission equipment does not require a TD.

3.1.2 All TDs shall be issued by the Commander, Naval Air Systems Command (NAVAIR) or by specifically certified PMAs.

3.1.3 NAVAIR technical manuals, or parts thereof, shall not be used as parts of TDs. Requirements of technical manuals may be referenced in TDs.

3.1.4 Local Engineering Specifications (LESs) or other engineering advisories shall not be used to incorporate configuration changes.

3.1.5 Air Worthiness Directives (ADs) issued by the Federal Aviation Administration (FAA), Air Force Time Compliance Technical Orders (TCTOs), Army Maintenance Work Orders (MWOs) and Manufacturer Service Bulletins, if applicable to Naval equipment, shall be implemented with the appropriate type of Naval Directive.

3.1.6 Flight clearances do not provide authorization to modify equipment.

3.2 TECHNICAL DIRECTIVE TYPES.

NAVAIR uses four types of TDs: Formal Change, Interim Change, Bulletin, and Rapid Action Minor Engineering Change (RAMEC). The purpose and uses of each TD type are discussed in the following paragraphs.

3.2.1 **Formal Change.** A formal change TD is the primary NAVAIR document for implementing a configuration change. A formal change TD contains instructions and information which direct accomplishment and recording of a material change, a repositioning, modification, or an alteration in the characteristics of a system. It shall be used to direct that parts of material be added, removed, altered, relocated, or changed from an existing configuration. A Formal Change TD is always identified by title as an "Airframe" Change (AFC), "Avionics" Change (AVC), etc. (see paragraph 3.4 for a complete list of TD titles). Further details concerning the preparation and processing of Formal Change TDs are contained in Appendix A of this manual.

3.2.2 **Interim Change.** Urgency sometimes requires change incorporations be initiated without delay, following Configuration Control Board (CCB) approval. In such cases, proposed changes are submitted to NAVAIR in message TD format and, after approval, are disseminated immediately by message. These message TDs are

designated “Interim Changes” (e.g., Interim Airframe Change (IAFC), Interim Avionics Change (IAVC), etc.) and are filed in publications libraries in the same manner as Formal Change TDs. When an Interim Change TD is issued, a formal ECP shall be obtained within 180 days to permit thorough review of all engineering and logistic elements of the change. Then, after ECP review and approval, a Formal Change TD shall be issued to supersede the Interim Change. Further details concerning the preparation and processing of ITDs are contained in Appendix B of this manual.

3.2.3 **Bulletin.** A Bulletin TD directs a one-time inspection to determine if a given condition exists and specifies what action shall be taken if the condition is found. It may contain instructions for corrective action using approved repair procedures, provided no change in configuration is involved; or it may require issuance of a change TD to remedy a deficiency. Bulletins are normally issued as Naval messages but may be issued by letter (in message format) when enclosures are required. Bulletins shall not be used in lieu of technical manual changes (e.g., to establish continuing maintenance/inspection requirements). Bulletins which restrict flight operations by requiring inspection prior to further flight, preflight, turn-around, daily inspection, next equipment use, or within the next ten flight hours are referred to as “Grounding Bulletins”. Because of their operational impact, Grounding Bulletins require special coordination and concurrences/approvals via the Red Stripe memorandum prior to being released. Grounding Bulletins shall be coordinated with Type Commanders/controlling custodians, with concurrence from AIR-3.0, AIR-4.0, CNO, and when applicable, CMC, and approved by AIR-00 before being released. Bulletins, which have significant operational impact due either to, imposed flight/operational limitations or to severe/unique impact on logistic support are referred to as “Flight Restriction Bulletins”. Flight Restriction Bulletins shall be processed in the same manner as Grounding Bulletins. Further details concerning the preparation and processing of Bulletin TDs are contained in Appendix C of this manual.

3.2.4 **RAMEC.** The concept of the RAMEC program is “fleet self-help”. Procedures are designed so that minor engineering changes may be processed expeditiously and, after approval, incorporated promptly by Organizational (O) and/or Intermediate (I) level maintenance activities, to ensure commonality of configuration throughout the inventory. (Depot (D) level incorporation is not authorized except in the case of RAMECs for support equipment which is used at both the I and D levels.) Changes approved in accordance with RAMEC procedures are issued as numbered TDs. Proposed RAMECs are initiated by fleet activities, FSTs, or engineering activities in response to requirements identified by fleet activities. **PMAs, NAVAIR System Headquarters, or contractors may not sponsor or initiate RAMECs.** RAMECs shall not be used to affect retrofit of, or to satisfy logistics requirements resulting from, Class II production changes.

Fleet activities must request RAMEC sponsorship from their controlling custodians prior to prototyping one item per OPNAVINST 4790.2. After successfully prototyping a prospective RAMEC change, the proposed RAMEC TD will be prepared and forwarded to the sponsoring controlling custodian for processing. NAVAIR FSTs may initiate and sponsor proposed RAMECs on items for which they have primary cognizance, provided they accept responsibility for coordinating related fleet support and obtaining concurrences from affected Type Commanders/controlling custodians. RAMECs are issued by naval messages or letters (in message format) as change TDs (e.g., AFCs, AVCs). Drawings and publications impacted by RAMECs are updated to provide for subsequent parts procurement and maintenance instructions for the modified aircraft, systems, or components.

NOTE

When a RAMEC is modifying an item of supply, reidentification of the modified item may be required (i.e., new part number). When reidentification is required, the FST will obtain new part numbers from contractors when the master drawings are held by the contractor, or assign a new FST part number. The following guidelines pertain:

- a. When master drawings are held by a contractor who agrees to update the drawings to reflect the proposed design change, the FST shall obtain the estimated cost to update the drawings from the contractor and include them in the proposed RAMEC.
- b. When master drawings cannot be located or when master drawings are held by a contractor who refuses to modify them to reflect the design change, the RAMEC may be forwarded to NAVAIR Headquarters (HQ) for approval only if the cognizant FST is prepared to create new drawings and to serve as the production source for the modified parts. In these cases, the FST shall provide cost estimates for creating the new drawings.

Use of the RAMEC TD is restricted by its special application; in order to receive NAVAIR approval, a RAMEC must:

- a. Be confined to a simple change that can be easily and rapidly incorporated, and that does not require extensive technical review or work effort.
- b. Be authorized for incorporation by O or I level maintenance activities, including regular contractor maintenance support at those levels. Depot (D) level incorporation is not authorized except in the case of RAMECs for support equipment which is used at both the I and D levels.

NOTE

RAMECs will not normally be incorporated by Depot level maintenance activities. However, if a TD is being incorporated by a Depot and an unincorporated RAMEC is a prerequisite, the RAMEC may be incorporated by the Depot.

- c. Require no more than eight maintenance man-hours per installation to accomplish.
- d. Use only standard stock items and/or raw materials, source-coded items that may be manufactured by the cognizant NADEP. This material should be readily obtainable by a requesting activity through normal supply system requisitioning procedures. The total cost of the material required should not exceed \$1,500 per installation. For the purposes of satisfying this requirement, items procured for specific applications and local open-purchase items are not considered "standard stock items".
- e. Be complied with as directed by the applicable TD, but not later than the next calendar/phase inspection requiring access to the area/zone containing the item(s) to be changed after receipt of parts, or next induction of the item(s) into an I level maintenance activity.
- f. Be coordinated with, and agreed to by, each affected controlling custodian, PMA, and FST. Be coordinated with, and agreed to by, the NAMTRAU when trainers under its cognizance are affected.
- g. Provide for modification of spares and trainers, if affected.
- h. Not require the development, fabrication, procurement, or stocking of retrofit kits.
- i. Not be used to amend or supplement an existing Interim or Formal TD.
- j. Not generate a requirement for additional or new support equipment.
- k. Not generate a change to support equipment.
- l. Not affect operational or avionics automatic test equipment or missile subsystem test sets, or the software programs and/or tapes associated therewith.
- m. Not require changes to general-purpose electronic test equipment under the technical/ procurement cognizance of the Space and Naval Warfare Systems Command.
- n. Not generate a requirement for new technical manuals.
- o. Not apply to items having a Source, Maintenance, and Recoverability (SM&R) code with "D" in the fourth position, excepting support equipment items.
- p. Not apply to nonconsumable items procured and managed by another service. (Formal ECPs are required to change such items).

Further details concerning the preparation and processing of RAMEC TDs are contained in Appendix D of this manual.

3.3 TECHNICAL DIRECTIVE CATEGORIES.

A TD shall be assigned one of four categories depending upon its type, urgency, or purpose. A Formal Change TD, issued to supersede an ITD, shall be assigned the same category as the ITD. The four TD categories are: Immediate Action, Urgent Action, Routine Action and Record Purpose. General criteria for assigning TD categories are as follows:

3.3.1 **Immediate Action.** The Immediate Action category is assigned when unsafe conditions exist which, if uncorrected, could result in fatal or serious injury to personnel; or extensive damage to or destruction of valuable property; and such conditions embody risks which are calculated to be unacceptable. The urgency of these TDs requires immediate action to ground aircraft, prevent launch of missiles, or deny the use of related support equipment or munitions. Whenever possible, methods for correcting the unsafe condition are included in the Immediate Action TD. Assignment of this category shall be justified by incident, accident, hazard, or similar reports, and must be concurred in by CNO/CMC. Immediate Action TDs normally require compliance prior to next flight or next use of equipment, or within the next ten flight hours.

3.3.2 **Urgent Action.** The Urgent Action category is assigned when factors of combat necessity, potential hazardous conditions which could result in personal injury or damage to valuable property, or unacceptable reductions in operational readiness exist; and such conditions, if uncorrected, would compromise safety or embody risks which are calculated to be acceptable within defined time and/or performance limits. These conditions are less serious than those for which the Immediate Action category would be assigned. Urgent Action TDs shall require compliance within specified time limits. Appropriate time limits for Urgent Category TDs are normally greater than 10 flight hours and not later than an appropriate scheduled maintenance period (i.e., next phase or calendar inspection, next "I" level induction, or next scheduled Depot level maintenance period), or 18 months. If compliance is not accomplished by expiration of the specified time limit, action will be required to ground aircraft, discontinue use of air-launched weapons, prevent launch of missiles, discontinue operation of ground communications, electronic or meteorological equipment, or discontinue use of support equipment, personnel equipment, materials, or munitions.

3.3.3 **Routine Action.** The Routine Action category will be assigned whenever the urgency of the situation does not warrant assignment of Immediate or Urgent Action categories and the assignment of Record Purpose would be inappropriate. The Routine Action category shall not be assigned to ITDs or Bulletins. Assignment of Routine Action is appropriate when conditions exist which embody degrees of risk calculated to be acceptable within broad time limits. Governing factors include equipment or procedural deficiencies of a material, mechanical, operational, or tactical nature, the uncorrected existence of which could:

- a. Constitute a hazard through prolonged use.
- b. Have a negative effect on operational effectiveness or readiness.
- c. Reduce tactical utility or supportability.
- d. Reduce operational service life.

Routine Action TDs are issued to authorize retrofit changes and provide detailed instructions for installing those changes. When attrition changes require a TD they shall be assigned the Routine Action category. Appropriate compliance time periods for Routine Action Category TDs include: next phase or calendar inspection, next "I" level induction, next scheduled Depot level maintenance period, or 36 months.

3.3.4 **Record Purpose.** The Record Purpose category is assigned to Formal Change TDs issued to document configuration changes that have been incorporated in all affected equipment by the change designer/originator before the TD is issued. The following restrictions apply to assignment of the Record Purpose category:

- a. TDs issued to supersede and formalize ITDs may not be Record Purpose.
- b. Bulletins, ITDs, RAMECs and other message TDs may not be assigned the Record Purpose category.

- c. The Record Purpose category may be assigned only to Formal Change TDs and only when the period for change incorporation in all affected systems is 12 months or less.
- d. Documentation of TYCOM concurrence shall be provided prior to assignment of the Record Purpose category.

3.4 TECHNICAL DIRECTIVE TITLES, CODES AND NUMBER.

3.4.1 **General.** Each TD is assigned a title by the APM/LM. TD titles are assigned that appropriately reflect the object or purpose of the TDs. For example, a change or a RAMEC affecting an airframe or integral airframe component would be given the title “Airframe Change” (AFC). A similar Interim Change would be titled, “Interim Airframe Change” (IAFC) and a Bulletin, “Airframe Bulletin” (AFB). TD titles are represented by TD codes (TDCs) in the Maintenance Material Management (3M) and TDSA systems. For example, all AFCs, including IAFCs, are represented by TDC 50 and all AFBs by TDC 74. The TD titles currently in use are described in the following paragraphs. Associated title abbreviations and TD Code numbers for Changes and Bulletins are shown immediately after each title. Figure 3-1 shows all TD titles listed in TDC number sequence. In addition to TD titles and TD code numbers, NATEC assigns each TD a unique TD number; this includes assignment of part, revision and amendment numbers. Change TD numbers are assigned immediately following CCB change approval. Bulletin TD numbers are assigned prior to release for compliance. TDs are either numbered sequentially by title (e.g., Avionics Change (AVC) 3500) or sequentially by title within specified type/model of equipment (e.g., F-18 Airframe Change (AFC) 100). Finally, when a TD is applicable only to a foreign country under a FMS program, the two-letter “Country Organization and Code”, found in DOD 55105.38-M, is placed after the TD number (e.g., P-3 AFC 2 (JA) for Japan).

3.4.2 **Airframe (AFC/50, AFB/74).** TDs shall be titled “Airframe” when the action required affects the structure or the installation of any equipment in an aircraft, trainer, drone, or missile target. Such affected items include, but are not limited to, the fuselage, wings, landing gear, fixed and moveable surfaces, cockpits, canopies, seats (except ejection seats), fairings, access doors, flight control attachment fittings, bearings, bellcranks, chains, associated rollers and sprockets, rigging rods, control wheels, rudder pedals, surface control locks, mechanical controls, trim tab controls, related airframe items and special provisions installations, wiring harness originating from aircraft power sources, distribution panels, and terminal boards. The Airframe title is also given when systems or system elements that are normally considered to be integral parts of the airframe are affected. Such systems include the airframe portions of fuel, oil, pressurization, fire extinguishing, air conditioning, anti-icing, anti-g, and oxygen systems. Special care should be taken with TDs involving routine removable/replacement airframe components. In many cases such TDs should be assigned accessory (AY) rather than airframe (AF) titles and codes. Airframe TDs shall be subdivided by, and numbered sequentially within, specific type/model equipment, e.g., “F-14 Airframe Change (AFC), “P-3 Airframe Bulletin (AFB).”

3.4.3 **Dynamic Component (DCC/51, DCB/52).**

TDs shall be titled “Dynamic Component” when the action required affects any component in the helicopter dynamic system; e.g., transmissions, clutches, brakes, rotor actuating mechanisms, rotor groups main and tail, rotor hubs main and tail, and drive shafts. Dynamic Component TDs shall be subdivided by, and numbered sequentially within, specific type/model equipment, e.g., “H-1 Dynamic Component Change (DCC)”, H-46 Dynamic Component Bulletin (DCB).”

3.4.4 **Power Plant (PPC/02, PPB/01).** TDs shall be titled “Power Plant” when the action required affects an integral part of an aircraft engine. Special care should be taken with TDs involving routine removable/replacement engine components. In many cases such TDs should be assigned accessory (AY) rather than power plant (PP) titles and codes. Power Plant TDs shall be subdivided by, and numbered sequentially within, specific type/model equipment, e.g., “TF-30 Power Plant Change (PPC)”, “J-79 Power Plant Bulletin (PPB).”

3.4.5 **Avionics (AVC/54, AVB/55).** TDs shall be titled “Avionics” when the action required affects the following:

3.4.5.1 Airborne electronic equipment: communications (excluding personal survival radios), radar, navigation, recognition/identification friend-or-foe (IFF), electronic fire control/weapon release, infrared, electro-optic, laser detection/designation, teletype, data transmission, data recording, NBC detection, magnetic detection, Electronic Warfare and Electronic Countermeasures (EW/ECM), telemetry, intercommunications, imbedded computer, Loran,

Omega, compass, radio/radar altimeter, marker beacons (excluding personal survival beacons), ground proximity warning, collision warning, altitude alert, flight data recording, inertial platform, gyro reference, flight director, automatic pilot, automatic stabilization, control panels, headsets, microphones, switches, sonar, sonobuoys, data processors, cameras, and the Light Airborne Multi-Purpose System (LAMPS).

3.4.5.2 Airborne electrical components: aircraft power distribution equipment and associated wiring harnesses, meters, electrical parts of generators and inverters, reverse-current relays, voltage regulators, over-voltage relays, warning lights, test switches, junction boxes, batteries, battery vent systems, internal and external lights, and the electrical portions of the airframe and engine accessories.

3.4.5.3 Airborne instruments: engine instruments, flight instruments, weapon system and navigational displays, sensor displays, Pitot-static system, heads-up displays, integrated displays, instrument panels, angle of attack systems, yaw systems and associated equipment.

3.4.5.4 Other avionics: intrusion detection systems, air traffic control and landing systems not included in paragraph 3.4.15, and other avionics devices not installed in aircraft.

3.4.6 **Aviation Armament (AAC/56, AAB/57)**. TDs shall be titled "Aviation Armament" when the action required affects airborne bombing/gunnery/missile equipment, gun sights, bomb racks, launchers, gun pallets, air compressors (armament only), switches, gun cameras, solenoids, transformers, heaters, bomb release units, bomb door position and warning lights, aircraft integral gun charging units, pyrotechnic ejectors and launchers, and the expendable impulse cartridges used in them.

3.4.7 **Accessory (AYC/61, AYB/58)**. TDs shall be titled "Accessory" when the action required affects a removable repairable component, unit, subsystem, or system which is considered to be an accessory to, rather than an integral part of a major system such as the airframe or the engine. Such items include, but are not limited to: engine mounted accessories, generators, inverters, pumps, compressors, actuators, constant speed drive mechanisms, auxiliary power units, emergency generators and pumps, aircraft deceleration parachutes, accumulators, aircraft installed arresting gear and launch bars, and liquid oxygen converters. Weapon system designation or component nomenclature shall be included in the TD subject immediately following the TD code (e.g., Accessory Change No. 123, TDS 61, F-14 Air Conditioning Compressor Modification).

3.4.8 **Support Equipment (SEC/62, SEB/63)**. TDs shall be titled "Support Equipment" when the action required affects equipment, other than fixed base facilities, used to support operation and maintenance of aircraft and associated airborne systems. This includes, but is not limited to the following:

3.4.8.1 Avionics support equipment: electronic test sets, test benches and associated harnesses, voltage/current/power/waveform measuring equipment, electro-mechanical devices such as rate tables, vacuum pressure chambers, electronic blade trackers, propeller balancers, missile test sets, engine test sets, weapon system test sets, test program sets, special purpose electronic test equipment, alignment checkers, circuit testers, continuity testers, etc.

3.4.8.2 Gasoline, electric, and diesel powered servicing equipment: air compressors, hydraulic test stands, mobile air conditioners, mobile electric power plants and trailers, aircraft/equipment tow tractors, vans, weapon handlers, mobile target vehicles and loaders.

3.4.8.3 Gas turbine powered servicing equipment such as the GTC-85, the NCPP-105, and similar equipment.

3.4.8.4 Trailers, dollies and carts: equipment such as engine removal and transportation trailers, bomb trucks, cryogenic servicing trailers, spotting dollies, crash dollies, wheel removal dollies and cages, reservations carts, load banks, weighing scales, water-alcohol trailers, weapons skids, shipment stands, and engine test stands.

3.4.8.5 Mechanical support equipment: equipment such as jacks, work stands, hoists, tow bars, slings, adapters, ladders, fixtures, wheel chocks, portable tools, tiedowns, analyzers, line testers (other than avionics), and bomb hoists.

3.4.8.6 Automatic Test Equipment (ATE): all types of land and ship-based automatic and semi-automatic test equipment used in the maintenance of airborne systems, support equipment, and components thereof. This includes ATE operating systems and test program sets. It also includes changes to software when that change is required by

virtue of a hardware change. For support equipment “software only” changes see the “Support Software” title, paragraph 3.4.19, below.

3.4.9 **Propeller (PRC/64, PRB/65)**. TDs shall be titled “Propeller” when the required action affects a propeller assembly, spinner, spinner after-body, oil control governor, synchronizer, or other integral component of a propeller system.

3.4.10 **Aircrew System (ACC/66, ACB/67)**. TDs shall be titled “Aircrew System” when the required action affects the following:

3.4.10.1 Aviation life support systems: inflatable survival equipment, survival kits and associated items, personal survival radios and beacons, oxygen equipment, pressure suits, helmets, integrated restraint and containment systems, parachute hardware, parachute packs and containers, protective equipment, and other items worn or carried by flight crew personnel.

3.4.10.2 Aviation escape systems: ejection seats and rocket extraction systems including inertia reels (powered and unpowered), shoulder harnesses, lap belts, ballistic and rocket catapults, rocket motors, drogue guns, ballistic transmission lines, firing units and related cartridge actuating devices, ballistic canopy removal systems including fracturing devices and related components, detonating cords and lines, removers, thrusters and related cartridge actuating devices, and seat mounted stabilizing and deceleration parachutes.

3.4.10.3 Other related equipment/systems: in-flight feeding and water systems, first aid kits, and helicopter rescue equipment.

3.4.11 **Photographic (PHC/68, PHB/69)**. TDs shall be titled “Photographic” when the action required affects airborne photographic components including: cameras (except scope and gun cameras), view finders, associated controls, solenoids, indicator lights, switches, control boxes, intervalometers (except weapon intervalometers), vacuum pumps, heaters and window washers.

3.4.12 **Meteorological Equipment (MEC/73, MEB/79)**. TDs shall be titled “Meteorological Equipment” when the action required affects units or components that sense or measure meteorological parameters and compute, analyze, or display the resulting data in usable form. Such equipment provides for the acquisition and use of wind velocity, temperature, relative humidity, barometric pressure, visibility, cloud cover and related meteorological data from the surface to the upper limits of the atmosphere.

3.4.13 **Airborne Weapon (AWC/75, AWB/76)**. TDs shall be titled “Airborne Weapon” when the action required affects the structural, hydraulic, electronic, electrical, optical, or explosive components of air delivered weapons including missiles, free fall weapons/munitions, mine clearance/countermeasure systems, sonobuoys, decoys and ammunition.

3.4.14 **Target Control System (TCC/77, TCB/78)**. TDs shall be titled “Target Control System” when the action required affects airborne target or drone control system components including telemetry, tracking beacons, miss distance measuring equipment, command control equipment and in-flight recovery systems.

3.4.15 **Ship-Installed and Expeditionary Airfield Launch, Recovery and Visual Landing Aid Equipment (LRC/83, LRB/84)**. TDs shall be titled “Ship-Installed and Expeditionary Airfield Launch, Recovery and Visual Landing Aid Equipment” when the action required affects the following expeditionary airfield or ship-installed systems: catapults, arresting gear, barricades, deck lighting, airfield lighting, optical landing systems, jet blast deflectors, airfield matting, earth anchors, earth anchor installation equipment, launch holdback/release systems, and related systems and components. LRCs and LRBs are numbered by PMA 251 with concurrent log entries by NATEC.

3.4.16 **Quick Engine Change Kit (QEC/03, QEB/04)**. TDs shall be titled “Quick Engine Change Kit” when the action required affects a component of a Quick Engine Change Kit as defined in the applicable aircraft Illustrated Parts Breakdown (IPB) technical manual. Quick Engine Change Kit TDs shall be subdivided by, and sequentially numbered within, specific type/model equipment; e.g., F-14 Quick Engine Change Kit Change (QEC), or S-3 Quick Engine Change Kit Bulletin (QEB).

3.4.17 **Naval Air Maintenance Trainer (NTC/91, NTB/92)**. TDs shall be titled “Naval Air Maintenance Trainer” when the action required affects naval air maintenance trainers (NAMT) in the inventory (custody) of NAMTRAGRU and the change is NAMT only. NAMT changes required as a result of weapon system changes should be implemented by the weapon system change TD.

3.4.18 **Airborne Software (ASC/93, ASB/94)**. TDs shall be titled “Airborne Software” when the action required affects programmable elements of digital systems and associated documentation applicable to systems that are unique to a single type/model aircraft platform. This includes computer software for weapon systems, electronic warfare systems, surveillance and warning systems, airborne control systems, navigation systems, data link, and other tactical communication systems. The “Airborne Software” title should be used when the action involved is software only. When the software action is related to, or required by virtue of a hardware change, it should be implemented by the weapon system (hardware) TD rather than by separate Airborne Software TD. Airborne Software TDs shall be subdivided by, and sequentially numbered within, specific type/model equipment, e.g., F/A-18 Airborne Software Change (ASC) or S-3 Airborne Software Bulletin (ASB).

3.4.19 **Support Software (SSC/95, SSB/96)**. TDs shall be titled “Support Software” when the action required affects software associated with support equipment systems and is software only. Software actions related to, or required by virtue of, SEC TDs (paragraph 3.4.8 above), should be implemented by the SEC TDs.

3.4.20 **Commodity Software (CSC/40, CSB/41)**. TDs shall be titled “Commodity Software” when the action required affects programmable elements of digital systems and associated documentation applicable to common systems including computer software for weapon systems, data link and other tactical communications systems which have multi-platform application. The “Commodity Software” title should be applied when the action is software only. Software actions required by virtue of hardware TDs should be implemented by the hardware TD.

3.4.21 **Naval Air Maintenance Trainer Support Software (TSC/97, TSB/98)**. TDs shall be titled “NAMT Support Software” when the action required affects the computer software of NAMT systems and the software action is not related to, or required because of, the hardware action of a NAMT or a weapon system TD.

3.4.22 **Reusable Container (RCC/07, RCB/08)**. TDs shall be titled “Reusable Container” when the action required affects reusable shipping or storage containers for NAVAIR cognizant material.

3.4.23 **Age Exploration AEB/99)**. Bulletin TDs shall be titled “Age Exploration” when the action is required in execution of an age exploration program. Age exploration programs gather and analyze specific user maintenance data through a sampling process for the purpose of adjusting preventive maintenance tasks and time intervals which were initially established by Reliability Centered Maintenance (RCM) analysis. Age Exploration Bulletins shall be subdivided by, and sequentially numbered within, specific type/model equipment (e.g., AV-8 Age Exploration Bulletin (AEB) and TF-30 Age Exploration Bulletin (AEB)).

3.4.24 **Training Equipment (TEC/05, TEB/06)**. TDs shall be titled “Training Equipment” when the action required affects COG 2 training equipment under the management control of the Naval Air Warfare Center Training Systems Division (NAWCTSD). TECs and TEBs are approved and released by NAWCTSD as authorized by PMA-205 and AIR-3.1. TECs and TEBs are numbered by NAWCTSD with concurrent log entries by NATEC.

3.5 TECHNICAL DIRECTIVE DEVELOPMENTAL STAGES.

During preparation, validation, verification, approval and publication, TDs pass through a number of developmental stages. The five most commonly used developmental stages are defined and discussed in the following paragraphs.

3.5.1 **Draft**. The term “Draft” is applied to initial versions of TD documents that may be validated but are not verified (see paragraphs 3.8 and 3.9). Draft TDs may be submitted to NAVAIR, when required, for information, review and/or comment. Draft TDs shall not be distributed to activities outside NAVAIR without approval of the cognizant APML/LM.

3.5.2 **Proposed**. The term “Proposed” is applied to TDs submitted to NAVAIR for verification and/or review and approval. “Proposed” applied to Formal Change TDs means they have not been verified. Formal Change TDs are redesignated “Preliminary” after verification (see paragraph 3.5.3). The RAMEC process requires verification

be accomplished before submitting proposed RAMECs to NAVAIR for review and approval. All Interim Change and Bulletin TDs submitted to NAVAIR for review and approval are designated "Proposed" until they are approved and issued. Distribution of Proposed TDs shall be strictly controlled by the APML/LM. Distribution of Proposed TDs for verification should include designated verifying activities, AIR-3.1.8, NATEC, NAVICP, cognizant fleet support teams (FST), and affected TYCOMs/controlling custodians.

3.5.3 **Preliminary.** The term "Preliminary" is applied to Formal Change TDs only. The term "Preliminary" denotes that a Formal Change TD has been verified but has not yet been posted to the NATEC website or has not yet been bar coded and distributed. A Preliminary TD shall not be used in lieu of an approved TD to incorporate a change or to deliver kits unless a waiver is granted by AIR-3.1. Distribution of Preliminary TDs shall be strictly controlled by the APML/LM.

3.5.4 **Master.** The term "Master" is used to specify the official reproducible copy of a Formal Change TD submitted to NAVAIR for approval signature.

3.5.5 **Approved.** Formal Change TDs are publications and are approved when they are signed by the NAVAIR TD approval authority and posted to the NATEC website or bar coded and formally distributed by NATEC. NATEC electronic publication media satisfies bar-coding and formal publishing requirements. Interim Change, Bulletin and RAMEC TDs are approved when they are released for compliance.

3.6 TECHNICAL DIRECTIVES ISSUED IN PARTS.

Implementation of approved engineering changes occasionally requires preparation and issuance of TDs in parts when: (1) the total directed action will be accomplished incrementally in separate distinct parts, (2) directed actions will be accomplished on different configurations of affected equipment, as approved detailed instructions and/or required change kits are developed and become available, or (3) directed action involves separate reportable compliance actions at different maintenance levels. When a TD is to be issued in parts, the first or basic issuance of the TD will always be part 1, even though it will not be identified as such in the TD number. Subsequent issuances shall be identified by Arabic numbers as Part 2, Part 3, etc. (e.g., F-18 AFC-217 Part 2). All parts shall have the same category and subject. Each part shall be a complete, stand-alone TD.

3.7 TECHNICAL DIRECTIVES PREPARED IN DATA PACKAGE FORMAT.

Depot level TDs that implement extensive changes may be written in "data package" format. This format eliminates unnecessary and expensive reproduction of detailed installation instructions for each TD copy published. Instead, a separate installation data package is prepared, and it is reproduced only as necessary to provide one copy to each installing activity. The requirement for a separate data package is identified in the TD and instructions for obtaining it are provided. Mixed format TDs are also permitted. For example, a TD implementing a minor change may contain complete instructions for installing the change in the basic equipment and identify a separate data package containing the necessary instructions for changing affected trainers.

3.8 CHANGE VALIDATION.

Validation is an engineering process by which the originator accomplishes all tasks required by a proposed change to ensure the modified items function as intended. Validation is usually conducted at an organic depot or contractor facility, but may be conducted at an operational site as directed by the APML/LM.

3.9 TECHNICAL DIRECTIVE VERIFICATION.

Verification is the process for determining the accuracy and adequacy of a proposed TD and reporting results to the preparing activity. Verification is the actual installation of change kits, incorporation of changes or performance of inspections by personnel of the prescribed skill, using a proposed TD, support equipment and special tools available at, and in an environment comparable to, the average service facilities of the lowest authorized compliance

maintenance level. Verification also includes the administrative review of the proposed TD by the appropriate personnel at NAVAIR, NATEC and cognizant FST. Successful verifications are authorized installations.

3.9.1 TDs shall be verified prior to issuance. TD verification shall be assigned a sufficiently high priority to enable completion of the required action within the prescribed time limit.

3.9.2 Verifications shall include the procedures associated with gaining access to the areas/equipment involved and performing tests required to ensure satisfactory operation after completion.

3.9.3 Verification of power plant and component changes shall include interface, clearance, and fit checks, as necessary, to ensure compatibility with installation and with support systems (e.g., Verification of power plant changes may require engine buildup and installation of an aircraft and/or compatibility checks with support equipment and reusable shipping containers when external dimensions are changed). Also, verification of power plant TDs on multi-engine platforms may require verification on all installed engines due to differing access/compatibility problems among installed engines.

3.9.4 Verification of software TDs will normally be performed by designated software support activities (SSA). Software verification at a Navy user level installation activity, if required, will normally be limited to verifying proper installation and operation of the software.

3.9.5 TDs applicable to more than one aircraft/equipment type model series (T/M/S) shall be verified on each affected aircraft/equipment T/M/S, unless waived by Head, Logistics Management Department (AIR-3.1). TDs requiring compliance action at more than one maintenance level shall be verified at all maintenance levels involved.

3.9.6 Organic Depot level verification plans shall be coordinated with AIR-6.0. Verifications performed by Organizational or Intermediate level maintenance activities shall be coordinated through applicable TYCOMs/controlling custodians.

3.9.7 Verifying activities shall report results to the APML/LM. If a verifying activity determines a TD to be unsatisfactory or deficient in any respect, that activity shall report difficulties and request instructions from the APML/LM.

3.9.8 Verifying activities shall evaluate costs to the installing activity for materials required incident to TD compliance. If these costs are projected to exceed \$1,000 per squadron, the verifying activity shall identify the excess costs in the verification report to the cognizant APML/LM who will determine whether to restructure or cancel the TD.

3.9.9 When a proposed amendment invalidates the verification performed on the basic TD, a new verification shall be performed.

3.9.10 When a proposed revision invalidates the verification performed on the original TD or previously issued revision or amendment thereto, the proposed revision shall have a new verification performed.

3.10 EXCEPTIONS TO THE VERIFICATION REQUIREMENT.

3.10.1 Verification is not required for Record Purpose TDs.

3.10.2 Verification is not required for TDs prepared in data package format when installations are performed entirely by the design activity.

3.10.3 Verification of RAMECs may be waived by TYCOMs/controlling custodians.

3.10.4 During critical or urgent operational conditions, when the requirement for verified accuracy is outweighed by the urgent need for the change, TD verification may be waived by Head, Logistics Management Department (AIR-3.1).

3.11 CONCURRENT VALIDATION/VERIFICATION (VAL/VER).

The APML/LM may authorize accomplishment of verification concurrent with validation when the change is relatively uncomplicated. When combined VAL/VER is performed, each functional and responsible activity must be clearly defined. Engineering personnel responsible for validation must not be involved with, or assist in, the verification. This is particularly important when the VAL/VER is performed by Organizational or Intermediate level maintenance activities. Concurrent VAL/VER performed by contractors, or by the Navy with contractor participation, shall not be authorized by an APML/LM without the concurrence of the Head, Logistics Management Department (AIR-3.1).

3.12 TECHNICAL DIRECTIVE APPROVAL AND PUBLICATION.

3.12.1 After verification, proposed TDs shall be updated by TD preparers to incorporate verification comments and submitted to the cognizant APML/LM as preliminary TDs.

3.12.2 APML/LMs shall review the Master TDs prior to presenting them to the approval authority for signature. This review shall include the availability of the resources necessary to TD compliance (e.g.; change kits, GFE, spares) and the delivery schedules and status of logistics resources necessary for system support after a TD installation. The APML/LM will complete a TD Logistics Support Checklist (see Attachment A-1 to Appendix A) documenting this review and include it with each Formal Change and Interim Change TD submitted to the TD approval authority for signature.

3.12.3 TDs shall be signed/approved either by AIR-3.1 or individuals with signature authority granted by AIR 3.1. TDs affecting common equipment shall be coordinated via the common PMA, with all affected programs. Immediate Action category TDs and TDs involving aircraft grounding or flight restrictions shall require concurrence by CNO/CMC and approved by AIR-00 prior to release.

3.12.4 APMLs/LMs shall ensure appropriate issue dates and target completion dates are assigned to Formal Change TDs before they are forwarded to NATEC for publication. Formal Change TD issue dates shall be postdated from date of signature to allow for printing and distribution lead-time. This lead-time is normally six weeks. This date shall also represent the time when sufficient change kits will be available to sustain the incorporation schedule, or when the new system configuration is expected to be logistically supportable (either by normal or interim support), whichever is later. Formal Change TDs issued to supersede Interim Change TDs shall be assigned issue dates the same as the dates the Interim Change TDs were issued.

3.12.5 APMLs/LMs shall ensure appropriate target completion dates are assigned before releasing RAMEC and Bulletin TDs for transmission. Interim Change TDs are not assigned target completion dates. See paragraph 3.16.1.2 for further instructions on assignment of target completion dates.

3.12.6 APML/LMs shall ensure that Formal TDs are forwarded to NATEC for publication.

3.13 TECHNICAL DIRECTIVE COMPLIANCE.

Approved TDs (except Record Purpose TDs) are NAVAIR directives to designated maintenance activities to comply with TD requirements within prescribed time periods or according to prescribed schedules. Each TD shall be complied with and reported as required by the TD and OPNAVINST 4790.2 (OPNAVINST 8000.16 for weapons).

3.13.1 All TDs are issued for compliance at designated maintenance level(s); Organizational (O), Intermediate (I), and/or Depot (D). Depot level encompasses non-depot government engineering/industrial activities such as laboratories and FSTs. TDs that route all affected items back to the manufacturer for modification shall cite "Contractor" as the compliance maintenance level. Compliance maintenance levels are assigned by the APML/LM, in consultation with TYCOMs/controlling custodians, FSTs, and using commands; and are approved by appropriate NAVAIR TD approval authorities. Maintenance level assignment is based on a number of factors. These factors include personnel skill level, special tools, support equipment, facilities, man-hours required, and S M&R codes of

affected equipment. The designation of Organizational or Intermediate level compliance does not prohibit accomplishment by Intermediate or Depot level maintenance activities. However, designation of Depot level compliance does prohibit accomplishment by Organizational or Intermediate maintenance activities unless specific authority is granted by NAVAIR.

3.13.1.1 **Organizational and/or Intermediate** level compliance normally will be assigned when: TDs are immediate, urgent or safety; affected equipment will be out-of-service or down for a minimum amount of time; relatively few man-hours are required; and actions to be performed are within the concept and capability of the O or I maintenance level. O or I level compliance normally will not be assigned when equipment out-of-service time will exceed eight hours or if more than ten man-hours per compliance action will be required. All TDs, except Bulletins, require prior concurrence from affected TYCOMs/controlling custodians in order to assign O or I level compliance.

3.13.1.2 **Depot** level normally will be assigned when: TDs are routine; affected equipment will be out of service for a relatively long period of time; a large number of man-hours are required; and/or skills, tools, support equipment, or facilities are required that are not routinely available at lower maintenance levels. D level TD compliances may be accomplished by organic depots, by commercial contractor, or by a combination of both. They are usually accomplished at depot facilities concurrent with maintenance/repair or affected equipment and/or as drive-in modifications. When circumstances require, compliance can also be accomplished at operational facilities by depot field teams. However, use of operational facilities or other fleet resources must be concurred in by the applicable TYCOMs/controlling custodians.

3.13.1.3 Man-hours required, in addition to accomplishing the directed modification, will include work tasks such as gaining access to perform the work, and post-modification operational checks.

3.14 TECHNICAL DIRECTIVE AMENDMENTS AND REVISIONS.

Once a TD is issued, it may only be changed by formally approved and issued TD amendments or TD revisions and may only be cancelled by formally approved and issued TD amendments. Use of other communication vehicles, official or unofficial, to change or cancel a published/issued TD, is not authorized. TD amendments and revisions shall be issued via the same media and to the same distribution/addressee list as the TD documents being amended/revision (e.g., TDs issued by message shall be amended/revision by message). When urgency dictates, deficiencies with Formal TDs may be addressed by message. However, message release must be approved by AIR-3.1 and any resulting TD amendment/revision must be formally published in accordance with this manual, within 120 days. When applicable, an amendment or revision shall state explicitly what additional work will be required on equipment that was modified or inspected in compliance with the basic TD, existing amendments, or previous revision.

NOTE

Changes to modification programs that are not within the scope of the approved CCB require review and formal approval by the NAVAIR CCB or cognizant chartered PMA CCB.

Amendments are identified numerically and revisions are identified alphabetically (e.g., AVC 3500 Amendment 1 or AVC 3500 Revision A). TD amendment/revision preparers shall obtain amendment number/revision alphabetical character assignments from NATEC. Master amendments and revisions to Formal Change TDs are forwarded to the appropriate TD approval authority. The approval authority for TD amendments and revisions is normally the same as for the basic TD.

3.14.1 **Amendments.** An amendment to a TD clarifies, corrects, adds to, deletes from, makes minor changes to, changes a target completion date for, or cancels an existing TD, revision, or amendment. Amendments are not complete TDs. They supplement existing TDs, identifying only the changes, additions, or deletions that need to be made.

3.14.1.1 An amendment's contents shall include: TD category, TD title, TD number, and TD code identical to the basic TD; amendment number; amendment issue date; target completion date identical to the basic TD, unless the purpose of the amendment is to extend a target completion date; "SUBJECT" identical to the basic TD; "REFERENCES" in addition to those in the basic TD; "PURPOSE" of the amendment; "DETAILED

INSTRUCTIONS” describing the changes to be made; “SIGNATURE”; “PREPARED BY”; “VERIFIED BY”; and only such additional elements as may be needed to clearly amend the basic TD.

3.14.1.2 Amendments shall not be issued to TDs when the size of the amendment will approximate the size of the basic TD. In such cases, a revision should be issued in lieu of an amendment.

3.14.1.3 TDs may be amended a maximum of three times. An exception to this rule is that a fourth amendment may be used to cancel a TD, a revision, or a previously issued amendment. A TD revision shall be required to change a TD that has been amended three times.

3.14.1.4 When a cancellation amendment is issued to discontinue incorporations of a previously issued TD, it must state the required configuration of each item initially specified to be modified, i.e., whether installed changes are to remain installed or are to be removed.

3.14.1.5 The “PURPOSE” element of amendments shall state the reason the amendment is required. For example: “additional installation/removal instructions”, “new alignment procedures”, “cancellation”, “extension of target completion date”, “reinstatement of target completion date”, etc.

3.14.2 **Revisions.** A revision is a complete new edition of an existing TD. A revision is required when the changes, additions, or deletions, involved are more than minor in nature; when a change approximates the size of the current TD; when changing a TD that has been amended three times; or when reactivating a TD that was completed and retired to the history file and reactivation by amendment is impractical. A revision supersedes the basic TD or prior TD revision and all existing amendments thereto.

3.14.2.1 The “PURPOSE” element of revisions shall restate the purpose of the basic TD, and in addition, state the reason the revision is required.

3.14.2.2 The “DOCUMENTATION AFFECTED” element of revisions shall state that the revision supersedes the basic TD or previous TD revision and all existing amendments thereto.

3.15 TECHNICAL DIRECTIVE COMPLETION, SUPERSEDURE, AND CANCELLATION.

Completion, supersedure, and cancellation are processes by which TDs are removed from the active status after they have served their purpose and/or are no longer needed.

3.15.1 **Completion.** Completion is the normal process by which TDs are moved from active TD status to *inactive* TD status when it is considered all requirements have been satisfied and the target completion date has passed.

NOTE

Active TDs are those TDs that are included in the current NAVAIR NA00500C (Technical Directive Aeronautical Indices).

3.15.1.1 A completed TD is not cancelled or repealed. It has simply been moved administratively to an inactive status to facilitate and better focus management attention on active TDs.

3.15.1.2 **Target Completion Dates.** All TDs, except Interim Changes, are assigned “Target Completion Dates”. This date represents a future point in time when compliance requirements are expected to be complete. Its purpose is to initiate a review of TD status.

- a. The review shall be performed by the APML/LM and AIR-3.1.8 90 days prior to target completion dates.
- b. When TD compliance requirements remain outstanding, target completion dates shall be formally extended by TD amendments or revisions.
- c. Unless extended, Bulletin TDs shall be automatically completed and moved to the inactive status at their assigned target completion dates.

- d. Change TDs shall be formally completed and moved to the inactive status when target completion dates expire and when status accounting records show no non-compliances outstanding.
- e. When status accounting data is inadequate or unreliable, Change TDs shall be declared completed at the judgement of AIR 3.1.8 and the cognizant APML/LM after there has been no compliance activity and no kit demand for at least one year.
- f. At TD completion, kits/materials for Change TDs are identified for reclamation/disposal.
- g. Occasionally, outstanding non-compliances will arise for TDs that have been completed or have passed their target completion dates. A TD does not have to be extended or reactivated to be complied with. Kits should be ordered. AIR-3.1.8 should issue kits (on demand), and compliance actions should be performed, regardless of whether a TD is in active or completed status. If no kits are in stock, AIR 3.1.8 shall notify the cognizant APML/LM.
- h. Completed TDs shall not be discarded. They shall be retained as a permanent record of system configuration by NATEC and at the designated compliance maintenance level.
- i. Target completion dates shall be assigned as the last day of the 6-month period when compliances are scheduled to be completed and shall be either 30 June or 31 December.
- j. **Recommended** time frames for target completion dates for TDs are:

Immediate Action	2 years
Urgent Action	3 years
Routine Action	8 years
Record Purpose	3 years
- k. Target completion dates for Bulletins will be 12-18 months after issuance.

3.15.2 **Supersedure.** Supersedure is the process by which an issued/published TD is removed from active files upon issuance of a superseding TD. Interim Change TDs are superseded by Formal Change TDs. TD Revisions supersede the basic TDs, including all previously issued amendments and revisions to them. Superseding TDs must cite all TD documents being superseded in the "DOCUMENTATION AFFECTED" element, must state "to supersede..." in the "PURPOSE" element, and must indicate the status of previous compliances in the "APPLICATION" element. (i.e., Previous compliances are valid, are not valid, or are valid with specified additional requirements.)

3.15.3 **Cancellation.** Cancellation terminates compliance requirements and removes TDs from the active files. TD cancellation is done by issuing a TD amendment. Cancellation is applicable to any TD, if after approval, a program manager decides it should be recalled/terminated for any reason. Cancellation amendments must specify disposition of prior compliances.

TECHNICAL DIRECTIVE CODE (TDC) NUMBERS

CODE	TITLE	CODE	TITLE
01	Power Plant Bulletin (PPB)	69	Photographic Bulletin (PHB)
02	Power Plant Change (PPC)	73	Meteorological Equipment Change (MEC)
03	Quick Engine Change Kit Change (QEC)	74	Airframe Bulletin (AFB)
04	Quick Engine Change Kit Bulletin (QEB)	75	Airborne Weapon Change (AWC)
05	Training Equipment Change (TEC)	76	Airborne Weapon Bulletin (AWB)
06	Training Equipment Bulletin (TEB)	77	Target Control System Change (TCC)
07	Reusable Container Change (RCC)	78	Target Control System Bulletin (TCB)
08	Reusable Container Bulletin (RCB)	79	Meteorological Equipment Bulletin (MEB)
40	Commodity Software Change (CSC)	83	Ship-Installed and Expeditionary Airfield Launch, Recovery, and Visual Landing Aid Equipment Change (LRC)
41	Commodity Software Bulletin (CSB)		
50	Airframe Change (AFC)	84	Ship-Installed and Expeditionary Airfield Launch, Recovery, and Visual Landing Aid Equipment Bulletin (LRB)
51	Dynamic Component Change (DCC)		
52	Dynamic Component Bulletin (DCB)	91	Naval Air Maintenance Trainer Change (NTC)
54	Avionics Change (AVC)	92	Naval Air Maintenance Trainer Bulletin (NTB)
55	Avionics Bulletin (AVB)	93	Airborne Software Change (ASC)
56	Aviation Armament Change (AAC)	94	Airborne Software Bulletin (ASB)
57	Aviation Armament Bulletin (AAB)	95	Support Software Change (SSC)
58	Accessory Bulletin (AYB)	96	Support Software Bulletin (SSB)
61	Accessory Change (AYC)	97	Naval Air Maintenance Trainer Support Software Change (TSC)
62	Support Equipment Change (SEC)	98	Naval Air Maintenance Trainer Support Software Bulletin (TSB)
63	Support Equipment Bulletin (SEB)	99	Age Exploration Bulletin (AEB)
64	Propeller Change (PRC)		
65	Propeller Bulletin (PRB)		
66	Aircrew System Change (ACC)		
67	Aircrew System Bulletin (ACB)		
68	Photographic Change (PHC)		

Figure 3-1

SECTION IV

TECHNICAL DIRECTIVE STATUS ACCOUNTING (TDSA)

4.1 GENERAL.

4.1.1 The Technical Directive Status Accounting (TDSA) system provides on-line configuration status accounting for naval aircraft, engines, support equipment, maintenance trainers, and serial numbered weapon system components. The TDSA system gathers TD application and compliance data on individual equipment items and provides that data in the form of tailored automated reports, to operating and management activities.

4.1.2 The TDSA databases reside within the Naval Aviation Logistics Data Analysis (NALDA) system. The data is accessible through the NAVAIR maintained NALDA website.

4.1.3 TDSA provides the Incorporated/Not-incorporated (INC/NINC) status of TDs applicable to each trackable equipment item (airframes, engines, support equipment, and maintenance trainers) and incorporation (INC) data for TDs which apply to components. TDSA also provides projected modification man-hour requirements and summary reports for modification management and budgeting.

4.1.4 The TDSA databases are updated daily to reflect new TD compliance actions against applicable equipment items. The TDSA system provides for:

- a. Maximum use of existing data collection systems.
- b. Production of quarterly INC/NINC reports for reporting custodians and functional wings.
- c. Production of special reports, as required (available reports are listed in Figure 4-1).
- d. Direct access to the databases by NALDA users.
- e. Daily database update.
- f. Annual purge of completed TD data from the active files of the active databases to the history files of the history databases.

4.2 DESCRIPTION.

4.2.1 The initial TD data in the TDSA databases are established by the NAVAIR Configuration Management (Logistics) Division (AIR-3.1.8) based on information contained in official NAVAIR DOCUMENTS (i.e., Change Control Board (CCB) Change Directives, implementation letters, and published TDs).

4.2.2 The TDSA databases are updated daily to reflect TD compliance actions reported directly into TDSA by Naval Air Depots (NADEPs), and by interservice depot activities and contractors with direct TDSA access. Basic validation checks are performed on the transactions to ensure appropriate data have been entered in key fields. The transactions are then placed on a disk file by system (airframe, engine, support equipment) and a report is produced indicating valid and erroneous data elements. AIR-3.1.8 controls the actual updating of the databases by listing the validated disk files and submitting the update jobs. Error reports are sent directly back to the compliance reporting activities for their correction.

4.2.3 The TDSA databases are updated daily to reflect TD compliance reports received from the fleet via the Maintenance Material Management (3M) system. Error reports on these compliance transactions are analyzed by AIR-3.1.8 specialists and corrections are made based upon the best available naval aviation maintenance experience and judgement.

4.2.4 The history databases are established and maintained by AIR-3.1.8 to reduce the volume of the active files and thereby reduce operating costs. The history files are updated annually by blocking those TD numbers that have been completed (i.e., no outstanding requirements). The first TD number with outstanding requirements and all subsequent TD numbers will be in the active file. Completed and cancelled TDs remain in the active files until their number is reached in the annual block purge.

4.2.5 Three standard TDSA TD status listings are distributed periodically to reporting custodians for verification, correction, and entry into aircraft/equipment logbooks. These listings are:

- a. List 02: A list of all approved TDs that are applicable to but Not-incorporated (NINC) in specific aircraft, by bureau number, or specific serial numbered equipment. List 02, the NINC listing, is distributed quarterly.
- b. List 04: A list of all approved TDs that are applicable to and Incorporated (INC) in specific aircraft, by bureau number, or specific serial numbered equipment. List 04, the INC listing, is distributed quarterly.
- c. List 04H: A list of all approved TDs that have been completed and retired to the history file which are applicable to a specific aircraft, by bureau number, or specific serial numbered equipment. List 04H is distributed annually.

4.2.6 The cooperation and involvement of all users are required to keep TDSA databases up-to-date and make TDSA reports accurate. Timely and accurate reporting of TD compliance actions will provide accurate INC/NINC status listings of all applicable TDs. Accurate and reliable TD listings provide TYCOMs/controlling custodians, functional wings, reporting custodians, APMLs/LMs, and all management levels with valuable information with which to make informed decisions involving:

- a. Equipment configuration.
- b. Equipment assignment, deployment, transfer, or retirement.
- c. Workload projections.
- d. TD change kit requirements, excesses, and shortages.
- e. Status of change installation plans.
- f. Budgeting for the funds required to install outstanding TDs.
- g. Engineering analysis of incorporated changes.

4.3 RESPONSIBILITIES.

4.3.1 **NAVAIR Configuration Management (Logistics) Division (AIR-3.1.8)** shall:

4.3.1.1 Establish and maintain basic cataloging data for approved NAVAIR TDs. These data shall be loaded/updated daily reflecting information received in official NAVAIR documents (e.g., CCB Change Directive, implementation letters, and approved/published TDs).

4.3.1.2 Correct errors in TDSA data annotated by reporting custodians on Lists 02 and 04 and returned to AIR-3.1.8 for corrective action.

4.3.1.3 Maintain aircraft inventory data with info from OPNAV X-ray messages.

4.3.1.4 Update the active databases daily to reflect TD compliance reports received from NADEPs, interservice activities, and contractors.

4.3.1.5 Update the active databases daily to reflect TD compliance reports received from fleet units via the 3M system.

- 4.3.1.6 Review and correct the 3M data Transaction/Error Report daily. Notify cognizant TYCOMs/controlling custodians of excessive error reporting.
- 4.3.1.7 Maintain close liaison with TDSA users including Type Commanders (TYCOMs)/controlling custodians, functional wings, Field Support Teams (FST), reporting custodians, NAVAIR System Team members, Naval Air Technical Data and Engineering Service Command (NATEC), Naval Air Maintenance Training Group (NAMTRAGRU) and its units, NADEPs, interservice depot activities, Defense Plant Representatives, and Contract Administrators.
- 4.3.1.8 Provide training and assistance on the TDSA system to all users.
- 4.3.2 **Reporting custodians, in whose custody the equipment is assigned**, shall:
- 4.3.2.1 Quarterly, upon receipt of new Lists 02 and 04, verify the accuracy of the new lists before inserting them into the Technical Directive Requirements Section of the aircraft/equipment logbook. Replaced Lists 02 and 04 should be destroyed. Report any errors or omissions from the new lists to the AIR-3.1.8 TDSA manager. Reports of errors or omissions are made by annotating List 02 with the following codes:
- C-Complied
 - P-Previously Complied
 - D-Does not apply
- 4.3.2.2 Report TD compliance actions as required by OPNAVINST 4790.2.
- 4.3.2.3 Annually, upon receipt of the new List 04H, verify its accuracy and insert it into the aircraft/equipment logbook removing and destroying the old List 04H.
- 4.3.3 **Aircraft Intermediate maintenance Activities/Departments** shall retrieve a List 02 for each aircraft engine received or inducted, review the List 02 for accuracy, and provide required updates to the TDSA manager at AIR-3.1.8.
- 4.3.4 **Naval Air Depots** (NADEPs) shall:
- 4.3.4.1 Submit TD compliance transactions daily, through their on-line terminal, for TD compliance actions performed on aircraft, maintenance trainers, engines, support equipment, and components.
- 4.3.4.2 Retrieve and review transactions/error reports daily. Correct the errors and resubmit the corrected transactions prior to the next update.
- 4.3.4.3 Conduct an administrative and physical (as required) configuration audit on all aircraft, engines, support equipment, and maintenance trainers inducted for Depot level maintenance and correct any discrepancies found on the current Lists 02 and 04.
- 4.3.4.4 Submit an equipment update transaction (Rapid Action Change (RAC) transaction type) for each inducted aircraft prior to completion of Depot level maintenance. This transaction shall reflect an audit review date for the specific aircraft bureau number.
- 4.3.4.5 Ensure current, updated Lists 02 and 04 are provided with the logbook records of each delivered aircraft and maintenance trainer.
- 4.3.4.6 Ensure Field Modification Teams (FMTs) report TD compliances back to parent NADEPs for appropriate entry into the TDSA database.
- 4.3.5 **Naval Air Maintenance Training Group** (NAMTRAGRU) shall:
- 4.3.5.1 Provide the Air-3.1.8 TDSA manager information describing the inventory of maintenance trainers. This information will include type equipment code, military serial number, nomenclature, and the NAMTRAU maintaining physical custody.

4.3.5.2 Submit TD compliance reports into TDSA database for all compliance actions performed by NAMTRAU on maintenance trainers.

4.3.5.3 Keep AIR-3.1.8 informed of new Naval Aviation Maintenance Trainers (NAMTs) received, existing NAMTs transferred between detachments, and excess NAMTs transferred, sold, or disposed of.

TECHNICAL DIRECTIVE STATUS ACCOUNTING (TDSA)

STANDARD REPORTS LISTING

LIST 01	Technical Directive Application Listing
LIST 02	Non-incorporated (NINC) Listing for Equipment
LIST 03	Incorporation/Non-incorporation Summary Matrix
LIST 04	Incorporation (INC) Listing for Equipment
LIST 04H	Historical INC Listing for Equipment
LIST 06	INC/NINC Listing for Equipment
LIST 07	INC/NINC Listing for Technical Directives
LIST 301	INC/NINC Man-Hour Technical Directive Summary
NAT 01	Technical Directive Catalog Report
NAT 02	Support Equipment Technical Directive Index
NAT 03	Technical Directive Avionics Listing
NAT 04	Aviation Aircrew Equipment TD Listing
NAT 11	Technical Directive/Applicability Audit Report
NA 003	Technical Directive Equipment Matrix Report
NA 011	Target Completion Date Advisory report
NA 500C	Aeronautical Technical Directive Index Report
REP 07	Technical Directive Compliance Report

Figure 4-1

SECTION V

MANAGEMENT OF NAVAIR MODIFICATION MATERIAL

5.1 GENERAL.

DOD Directive 4140.1, "Material Management Policy", outlines procedures for material management. NAVSUP Publication 485, "Naval Supply Procedures", designates NAVAIR as the Inventory Control Point (ICP) for 6V cognizance code material, more commonly known as "Technical Directive (TD) Change Kits". NAVSUP Pub 485 further delineates ICP management responsibilities for Navy owned material from initial procurement through disposal including: material identification, standard requisition and issue procedures, transaction item reporting, financial item reporting, and reclamation/disposal procedure. TD change kit managers have been assigned ICP management responsibility for NAVAIR TD change kits.

TD change kits and associated Government Furnished Equipment (GFE) are budgeted for and managed as NAVAIR-owned 6V cognizance material for one time free issue for installation in specific equipment identified in the TD. TD change kits do not have a recurring demand so they are not considered normal items of supply or within the scope of the federal cataloging program. Therefore, Kit Identification Numbers (KINs) instead of National Stock Numbers (NSNs) are assigned for the purpose of identifying, requisitioning, shipping, and reporting on TD change kits. Most importantly, KINs provide a means of protecting material(s) procured for a specific retrofit program. Materials required to incorporate Technical Directives (TDs) shall, insofar as practical, be furnished as TD change kits. TD change kits shall be provided in the minimum number of unique kit number configurations required to support the TD in order to minimize the requisitioning activity.

5.2 CENTRAL KITTING ACTIVITY (CKA).

The Central Kitting Activity (CKA) is NAVAIR's central hub for managing TD change kits. The facility, located in Orange Park, Florida, shall provide for the secure receipt, storage, distribution, assembly, and reclamation of TD change kits. TD change kit managers shall be responsible for managing this operation.

5.3 BACKGROUND.

Prior to the establishment of the CKA, TD change kits were allocated from kit manufacturers to one or more Navy Supply Centers (NSCs). TD change kits represented only a small fraction of the material these facilities stored. TD change kits did not fit the profile of a normal item of supply since they do not have a recurring demand and are provided as free issue. TD change kits were (and still are) incorrectly marked with vendor part numbers or NSNs vice KINs. Marking problems create the potential for kits to be lost or issued for requirements other than the intended retrofit program. In 1985, NAVAIR conducted a feasibility study to investigate alternative methods for improving TD change kit management and asset visibility. As a result, NAVAIR established the CKA in 1986 to:

- Improve response time to install activities.
- Improve asset visibility and ability to correct TD change kit marking and shortage problems.
- Improve metrics for TD change kit status reports.
- Standardize TD change kit identification, shipping and requisitioning procedures across all platforms.
- Achieve economies of scale cost savings by using a single site for management of all NAVAIR TD change kits.

5.4 MANAGEMENT OF TD CHANGE KITS BY EXCEPTION.

This publication sets a standard process for management of TD change kits. It is recognized that unique situations may arise which require tailoring of this process. Management of TD change kits by alternative methods does not relieve NAVAIR of the responsibilities delineated in DODD 4140.1 and NAVSUP Pub 485 for management and reporting of 6V cognizance material including material identification, requisition and issue procedures, transaction item reporting, financial item reporting, and reclamation/disposal procedures. Requests for waivers from the policy set forth in this manual for the management of TD change kits shall be submitted for approval by AIR-3.1 and shall be implemented according to the approved exception process.

5.5 TD CHANGE KIT IMPLEMENTING INSTRUCTIONS.

APMLs/LMs shall provide implementing instructions to TD change kit assemblers/manufacturing activities to obtain KINs, and shipping and marking instructions from TD change kit managers, and shall forward copies of TD change kit implementing instructions to TD change kit managers.

5.6 TD CHANGE KIT CONTENTS.

TD change kits shall not contain shelf life items, explosives, flammables, hazardous, or classified materials that require extraordinary packaging and handling techniques. Local stock items or items to be fabricated from local stock material, may also be excluded when authorized by the APML/LM. When local fabrication of items is authorized, the items excluded from TD change kits shall be limited to items that are within the maintenance capability of incorporating activities. Complete instructions for fabrication shall be included in the TD. Other items may be excluded from TD change kits when authorized by the APML/LM for reasons of cost or impracticality. A copy of the approved TD is no longer required in a TD change kit. Instead, each TD change kit shall contain a TD change kit contents list which matches the TD change kit contents in the approved TD. (See Figure 5-1 for required content and sample format for TD change kit contents list.)

5.7 TECHNICAL DIRECTIVE MODIFICATION MATERIAL COSTS (LIMITATIONS)

Materials required to incorporate TDs shall, insofar as practical, be furnished as TD change kits. TD change kits, parts, and materials required for TD compliance are normally procured by NAVAIR and provided to installing activities as free issues. The intent of this policy is to minimize modification costs to fleet units. However, installing activities may incur incidental costs for materials required for TD installation including fluids, epoxies, limited shelf life items, and common supply items such as rags, lockwires, and common screws.

Modification material costs for installation of TDs at Organizational and Intermediate maintenance level activities shall be limited as follows:

Formal Technical Directives	\$1,000.00 per TD per Activity
Interim Technical Directives	\$1,000.00 per TD per Activity
Bulletins	\$1,000.00 per TD per Activity
RAMECS	\$1,500.00 per TD Installation

5.7.1 **LECPs (Logistic Engineering Change Proposals)**. If a TD is released as the result of a LECP, modification material will not be provided as free issue to installation activities. In keeping with the return on investment nature of LECPs, material will be paid for by the install activity as agreed to by the fleet/depot representatives during processing of the LECP.

5.8 REQUESTING TD CHANGE KITS IDENTIFICATION NUMBERS (KINs), SHIPPING AND MARKING INSTRUCTIONS.

TD change kit assemblers/manufacturing activities shall submit a formal written request to TD change kit managers for TD change kit identification numbers, shipping, and marking instructions. This request shall include the following information:

Type Equipment affected (AV-8B, F404, etc.)
 Engineering Change Proposal
 Change Control Board Approval Number
 Technical Directive Type and Number (AFC-437, PPC-99, etc.)
 Contract Number (If Applicable)
 Type TD change kit(s),
 (Basic kits A1, A2,...)
 (Spare kits B1, B2,...)
 (Installation Tool kits C1, C2,...)
 (Special Mission kits, D1, D2, ...)
 (Maintenance Trainer kits E1, E2,...)
 (Operational Trainer kits K1, K2,...)
 (Government Furnished Equipment, P1, P2,...)
 Part number and nomenclature for GFE (other as applicable)
 Quantity Procured for each type TD change kit
 Unit cost for each type TD change kit
 (See Figure 5-2 for sample request for KINs, shipping and marking instructions.)

5.9 TD CHANGE KIT MARKING INSTRUCTIONS.

Each TD change kit shipping container shall be clearly marked with the appropriate 15 character kit number as assigned by TD change kit managers. If multiple shipping containers are required for a single retrofit TD change kit, each container shall be marked with the same kit number and marked "Box 1 of 3, 2 of 3", etc. If a single container is used to ship more than one of the same TD change kits, the container shall be marked "OUTER CONTAINER" and reflect the contents. Each TD change kit within the container shall be marked with the appropriate kit number.

5.10 PROCESSING THE REQUEST FOR KINs, SHIPPING AND MARKING INSTRUCTIONS.

TD change kit managers shall process the request for KINs, and shipping and marking instructions by assigning and entering applicable TD change kit management codes (Material Control Code (MCC); and Disposal, Redistribution, Referral/Issue on backorder, Procurement, or Repair schedule (DRIPR). TD change kit managers shall provide kit numbers, and shipping and marking information via formal correspondence to TD change kit assemblers/manufactures and APMLs/LMs. (See Figure 5-3 for a sample KIN Assignment letter.)

5.11 KIT IDENTIFICATION NUMBER DESCRIPTION.

A KIN is a unique 15-character number assigned to TD change kits and associated GFE to allow for automated reporting of inventories/transactions in the Navy supply system. KINs are constructed as follows:

- a. Position 1-4 – TD number
 (NOTE: 1st position contains the number "9" if there are less than four significant digits in TD change kit number).
- b. Position 5-6 – National Item Control Number (NICN)

- “LK” designates general use TD change kit (Airframe Change (AFC), Power Plants Change (PPC), Avionics Change (AVC), etc.).
- “LN” designates kits managed by exception process (See TD for TD change kit source of supply).
- “LQ” designates Quick Engine Change (QEC) kit.
- “LT” designates Support Software Change (SSC) kit..

c. Position 7 – Use code

- “A” designates TD change kits for basic equipment.
- “B” designates TD change kits for system spares.
- “C” designates installation tool kits or support equipment items.
- “D” designates special mission TD change kits.
- “E” designates TD change kits for Naval Air Maintenance Trainers (NAMTs).
- “K” designates TD change kits for Operational Flight Trainers (OFTs) or Weapon System Trainers (WSTs).
- “P” designates items of GFE or installed equipment.

d. Position 8 – Kit number (1 thru 9, alpha A-Z used if more than 9 kit numbers are required)

e. Position 9-13 – A unique serial number assigned by the TD change kit manager

f. Position 14-15 – Special Material Identification Code (SMIC)

5.12 TD CHANGE KIT SHIPMENT FROM KIT ASSEMBLERS/MANUFACTURERS.

TD change kit assemblers/manufacturers shall ship TD change kits according to the instructions provided by TD change kit managers and shall report/document the shipment(s) by Technical Directive Kit Shipment Reports (TDKSRs). (See Figure 5-4 for a sample TDKSR.)

5.13 TD CHANGE KIT RECEIPT AT CENTRAL KITTING ACTIVITY.

NAVAIR CKA shall perform random inspection of newly received TD change kits to verify contents against published contents in the TD, and shall report disparities to TD change kit managers.

5.14 REQUISITIONING OF TD CHANGE KITS.

Installation activities shall review TDs to determine TD change kit requirements, applicability to their equipment, level of maintenance, kit availability, kit condition codes (A = Ready for Issue, G = Parts Shortages, M = In Rework) and source(s) of supply and shall submit requisitions for TD change kits after ensuring:

- a. The TD change kit has not been previously installed by verifying the Aeronautical Technical Directives Requirements List 02 of the aircraft/engine logbooks or by visual inspection of equipment.
- b. Prerequisite TDs have been installed or are planned for concurrent installation.

5.15 PROCESSING OF TD CHANGE KIT REQUISITIONS.

5.15.1 Local Supporting Supply Departments shall:

5.15.1.1 **If TD change kits are not controlled** (Material Control Code “M”), submit the requisitions to NAVICP, Routing Identifier Code (RIC) N32.

5.15.1.2 **If the TD change kits are controlled** (Material Control Code “Z”), submit the MILSTRIP requisition with exception data to TD change kit managers (RIC N52) via DD 1348, facsimile, Email, Naval message or by other means consistent with the urgency. Applicable exception data shall be included as required to identify the end item to be modified (i.e., aircraft bureau number or engine/module/component serial number) and special “Ship To” or “Mark For” instructions shall be included in the remarks section. (See Figure 5-5 for a sample TD change kit requisition in Naval MILSTRIP message format with exception data.)

5.15.1.3 Submit requisitions for TD change kits managed by exception, (“N” in seventh position of KIN) per “Source of Supply” as identified in the “SUPPLY DATA” element of the TD.

5.15.2 **Naval Inventory Control Points** shall:

5.15.2.1 Refer all requisitions for TD change kits to, TD change kit managers, RIC N52.

5.15.2.2 Process daily Transaction Item Records (TIRs) for all 6V cognizance transactions and maintain stock balances on the Master Inventory File (MIF).

5.15.3 **Designated TD Change Kit Wholesale Control Points** shall:

5.15.3.1 Process referrals for 6V cognizance material per current referral procedures.

5.15.3.2 Refer bounce backs due to “not in stock” conditions to TD change kit managers (RIC N52) for disposition.

5.15.4 **AIR 3.1.8** shall validate and process all TD change kit requisitions referred to N52 for action and provide applicable Inter-Service status codes in accordance with NAVSUP Publication 485.

5.16 PROCESSING OF RECEIPT OF TD CHANGE KITS AT INSTALLATION ACTIVITIES.

5.16.1 **Installation activity personnel** shall:

5.16.1.1 Perform a receiving/screening inspection for TD change kits issued against the kit contents in the TD.

5.16.1.2 Initiate a Report of Discrepancy (ROD) for disparities against TD change kits received.

5.16.1.3 Initiate a Quality Deficiency Report (QDR) for discrepant TD change kit components received.

5.16.1.4 Info the cognizant APML/LM and Configuration Management Logistics Division when QDRs are submitted.

5.17 SHORTAGES.

Shortages in the quantity of TD change kits procured to meet the requirements of a TD may develop as a result of funding shortfalls, unforeseen additional requirements, or changes in scope of the TD. In the event of a TD change kit shortage, all efforts shall be made to recover TD change kits issued in excess of the requirements of installation activities. Identification and control of shortages is the shared responsibility of TD change kit managers, cognizant APMLs/LMs, and installation activities.

5.17.1 **TD change kit managers** shall:

5.17.1.1 Match TD change kit issue history with the Technical Directive Status Accounting (TDSA) incorporation data to identify potential excess TD change kits.

5.17.1.2 Provide status of TD change kits issued but not incorporated to APMLs/LMs.

5.17.1.3 Obtain a firm installation commitment from TD change kit installation activities for TD change kits that have been issued for 6 months or longer but have not yet been installed.

5.17.2 **APMLs/LMs** shall:

5.17.2.1 Review TD change kit issues against incorporation data.

5.17.2.2 Procure additional TD change kits in order to meet the requirements of the TD or direct “bit and piece” support of the TD in lieu of additional TD change kit procurement.

5.17.3 **Installation activities** shall:

5.17.3.1 Actively control the requisitioning and receipt of TD change kits to ensure the quantity of TD change kits on-hand is not in excess of requirements.

5.17.3.2 Obtain turn-in instructions from AIR 3.1.8 for those TD change kits that are in excess of requirements.

5.17.3.3 Meet the requirements of the TD through the procurement of “bit and piece” TD change kit components when directed by the APML/LM.

5.18 REALLOCATION OF TD CHANGE KITS.

TD change kit managers shall issue TD change kits as a one-time free issue to the end item of equipment for which the TD change kit was requisitioned. Once issued, the TD change kits are assigned to the end item it was issued against and shall be transferred with that end item even if that TD change kit has not been installed prior to transfer. If a TD change kit is received for an end item that has already transferred to a new activity, the TD change kit shall be forwarded to the new activity having custody of that end item. Changing priorities and/or maintenance requirements may necessitate the reallocation of TD change kits within an installation activity. Reallocation of TD change kits to end items that were not issued the TD change kit, is not advised without prior written formal notification (see Figure 5-6) to the TD change kit manager(s). Once notified, TD change kit managers can adjust the controlled kit issue file in the Kit Management Information System (KITMIS) database to reflect any TD change kit reallocations within the installation activities. Failure to notify the TD change kit managers of TD change kit reallocation within an installation activity, may preclude further issuance of the required TD change kits needed in the modification of the end items affected until reallocation can be verified/resolved by the TD change kit managers.

5.19 EXCESS TD CHANGE KITS.

Management of excess TD change kits is coordinated between APMLs/LMs and TD change kit managers.

5.19.1 **TD change kit managers** shall notify cognizant APMLs/LMs of potential excess TD change kits semi-annually.

5.19.2 **APMLs/LMs** shall review the potential excess TD change kit listing and provide disposition instructions for excess TD change kits in writing (email, fax, letter) to TD change kit managers prior to target completion date.

\$\$\$ NOTE \$\$\$

TD change kit managers will make every effort to ensure that creditable or salvageable material results in a monetary credit for the program(s) from which the TD change kit procurement was originally funded.

5.19.3 **TD change kit managers** shall process the excess TD change kits for reclamation as authorized in writing by the APML/LM in the following order of priority:

- a. Government Furnished Equipment (GFE).
- b. TD change kits associated with active weapon systems.
- c. TD change kits associated with inactive weapon systems.

**SAMPLE KIT CONTENTS LIST
TECHNICAL DIRECTIVE CHANGE KIT**

TECHNICAL DIRECTIVE NUMBER: TDC CODE 50 F/A-18 AIRFRAME CHANGE (AFC) NO. 155

SUBJECT: MAIN LANDING GEAR RETRACTION/EXTENSION TIMING, IMPROVEMENT OF

KIT APPLICABILITY INFORMATION:

WUC/PART NUMBER/NOMENCLATURE: 13C10/7210MS160T/MAIN LANDING SYSTEM

ILLUSTRATED PARTS BREAKDOWN: A2-FA18AC-130-310

KIT IDENTIFICATION NUMBER: 9155LKA228181SF

KIT CONTENTS:

<u>QTY</u>	<u>PART NO.</u>	<u>CAGE</u>	<u>NOMENCLATURE</u>	<u>SM&R</u>	<u>NSN</u>
2	74A690617-1009	76301	Coiled Tube Assy	PAOZZ	4710-01-346-0121
1	74A690618-1005	76301	Coiled Tube Assy	PAOZZ	4710-01-343-8717
2	AN960JD10L	88044	Washer	PAOZZ	5310-01-105-7241
2	MS20470AD4-6	76823	Rivet	PAOZZ	5320-00-117-6826
3	NAS673V4	80205	Bolt	PAOZZ	5306-00-914-9007
2	ST3M523C3M	76301	Clipnut	PAOZZ	5310-00-275-3574
2	74R695022-1001	76823	Tube Assy	PAOZZ	4710-LL-AZZ-U676

NOTE: Refer to the Technical Directive for the related maintenance instructions associated with this TD change kit.

Figure 5-1

**SAMPLE REQUEST FOR KINs
AND SHIPPING INSTRUCTIONS**

From: Commander, Naval Air Systems Command (PMA-226)

To: Commander, Naval Air Systems Command (AIR 3.1.8)

Subj: KIT IDENTIFICATION NUMBER (KIN) ASSIGNMENT, MARKING AND SHIPPING INSTRUCTIONS
FOR C-130 AIRFRAME CHANGE (AFC) NO. 345

Ref: (a) CCB No. 941-03333
(b) Contract N00019-95-D-0023 Order K017
(c) ECP LASO NVIS-001

1. As authorized by references (a), (b), and (c), request you provide kit identification number, and shipping instructions for the Night Vision Lighting System installation, AFC-345, as indicated below:

<u>NOMENCLATURE</u>	<u>PART NUMBER</u>	<u>KIT TYPE</u>	<u>UNIT COST</u>	<u>QTY PROCURED</u>
Install Provisioning	NA	A1	\$1,015.	30
Control Panel, ADF	7926275002	P1	\$1,640.	30
Indicator, True Air Sp	6625012145892	P2	\$2,440.	30
Control, Interrogator	5895001677585	P3	\$3,300.	30

2. Point of contact for additional information is Don Jones, Deputy Assistant Program Manager for Logistics (AIR-3.1.2Y), DSN 757-1234 or commercial (301) 757-1234.

Figure 5-2

SAMPLE KIN ASSIGNMENT LETTER

13060
Ser AIR 3.1.8/

From: Commander, Naval Air Systems Command
To: Commanding Officer, Defense Contract Management Command,
St. Louis, MO 63166-0516

Subj: KIT IDENTIFICATION NUMBER (KIN) ASSIGNMENT, ALLOCATION AND SHIPPING INSTRUCTIONS FOR F-20 AIRFRAME CHANGE (AFC) 258

Ref: (a) Engineering Change Proposal (ECP) MDC-F-20-573
(b) Change Control Board (CCB) Number 981-0311 of 5 Aug 98
(c) Defense Contract Management Center Boeing ST Louis, Message 191903Z AUG 99
(d) NAVAIR 00-25-300 Naval Air Systems Command Technical Directive System Management and Procedures Manual

1. Reference (a) was approved by reference (b). As requested by reference (c), identify kits for subject Technical Directive as follows:

<u>TD NR</u>	<u>KIT TYPE</u>	<u>PROCURED QTY</u>	<u>UNIT COST</u>	<u>KIN</u>
AFC 258	A1	168 ea	\$2,739.00	9258LKA141665SF
AFC 258	A2	166 ea	\$2,739.00	9258LKA241666SF

2. Each kit shipping container shall be clearly marked with the appropriate 15 character Kit Identification Number as assigned in paragraph one. If multiple shipping containers are required for a single kit, each container shall be marked with the same kit number and indicate box 1 of 3, 2 of 3, etc. If a single container is used to ship multiple quantities of the same kit or different kits, the container shall be marked "OUTER CONTAINER" and reflect the contents. Each kit within the container shall be marked with the appropriate Kit Identification Number. Each kit shall include a kit contents listing or a copy of the formal technical directive in accordance with reference (d). Preservation and packaging shall be as specified in the acquisition document(s).

3. Retain one of each kit identified in paragraph one and mark for verification. Ship all remaining kits via traceable means after verification has been completed to:

NAVAL AIR SYSTEMS COMMAND
CENTRAL KITTING ACTIVITY
235 INDUSTRIAL LOOP SUITE 182
ORANGE PARK FL 32073
DODAAD N46899

4. Shipping instructions for kits identified for verification will be forwarded at a later date. If verification is waived, ship verification kits to address provided in paragraph three. Provide one copy of the proposed/verification copy of the Technical Directive to Naval Air Systems Command (AIR 3.1.8).

5. Request complete Naval Air Systems Command Form 13053/1 (Technical Directive Kit Shipment Report) in accordance with reference (d) and distribute one each copy to Naval Air Systems Command (AIR 3.1.8.3D) and (AIR 3.1.1C).

6. Our point of contact is Ms. Lois Taylor (AIR 3.1.8.3D), Voice DSN 757-8239 or Commercial (301) 757-8239, FAX DSN 757-8251, Commercial (301) 757-8251.

Figure 5-3

SAMPLE TD CHANGE KIT MILSTRIP REQUISITION

RTTUZYUW RULSKAU2778 0410800-UUUU--RULSSUU

ZNR UUUUU

R 100141Z FEB 99 ZYB

FM REQUESTING ACTIVITY//JJJ//

TO COMNAVAIRSYSCOM PATUXENT RIVER MD//3.1.8.3//

BT

UNCLAS//N13053//

MSGID/GENADMIN/ /19611-//

SUBJ/TD CHANGE KIT MILSTRIP REQ//

POC//SUPPLY/AK2/DSN: 860-1233/COMM: 904-778-1233//

RMKS/1. A0D/N52/S/9091LKA225205SF/EA/00001/N12345/9034/GD91/N/N54321/A/
Y6/BLNK6V/Z09/13/777/

REMARKS: TEC AEAW, BUNO 162845

2. A0D/N52/S/4709LKA125955SX/EA/00001/N12345/9034/GD92/N/BLNK/A/
Y6/BLNK6V/Z09/13/777/

REMARKS: TEC GHSJ, S/N MHC002

3. ADDITIONAL POC: AZ2 R.U. FORIT, DSN 860-1234, COMM 904-778-1234.//

BT

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NNNN

Figure 5-5

SAMPLE TD CHANGE KIT END ITEM REALLOCATION MESSAGE

RTTUZYUW RULSKAU2778 0410800-UUUU--RULSSUU

ZNR UUUUU

R 291530Z FEB 99 ZYB

FM FITRON TWO ONE THREE//030//

TO COMNAVAIRSYSCOM PATUXENT RIVER MD//3.1.8.3//

BT

UNCLAS//N13053//

MSGID/GENADMIN/FITRON TWO ONE THREE//

SUBJ/TD CHANGE KIT REALLOCATION ACTION, F110 PPC-103//

REF/A/PHONECON/26FEB99//

POC//LOGBOOK/AZ2/DSN: 433-1233/COMM: 757-433-1233//

RMKS/1. AS PER REF A, F110 PPC-103 TD CHANGE KIT, 9103LKA140812XN, RECEIVED ON DOCUMENT NUMBER V09934-9032-FD22 WAS REDISTRIBUTED FROM ENGINE SERIAL NUMBER 588366 AND INSTALLED ON ENGINE SERIAL NUMBER 588432.

2. ADDITIONAL POC: MONITOR, ADC, DSN: 433-1234, COMM: 757-433-1234.

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NNNN

Figure 5-6

APPENDIX A

PREPARATION AND PROCESSING OF FORMAL CHANGE TDs

A-1 PURPOSE.

This appendix contains instructions for preparing and processing Formal TDs. (Conversion of TDs to digital format shall be in accordance with the requirements posted on the NATEC web site.) This type of TD is the primary document used by the Naval Air Systems Command (NAVAIR) to direct the accomplishment and recording of retrofit engineering (configuration) changes to aircraft and other aviation systems procured by or for NAVAIR.

A-2 FORMAL TD PROCESSING.

A copy of the AIR 3.1 Technical Directive Logistics Support Checklist is provided as Attachment A-1 to ensure that all necessary actions and staffing are completed in the Formal TD process.

A-3 FORMAL CHANGE TD FORMAT AND CONTENT.

Formal Change TDs and Formal Change TD revisions shall be prepared according to the format shown in Figure A-1 or A-2 and shall contain all elements listed below in the order indicated. If there is no information applicable to an element, "Not Applicable" shall be entered following the element heading. Conversion of TDs to digital format shall be in accordance with the requirements posted on the NATEC web site.

<u>ELEMENT</u>	<u>REFERENCE</u>
HEADING	A-3.1
SUBJECT	A-3.2
REFERENCES	A-3.3
ENCLOSURES	A-3.4
DOCUMENTATION AFFECTED	A-3.5
PURPOSE OF DIRECTIVE/REVISION	A-3.6
APPLICATION	A-3.7
COMPLIANCE	A-3.8
MAN-HOURS REQUIRED	A-3.9
SUPPLY DATA	A-3.10
REIDENTIFICATION OF ITEMS OF SUPPLY	A-3.11
DETAILED INSTRUCTIONS	A-3.12
WEIGHT AND BALANCE	A-3.13
RECORDS AFFECTED	A-3.14

INTERIM SUPPORT	A-3.15
SIGNATURE	A-3.16
PREPARED BY	A-3.17
VERIFIED BY	A-3.18

Formal Change TD amendments shall be prepared according to the format shown in Figure A-3 and shall contain the following 7 elements and any additional elements as may be necessary.

<u>ELEMENT</u>	<u>REFERENCE</u>
HEADING	A-3.1
SUBJECT	A-3.2
PURPOSE OF AMENDMENT	A-3.6
DETAILED INSTRUCTIONS	A-3.12
SIGNATURE	A-3.16
PREPARED BY	A-3.17
VERIFIED BY	A-3.18

A-3.1 **HEADING.** The “HEADING” element of a Formal TD contains ten parts, seven of which are mandatory. Three parts: safety marking, security markings, and statement of attention are as required. The ten parts are described in the following paragraphs.

A-3.1.1 **TD Category.** The assigned TD category (Immediate Action, Urgent Action, Routine Action, and Record Purpose) shall be entered in 1/4-inch bold capital letters at the top center of the first page of the TD.

A-3.1.2 **Safety Marking.** When a change is designated as “safety”, the word ‘SAFETY’ shall be printed diagonally across the first page in 1-inch high capital letters in a manner that does not obscure the text (see Figure A-2).

A-3.1.3 **Authorizing Activity.** The Naval Air Systems Command letterhead, in capital letters, shall be entered at the top center of the first page immediately below the TD category.

A-3.1.4 **Cognizant Code(s).** The PMA code and the NAVAIR codes having technical engineering and logistic responsibilities for the modification shall be shown at the upper right corner of the first page, two spaces below and to the right of the letterhead.

A-3.1.5 **Issue Date.** The words “Issue Date” followed by the day, month, and year (e.g., 5 July 1995) the TD is projected to be printed and ready for bulk distribution shall be entered into the upper right corner immediately below the cognizant code(s). The date entered is normally postdated six weeks after the TD approval signature to allow for printing and distribution lead-time. The issue date for Formal Change TDs issued to supersede Interim Change TDs shall be the issue date of the Interim Change TD.

A-3.1.6 **Target Completion Date.** The words “Target Completion Date” followed by the day, month, and year when the TD is expected to be completely incorporated and to have otherwise served its purpose, are entered into the upper right corner of the first page immediately below the issue date. Target Completion dates are always 30 June or 31 December.

A-3.1.7 **Security Markings.** If a TD is classified, classification and downgrading instructions shall be shown in accordance with standard classification marking procedures. If a classified TD also requires special handling, the appropriate special handling notice (e.g., Not Releasable to Foreign Nationals) shall also be included in accordance with standard marking procedures for such documents.

A-3.1.8 **Distribution Statement/Destruction Notice.** A distribution statement and a destruction notice shall be included below the target completion date, centered, and indentation justified from the left and right margins. Specific instructions on distribution statements and destruction notices are contained in SECNAVINST 5510.36. The most common distribution statements/destruction notices used in TDs are as follows:

DISTRIBUTION STATEMENT C: Distribution authorized to U. S. Government agencies and their contractors to protect publications required for official use or for administrative or operational purposes only, effective (see issue date). Other requests for the document shall be referred to Commanding Officer, Naval Air Technical Data and Engineering Service Command (NATEC), Naval Air Station North Island, Building 90, P.O. Box 357031, San Diego, California 92135-7031.

DESTRUCTION NOTICE: For unclassified, limited documents, destroy by any method that will prevent disclosure of contents or reconstruction of the document.

Special distribution statement for foreign military sales directives:

DISTRIBUTION STATEMENT: This information is furnished upon the condition that it or knowledge of its possession will not be released to another nation without specific authority of the Department of the Navy of the United States; and that it will not be used for other than military purposes; that individual or corporate rights originating in the information, whether patented or not, will be respected; that the information will be provided the same degree of security afforded it by the Department of Defense of the United States.

A-3.1.9 **TD Title, Number, and Code.** Each TD shall be assigned a title, a number and a Technical Directive Code (TDC) corresponding to the TD Title. The TD title followed by the assigned TD number (e.g., F/A-18 AIRFRAME CHANGE NO. 227, AVIONICS CHANGE NO. 4003, etc.) shall be centered below the destruction notice on the first page and centered at the top of each succeeding page. The appropriate TD code (e.g., TDC 50) shall be centered immediately below the title and number on the first page only. When applicable, words identifying the TD document as a part, an amendment, or a revision will be added after the TD number on every page (e.g., PART 2, AMENDMENT 1, REVISION A, etc.). TDs that are designated safety of flight shall have the word "SAFETY" added after the TD title and number on every page.

A-3.1.10 **Statement of Attention.** When appropriate, an attention statement will be placed on the first page below the TD title, number, and code. An attention statement is appropriate when the detailed instructions affect operational or maintenance procedures in a manner which may concern or require the attention of personnel not normally having an interest in TDs of the particular title. When required, the following note will be placed centered on the first page below the TD title, number, and code:

NOTE

Commanding Officers will be responsible for bringing this change to the attention of all personnel cleared for operation of the affected equipment/system.

A-3.2 **SUBJECT.** The "SUBJECT" shall be entered on the first page only. It shall contain a brief statement identifying the affected system/equipment/component and describing the action required. The affected item will first be identified by standard "AN" nomenclature (e.g., AN/ALQ-126B), and then by nomenclature according to respective Maintenance Instruction Manual (MIM) and Illustrated Parts Breakdown (IPB) (e.g., **F/A-18 ENVIRONMENTAL CONTROL SYSTEM**). The affected system/equipment identification shall be followed by a brief phrase indicating the action required (e.g., MODIFICATION OF, INSTALLATION OF, REPLACEMENT OF, etc.). The Work Unit Code (WUC) of affected equipment shall be entered at the end of the subject line.

A-3.3 **REFERENCES.** The "REFERENCES" element of a TD shall identify essential references to the TD. At a minimum, references shall include the Engineering Change Proposal (ECP), the Change Control Board (CCB) number representing the change approval action and the Implementation Letter. Technical manuals and other affected documents should not be referenced unless actually used as source data for TD compliance. Technical manuals and handbooks shall be referenced by number, title, and date. Installation data packages, when applicable, shall be referenced. Engineering drawings and other design/installation documents shall be referenced by Contractor and Government Entity (CAGE) code, drawing/document number, and revision designator. All

references must be referred to in the text in sequential order. TD preparers should reference only those items that are necessary and relevant, and that are known and available to naval personnel reviewing and/or installing the TD.

A-3.3.1 **References in Amendments.** References in amendments shall be only those in addition to the references in the basic directive and shall be lettered accordingly (e.g., If the basic directive has five references lettered “a” through “e”, the first reference in amendment 1 to that directive shall be lettered “f”). The basic directive will not be referenced in the amendment.

A-3.4 **ENCLOSURES.** The “ENCLOSURES” element of the TD shall identify and list all enclosures appended to a TD.

A-3.5 **DOCUMENTATION AFFECTED.** The “DOCUMENTATION AFFECTED” element shall identify drawings, technical manuals, and any other technical documentation requiring revision as a result of a TD. Each document will be identified by number, title, revision/version, and date as necessary for specific identification. If sectionalized, affected section(s) of a manual shall be identified. Amendments and revisions shall identify the basic directive as an affected document. Amendments need not repeat the affected documentation identified in the basic directive. TD revisions and Formal TDs issued to supersede Interim TDs shall contain a statement under this element that the basic ITD/TD or previously issued revision and all existing amendments are superseded.

A-3.6 **PURPOSE OF DIRECTIVE.** The “PURPOSE OF DIRECTIVE” element shall contain a brief statement of the purpose of the TD. The purpose statement shall summarize the new features and/or capabilities being gained by the modification, and describe the conditions such as hazards, failures, or incidents that necessitated the change action. The element headings for amendments or revisions shall be changed to “PURPOSE OF AMENDMENT” or “PURPOSE OF REVISION”. In amendments, the “PURPOSE OF AMENDMENT” element shall state only the reason for the amendment. In revisions, the “PURPOSE OF REVISION” element shall restate the purpose of the basic TD and in addition, state the reason for the revision. For changes to equipment used on multiple Type Model Series where the affected aircraft T/M/S is not contained in the TD subject, the phrase “as used on T/M/S” should be inserted in the “PURPOSE OF DIRECTIVE” element.

A-3.7 **APPLICATION.** The “APPLICATION” element shall contain three mandatory paragraphs: Basic Equipment, Trainers, and Spares and shall identify the applicability of the TD to specific aircraft, engines, engine modules, trainers, support equipment, systems, equipment, and components. Use of indefinite terms such as “SerNo....and subsequent” or “all” are not acceptable. When equipment/components have not been identified by serial numbers, “Not Assigned” shall be entered below the SERIAL NO. heading. When serial numbers have been assigned but are unknown, “Unknown” shall be entered below the SERIAL NO. heading. **In TD revisions** a statement shall be included, indicating whether compliance with the superseded TD satisfies requirements of the TD, and if not, identifying the additional actions that must be accomplished.

A-3.7.1 **Dependency Statement.** When appropriate, a statement of dependency upon prior, concurrent, or subsequent incorporation of other TDs shall be stated before other application data. TDs listed here shall include both those required to physically accomplish a change and those required to maintain configuration control.

A-3.7.2 **Basic Equipment.** The basic equipment paragraph shall completely identify the major equipment, systems, assemblies, components or software to be modified. The lists of items affected shall be preceded by statements specifying items requiring (1) modification by service activities and/or (2) modification by contractor (contractor retrofit only, not production incorporations). Aircraft and power plants shall be identified by type, model, series, contract number (when applicable), and bureau number or serial number. All other equipment such as airborne system components, missiles, support equipment, and pressure suits shall be identified by quantity and serial numbers (if possible), NSN (if assigned), military designation (Mark, Mod, Aero, AN) and nomenclature, CAGE, part number, and type equipment code. When bureau/serial numbers are used they shall be expressed in definite terms (i.e., “Serial Nos 123456 thru 123678”). It is necessary to show a separate bureau number listing for each affected type/model/series aircraft when more than one type/model/series aircraft is affected. Bureau numbers of stricken aircraft need not be omitted. Bureau numbers of aircraft that are in preservation status in the Aviation and Maintenance Reclamation Center (AMARC) shall be included if they are intended to be modified. Indefinite statements of affectivity such as “Serial Nos. 123456 and subsequent” and “all J79 engines” are not acceptable. Support Equipment shall be identified by Type Equipment Code (TEC) if assigned. TDs for components installed in aircraft or power plants shall also identify the applicable aircraft or power plant by type/model/series. When TDs consist of distinct self-contained parts applicable to different configurations, each configuration shall be listed separately corresponding to the detailed instructions.

A-3.7.3 **Trainers.** The trainers paragraph shall identify trainers affected under two subparagraphs: (1) Operator Trainers (OTs) and (2) Naval Air Maintenance Trainers (NAMTs). Affected trainers shall be identified by appropriate serial number (Navy serial numbers if assigned). When multiple trainer configurations are affected, the different configurations shall be listed separately and related to the applicable detailed instructions and/or KINs. If trainers are not affected by the TD, the term “Not Applicable” shall be entered for this paragraph.

A-3.7.4 **Spares.** The spares paragraph shall identify all spares affected by the TD by quantity, nomenclature, part number, CAGE, and NSN. When different configurations of spares are affected they shall be cross-referenced to applicable Kit Identification Numbers (KINs). If spares are not affected, the term “Not Applicable” shall be entered for this paragraph.

A-3.8 **COMPLIANCE.** The “COMPLIANCE” element shall state the maintenance level and time limit. The time limit shall be appropriate to the TD category and selected maintenance level. (Equipment categories listed as “not applicable” in the “APPLICATION” element may be omitted.) Use of conditional phrases such as “after receipt of parts” with the compliance time limit are not acceptable.

A-3.8.1 **Incorporation Schedule.** If compliance is not stated in terms of scheduled maintenance, a definitive calendar schedule of incorporations shall be shown for basic equipment, trainers, and spares.

A-3.9 **MAN-HOURS REQUIRED.** The “MAN-HOURS REQUIRED” element shall present a tabular listing for each maintenance level showing Kit Identification Number (KIN), “KIT NO.”, “NO. OF MEN”, “SKILL” (rating or occupational specialty) spelled out, and “TOTAL MAN-HOURS” for each kit and non-kit requirement for basic equipment, trainers, and spares. **Record Purpose TDs are not excluded from this element.** Where more than one type or configuration of kit is involved, man-hour information will be provided for each type/configuration of kit.

	<u>KIN</u>	<u>KIT NO.</u>	<u>NO. OF MEN</u>	<u>SKILL</u>	<u>TOTAL MAN-HOURS</u>
Basic Equipment					
Trainers					
Spares					

A-3.9.1 **Revision Man-Hours.** In addition to showing total man-hours, TD revisions shall indicate the man-hours required to perform the additional work in the items that have a basic TD incorporated.

A-3.10 **SUPPLY DATA.** The “SUPPLY DATA” element shall identify all materials including kits, parts, support equipment, and other materials required to incorporate the TD in all affected equipment. The element shall be divided into three paragraphs: “REQUIREMENTS FOR BASIC EQUIPMENT”, “REQUIREMENTS FOR TRAINERS”, and “REQUIREMENTS FOR SPARES”. Any of these categories of equipment listed as “Not Applicable” in the “APPLICATION” element may be omitted from the “SUPPLY DATA” element.

A-3.10.1 **Requirements for Basic Equipment.** Supply data applicable to basic equipment shall be provided in five subparagraphs under this paragraph entitled: “Kits Required”, “Other Material Required”, “Support Equipment Required”, “Source of Supply”, and “Parts/Materials Removed and Disposition”. If no requirement for data exists under any subparagraph, the subparagraph should either be omitted or “Not Applicable” should be entered next to the subparagraph title.

NOTE

When the TD is a result of a LECP and a KIN is used to requisition the part(s), the following statement shall be included in the “Requirements for Basic Equipment” element:

“This technical directive is a result of a Logistics Engineering Change Proposal (LECP). In keeping with the return on investment nature of LECPs, material required to install this modification will not be provided to the fleet as free issue, but will be paid for by the requisitioner as agreed to by the fleet representatives during processing of the LECP”.

A-3.10.1.1 **Kits Required.** Materials required to incorporate TDs shall be packaged and provided as kits unless authorized by NAVAIR to list “Parts Required” in lieu of “Kits Required”. Kit and kit contents data shall be described in columnar format:

KITS REQUIRED

<u>QTY</u>	<u>PART NO.</u>	<u>CAGE</u>	<u>NOMEN</u>	<u>SM&R</u>	<u>NSN</u>	<u>SOURCE</u>
------------	-----------------	-------------	--------------	-----------------	------------	---------------

A-3.10.1.1.1 Kits required shall be identified immediately under the column headings. Quantity shall indicate the total number of kits required to incorporate the change in all affected items unless directed otherwise by the cognizant NAVAIR program office. The KIN shall be entered in the Part No. column. The Kit Number shall be entered in the nomenclature column. The kit size (dimensions) shall be entered in the Source, Maintenance and Recoverability (SM&R) column. Kit weight shall be entered in the NSN column. Should a kit consist of more than one container, each container will have its size and weight listed in the appropriate columns and identified as container 1 of (total number of containers required), container 2, etc. A code number that refers to the source of supply subparagraph shall be entered in the Source column.

A-3.10.1.1.2 Kit contents shall be listed immediately below the kit entry. NSNs are only required when previously assigned. No entry is required in the Source column for kit contents. If there are items with no NSNs, the following statement shall be entered immediately below the last item in the kit: “Subsequent requirements for items of supply, for which no NSN is indicated, shall be requisitioned by part number and CAGE pending publication of the applicable NSNs in Navy stock lists.” Circuit symbol reference designators shall be included for electronics equipment. When more than one configuration of kit (i.e., A1, A2, A3, etc.) is involved and there are common items among the different kits, the Quantity column may be subdivided to reflect the quantities in each differently configured kit.

A-3.10.1.1.3 **Installed Equipment/GFE (use code “P” kits).** When the installed equipment/GFE is required, “Installed Equipment/GFE Required” shall be made a separate subparagraph under the “Requirements for Basic Equipment” paragraph. When applicable, installed equipment or GFE shall be identified below the kit contents by quantity, KIN, nomenclature, part number, and source. NSNs will not be cited.

A-3.10.1.2 **Other Material Required.** All materials required to comply with the TD, but not included in the kits, shall be identified in this paragraph in the same tabular format as for kit contents with the addition of a column entitled “Cost”. Special material such as sealants, paint, and oil that are not included in overhaul or service manuals, shall have the federal or military specification number reflected in the nomenclature column. Raw stock, such as sheet metal, plexiglass, and fabric, shall have the dimensions (not area) indicated in the quantity column in addition to the number of pieces required. Quantities listed shall be the amount required to install one kit. When TDs identify multiple kits, the quantity listed shall be the largest required to accomplish an installation of any of the kits listed. The cost of materials required to be procured/provided by fleet units shall be entered in the cost column and the total cost per installation/compliance shown at the bottom of the cost column.

OTHER MATERIAL REQUIRED

<u>QTY</u>	<u>PART NO.</u>	<u>CAGE</u>	<u>NOMEN</u>	<u>SM&R</u>	<u>NSN</u>	<u>COST</u>
	<u>SOURCE</u>					

A-3.10.1.3 **Support Equipment Required.** All Support Equipment (SE) required to accomplish modification incorporation that is not normally available at the prescribed compliance maintenance level shall be listed in this paragraph and divided into two groups, Group 1 and Group 2, as described below. Code numbers shall be entered into the Source column and the Source of Supply paragraph shall explain how installing activities can obtain the support equipment items required. The Disposition column shall be completed by entering the

alphabetic character keyed to the appropriate disposition instruction in the Parts/Materials Removed and Disposition paragraph below.

A-3.10.1.3.1 **Group 1 (One-Time-Use Support Equipment).** Group 1, one-time-use SE, includes items such as special installation tools, fixtures, and templates. They are items required for installation only and are not needed for continuing maintenance after the modification has been installed. Items may be furnished in kit form or individually. If a kit is being furnished, it shall be identified along with its contents in the same format as the basic equipment kits with the addition of a Disposition column. When the SE is furnished as individual items, the items shall be listed in the following format.

- GROUP 1 -

ONE-TIME-USE SUPPORT EQUIPMENT

<u>QTY</u>	<u>PART NO.</u>	<u>CAGE</u>	<u>NOMENCLATURE</u>	<u>SOURCE</u>	<u>DISPOSITION</u>
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A-3.10.1.3.2 **Group 2 (Continuing-Use Support Equipment).** Group 2, continuing-use items, includes those SE items that are required for installation of the TD and are also required for continuing maintenance support of the modified item(s) after installation. Continuing-use SE provided shall be identified in following format.

- GROUP 2 -

CONTINUING-USE SUPPORT EQUIPMENT

<u>QTY</u>	<u>PART NO.</u>	<u>CAGE</u>	<u>NOMEN</u>	<u>SM&R</u>	<u>NSN</u>	<u>SOURCE</u>	<u>DISPOSITION</u>
------------	-----------------	-------------	--------------	-----------------	------------	---------------	--------------------

A-3.10.1.4 **Source of Supply.** This paragraph shall cross-reference and explain the codes entered in the Source columns for the kits, GFM and other materials, and SE. Source codes shall be numeric to differentiate them from disposition codes, which are alphabetic. Some typical source statements might include: (1) Available through normal supply channels. (2) Manufacture locally. (3) Requisition via channels and procedures established by AIR-3.1.8.

A-3.10.1.5 **Parts/Materials Removed and Support Equipment Disposition.** All parts and materials removed, except low cost hardware (e.g., “O” rings, seals, gaskets, etc.), as a result of incorporating the TD shall be listed in tabular format. The Disposition column shall be completed for each item, or may be coded with an **alphabetic** character keyed to notes indicating the disposition required.

PARTS/MATERIALS REMOVED AND DISPOSITION

<u>QTY</u>	<u>PART NO.</u>	<u>NOMENCLATURE</u>	<u>NSN</u>	<u>DISPOSITION</u>
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Typical disposition notes include:

- (A) Dispose of through local Defense Reutilization and Marketing Office (DRMO).
- (B) Return to supply.
- (C) Retain for future disposition instructions.

A-3.10.2 **Requirements for Trainers.** Supply data applicable to maintenance trainers shall be specified in this paragraph in the same manner as for basic equipment. If the material required for trainers is the same as for the basic equipment, a detailed listing shall not be included. The following statement shall be inserted instead: “All elements of data are the same as for basic equipment, except the Kit Identification Number (KIN) is (specify trainer KIN) and the quantity of kits is (specify number of kits required)”. Where material differences are minor, the same statement may be used and exceptions specified.

A-3.10.3 **Requirements for Spares.** Supply data applicable to spares shall be specified in this paragraph in the same manner as for basic equipment. If the material required for spares is the same as for the basic equipment, a detailed listing shall not be included. The following statement shall be inserted instead: “All elements of data are the same as for basic equipment, except the Kit Identification Number (KIN) is (specify spare KIN) and the quantity of kits is (specify number of kits required)”. Where material differences are minor, the same statement may be used and exceptions specified.

A-3.11 **REIDENTIFICATION OF ITEMS OF SUPPLY.** The “REIDENTIFICATION OF ITEMS OF SUPPLY” element shall identify all items of supply that require reidentification as a result of TD incorporation. When a TD does not modify an item of supply and reidentification is not required, this element shall be identified as “Not Applicable/NA”. When marking is required, instructions shall be included in the “DETAILED INSTRUCTIONS” element. Previous and superseding identifications shall be identified in the format shown below. If a superseding NSN is not available, an Activity Control Number (ACN) is required.

PREVIOUS	PREVIOUS		SUPERSEDING	SUPERSEDING
<u>P/N</u>	<u>NSN</u>	<u>NOMENCLATURE</u>	<u>P/N</u>	<u>NSN</u>

“AN “ nomenclature shall be used, if unchanged. No item of supply shall be listed if the superseding NSN or ACN is not available. Items requiring reidentification that have not been assigned an NSN shall be identified in the “DETAILED INSTRUCTIONS” element.

A-3.12 **DETAILED INSTRUCTIONS.** The “DETAILED INSTRUCTIONS” element shall contain the text necessary to provide step-by-step instructions for conducting the modification required by the TD. The instructions shall be concise and clear, with logical continuity. The step-by-step instructions shall define the chronological accomplishment of the work required in the simplest and most direct manner. Existing NAVAIR technical manuals, engineering drawings, and design documents may be referenced when it is essential, or when it is impractical to include the information in the TD. All unusual and critical steps shall be covered in detail. When TD compliance requires local manufacture of parts, all information necessary for activities to manufacture parts shall be included. Operational checks shall be specified in the TD to assure proper operation of affected systems or equipment after compliance. Any procedures involving safety shall be clearly identified by appropriate cautions and warnings. Parts or assemblies shall be referred to by both nomenclature and part number. When the directive affects more than one configuration of equipment for which separate instructions apply, separate “DETAILED INSTRUCTIONS” element(s) shall be included for them. If a TD affects trainers and/or spares, separate "DETAILED INSTRUCTIONS" element(s) shall be included for them. If the detailed instructions are the same for the trainers or spares, it shall be so stated and the instructions shall not be repeated

A-3.12.1 **Installation Data Packages.** When economically and technically advantageous, detailed installation instructions may be developed as a separate installation data package. This is normally done for large and/or technically complex changes. TDs prepared in this “data package format” shall contain brief detailed instructions sufficient for service personnel to determine that the modification has been accomplished. The detailed instructions shall also identify the installation data package and provide distribution and ordering instructions for it. Installation data packages shall consist of drawings, narrative instructions, and technical data, as required. The narrative instructions shall contain a list of all drawings required/supplied. The TD title and number shall be shown on each page of the data package. Installation data packages shall be distributed to each activity authorized to install the TD and to NATEC. Installation data packages shall not be included in TD change kits. Since installation data packages are stand alone documents, they can not be corrected by TD amendment.

A-3.13 **WEIGHT AND BALANCE.** The “WEIGHT AND BALANCE” element shall show the changes to weight and center of gravity resulting from TD incorporation. All TDs directing modification of aircraft, missiles or airborne systems for which a weight and balance control system is maintained shall contain a statement about the effect of the change on weight and balance. The format of the data in this statement shall be consistent with the format of the original weight and balance data (for aircraft, the format of the data in the aircraft weight and balance Charts A and E). When a TD is issued in parts, effect on weight and balance shall be shown separately for each part. In addition, for TDs having a major effect on weight or balance, a requirement to weigh the aircraft after completion of the change shall be included.

A-3.13.1 **Not Applicable.** If the change is applicable only to a system or systems for which weight or balance is not a consideration, then the statement “Not applicable.” shall be used in this element.

A-3.13.2 **No Effect on Weight and Balance.** If the change has no effect on vehicle weight or center of gravity and no effect on the items listed in the Chart A (Basic Weight Checklist Record) and the Chart E (Load Data) of the affected aircraft (e.g., a software change), then the statement “No effect on weight and balance.” shall be used in this element.

A-3.13.3 **Negligible Effect on Weight and Balance.** If the change has less-than-threshold effects on the vehicle basic weight and moment (see paragraph A-3.13.4) and does not affect the aircraft Chart A (see paragraph A-3.13.5) or Chart E (see paragraph A-3.13.6), then the statement “Negligible effect on weight and balance.” shall be used in this element.

A-3.13.4 **Greater than Negligible Effect on Basic Weight and Center of Gravity.** If the net change to vehicle basic weight is greater than one pound for vehicle basic weight less than 5000 pounds, two pounds for basic weight between 5000 and 50,000 pounds and five pounds for basic weight greater than 50,000 pounds, or the net change to basic weight center of gravity location is greater than 0.05% Mean Aerodynamic Chord (MAC) for fixed wing aircraft or 0.2% of the maximum allowable center of gravity range for rotary wing aircraft, then the net change to basic weight and moment shall be identified as shown below, including the footnote instruction regarding entry of the net change on Chart C. The effects of removed items and added items shall be shown separately. Changes to non-readily removable items (structure, plumbing, wiring, supports, etc.) should not be shown in detail. However, for large changes, sufficient breakdown of the weight and moment changes should be provided to make it clear that all impacts have been addressed. Also, when weight is removed from one location in the aircraft and added at another, the moment arm of the net change will be far removed from the locations of the physical changes: in such cases the Items Removed and the Items Added should be listed separately, in order to make clear the source of the net arm and moment values.

“This TD affects the basic weight and moment as follows:

	<u>POUNDS WEIGHT</u>	<u>INCHES AFT OF REF DATUM</u>	<u>MOMENT/-----</u>
<u>ITEMS REMOVED</u>			
** _____	---	---	----
** _____	---	---	----
_____	---	---	----
<u>ITEMS ADDED</u>			
** _____	---	---	----
** _____	---	---	----
_____	---	---	----
<u>*NET CHANGE</u>			
	---	---	----

*Enter on Chart C in the Weight and Balance Handbooks of affected aircraft.

** (Delete from) and (add to) Chart A in the Weight and Balance Handbooks of affected aircraft.”

A-3.13.5 **Changes to Chart A Basic Weight Checklist Record.** If the TD involves deletion, addition or relocation of readily-removable items of greater-than-threshold weight, then each such item shall be listed as shown above, together with the footnote instruction regarding how to change the Chart A. The threshold weights are one pound for vehicle basic weight less than 5000 pounds, two pounds for basic weight between 5000 and 50,000 pounds and five pounds for basic weight greater than 50,000 pounds. Deleted items shall be listed using the same nomenclature as in the existing Chart A. Weight, arm and moment values shall be shown to the same number of decimal places as in the existing Chart A, and the moment constant shall be that used for the affected aircraft (1000 for most aircraft but 100 for some small aircraft). If the changes to Chart A are extensive, then replacement page(s) or a complete new Chart A should be provided, together with appropriate instructions for insertion into the Weight

and Balance Handbooks of the affected aircraft. Replacement page(s) and new Chart A's shall be submitted to the Weights Division at NAVAIR HQ for review and approval prior to finalization of the TD.

A-3.13.6 **Changes to Chart E Load Data.** If a TD deletes, adds or relocates variable or expendable load items, such as stores or weapon suspension and release equipment, then the relevant weight and balance shall be provided in the format shown above together with the footnote “*** (Delete from) and (add to) Chart E of Aircraft Weight and Balance Handbook.”. Removed items shall be listed using the same nomenclature as in the existing Chart E. If the TD affects other data provided in the Chart E, such as fuel quantities, passenger seating arrangements or capacities of cargo compartments, then suitable instructions for revising the Chart E shall be provided. Weight, arm and moment values shall be shown to the same number of decimal places as in the Chart E of the affected aircraft, and the moment constant shall be that used for the affected aircraft. If the changes are extensive, then replacement page(s) or a complete new Chart E should be provided, together with appropriate instruction for insertion into the Weight and Balance Handbooks of the affected aircraft. Replacement page(s) and new Chart E's shall be submitted to the Weights Division at NAVAIR HQ for review and approval prior to finalization of the TD.

A-3.13.7 **Requirement to Weigh Vehicle.** If the TD has a major effect on vehicle weight or balance, then a requirement to weigh the vehicle in accordance with NAVAIR 01-1B-50 after completion of the modification shall be included in this element. As a guideline, a change should be considered as “major” if it changes basic weight by more than 1% (i.e., the additions or the removals total more than 1%) or changes basic weight center of gravity by more than 0.5% of Mean Aerodynamic Chord (MAC) for fixed wing aircraft or more than 2.0% of the maximum allowable center of gravity range for rotary wing aircraft.

A-3.14 **RECORDS AFFECTED.** The “RECORDS AFFECTED” element shall contain instructions for actions to be taken on records affected by TD compliance. This shall include, as a minimum, instructions for recording TD compliance in the Technical Directive Status Accounting (TDSA) system. When applicable, such instructions shall also include: recording TD compliance in equipment records; recording component replacement intervals or explosive device expiration dates on appropriate OPNAV 4790 forms; and adding or deleting items from the Aircraft Inventory Record. Sample TD compliance statements include:

A-3.14.1 Record accomplishment of this TD in the aircraft/equipment logbook, technical directive section, OPNAV form 4790/24A and/or Aircraft Technical Directive Record (ATDR) Lists 02 and 04 as applicable. Compliance shall be reported through MAF OPNAV form 4790/60 and through the Technical Directive Status Accounting (TDSA) system.

A-3.14.2 Compliance shall be reported through MAF OPNAV form 4790/60 and through the Technical Directive Status Accounting (TDSA) system.

A-3.14.3 Make appropriate entry in support equipment custody and maintenance records on OPNAV form 4790/51. Compliance shall be reported through MAF OPNAV form 4790/60 and through the Technical Directive Status Accounting (TDSA) system.

A-3.15 **INTERIM SUPPORT.** The “INTERIM SUPPORT” element shall identify and describe the interim support required to maintain new configurations or systems incorporated by the TD until full Navy support is established. Information provided shall include: (1) the logistic elements involved (e.g., training, spares, etc.); (2) the activity furnishing the interim support; (3) the beginning and ending dates of the interim support; and (4) The Material/Navy Support Date (MSD/NSD) for the logistic element(s) involved.

A-3.16 **SIGNATURE.** The “SIGNATURE” element shall contain the signature of the appropriate NAVAIR TD approval authority.

A-3.17 **PREPARED BY.** The “PREPARED BY” element of each TD shall include the name of the preparing activity and, if applicable, a preparing activity cognizant code.

A-3.18 **VERIFIED BY.** The “VERIFIED BY” element of each TD shall include the name of the verifying activity and the date the verification occurred. If the TD has an exception to the verification requirement, “Not required” shall be stated. The element shall also include the bureau number(s) of the aircraft upon which verification was performed, when applicable. If verification is waived, the statement “Verification Waived” shall be entered and the reference (e.g., message, letter, etc.) waiving verification shall be identified. TD

amendments/revisions that do not require additional verification shall state, "This amendment does not generate any change which invalidates the verification performed on the basic technical directive".

A-4 OTHER TD PREPARATION GUIDANCE.

A-4.1 **Content Development.** TDs shall be prepared in the form described in this section for uniformity of style and appearance. Statements should be kept short and simple. Instructions shall be written as commands, clearly stating what is to be accomplished; e.g., "install fuel by-pass line between fuel tube and reducer." Normally, articles (a, an, the) shall be omitted; however, articles may be used when needed to prevent ambiguity or to facilitate understanding. Preparers should include all instructions required in the TD; however, lengthy instructions that are contained in technical manuals may be referenced in the text when it is appropriate to do so. Numbers can be shown either as numerals or spelled out but not both, i.e., a number spelled out followed by the numeral in parentheses is unacceptable and unnecessary. Decimal numbers less than one shall begin with a zero before the decimal point.

A-4.2 **Numbering.**

A-4.2.1 **Paragraphs.** Paragraphs shall be numbered as follows:

- 1.
- a.
- (1)
- (a)
- 1.
- a.
- (1)
- (a)

A-4.2.2 **Page Layout.** To accommodate two-sided printing, three hole punching, and bar-coding margins shall be:

- Top margin: 1 inch
 - Bottom margin: page 1 = 1 ½ inches, all others = 1 inch
 - Odd pages: left margin = 1 inch, right margin = ½ inch
 - Even pages: left margin = ½ inch, right margin = 1 inch
- Pages shall be numbered with Arabic numerals in the lower-outer corner of the page within a 7 X 10 inch image area. Pages that will not be backed-up, when printed, shall contain the number of the reverse blank page separated by a diagonal. (e.g., "3/4 blank")

A-4.2.3 **Figures.** Figures shall be numbered consecutively in the order they appear in the directive with single Arabic numerals. The figure number shall be centered at the bottom of the page. Full-page illustrations, placed sideways on a page, shall be turned 90 degrees counterclockwise with the figure title and number beneath the illustration at the right edge of the page.

Attachment A-1

TECHNICAL DIRECTIVE LOGISTICS SUPPORT CHECKLIST

1. Technical Directives (TDs) shall be prepared following NA-00-25-300. TD has been reviewed by APMSE.

Equipment Affected: _____ TD Numbers: _____

APML/Logistics Manager: _____ Code: _____ Date: _____

Title (DATE)	Verified By (Initials)	Activity	Code	Date
a. Supply Data – DCNs Processed by NAVICP: _____.				
b. Kit Del Start: _____. Kit Del Rate: _____.				
c. Spare Kit Start: _____. Spare Kit Rate: _____.				
d. Interim Support Spares Available: _____.				
e. Mod Support Spares Available: _____.				
f. GFE Support Available: _____.				
g. Support Equipment Available: _____.				
h. SE ILS or Interim Support Available: _____.				
i. Pubs Available: _____. "O" Level Yes _____. No _____. "I" Level Yes _____. No _____. "D" Level Yes _____. No _____. PMICs Yes _____. No _____. MRCs Yes _____. No _____. TACMAN Yes _____. No _____. NATOPS Yes _____. No _____.				
j. Maint Plan Rev. Available: _____.				
k. VAL/VER Comments Resolved/Inc: _____.				
l. Impact on Training: (Yes/No) _____. 1. NAMT Kits Available: _____. 2. NAMT Kits Install Scheduled: _____. 3. WST/OT Kits Available: _____. 4. WST/OT Kit Install Scheduled: _____. 5. Revised Maintenance Training Initiated: _____. 6. Revised Operator Training Initiated: _____.				
m. Impact on Structure or Life Component 1. If the purpose of the TD is to change the limiting factor, i.e., events, cycles, hours, etc., is this change defined/specified in the PURPOSE OF DIRECTIVE? _____. (If no, explain in Remarks Section)				

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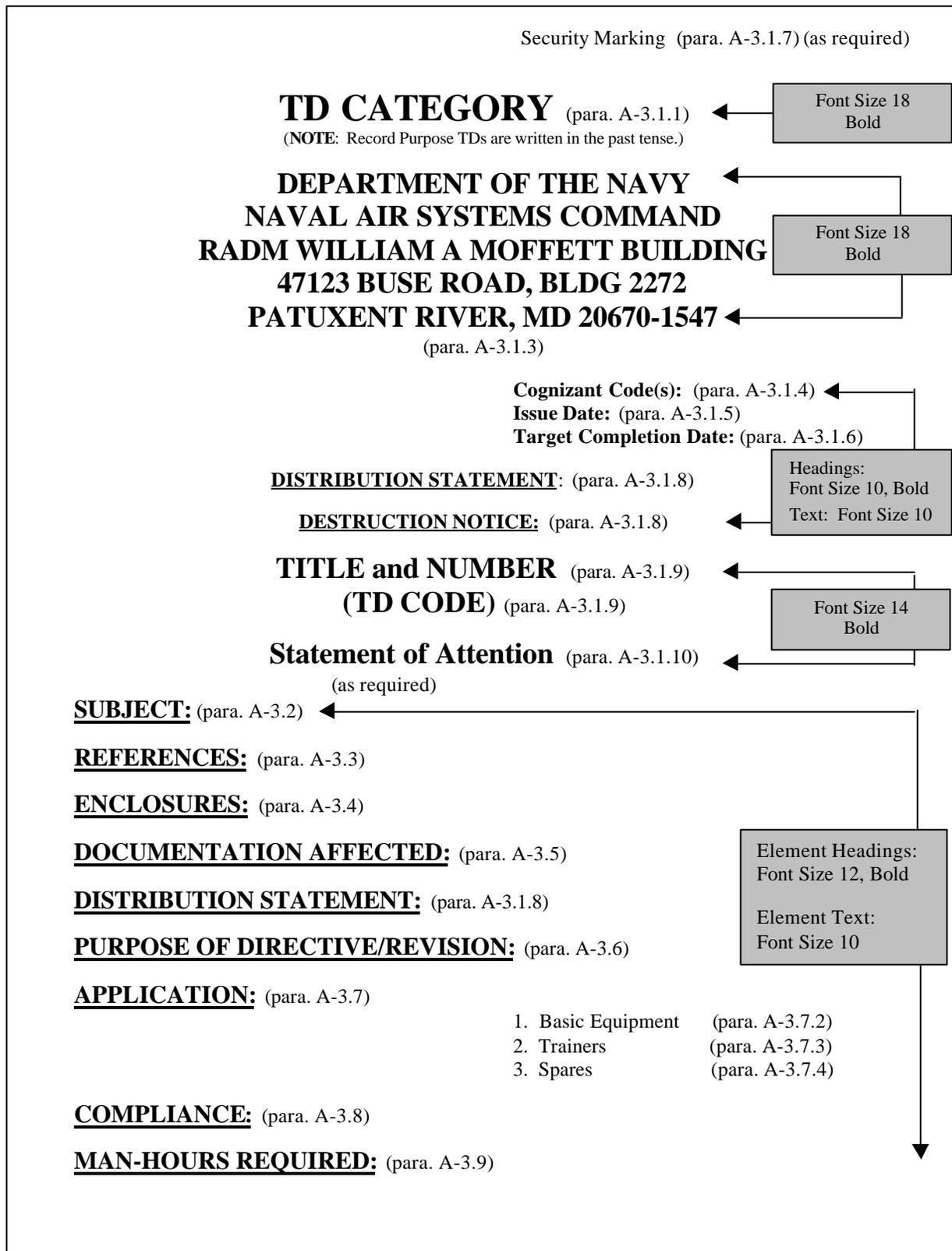


Figure A-1
Formal TD and Formal TD Revision Format

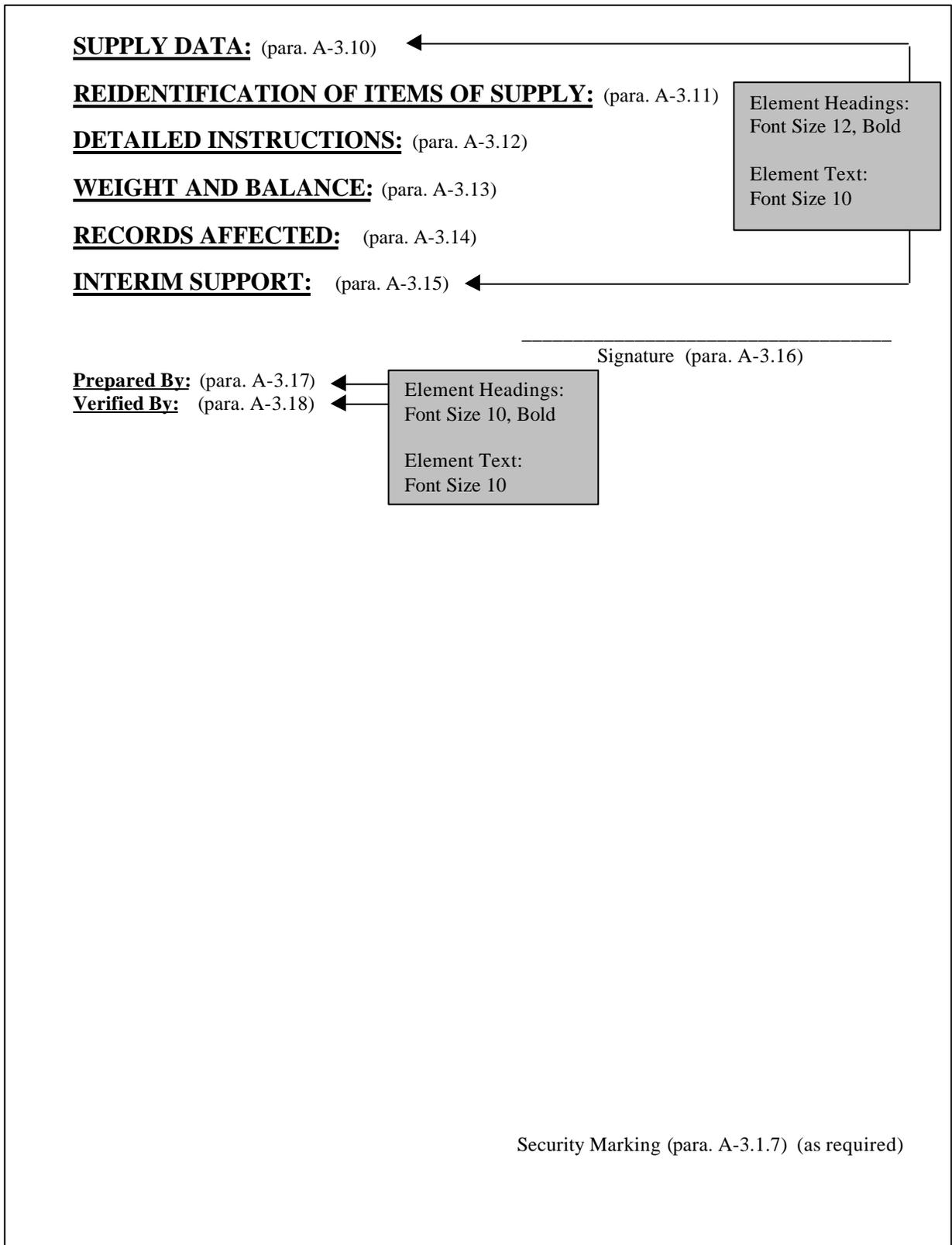


Figure A-1 (continued)
Formal TD and Formal TD Revision Format

Security Marking (as required) (para. A-3.1.7)

TD CATEGORY (para. A-3.1.1)

(NOTE: Record Purpose TDs are written in the past tense)



DEPARTMENT OF THE NAVY
NAVAL AIR SYSTEMS COMMAND HEADQUARTERS
47056 McLEOD ROAD, UNIT 8
PATUXENT RIVER, MD 20670-1626
(para. A-3.1.3)

Cognizant Code(s) (para. A-3.1.4)
Issue Date: (para. A-3.1.5)
Target Completion Date: (para. A-3.1.6)



DISTRIBUTION STATEMENT: (para. A- 3.1.8)

DESTRUCTION NOTICE: (para. A-3.1.8)

TITLE and NUMBER (para. A-3.1.9)
(Technical Directive Code) (para. A-3.1.9)

Statement of Attention (as required) (para. A-3.1.10)

SUBJECT: (para. A-3.2)

REFERENCES: (para. A-3.3)

ENCLOSURES: (para. A-3.4)

DOCUMENTATION AFFECTED: (para. A-3.5)

DISTRIBUTION STATEMENT: (para. A-3.1.8)

PURPOSE OF DIRECTIVE or PURPOSE OF REVISION: (para. A-3.6)

APPLICATION: (para. A-3.7)

1. Basic Equipment (para. A-3.7.2)
2. Trainers (para. A-3.7.3)
3. Spares (para. A-3.7.4)

COMPLIANCE: (para. A-3.8)

MAN-HOURS REQUIRED: (para. A-3.9)

SUPPLY DATA: (para. A-3.10)

REIDENTIFICATION OF ITEMS OF SUPPLY: (para. A-3.11)

DETAILED INSTRUCTIONS: (para. A-3.12)

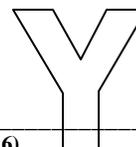
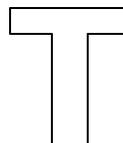
WEIGHT AND BALANCE: (para. A-3.13)

RECORDS AFFECTED: (para. A-3.14)

INTERIM SUPPORT: (para. A-3.15)

PREPARED BY: (para. A-3.17)

VERIFIED BY: (para. A-3.18)



Signature (para. A-3.16)

Security Marking (as required) (para. A-3.1.7)

Figure A-2
Example of Formal TD Safety Marking (para A-3.1.2)

Security Marking (as required) (para. A-3.1.7)

TD CATEGORY (para. A-3.1.1)

(NOTE: Record Purpose TDs are written in the past tense)

DEPARTMENT OF THE NAVY
NAVAL AIR SYSTEMS COMMAND HEADQUARTERS
47056 McLEOD ROAD, UNIT 8
PATUXENT RIVER, MD 20670-1626
(para. A-3.1.3)

Cognizant Code(s) (para. A-3.1.4)

Issue Date: (para. A-3.1.5)

Target Completion Date: (para. A-3.1.6)

DISTRIBUTION STATEMENT: (para. A- 3.1.8)DESTRUCTION NOTICE: (para. A-3.1.8)**TITLE and NUMBER, AMENDMENT** (para. A-3.1.9)
(Technical Directive Code) (para. A-3.1.9)

Statement of Attention (as required) (para. A-3.1.10)

SUBJECT: (para. A-3.2)REFERENCES: (para. A-3.3.1)PURPOSE OF AMENDMENT: (para. A-3.6)DETAILED INSTRUCTIONS: (para. A-3.12)

Signature (para. A-3.16)PREPARED BY: (para. A-3.17)VERIFIED BY: (para. A-3.18)

Security Marking (as required) (para. A-3.1.7)

Figure A-3
Formal TD Amendment Format

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APPENDIX B

PREPARATION AND PROCESSING OF INTERIM CHANGE TECHNICAL DIRECTIVES (ITDs)

B-1 PURPOSE.

This appendix contains instructions for preparing and processing ITDs. The ITD is used when the urgency of a situation requires that change incorporation be initiated immediately following Configuration Control Board (CCB) approval.

B-2 INTERIM CHANGE PROCESSING.

The following ITD checklists are provided as attachments to ensure all necessary actions and staffing are completed in the ITD process.

Attachment B-1 - Program Management ITD Checklist
Attachment B-2 - Engineering ITD Checklist
Attachment B-3 - Logistics ITD Checklist

B-3 INTERIM CHANGE TD MESSAGE FORMAT AND CONTENT.

ITDs and their subsequent revisions and amendments shall be prepared according to the format in Figures B-1 and B-2 respectively.

B-3.1 **Precedence.** The precedence assigned to an ITD message shall be consistent with the category of the ITD. A precedence of IMMEDIATE shall be applied to immediate category ITDs and PRIORITY to urgent category ITDs.

B-3.2 **Addressees.** Approved ITDs shall be sent from the approval authority (NAVAIRSYSCOM/PMA-XXX) to Address Indicator Group (AIG) ONE SIX FIVE and any supplemental AIG numbers for the specific equipment involved, with INFO as required.

NOTE

Messages requesting verification shall be sent to the minimum essential addressees to preclude premature compliance actions.

B-3.3 **Security Classification and Message Standard Subject Identification Code.** ITD messages shall be classified as required. The Message Identification Code //N13052// shall be used on all message ITDs.

B-3.4 **Subject.** The subject shall consist of the TD title, TD number, TD code, subject of the modification and Work Unit Code (WUC) of affected equipment. The TD title shall be preceded by "INTERIM". Prior to release of the final ITD message by NAVAIR (ITD submission to NAVAIR, requests for verifications, etc.), the TD title shall be preceded by "PROPOSED INTERIM".

NOTE

ITDs issued for verification shall be prefixed with the word "PROPOSED" as the first word of the subject and the words "REQUEST FOR VERIFICATION" shall be included at the end of the subject.

B-3.5 **References.** The references shall include technical documentation and background correspondence, as necessary. All references should be cited in the text of the message. A narrative (NARR) section describing the references shall immediately follow the list of references.

B-3.5.1 **References in Amendments.** References in amendments shall be only those in addition to the references in the basic directive and shall be lettered accordingly (e.g., If the basic directive has five references lettered “a” through “e”, the first reference in amendment 1 to that directive shall be letter “f”). The basic directive shall not be referenced in the amendment.

B-3.6 **Text.** The text section of the ITD (the “RMKS” section of the message) and any subsequent revision thereto shall contain the following fifteen paragraphs. All fifteen paragraphs are mandatory. If a particular element is not applicable to a given ITD, “Not Applicable” shall be entered after the element title.

<u>ITD PARAGRAPH NUMBER</u>	<u>ELEMENT</u>	<u>REFERENCE</u>
1	COG CODE	B-3.6.1
2	CATEGORY	B-3.6.2
3	DOCUMENTATION AFFECTED	B-3.6.3
4	PURPOSE	B-3.6.4
5	APPLICATION	B-3.6.5
6	COMPLIANCE	B-3.6.6
7	MAN-HOURS REQUIRED	B-3.6.7
8	SUPPLY DATA	B-3.6.8
9	REIDENTIFICATION OF ITEMS OF SUPPLY	B-3.6.9
10	DETAILED INSTRUCTIONS	B-3.6.10
11	WEIGHT AND BALANCE	B-3.6.11
12	RECORDS AFFECTED	B-3.6.12
13	VERIFIED BY	B-3.6.13
14	SUPERSEDURE	B-3.6.14
15	RELATED NFORMATION	B-3.6.15

ITD amendments shall contain the following 5 elements and any other additional elements as may be necessary.

<u>ELEMENT</u>	<u>REFERENCE</u>
COG CODE	B-3.6.1
CATEGORY	B-3.6.2
DOCUMENTATION AFFECTED	B-3.6.3
PURPOSE	B-3.6.4
DETAILED INSTRUCTIONS	B-3.6.10

B-3.6.1 **COG CODE.** The “COG CODE” element shall include code, name, and telephone number of cognizant engineering and logistic codes.

B-3.6.2 **CATEGORY.** The “CATEGORY” element shall read “Immediate” or “Urgent” whichever is appropriate. The “Routine” or “Record Purpose” category shall not be used for ITDs.

B-3.6.3 **DOCUMENTATION AFFECTED.** The “DOCUMENTATION AFFECTED” element shall identify drawings, technical manuals, and any other technical documentation requiring revision as a result of the TD. Each document will be identified by number, title, revision/version, and date as necessary for specific identification. If sectionalized, affected section(s) of a manual shall be identified. Amendments and revisions shall identify the basic directive as an affected document. Amendments need not repeat the affected documentation identified in the basic directive. TD revisions issued to supersede the TD shall contain a statement under this element that states that the basic TD or previously issued revision and all existing amendments are superseded.

B-3.6.4 **PURPOSE.** The “PURPOSE” element shall contain a brief statement of the purpose of the TD. The purpose statement shall summarize the new features and/or capabilities being gained by the modification, and describe the conditions such as hazards, failures, or incidents that necessitated the change action. The element headings for amendments or revisions shall be changed to “PURPOSE OF AMENDMENT” or “PURPOSE OF REVISION”. In amendments, the “PURPOSE OF AMENDMENT” element shall state only the reason for the amendment. In revisions, the “PURPOSE OF REVISION” element shall restate the purpose of the basic TD and in addition, state the reason for the revision. For changes to equipment used on multiple Type Model Series where the affected aircraft T/M/S is not contained in the TD subject, the phrase “as used on T/M/S” should be inserted in the “PURPOSE” element.

B-3.6.5 **APPLICATION.** The “APPLICATION” element shall contain three mandatory paragraphs: Basic Equipment, Trainers, and Spares and shall identify the applicability of the TD to specific aircraft, engines, engine modules, trainers, support equipment, systems, equipment, and components. Use of indefinite terms such as “SerNo....and subsequent” or “all” are not acceptable. When equipment/components have not been identified by serial numbers, “Not Assigned” shall be entered below the SERIAL NO. heading. When serial numbers have been assigned but are unknown, “Unknown” shall be entered below the SERIAL NO. heading. **In TD revisions** a statement shall be included, indicating whether compliance with the superseded TD satisfies requirements of the TD, and if not, identifying the additional actions that must be accomplished.

B-3.6.5.1 **Dependency Statement.** When appropriate, a statement of dependency upon prior, concurrent, or subsequent incorporation of other TDs shall be stated before other application data. TDs listed here shall include both, those required to physically accomplish a change and those required to maintain configuration control.

B-3.6.5.2 **Basic Equipment.** The basic equipment paragraph shall completely identify the major equipment, systems, assemblies, components or software to be modified. The lists of items affected shall be preceded by statements specifying items requiring (1) modification by service activities and/or (2) modification by contractor (contractor retrofit only, not production incorporations). Aircraft and power plants shall be identified by type, model, series, contract number (when applicable), and bureau number or serial number. All other equipment such as airborne system components, missiles, support equipment, and pressure suits shall be identified by quantity and serial numbers (if possible), NSN (if assigned), military designation (Mark, Mod, Aero, AN) and nomenclature, CAGE, part number, and type equipment code. When bureau/serial numbers are used they shall be expressed in definite terms (i.e., “Serial Nos 123456 thru 123678”). It is necessary to show a separate bureau number listing for each affected type/model/series aircraft when more than one type/model/series aircraft is affected. Bureau numbers of stricken aircraft need not be omitted. Bureau numbers of aircraft that are in preservation status in AMARC shall be included if they are intended to be modified. Indefinite statements of affectivity such as “Serial Nos. 123456 and subsequent” and “all J79 engines” are not acceptable. Support Equipment shall be identified by Type Equipment Code (TEC) if assigned. TDs for components installed in aircraft or power plants shall also identify the applicable aircraft or power plant by type/model/series. When TDs consist of distinct self-contained parts applicable to different configurations, each configuration shall be listed separately corresponding to the detailed instructions.

B-3.6.5.3 **Trainers.** The trainers paragraph shall identify trainers affected under two subparagraphs: (1) Operator Trainers (OTs) and (2) Naval Air Maintenance Trainers (NAMTs). Affected trainers shall be identified by appropriate serial number (Navy serial numbers if assigned). When multiple trainer configurations are affected, the different configurations shall be listed separately and related to the applicable detailed instructions and/or KINs. If trainers are not affected by the TD, the term “Not Applicable” shall be entered for this paragraph.

B-3.6.5.4 **Spares.** The spares paragraph shall identify all spares affected by the TD by quantity, nomenclature, part number, CAGE, and NSN. When different configurations of spares are affected, they shall be cross referenced to applicable Kit Identification Numbers (KINs). If spares are not affected, the term “Not Applicable” shall be entered for this paragraph.

B-3.6.6 **COMPLIANCE.** The “COMPLIANCE” element shall state the maintenance level and time limit. The time limit shall be appropriate to the TD category and selected maintenance level. (Equipment categories listed as “not applicable” in the “APPLICATION” element may be omitted.) Use of conditional phrases such as “after receipt of parts” with the compliance time limit are not acceptable.

B-3.6.6.1 **Incorporation Schedule.** If compliance is not stated in terms of scheduled maintenance, a definitive calendar schedule of incorporations shall be shown for basic equipment, trainers, and spares.

B-3.6.7 **MAN-HOURS REQUIRED.** The “MANHOURS REQUIRED” element shall present a columnar listing for each maintenance level showing Kit Identification Number (KIN), “KIT NO”, “NO. OF MEN”, “SKILL” (rating or occupational specialty) spelled out, and “TOTAL MAN-HOURS” for each kit and non-kit requirement for basic equipment, trainers, and spares. Record Purpose TDs are not excluded from this element. Where more than one type or configuration of kit is involved, man-hour information will be provided for each type/configuration of kit.

<u>KIN</u>	<u>KIT NO.</u>	<u>NO. OF MEN</u>	<u>SKILL</u>	<u>TOTAL MAN- HOURS</u>
------------	----------------	-------------------	--------------	-----------------------------

Basic
Equipment

Trainers

Spares

B-3.6.8 **SUPPLY DATA.** The “SUPPLY DATA” element shall identify all materials including kits, parts, support equipment, and other materials required to incorporate the TD in all affected equipment. The element shall be divided into three paragraphs: “REQUIREMENTS FOR BASIC EQUIPMENT”, “REQUIREMENTS FOR TRAINERS”, and “REQUIREMENTS FOR SPARES”. Any of these categories of equipment listed as “Not Applicable” in the “APPLICATION” element may be omitted from the “SUPPLY DATA” element.

B-3.6.8.1 **Requirements for Basic Equipment.** Supply data applicable to basic equipment shall be provided in five subparagraphs under this paragraph entitled: “Kits Required”, “Other Material Required”, “Support Equipment Required”, “Source of Supply”, and “Parts/Materials Removed and Disposition”. If no requirement for data exists under any subparagraph, the subparagraph should either be omitted or “Not Applicable” should be entered next to the subparagraph title.

NOTE

When the TD is a result of a Logistics Engineering Change Proposal (LECP) and a KIN is used to requisition the part(s), the following statement shall be included in the “Requirements for Basic Equipment” element:

“This technical directive is a result of a Logistics Engineering Change Proposal (LECP). In keeping with the return on investment nature of LECPs, material required to install this modification will not be provided to the fleet as free issue, but will be paid for by the requisitioner as agreed to by the fleet representatives during processing of the LECP”.

B-3.6.8.1.1 **Kits Required.** Materials required to incorporate TDs shall be packaged and provided as kits unless authorized by NAVAIR to list “Parts Required” in lieu of “Kits Required”. Kit and kit contents data shall be described in columnar format:

KITS REQUIRED

<u>QTY</u>	<u>PART NO.</u>	<u>CAGE</u>	<u>NOMEN</u>	<u>SM&R</u>	<u>NSN</u>	<u>SOURCE</u>
------------	-----------------	-------------	--------------	-----------------	------------	---------------

B-3.6.8.1.1.1 Kits required shall be identified immediately under the column headings. Quantity shall indicate the total number of kits required to incorporate the change in all affected items unless directed otherwise by the cognizant NAVAIR program office. The KIN shall be entered in the Part No. column. The Kit Number shall be entered in the nomenclature column. The kit size (dimensions) shall be entered in the Source, Maintenance and Recoverability (SM&R) column. Kit weight shall be entered in the NSN column. Should a kit consist of more than one container, each container will have its size and weight listed in the appropriate columns and identified as container 1 of (total number of containers required), container 2, etc. A code number that refers to the source of supply subparagraph shall be entered in the Source column.

B-3.6.8.1.1.2 Kit contents shall be listed immediately below the kit entry. NSNs are only required when previously assigned. No entry is required in the Source column for kit contents. If there are items with no NSNs, the following statement shall be entered immediately below the last item in the kit: "Subsequent requirements for items of supply, for which no NSN is indicated, shall be requisitioned by part number and CAGE pending publication of the applicable NSNs in Navy stock lists." Circuit symbol reference designators shall be included for electronics equipment. When more than one configuration of kit (i.e., A1, A2, A3, etc.) is involved and there are common items among the different kits, the Quantity column may be subdivided to reflect the quantities in each differently configured kit.

B-3.6.8.1.2 **Installed Equipment/GFE (use code "P" kits).** When the installed equipment/GFE is required, "Installed Equipment/GFE Required" shall be made a separate subparagraph under the "Requirements for Basic Equipment" paragraph. When applicable, installed equipment or GFE shall be identified below the kit contents by quantity, KIN, nomenclature, part number, and source. NSNs will not be cited.

B-3.6.8.2 **Other Material Required.** All materials required to comply with the TD, but not included in the kits, shall be identified in this paragraph in the same tabular format as for kit contents with the addition of a column entitled "Cost". Special material such as sealants, paint, and oil that are not included in overhaul or service manuals, shall have the federal or military specification number reflected in the nomenclature column. Raw stock, such as sheet metal, plexiglass, and fabric, shall have the dimensions (not area) indicated in the quantity column in addition to the number of pieces required. Quantities listed shall be the amount required to install one kit. When TDs identify multiple kits, the quantity listed shall be the largest required to accomplish an installation of any of the kits listed. The cost of materials required to be procured/provided by fleet units shall be entered in the cost column and the total cost per installation/compliance shown at the bottom of the cost column.

OTHER MATERIAL REQUIRED

<u>QTY</u>	<u>PART NO.</u>	<u>CAGE</u>	<u>NOMEN</u>	<u>SM&R</u>	<u>NSN</u>	<u>COST</u>
	<u>SOURCE</u>					

B-3.6.8.3 **Support Equipment Required.** All Support Equipment (SE) required to accomplish modification incorporation that is not normally available at the prescribed compliance maintenance level shall be listed in this paragraph and divided into two groups, Group 1 and Group 2, as described below. Code numbers shall be entered into the Source column and the Source of Supply paragraph shall explain how installing activities can obtain the support equipment items required. The Disposition column shall be completed by entering the alphabetic character keyed to the appropriate disposition instruction in the Parts/Materials Removed and Disposition paragraph below.

B-3.6.8.3.1 **Group 1 (One-Time-Use Support Equipment).** Group 1, one-time-use SE, includes items such as special installation tools, fixtures, and templates. They are items required for installation only and are not needed for continuing maintenance after the modification has been installed. Items may be furnished in kit form or individually. If a kit is being furnished, it shall be identified along with its contents in the same format as the basic equipment kits with the addition of a Disposition column. When the SE is furnished as individual items, the items shall be listed in the following format.

- GROUP 1 -

ONE-TIME-USE SUPPORT EQUIPMENT

<u>QTY</u>	<u>PART NO.</u>	<u>CAGE</u>	<u>NOMENCLATURE</u>	<u>SOURCE</u>	<u>DISPOSITION</u>
------------	-----------------	-------------	---------------------	---------------	--------------------

B-3.6.8.3.2 **Group 2 (Continuing-Use Support Equipment).** Group 2, continuing-use items, includes those SE items that are required for installation of the TD and are also required for continuing maintenance support of the modified item(s) after installation. Continuing-use SE provided shall be identified in tabular format as shown below.

- GROUP 2 -

CONTINUING-USE SUPPORT EQUIPMENT

<u>QTY</u>	<u>PART NO.</u>	<u>CAGE</u>	<u>NOMEN</u>	<u>SM&R</u>	<u>NSN</u>	<u>SOURCE</u>	<u>DISPOSITION</u>
------------	-----------------	-------------	--------------	-----------------	------------	---------------	--------------------

B-3.6.8.4 **Source of Supply.** This paragraph shall cross-reference and explain the codes entered in the Source columns for the kits, GFM and other materials, and SE. Source codes shall be numeric to differentiate them from disposition codes which are alphabetic. Some typical source statements might include: (1) Available through normal supply channels. (2) Manufacture locally. (3) Requisition via channels and procedures established by AIR-3.1.8.

B-3.6.8.5 **Parts/Materials Removed and Support Equipment Disposition.** All parts and materials removed, except low cost hardware (e.g., "O" rings, seals, gaskets, etc.), as a result of incorporating the TD shall be listed in tabular format. The Disposition column shall be completed for each item, or may be coded with an **alphabetic** character keyed to notes indicating the disposition required.

PARTS/MATERIALS REMOVED AND DISPOSITION

<u>QTY</u>	<u>PART NO.</u>	<u>NOMENCLATURE</u>	<u>NSN</u>	<u>DISPOSITION</u>
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Typical disposition notes include:

- (A) Dispose of through local Defense Reutilization and Marketing Office (DRMO).
- (B) Return to supply.
- (C) Retain for future disposition instructions.

B-3.6.8.6 **Requirements for Trainers.** Supply data applicable to maintenance trainers shall be specified in this paragraph in the same manner as for basic equipment above. If the material required for trainers is the same as for the basic equipment, a detailed listing shall not be included. The following statement shall be inserted instead: "All elements of data are the same as for basic equipment, except the Kit Identification Number (KIN) is (specify trainer KIN) and the quantity of kits is (specify number of kits required)". Where material differences are minor, the same statement may be used and exceptions specified.

B-3.6.8.7 **Requirements for Spares.** Supply data applicable to spares shall be specified in this paragraph in the same manner as for basic equipment. If the material required for spares is the same as for the basic equipment, a detailed listing shall not be included. The following statement shall be inserted instead: "All elements of data are the same as for basic equipment, except the Kit Identification Number (KIN) is (specify spare KIN) and the quantity of kits is (specify number of kits required)". Where material differences are minor, the same statement may be used and exceptions specified.

B-3.6.9 **REIDENTIFICATION OF ITEMS OF SUPPLY.** The "REIDENTIFICATION OF ITEMS OF SUPPLY" element shall identify all items of supply that require reidentification as a result of TD incorporation. When a TD does not modify an item of supply and reidentification is not required, this element shall be identified as "Not Applicable/NA". If marking of equipment to show reidentification is required, instructions shall be included in the "DETAILED INSTRUCTIONS" element. Previous and superseding identifications shall be identified in columnar format as follows. If a superseding NSN is not available, an Activity Control Number (ACN) is required. AN nomenclature shall be used, if applicable.

PREVIOUS	PREVIOUS		SUPERSEDING	SUPERSEDING
<u>P/N</u>	<u>NSN</u>	<u>NOMENCLATURE</u>	<u>P/N</u>	<u>NSN</u>

If a part number is changed for an item that is not an item of supply, that information shall be provided in the "DETAILED INSTRUCTIONS" element.

B-3.6.10 DETAILED INSTRUCTIONS. The "DETAILED INSTRUCTIONS" element shall contain the text necessary to provide step-by-step instructions for conducting the modification required by the TD. The instructions shall be concise and clear, with logical continuity. The step-by-step instructions shall define the chronological accomplishment of the work required in the simplest and most direct manner. Existing NAVAIR technical manuals, engineering drawings, and design documents may be referenced when it is essential, or when it is impractical to include the information in the TD. All unusual and critical steps shall be covered in detail. When TD compliance requires local manufacture of parts, all information necessary for activities to manufacture parts shall be included. Operational checks shall be specified in the TD to assure proper operation of affected systems or equipment after compliance. Any procedures involving safety shall be clearly identified by appropriate cautions and warnings. Parts or assemblies shall be referred to by both nomenclature and part number. When the directive affects more than one configuration of equipment for which separate instructions apply, separate "DETAILED INSTRUCTIONS" element(s) shall be included for them. If a TD affects trainers and/or spares, separate "DETAILED INSTRUCTIONS" element(s) shall be included for them. If the detailed instructions are the same for the trainers or spares, it shall be so stated and the instructions shall not be repeated.

B-3.6.10.1 Installation Data Packages. When economically and technically advantageous, detailed installation instructions may be developed as a separate installation data package. This is normally done for large and/or technically complex changes. TDs prepared in this "data package format" shall contain brief detailed instructions sufficient for service personnel to determine that the modification has been accomplished. The detailed instructions shall also identify the installation data package and provide distribution and ordering instructions for it. Installation data packages shall consist of drawings, narrative instructions, and technical data, as required. The narrative instructions shall contain a list of all drawings required/supplied. The TD title and number shall be shown on each page of the data package. Installation data packages shall be distributed to each activity authorized to install the TD and to NATEC. Installation data packages shall not be included in kits. Installation data packages can not be corrected by TD amendment.

B-3.6.11 WEIGHT AND BALANCE. The "WEIGHT AND BALANCE" element shall show the changes to weight and center of gravity resulting from TD incorporation. All TDs directing modification of aircraft, missiles or airborne systems for which a weight and balance control system is maintained shall contain a statement about the effect of the change on weight and balance. The format of the data in this statement shall be consistent with the format of the original weight and balance data (for aircraft, the format of the data in the aircraft weight and balance Charts A and E). When a TD is issued in parts, effect on weight and balance shall be shown separately for each part. In addition, for TDs having a major effect on weight or balance, a requirement to weigh the aircraft after completion of the change shall be included

B-3.6.11.1 Not Applicable. If the change is applicable only to a system or systems for which weight or balance is not a consideration, then the statement "Not applicable." shall be used in this element.

B-3.6.11.2 No Effect on Weight and Balance. If the change has no effect on vehicle weight or center of gravity and no effect on the items listed in the Chart A (Basic Weight Checklist Record) and the Chart E (Load Data) of the affected aircraft (e.g., a software change), then the statement "No effect on weight and balance." shall be used in this element.

B-3.6.11.3 Negligible Effect on Weight and Balance. If the change has less-than-threshold effects on the vehicle basic weight and moment (see paragraph B-3.6.11.4) and does not affect the aircraft Chart A (see paragraph B-3.6.11.5) or Chart E (see paragraph B-3.6.11.6), then the statement "Negligible effect on weight and balance." shall be used in this element.

B-3.6.11.4 Greater than Negligible Effect on Basic Weight and Center of Gravity. If the net change to vehicle basic weight is greater than one pound for vehicle basic weight less than 5000 pounds, two pounds for basic weight between 5000 and 50,000 pounds and five pounds for basic weight greater than 50,000 pounds, or the net change to basic weight center of gravity location is greater than 0.05% Mean Aerodynamic Chord (MAC) for fixed wing aircraft or 0.2% of the maximum allowable center of gravity range for rotary wing aircraft, then the net change

to basic weight and moment shall be identified as shown below, including the footnote instruction regarding entry of the net change on Chart C. The effects of removed items and added items shall be shown separately. Changes to non-readily removable items (structure, plumbing, wiring, supports, etc.) should not be shown in detail. However, for large changes, sufficient breakdown of the weight and moment changes should be provided to make it clear that all impacts have been addressed. Also, when weight is removed from one location in the aircraft and added at another, the moment arm of the net change will be far removed from the locations of the physical changes: in such cases the Items Removed and the Items Added should be listed separately, in order to make clear the source of the net arm and moment values.

“This TD affects the basic weight and moment as follows:

	<u>POUNDS</u> <u>WEIGHT</u>	<u>INCHES AFT OF</u> <u>REF DATUM</u>	<u>MOMENT/-----</u>
<u>ITEMS REMOVED</u>			
** _____	---	---	----
** _____	---	---	----
_____	---	---	----
<u>ITEMS ADDED</u>			
** _____	---	---	----
** _____	---	---	----
_____	---	---	----
<u>*NET CHANGE</u>	---	---	----

*Enter on Chart C in the Weight and Balance Handbooks of affected aircraft.
 ** (Delete from) and (add to) Chart A in the Weight and Balance Handbooks of affected aircraft.”

B-3.6.11.5 Changes to Chart A Basic Weight Checklist Record If the TD involves deletion, addition or relocation of readily-removable items of greater-than-threshold weight, then each such item shall be listed as shown above, together with the footnote instruction regarding how to change the Chart A. The threshold weights are one pound for vehicle basic weight less than 5000 pounds, two pounds for basic weight between 5000 and 50,000 pounds and five pounds for basic weight greater than 50,000 pounds. Deleted items shall be listed using the same nomenclature as in the existing Chart A. Weight, arm and moment values shall be shown to the same number of decimal places as in the existing Chart A, and the moment constant shall be that used for the affected aircraft (1000 for most aircraft but 100 for some small aircraft). If the changes to Chart A are extensive, then replacement page(s) or a complete new Chart A should be provided, together with appropriate instructions for insertion into the Weight and Balance Handbooks of the affected aircraft. Replacement page(s) and new Chart A's shall be submitted to the Weights Division at NAVAIR HQ for review and approval prior to finalization of the TD.

B-3.6.11.6 Changes to Chart E Load Data. If a TD deletes, adds or relocates variable or expendable load items, such as stores or weapon suspension and release equipment, then the relevant weight and balance shall be provided in the format shown above together with the footnote “*** (Delete from) and (add to) Chart E of Aircraft Weight and Balance Handbook.”. Removed items shall be listed using the same nomenclature as in the existing Chart E. If the TD affects other data provided in the Chart E, such as fuel quantities, passenger seating arrangements or capacities of cargo compartments, then suitable instructions for revising the Chart E shall be provided. Weight, arm and moment values shall be shown to the same number of decimal places as in the Chart E of the affected aircraft, and the moment constant shall be that used for the affected aircraft. If the changes are extensive, then replacement page(s) or a complete new Chart E should be provided, together with appropriate instruction for insertion into the Weight and Balance Handbooks of the affected aircraft. Replacement page(s) and new Chart E's shall be submitted to the Weights Division at NAVAIR HQ for review and approval prior to finalization of the TD.

B-3.6.11.7 **Requirement to Weigh Vehicle.** If the TD has a major effect on vehicle weight or balance, then a requirement to weigh the vehicle in accordance with NAVAIR 01-1B-50 after completion of the modification shall be included in this element. As a guideline, a change should be considered as “major” if it changes basic weight by more than 1% (i.e., the additions or the removals total more than 1%) or changes basic weight center of gravity by more than 0.5% of Mean Aerodynamic Chord (MAC) for fixed wing aircraft or more than 2.0% of the maximum allowable center of gravity range for rotary wing aircraft.

B-3.6.12 **RECORDS AFFECTED.** The “RECORDS AFFECTED” element shall contain instructions for actions to be taken on records affected by TD compliance. This shall include, as a minimum, instructions for recording TD compliance in the Technical Directive Status Accounting (TDSA) system. When applicable, such instructions shall also include: recording TD compliance in equipment records; recording component replacement intervals or explosive device expiration dates on appropriate OPNAV 4790 forms; and adding or deleting items from the Aircraft Inventory Record. Sample TD compliance statements include:

B-3.6.12.1 Record accomplishment of this TD in the aircraft/equipment log book, technical directive section, OPNAV form 4790/24A and/or ATDR Lists 02 and 04 as applicable. Compliance shall be reported through MAF OPNAV form 4790/60 and through the Technical Directive Status Accounting (TDSA) system (for AFCs and PPCs).

B-3.6.12.2 Compliance shall be reported through MAF OPNAV form 4790/60 and through the Technical Directive Status Accounting (TDSA) system (for AVCs, AYCs, AACs, ASCs, etc.).

B-3.6.12.3 Make appropriate entry in support equipment custody and maintenance records on OPNAV form 4790/51. Compliance shall be reported through MAF OPNAV form 4790/60 and through the Technical Directive Status Accounting (TDSA) system (for SECs and SSCs).

B-3.6.13 **VERIFIED BY.** The “VERIFIED BY” element of each TD shall include the name of the verifying activity and the date the verification occurred. If the TD has an exception to the verification requirement, “Not required” shall be stated. The element shall also include the bureau number(s) of the aircraft upon which verification was performed, when applicable. If verification is waived, the statement “Verification Waived” shall be entered and the reference (e.g., message, letter, etc.) waiving verification shall be identified. TD amendments/revisions that do not require additional verification shall state, “This amendment does not generate any change which invalidates the verification performed on the basic technical directive”.

B-3.6.13.1 On occasion, due to the urgency of the change, it may be necessary for NAVAIR to direct that installation and verification be conducted concurrently upon receipt of the ITD message. When this is the case, “See RELATED INSTRUCTIONS/INFORMATION” shall be entered in the “VERIFIED BY” element and an appropriate statement requesting verification and response to the verification, shall be entered in the “RELATED INSTRUCTIONS/INFORMATION” element.

B-3.6.14 **SUPERSEDURE.** The “SUPERSEDURE” element shall contain an appropriate supersedure statement that states when the ITD will be superseded by the formal TD. For example, “This Interim Directive shall be superseded by a formal change directive prepared by (preparer) not later than (date).”

B-3.6.15 **RELATED INSTRUCTIONS/INFORMATION.** The “RELATED INSTRUCTIONS / INFORMATION” element shall be used to provide instructions/information which is not appropriate for inclusion in other elements of the ITD. For each instruction directed, a responsible addressee shall be identified. Example information/instructions that could be included in this element:

- a. Specific instructions to affect changes to documents listed under “Documentation Affected”. For example, (FST): Prepare and submit publications data package; NATEC (Code) update publications.
- b. When safety is involved or when a “WARNING” or “CAUTION” entry to a technical manual will be required, include direction for a specified FST member to issue a technical manual Rapid Action Change (RAC).
- c. Special instructions for Foreign Military Sales (FMS) systems, when applicable.

- d. Modification kit availability, when applicable, including monthly quantities and distribution among installing activities (priorities for distribution coordinated with TYCOMs and the AIR-3.1.8).
- e. Identify the Engineering Change Proposal (ECP) number, if available, obtained from the contractor or NADEP who will submit the formal change to supersede the ITD.
- f. When verification has been performed, include instructions for disposition of the verification installation. For example, "Verification accomplished in Serial Number 123456 as reported (message date time group) and the modification shall remain installed in the equipment."
- g. When verification is to be performed concurrent with the initial installation, include a request for verification. For example, "(Specified TYCOM): request verify and notify (APML/FST) of any critical changes, info all concerned."
- h. For TDs affecting engines common to more than one aircraft platform, include a statement of concurrence of the other affected PMAs.
- i. Details concerning interim support shall be provided as applicable.

Attachment B-1

**PROGRAM MANAGEMENT
INTERIM CHANGE TD CHECKLIST**

#	TASK	✓
1.	Request/receive proposed ITD.	
2.	Notify PEO/AIR 1.0, AIR-00, and OPNAV sponsor, as appropriate, when aircraft grounding or flight restrictions are involved.	
3.	Request reprogramming/realignment of funding.	
4.	Log ITD receipt into MODMIS.	
5.	Conduct a preliminary evaluation and issue decision memorandum.	
6.	Complete coordinated briefing for AIR-00 for Interim Changes involving aircraft grounding, imposition of flight restrictions or safety of flight in conjunction with submission of RED STRIPE memorandum.	
7.	Approve and release "RED STRIPE" memorandum to CNO/CMC as required.	
8.	Approve required funding for procurements.	
9.	Review final CCB package for adequacy, completeness, and required concurrences.	
10.	Request "hand-carry" processing, if urgency warrants.	
11.	Refer completed package to the cognizant CCB for review or process as "hand-carry" if approved.	
12.	Approve and release the ITD message. (Immediate ITDs are ITDs involving aircraft grounding or flight restrictions require approval by AIR-00 prior to PMA/AIR-3.1 release or release by AIR-00, as appropriate.)	

Attachment B-2

**ENGINEERING
INTERIM CHANGE TD CHECKLIST**

#	TASK	✓
1.	Notify AIR-4.1 and any other affected AIR-4.0 department heads and coordinate their review and concurrence as necessary.	
2.	Evaluate necessity, feasibility, and acceptability of engineering design.	
3.	Coordinate safety evaluation with NAVAIR Safety Officer.	
4.	Prepare "RED STRIPE" memorandum for release by PMA as required.	
5.	Evaluate engineering technical impact of the proposed interim change in accordance with NAVARINST 4130.1 and applicable PMA CM Plan. Impact on: _____ performance _____ combat survivability _____ airworthiness _____ electronic emissions _____ structure _____ ozone depletion _____ service life _____ shipboard compatibility _____ weight and balance	
6.	Consolidate CCB package for presentation to the cognizant PMA.	
7.	Prepare final ITD message for release.	
8.	Verify/ensure appropriate CNO/CMC concurrences when ITD is Immediate category or when safety of flight, aircraft grounding, or flight restriction is involved.	
9.	Obtain appropriate AIR-4.0 concurrences and coordinate with the APML to ensure appropriate AIR-3.0 concurrences are obtained for final ITD message.	
10.	Forward ITD message to PMA for release.	
11.	Initiate order/request for ECP preparation to the appropriate design engineering activity (e.g., contractor, FST).	
12.	Ensure delivery of ITD message to supporting communications center for prompt transmission.	

Attachment B-3

**LOGISTICS
INTERIM CHANGE TD CHECKLIST**

#	TASK	✓
1.	Notify AIR-3.1 and provide updated status, as necessary.	
2.	Prepare implementation plan/schedule in coordination with the Type Commanders and installing activities.	
3.	Coordinate any technical, logistical, or operational issues associated with ITD incorporation with APMSE, FST members, contractor(s), NAVICP, and Type Commanders. Include: <ul style="list-style-type: none"> <input type="checkbox"/> weapon system availability <input type="checkbox"/> availability of required kits <input type="checkbox"/> availability of materials <input type="checkbox"/> availability of support equipment <input type="checkbox"/> availability of fleet installation man-hours <input type="checkbox"/> formation/scheduling of Navy and/or contractor field modification teams 	
4.	Evaluate the logistics technical impact of the proposed Interim Change in accordance with NAVAIRINST 4130.1 and the applicable PMA CM Plan. Impact on: <ul style="list-style-type: none"> <input type="checkbox"/> training systems with PMA-205 <input type="checkbox"/> publications and technical data with NATEC <input type="checkbox"/> provisioning requirements (spares/interim supply support with NAVICP) <input type="checkbox"/> Support Equipment with PMA-260 and/or supporting Peculiar Support Equipment SEPO 	
5.	Obtain ITD number from NATEC. NATEC will need the following information to issue an ITD number: <ul style="list-style-type: none"> <input type="checkbox"/> Category of TD <input type="checkbox"/> Estimated man-hours <input type="checkbox"/> Level of maintenance <input type="checkbox"/> Preparing activity <input type="checkbox"/> Requester's name, code, and phone number <input type="checkbox"/> T/M/S(s)affected <input type="checkbox"/> Subject of TD <input type="checkbox"/> Target Completion Date (TCD) 	
6.	Coordinate ITD verification. (If verification is to be performed after issuance concurrent with initial compliance, obtain verification waiver from AIR-3.1 and assure appropriate verification instructions are contained in the RELATED INSTRUCTIONS/INFORMATION element of the ITD.)	
7.	Obtain AIR-3.1 concurrence prior to release of the ITD message.	

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APPENDIX C

PREPARATION AND PROCESSING OF BULLETIN TDs

C-1 PURPOSE.

This appendix contains instructions for preparing and processing Bulletin TDs, hereafter referred to as Bulletins. Bulletins are issued as Naval messages, or when drawings or diagrams are required, as letters (in message format).

C-2 BULLETIN PROCESSING.

C-2.1 **Processing Grounding Bulletins.** The following Grounding Bulletin checklists are provided as attachments to ensure all necessary actions and staffing are completed in the Grounding Bulletin TD process.

Attachment C-1 - Program Management Grounding Bulletin Checklist
Attachment C-2 - Engineering Grounding Bulletin Checklist
Attachment C-3 - Logistics Grounding Bulletin Checklist

C-2.2 **Processing Non-Grounding Bulletins.** The following Bulletin checklist is provided as an attachment to ensure all necessary actions and staffing are completed in the Bulletin TD process.

Attachment C-4 - Preparing Activity Bulletin Checklist

C-3 BULLETIN TD MESSAGE FORMAT AND CONTENT.

Bulletin TDs and their subsequent revisions and amendments shall be prepared according to the format in Figures C-1 and C-2 respectively.

C-3.1 **Precedence.** The precedence assigned to a Bulletin message shall be consistent with the category of the Bulletin. The precedence IMMEDIATE shall normally be applied to Immediate category Bulletins, and PRIORITY to Urgent category bulletins.

C-3.2 **Addressees.** Approved Bulletins shall be sent from the approval authority to Address Indicator Group (AIG) ONE SIX FIVE and any supplemental AIG numbers for the specific equipment involved, with INFO as required.

NOTE

Messages requesting verification shall be sent to the minimum essential addressees to preclude premature compliance actions.

C-3.3 **Security Classification and Message Standard Subject Identification Code.** Bulletin messages shall be classified as required. The Message Standard Subject Identification Code //N13052// shall be used on all message bulletins.

C-3.4 **Subject.** The subject shall consist of the TD title, bulletin number, TD code, subject of the Bulletin and Work Unit Code (WUC) of affected system/equipment. The title shall include the words "BULLETIN" and "INSPECTION".

NOTE

Bulletins issued for verification shall be prefixed with the word "PROPOSED" as the first word of the subject and the words "REQUEST FOR VERIFICATION" shall be included at the end of the subject.

C-3.5 **References.** The references shall include technical documentation and background correspondence, as necessary. All references should be cited in the text of the message. A narrative (NARR) section describing the references shall immediately follow the list of references.

C-3.5.1 **References in Amendments.** References in amendments shall be only those in addition to the references in the basic directive and shall be lettered accordingly (e.g., If the basic directive has five references lettered “a” through “e”, the first reference in amendment 1 to that directive shall be lettered “F”.) The basic directive shall not be referenced in the amendment.

C-3.6 **Text.** The text section of the Bulletin (the RMKS section of the message) and any subsequent revisions thereto shall contain the following fifteen elements. All fifteen elements are mandatory. If a particular element is not applicable to a given Bulletin, “Not Applicable” shall be entered after the element title.

<u>BULLETIN PARAGRAPH NUMBER</u>	<u>ELEMENT</u>	<u>REFERENCE</u>
1	COG CODE	C-3.6.1
2	CATEGORY	C-3.6.2
3	DOCUMENTATION AFFECTED	C-3.6.3
4	PURPOSE	C-3.6.4
5	APPLICATION	C-3.6.5
6	COMPLIANCE	C-3.6.6
7	MAN-HOURS REQUIRED	C-3.6.7
8	SUPPLY DATA	C-3.6.8
9	REIDENTIFICATION OF ITEMS OF SUPPLY	C-3.6.9
10	DETAILED INSTRUCTIONS	C-3.6.10
11	WEIGHT AND BALANCE	C-3.6.11
12	RECORDS AFFECTED	C-3.6.12
13	VERIFIED BY	C-3.6.13
14	TARGET COMPLETION DATE	C-3.6.14
15	RELATED INSTRUCTIONS/INFORMATION	C-3.6.15

Bulletin amendments shall contain the following 5 elements and any additional elements as may be necessary:

<u>ELEMENT</u>	<u>REFERENCE</u>
COG CODE	C-3.6.1
CATEGORY	C-3.6.2
DOCUMENTATION AFFECTED	C-3.6.3
PURPOSE	C-3.6.4
DETAILED INSTRUCTIONS	C-3.6.10

C-3.6.1 **COG CODE.** The “COG CODE” element shall include code, name, and telephone number of cognizant engineering and logistic managers.

C-3.6.2 **CATEGORY.** The “CATEGORY” element shall read “Immediate” or “Urgent”, whichever is most appropriate. The “Routine” or “Record Purpose” category shall not be used for bulletins.

C-3.6.3 **DOCUMENTATION AFFECTED.** The “DOCUMENTATION AFFECTED” element shall identify drawings, technical manuals, and any other technical documentation requiring revision as a result of the TD. Each document will be identified by number, title, revision/version, and date as necessary for specific identification. If sectionalized, affected section(s) of a manual shall be identified. Amendments and revisions shall identify the basic directive as an affected document. Amendments need not repeat the affected documentation identified in the basic directive. TD revisions issued to supersede the TD shall contain a statement under this element that states that the basic TD or previously issued revision and all existing amendments are superseded.

C-3.6.4 **PURPOSE.** The “PURPOSE” element shall state the inspection requirement and subsequent conditional action required. For example, to inspect the item affected and if condition requires, accomplish repair according to specified approved procedures or replace with an identically configured item and, restore aircraft/equipment to operational status.

C-3.6.5 **APPLICATION.** The “APPLICATION” element shall contain three mandatory paragraphs: Basic Equipment, Trainers, and Spares and shall identify the applicability of the TD to specific aircraft, engines, engine modules, trainers, support equipment, systems, equipment, and components. Use of indefinite terms such as “SerNo....and subsequent” or “all” are not acceptable. When equipment/components have not been identified by serial numbers, “Not Assigned” shall be entered below the SERIAL NO. heading. When serial numbers have been assigned but are unknown, “Unknown” shall be entered below the SERIAL NO. heading. **In TD revisions** a statement shall be included, indicating whether compliance with the superseded TD satisfies requirements of the TD, and if not, identifying the additional actions that must be accomplished.

C-3.6.5.1 **Dependency Statement.** When appropriate, a statement of dependency upon prior, concurrent, or subsequent incorporation of other TDs shall be stated before other application data.

C-3.6.5.2 **Basic Equipment.** The basic equipment paragraph shall completely identify the major equipment, systems, assemblies, components or software to be inspected. The lists of items affected shall be preceded by statements specifying items requiring (1) inspection by service activities and/or (2) inspection by contractor (contractor retrofit only, not production incorporations). Aircraft and power plants shall be identified by type, model, series, contract number (when applicable), and bureau number or serial number. All other equipment such as airborne system components, missiles, support equipment, and pressure suits shall be identified by quantity and serial numbers (if possible), NSN (if assigned), military designation (Mark, Mod, Aero, AN) and nomenclature, CAGE, part number, and type equipment code. When bureau/serial numbers are used they shall be expressed in definite terms (i.e., “Serial Nos 123456 thru 123678”). It is necessary to show a separate bureau number listing for each affected type/model/series aircraft when more than one type/model/series aircraft is affected. Bureau numbers of stricken aircraft need not be omitted. Bureau numbers of aircraft that are in preservation status in AMARC shall be included if they are intended to be inspected. Indefinite statements of affectivity such as “Serial Nos. 123456 and subsequent” and “all J79 engines” are not acceptable. Support Equipment shall be identified by Type Equipment Code (TEC) if assigned. TDs for components installed in aircraft or power plants shall also identify the applicable aircraft or power plant by type/model/series. When TDs consist of distinct self-contained parts applicable to different configurations, each configuration shall be listed separately corresponding to the detailed instructions.

C-3.6.5.3 **Trainers.** The trainers paragraph shall identify trainers affected under two subparagraphs: (1) Operator Trainers (OTs) and (2) Naval Air Maintenance Trainers (NAMTs). Affected trainers shall be identified by appropriate serial number (Navy serial numbers if assigned). When multiple trainer configurations are affected, the different configurations shall be listed separately and related to the applicable detailed instructions. If trainers are not affected by the TD, the term “Not Applicable” shall be entered for this paragraph

C-3.6.5.4 **Spares.** The spares paragraph shall identify all spares affected by the TD by quantity, nomenclature, part number, CAGE, and NSN. If spares are not affected, the term “Not Applicable” shall be entered for this paragraph.

C-3.6.6 **COMPLIANCE.** The “COMPLIANCE” element shall state the maintenance level and time limit. The time limit shall be appropriate to the TD category and selected maintenance level. (Equipment categories listed as “not applicable” in the “APPLICATION” element may be omitted.) Use of conditional phrases such as “after receipt of parts” with the compliance time limit are not acceptable.

C-3.6.6.1 **Incorporation Schedule.** If compliance is not stated in terms of scheduled maintenance, a definitive calendar schedule of incorporations shall be shown for basic equipment, trainers, and spares.

C-3.6.7 **MAN-HOURS REQUIRED.** The “MANHOURS REQUIRED” element shall present a tabular listing for each maintenance level showing “NO. OF MEN”, “SKILL” (rating or occupational specialty) spelled out (e.g., Aviation Electronics Technician) and “TOTAL MAN-HOURS” for basic equipment, trainers, and spares. In addition to accomplishing the directed inspection, man-hours will include work tasks such as gaining access to perform the inspection, and post-inspection operational checks.

NO. OF MEN SKILL TOTAL MAN-HOURS

Basic
Equipment

Trainers

Spares

C-3.6.8 **SUPPLY DATA.** The “SUPPLY DATA” element shall identify all materials including parts, support equipment, and other materials required to complete the inspection in all affected equipment. The element shall be divided into three paragraphs: “REQUIREMENTS FOR BASIC EQUIPMENT”, “REQUIREMENTS FOR TRAINERS”, and “REQUIREMENTS FOR SPARES”. Any of these categories of equipment listed as “Not Applicable” in the “APPLICATION” element may be omitted from the “SUPPLY DATA” element.

C-3.6.8.1 **Requirements for Basic Equipment.** Supply data applicable to basic equipment shall be provided in four subparagraphs under this paragraph entitled: “Parts and Materials Required”, “Support Equipment Required”, “Source of Supply”, and “Parts/Materials Removed and Disposition”. If no requirement for data exists under any subparagraph, the subparagraph should either be omitted or “Not Applicable” should be entered next to the subparagraph title.

C-3.6.8.2 **Parts and Materials Required.** All materials required to comply with the TD shall be identified in this paragraph in columnar format. Special material such as sealant, paint, and oil that are not included in overhaul or service manuals, shall have the federal or military specification number reflected in the nomenclature column. Raw stock, such as sheet metal, plexiglass, and fabric, shall have the dimensions (not area) indicated in the quantity column in addition to the number of pieces required. Quantities listed shall be the amount required for one installation. The cost of materials required to be procured/provided by fleet units shall be entered in the cost column and the total cost per installation/compliance shown at the bottom of the cost column.

QTY PART NO. CAGE NOMEN SM&R NSN SOURCE COST

C-3.6.8.3 **Support Equipment Required.** All Support Equipment (SE) required to accomplish inspection that is not normally available at the prescribed compliance maintenance level shall be listed in this paragraph. Code numbers shall be entered into the SOURCE column and the Source of Supply paragraph shall explain how activities can obtain the support equipment items required. The DISPOSITION column shall be completed by entering the **alphabetic character** keyed to the appropriate disposition instruction in the Parts/Materials Removed and Disposition paragraph.

QTY PART NO. CAGE NOMEN SM&R NSN SOURCE DISPOSITION

C-3.6.8.4 **Source of Supply.** This paragraph shall cross-reference and explain the codes entered in the SOURCE columns, Parts and Material and SE required. Source codes **shall be numeric** to differentiate them from disposition codes, which are alphabetic. Some typical source statements might include: (1) Available through normal supply channels. (2) Manufacture locally.

C-3.6.8.5 **Parts/Materials Removed and Support Equipment Disposition.** All parts and materials removed, except low cost hardware (e.g., “O” rings, seals, gaskets, etc.), as a result of incorporating the TD, shall be listed in tabular format. The Disposition column shall be completed for each item, or may be coded with an **alphabetic character** keyed to notes indicating the disposition required.

PARTS/MATERIALS REMOVED AND DISPOSITION

<u>QTY</u>	<u>PART NO.</u>	<u>NOMENCLATURE</u>	<u>NSN</u>	<u>DISPOSITION</u>
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Typical disposition notes include:

- (A) Dispose of through local Defense Reutilization and Marketing Office (DRMO).
- (B) Return to supply.
- (C) Retain for future disposition instructions.

C-3.6.8.6 **Requirements for Trainers.** Supply data applicable to maintenance trainers shall be specified in this paragraph in the same manner as for basic equipment above. If the material required for trainers is the same as for the basic equipment, a detailed listing shall not be included. The following statement shall be inserted instead: “All elements of data are the same as for basic equipment.” Where material differences are minor, the same statement may be used and exceptions specified.

C-3.6.8.7 **Requirements for Spares.** Supply data applicable to spares shall be specified in this paragraph in the same manner as for basic equipment. If the material required for spares is the same as for the basic equipment, a detailed listing shall not be included. The following statement shall be inserted instead: “All elements of data are the same as for basic equipment.” Where material differences are minor, the same statement may be used and exceptions specified.

C-3.6.9 **REIDENTIFICATION OF ITEMS OF SUPPLY.** N/A

C-3.6.10 **DETAILED INSTRUCTIONS.** The “DETAILED INSTRUCTIONS” element shall contain the text necessary to provide step-by-step instructions for conducting the inspection required by the TD. The instructions shall be concise and clear, with logical continuity. The step-by-step instructions shall define the chronological accomplishment of the work required in the simplest and most direct manner. Existing NAVAIR technical manuals, engineering drawings, and design documents may be referenced when it is essential, or when it is impractical to include the information in the TD. All unusual and critical steps shall be covered in detail. Operational checks shall be specified in the TD to assure proper operation of affected systems or equipment after compliance. Any procedures involving safety shall be clearly identified by appropriate cautions and warnings. Parts or assemblies shall be referred to by both nomenclature and part number. When the directive affects more than one configuration of equipment for which separate instructions apply, separate “DETAILED INSTRUCTIONS” element(s) shall be included for them. If a TD affects trainers and/or spares, separate “DETAILED INSTRUCTIONS” element(s) shall be included for them. If the detailed instructions are the same for the trainers or spares, it shall be so stated and the instructions shall not be repeated.

C-3.6.11 **WEIGHT AND BALANCE.** No Effect on Weight and Balance

C-3.6.12 **RECORDS AFFECTED.** The “RECORDS AFFECTED” element shall contain instructions for actions to be taken on records affected by TD compliance. This shall include, as a minimum, instructions for recording TD compliance in the Technical Directive Status Accounting (TDSA) system. When applicable, such instructions shall also include: recording TD compliance in equipment records; recording component replacement intervals or explosive device expiration dates on appropriate OPNAV 4790 forms; and adding or deleting items from the Aircraft Inventory Record. Sample TD compliance statements include:

C-3.6.12.1 Record accomplishment of this TD in the aircraft/equipment log book, technical directive section, OPNAV form 4790/24A and/or ATDR Lists 02 and 04 as applicable. Compliance shall be reported through MAF

OPNAV form 4790/60 and through the Technical Directive Status Accounting (TDSA) system (for AFBs and PPBs).

C-3.6.12.2 Compliance shall be reported through MAF OPNAV form 4790/60 and through the Technical Directive Status Accounting (TDSA) system (for AVBs, AYBs, AABs, etc.).

C-3.6.12.3 Make appropriate entry in support equipment custody and maintenance records on OPNAV form 4790/51. Compliance shall be reported through MAF OPNAV form 4790/60 and through the Technical Directive Status Accounting (TDSA) system (for SECs).

C-3.6.13 **VERIFIED BY.** The “VERIFIED BY” element of each TD shall include the name of the verifying activity and the date the verification occurred. If the TD has an exception to the verification requirement, “Not required” shall be stated. The element shall also include the bureau number(s) of the aircraft upon which verification was performed, when applicable. If verification is waived, the statement “Verification Waived” shall be entered and the reference (e.g., message, letter, etc.) waiving verification shall be identified. TD amendments/revisions that do not require additional verification shall state, “This amendment/revision does not generate any change which invalidates the verification performed on the basic technical directive”.

C-3.6.13.1 On occasion, due to the urgency of the inspection, it may be necessary for NAVAIR to direct that inspection and verification be conducted concurrently upon receipt of the bulletin message. When this is the case, “See RELATED INSTRUCTIONS/INFORMATION” shall be entered in the “VERIFIED BY” element and an appropriate statement requesting verification and response to the verification shall be entered in the “RELATED INSTRUCTIONS/INFORMATION” element.

C-3.6.14 **TARGET COMPLETION DATE.** The “TARGET COMPLETION DATE” element shall read either 30 June or 31 December after an effective period of twelve to eighteen months.

C-3.6.15 **RELATED INSTRUCTIONS/INFORMATION.** The “RELATED INSTRUCTIONS/INFORMATION” element shall be used to provide instructions/information which is not appropriate for inclusion in other elements of the Bulletin TD. For each instruction, a responsible addressee shall be identified. Examples of instructions/information that could be included in this element:

- a. Specific instructions to affect changes to documents listed under “Documentation Affected”.
- b. When safety is involved or when a “WARNING” or “CAUTION” entry to a technical manual will be required, include direction for the FST to issue a technical manual Rapid Action Change (RAC).
- c. When appropriate, provide a statement regarding anticipated corrective action, or permanent fix, to eliminate or alleviate the problem that necessitated the inspection required by the Bulletin.
- d. When verification is to be performed concurrent with the initial inspection, include a request for verification (see paragraph 3.6.13).
- e. A justification for the compliance time selected.
- f. The identification of serialized equipment used for verification.
- g. Instructions to contractors to report Bulletin compliance in accordance with DID DI-MGMT-80224.
- h. Shipping instructions for material removed for further testing and/or repair.
- i. Cite the Engineering Investigation (EI) number or Quality Deficiency Report (QDR) number related to the Bulletin.
- j. Engine Bulletins affecting more than one type model aircraft shall include a statement indicating concurrence of affected PMAs other than the Bulletin originator.

Attachment C-1

**PROGRAM MANAGEMENT
GROUNDING BULLETIN TD CHECKLIST**

#	TASK	✓
1.	Alert PEO/AIR 1.0, AIR 3.0, AIR 4.0, AIR-00, and CNO/CMC of impending bulletin.	
2.	Complete coordinated briefing for AIR-00 for the bulletin in conjunction with submission of "RED STRIPE" memorandum.	
3.	Release the draft final bulletin to Type Commander/controlling custodian for verification.	
4.	Release the bulletin after AIR-00 approval, and AIR 3.0 and AIR 4.0 concurrence.	

Attachment C-2

**ENGINEERING
GROUNDING BULLETIN TD CHECKLIST**

#	TASK	✓
1.	Notify AIR-4.1 and any other affected AIR-4.0 department heads of impending grounding bulletin.	
2.	Evaluate adequacy, effectiveness, and engineering technical impact of proposed bulletin.	
3.	Coordinate safety evaluation with System Safety Engineer.	
4.	Prepare "RED STRIPE" memorandum.	
5.	Obtain appropriate AIR-4.0 concurrence prior to release of bulletin message.	

Attachment C-3

LOGISTICS
GROUNDING BULLETIN TD CHECKLIST

#	Task	✓
1.	Notify AIR-3.1 and AIR-3.0 of impending bulletin.	
2.	Ensure proposed bulletin is prepared in accordance with NAVAIR 00-25-300, Appendix C, and transmitted to cognizant/affected PMAs.	
3.	Coordinate any technical, logistical, or operational issues associated with proposed bulletin. Include: _____ availability of replacement parts _____ weapon system availability _____ availability of support equipment (particularly NDI equipment and/or standards) or technical data _____ availability of man-hours required for compliance (fleet or depot) _____ notification of affected FSTs	
4.	Obtain bulletin number from NATEC prior to releasing bulletin for compliance. NATEC will need the following information to issue a bulletin number: ___ CCB Number ___ Category of TD ___ Estimated man-hours ___ Level of maintenance ___ Preparing activity ___ Requester's name, code, and phone number ___ T/M/S(s)affected ___ Subject of TD	
5.	Coordinate bulletin verification.	
6.	Incorporate verification comments and prepare final bulletin for release.	
7.	Obtain appropriate AIR-3.0 concurrences and coordinate with the APMSE to ensure appropriate AIR-4.0 concurrences are obtained for final bulletin message.	
8.	Forward bulletin message to PMA for release.	

Attachment C-4

**PREPARING ACTIVITY
BULLETIN TD CHECKLIST**

#	Task	✓
1.	Alert cognizant/affected PMAs, APMLs, APMSEs or cognizant engineers of impending bulletin.	
2.	Prepare proposed bulletin in accordance with NAVAIR 00-25-300, Appendix C, and transmit to cognizant/affected PMAs.	
3.	Inform the cognizant APML/LMs when availability of replacement components is (or could be) inadequate to support bulletin compliance.	
4.	Coordinate with all affected FSTs.	
5.	Alert Type Commanders/controlling custodians of impending bulletin.	
6.	Arrange for verification at proper maintenance level.	
7.	Monitor verification status and ensure verification comments are incorporated.	
8.	Obtain bulletin number from NATEC prior to releasing bulletin for compliance. NATEC will need the following information to issue a bulletin number: ___ Category of TD ___ Estimated man-hours ___ Level of maintenance ___ Preparing activity ___ Requester's name, code, and phone number ___ T/M/S(s)affected ___ Subject of TD ___ Target Completion Date (TCD)	
9.	Prepare final bulletin in accordance with NAVAIR 00-25-300, Appendix C.	
10.	Coordinate approval and release of the final bulletin message.	

APPENDIX D

PREPARATION AND PROCESSING OF RAPID ACTION MINOR ENGINEERING CHANGE (RAMEC) TDs

D-1 PURPOSE.

This appendix contains instructions for preparing and processing RAMEC TDs. RAMEC TDs are designed to provide an expeditious means for processing minor engineering (configuration) changes that meet the requirements listed on the RAMEC Suitability Form provided as Attachment D-1.

D-2 RAMEC PROCESSING.

The following RAMEC TD checklists are provided as attachments to ensure all necessary actions and staffing are completed in the RAMEC TD process.

- Attachment D-2 - Preparing Activity RAMEC TD Checklist
- Attachment D-3 - Sponsor RAMEC TD Checklist
- Attachment D-4 - TYCOM/Controlling Custodian RAMEC TD Checklist
- Attachment D-5 - Program Management RAMEC TD Checklist

D-3 RAMEC MESSAGE FORMAT AND CONTENT.

RAMEC TDs and their subsequent revisions and amendments shall be prepared according to the format in Figures D-1 and D-2 respectively.

D-3.1 **Precedence.** The precedence assigned to a RAMEC shall be consistent with the category of the RAMEC. The precedence ROUTINE shall normally be applied to RAMECs. PRIORITY shall only be used when safety is an issue.

D-3.2 **Addressees.**

D-3.2.1 The **originator's proposed RAMEC** message shall be sent from the RAMEC originator to the sponsoring controlling custodian, with INFO as required.

D-3.2.2 The **sponsor's proposed RAMEC** message shall be sent from the RAMEC sponsor to the cognizant PMA, with INFO to all affected TYCOMs/controlling custodians, FSTs, NATEC, NAVICP/DLA, and NAMTRAGRU.

D-3.2.3 **Approved RAMECs** shall be sent from the approval authority (NAVAIRSYSCOM/PMA-XXX) to Address Indicator Group (AIG) ONE SIX FIVE and any supplemental AIG numbers for the specific equipment involved, with INFO as required. When a RAMEC is applicable to Foreign Military Sales (FMS), distribution to foreign governments as governed by NAVAIRINST 5605.3.

NOTE

Messages requesting verification shall be sent to the minimum essential addressees to preclude premature compliance actions.

D-3.3 **Security Classification and Message Standard Subject Identification Code.** RAMEC messages shall be classified as required. The Message Standard Subject Identification Code //N13052// shall be used on all message RAMECs.

D-3.4 **Subject.** The subject shall begin with “PROPOSED RAMEC” until Change Control Board (CCB) approval. After approval, the subject shall consist of the TD title, RAMEC number consisting of three elements: sponsor’s source code, sequence number, and calendar year of initiation (e.g., RAMEC P-02-00 would be the second RAMEC sponsored by COMNAVAIRPAC and initiated during calendar year 2000), TD code, subject of the RAMEC and Work Unit Code (WUC) of the affected system/equipment.

NOTE

RAMECs issued for verification shall be prefixed with the word “**PROPOSED**” as the first word of the subject and the words ‘**REQUEST FOR VERIFICATION**’ shall be included at the end of the subject.

D-3.5 **References.** The references shall include technical documentation and background correspondence, as necessary. All references should be cited in the text of the message. A narrative (NARR) section describing the references shall immediately follow the list of references.

D-3.5.1 **References in Amendments.** References in amendments shall be only those in addition to the references in the basic directive and shall be lettered accordingly (e.g., If the basic directive has five references lettered “a” through “e”, the first reference in amendment 1 to that directive shall be lettered “F”.) The basic directive shall not be referenced in the amendment.

D-3.6 **Text.** The text section of the RAMEC (the RMKS section of the message) and any subsequent revisions thereto shall contain the following fifteen elements. All fifteen elements are mandatory. If a particular element is not applicable to a given RAMEC, “Not Applicable” shall be entered after the element title.

<u>RAMEC</u> <u>PARAGRAPH NUMBER</u>	<u>ELEMENT</u>	<u>REFERENCE</u>
1	COG CODE	D-3.6.1
2	CATEGORY	D-3.6.2
3	DOCUMENTATION AFFECTED	D-3.6.3
4	PURPOSE	D-3.6.4
5	APPLICATION	D-3.6.5
6	COMPLIANCE	D-3.6.6
7	MAN-HOURS REQUIRED	D-3.6.7
8	SUPPLY DATA	D-3.6.8
9	REIDENTIFICATION OF ITEMS OF SUPPLY	D-3.6.9
10	DETAILED INSTRUCTIONS	D-3.6.10
11	WEIGHT AND BALANCE	D-3.6.11
12	RECORDS AFFECTED	D-3.6.12
13	VERIFIED BY	D-3.6.13
14	TARGET COMPLETION DATE	D-3.6.14
15	RELATED INSTRUCTIONS/INFORMATION	D-3.6.15

RAMEC amendments shall contain the following 5 elements and any additional elements as may be necessary:

<u>ELEMENT</u>	<u>REFERENCE</u>
COG CODE	D-3.6.1
CATEGORY	D-3.6.2
DOCUMENTATION AFFECTED	D-3.6.3
PURPOSE	D-3.6.4
DETAILED INSTRUCTIONS	D-3.6.10

D-3.6.1 **COG CODE**. The “COG CODE” element shall include code, name, and telephone number of cognizant engineering and logistic managers and/or originator's name and phone number (Distributed Systems Network (DSN) and commercial with area code).

D-3.6.2 **CATEGORY**. The “CATEGORY” element shall read either “Routine” or “Urgent” whichever is most appropriate. “Urgent” shall only be used if safety is involved. The “Immediate” or “Record Purpose” category **shall not** be used for RAMECs.

D-3.6.3 **DOCUMENTATION AFFECTED**. The “DOCUMENTATION AFFECTED” element shall identify drawings, technical manuals, and any other technical documentation requiring revision as a result of the TD. Each document will be identified by number, title, revision/version, and date as necessary for specific identification. If sectionalized, affected section(s) of a manual shall be identified. Amendments and revisions shall identify the basic directive as an affected document. Amendments need not repeat the affected documentation identified in the basic directive. TD revisions issued to supersede the TD shall contain a statement under this element that states that the basic TD or previously issued revision and all existing amendments are superseded.

D-3.6.4 **PURPOSE**. The “PURPOSE” element shall contain a brief statement of the purpose of the TD. The purpose statement shall summarize the new features and/or capabilities being gained by the modification, and describe the conditions such as hazards, failures, or incidents that necessitated the change action. The element headings for amendments or revisions shall be changed to “PURPOSE OF AMENDMENT” or “PURPOSE OF REVISION”. In amendments, the “PURPOSE OF AMENDMENT” element shall state only the reason for the amendment. In revisions, the “PURPOSE OF REVISION” element shall restate the purpose of the basic TD and in addition, state the reason for the revision. For changes to equipment used on multiple Type Model Series where the affected aircraft T/M/S is not contained in the TD subject, the phrase “as used on T/M/S” should be inserted in the “PURPOSE” element.

D-3.6.5 **APPLICATION**. The “APPLICATION” element shall contain three mandatory paragraphs: Basic Equipment, Trainers, and Spares and shall identify the applicability of the TD to specific aircraft, engines, engine modules, trainers, support equipment, systems, equipment, and components. Use of indefinite terms such as “SerNo....and subsequent “all” are not acceptable. When equipment/components have not been identified by serial numbers, “Not Assigned” shall be entered below the SERIAL NO. heading. When serial numbers have been assigned but are unknown, “Unknown” shall be entered below the SERIAL NO. heading. **In TD revisions** a statement shall be included, indicating whether compliance with the superseded TD satisfies requirements of the TD, and if not, identifying the additional actions that must be accomplished.

D-3.6.5.1 **Dependency Statement**. When appropriate, a statement of dependency upon prior, concurrent, or subsequent incorporation of other TDs shall be stated before other application data. TDs listed here shall include both, those required to physically accomplish a change and those required to maintain configuration control.

D-3.6.5.2 **Basic Equipment**. The basic equipment paragraph shall completely identify the major equipment, systems, assemblies, components or software to be modified. The lists of items affected shall be preceded by statements specifying items requiring (1) modification by service activities and/or (2) modification by contractor (contractor retrofit only, not production incorporations). Aircraft and power plants shall be identified by type, model, series, contract number (when applicable), and bureau number or serial number. All other equipment such as

airborne system components, missiles, support equipment, and pressure suits shall be identified by quantity and serial numbers (if possible), NSN (if assigned), military designation (Mark, Mod, Aero, AN) and nomenclature, CAGE, part number, and type equipment code. When bureau/serial numbers are used they shall be expressed in definite terms (i.e., “Serial Nos 123456 thru 123678”). It is necessary to show a separate bureau number listing for each affected type/model/series aircraft when more than one type/model/series aircraft is affected. Bureau numbers of stricken aircraft need not be omitted. Bureau numbers of aircraft that are in preservation status in AMARC shall be included if they are intended to be modified. Indefinite statements of affectivity such as “Serial Nos. 123456 and subsequent” and “all J79 engines” are not acceptable. Support Equipment shall be identified by Type Equipment Code (TEC) if assigned. TDs for components installed in aircraft or power plants shall also identify the applicable aircraft or power plant by type/model/series. When TDs consist of distinct self-contained parts applicable to different configurations, each configuration shall be listed separately corresponding to the detailed instructions.

D-3.6.5.3 **Trainers.** The trainers paragraph shall identify trainers affected under two subparagraphs: (1) Operator Trainers (OTs) and (2) Naval Air Maintenance Trainers (NAMTs). This sub-heading is mandatory in all TDs. Affected trainers shall be identified by appropriate serial number (Navy serial numbers if assigned). When multiple trainer configurations are affected, the different configurations shall be listed separately and related to the applicable detailed instructions. If the TD does not affect trainers, the term “Not Applicable” shall be entered for this paragraph.

D-3.6.5.4 **Spares.** The spares paragraph shall identify all spares affected by the TD by quantity, nomenclature, part number, CAGE, and NSN. If spares are not affected, the term “Not Applicable” shall be entered for this paragraph.

D-3.6.6 **COMPLIANCE.** The “COMPLIANCE” element shall state the maintenance level and time limit. The time limit shall be appropriate to the TD category and selected maintenance level. (Equipment categories listed as “not applicable” in the “APPLICATION” element may be omitted.) Use of conditional phrases such as “after receipt of parts” with the compliance time limit are not acceptable.

D-3.6.6.1 **Incorporation Schedule.** If compliance is not stated in terms of scheduled maintenance, a definitive calendar schedule of incorporations shall be shown for basic equipment, trainers, and spares.

D-3.6.7 **MAN-HOURS REQUIRED.** The “MANHOURS REQUIRED” element shall present a tabular listing for each maintenance level showing “NO. OF MEN”, “SKILL” (rating or occupational specialty) spelled out (e.g, Aviation Electronics Technician) and “TOTAL MAN-HOURS” for basic equipment, trainers, and spares.

	<u>NO. OF MEN</u>	<u>SKILL</u>	<u>TOTAL MAN-HOURS</u>
Basic Equipment			
Trainers			
Spares			

D-3.6.8 **SUPPLY DATA.** The “SUPPLY DATA” element shall identify all materials including parts, support equipment, and other materials required to incorporate the TD in all affected equipment. The element shall be divided into three paragraphs: “REQUIREMENTS FOR BASIC EQUIPMENT”, “REQUIREMENTS FOR TRAINERS”, and “REQUIREMENTS FOR SPARES”. Any of these categories of equipment listed as “Not Applicable” in the “APPLICATION” element may be omitted from the “SUPPLY DATA” element.

D-3.6.8.1 **Requirements for Basic Equipment.** Supply data applicable to basic equipment shall be provided in four subparagraphs under this paragraph entitled: “Parts and Materials Required”, “Support Equipment Required”, “Source of Supply”, and “Parts/Materials Removed and Disposition”. If no requirement for data exists under any subparagraph, the subparagraph should either be omitted or “Not Applicable” should be entered next to the subparagraph title.

D-3.6.8.2 **Parts and Materials Required.** All materials required to comply with the TD shall be identified in this paragraph in columnar format. Special material such as sealant, paint, and oil that are not included in overhaul or service manuals, shall have the federal or military specification number reflected in the nomenclature column. Raw

stock, such as sheet metal, plexiglass, and fabric, shall have the dimensions (not area) indicated in the quantity column in addition to the number of pieces required. Quantities listed shall be the amount required for one installation. The cost of materials required to be procured/provided by fleet units shall be entered in the cost column and the total cost per installation/compliance shown at the bottom of the cost column.

QTY PART NO. CAGE NOMEN SM&R NSN SOURCE COST

D-3.6.8.3 **Support Equipment Required.** All Support Equipment (SE) required to accomplish modification incorporation that is not normally available at the prescribed compliance maintenance level shall be listed in this paragraph. Code numbers shall be entered into the SOURCE column and the Source of Supply paragraph shall explain how installing activities can obtain the support equipment items required. The DISPOSITION column shall be completed by entering the **alphabetic character** keyed to the appropriate disposition instruction in the Parts/Materials Removed and Disposition paragraph.

QTY PART NO. CAGE NOMEN SM&R NSN SOURCE DISPOSITION

D-3.6.8.4 **Source of Supply.** This paragraph shall cross-reference and explain the codes entered in the SOURCE columns, Parts and Material and SE required. Source codes **shall be numeric** to differentiate them from disposition codes, which are alphabetic. Some typical source statements might include: (1) Available through normal supply channels. (2) Manufacture locally.

D-3.6.8.5 **Parts/Materials Removed and Support Equipment Disposition.** All parts and materials removed, except low cost hardware (e.g., “O” rings, seals, gaskets, etc.), as a result of incorporating the TD, shall be listed in tabular format. The Disposition column shall be completed for each item, or may be coded with an **alphabetic character** keyed to notes indicating the disposition required.

PARTS/MATERIALS REMOVED AND DISPOSITION

QTY PART NO. NOMENCLATURE NSN DISPOSITION

Typical disposition notes include:

- (A) Dispose of through local Defense Reutilization and Marketing Office (DRMO).
- (B) Return to supply.
- (C) Retain for future disposition instructions.

D-3.6.8.6 **Requirements for Trainers.** Supply data applicable to maintenance trainers shall be specified in this paragraph in the same manner as for basic equipment above. If the material required for trainers is the same as for the basic equipment, a detailed listing shall not be included. The following statement shall be inserted instead: “All elements of data are the same as for basic equipment.” Where material differences are minor, the same statement may be used and exceptions specified.

D-3.6.8.7 **Requirements for Spares.** Supply data applicable to spares shall be specified in this paragraph in the same manner as for basic equipment. If the material required for spares is the same as for the basic equipment, a detailed listing shall not be included. The following statement shall be inserted instead “All elements of data are the same as for basic equipment.” Where material differences are minor, the same statement may be used and exceptions specified.

D-3.6.9 **REIDENTIFICATION OF ITEMS OF SUPPLY.** The “REIDENTIFICATION OF ITEMS OF SUPPLY” element shall identify all items of supply that require reidentification as a result of TD incorporation. When a TD does not modify an item of supply and reidentification is not required, this element shall be identified as “Not Applicable”. If marking of equipment to show reidentification is required, instructions shall be included in the “DETAILED INSTRUCTIONS” element. Previous and superseding identifications shall be identified in the format shown below. If a superseding NSN is not available, an Activity Control Number (ACN) is required. AN nomenclature shall be used, if applicable.

PREVIOUS	PREVIOUS		SUPERSEDING	SUPERSEDING
<u>P/N</u>	<u>NSN</u>	<u>NOMENCLATURE</u>	<u>P/N</u>	<u>NSN</u>

If part number is changed for an item that is not an item of supply, that information shall be provided in the "DETAILED INSTRUCTIONS" element.

D-3.6.10 **DETAILED INSTRUCTIONS.** The "DETAILED INSTRUCTIONS" element shall contain the text necessary to provide step-by-step instructions for conducting the modification required by the TD. The instructions shall be concise and clear, with logical continuity. The step-by-step instructions shall define the chronological accomplishment of the work required in the simplest and most direct manner. Existing NAVAIR technical manuals, engineering drawings, and design documents may be referenced when it is essential, or when it is impractical to include the information in the TD. All unusual and critical steps shall be covered in detail. When TD compliance requires local manufacture of parts, all information necessary for activities to manufacture parts shall be included. Operational checks shall be specified in the TD to assure proper operation of affected systems or equipment after compliance. Any procedures involving safety shall be clearly identified by appropriate cautions and warnings. Parts or assemblies shall be referred to by both nomenclature and part number. When the directive affects more than one configuration of equipment for which separate instructions apply, separate "DETAILED INSTRUCTIONS" element(s) shall be included for them. If a TD affects trainers and/or spares, separate "DETAILED INSTRUCTIONS" element(s) shall be included for them. If the detailed instructions are the same for the trainers or spares, it shall be so stated and the instructions shall not be repeated.

D-3.6.11 **WEIGHT AND BALANCE.** The "WEIGHT AND BALANCE" element shall show the changes to weight and center of gravity resulting from TD incorporation. All TDs directing modification of aircraft, missiles or airborne systems for which a weight and balance control system is maintained shall contain a statement about the effect of the change on weight and balance. The format of the data in this statement shall be consistent with the format of the original weight and balance data (for aircraft, the format of the data in the aircraft weight and balance Charts A and E). When a TD is issued in parts, effect on weight and balance shall be shown separately for each part. In addition, for TDs having a major effect on weight or balance, a requirement to weigh the aircraft after completion of the change shall be included.

D-3.6.11.1 **Not Applicable.** If the change is applicable only to a system or systems for which weight or balance is not a consideration, then the statement "Not applicable." shall be used in this element.

D-3.6.11.2 **No Effect on Weight and Balance.** If the change has no effect on vehicle weight or center of gravity and no effect on the items listed in the Chart A (Basic Weight Checklist Record) and the Chart E (Load Data) of the affected aircraft (e.g., a software change), then the statement "No effect on weight and balance." shall be used in this element.

D-3.6.11.3 **Negligible Effect on Weight and Balance.** If the change has less-than-threshold effects on the vehicle basic weight and moment (see paragraph D-3.6.11.4) and does not affect the aircraft Chart A (see paragraph D-3.6.11.5) or Chart E (see paragraph D-3.6.11.6), then the statement "Negligible effect on weight and balance." shall be used in this element.

D-3.6.11.4 **Greater than Negligible Effect on Basic Weight and Center of Gravity.** If the net change to vehicle basic weight is greater than one pound for vehicle basic weight less than 5000 pounds, two pounds for basic weight between 5000 and 50,000 pounds and five pounds for basic weight greater than 50,000 pounds, or the net change to basic weight center of gravity location is greater than 0.05% Mean Aerodynamic Chord (MAC) for fixed wing aircraft or 0.2% of the maximum allowable center of gravity range for rotary wing aircraft, then the net change to basic weight and moment shall be identified as shown below, including the footnote instruction regarding entry of the net change on Chart C. The effects of removed items and added items shall be shown separately. Changes to non-readily removable items (structure, plumbing, wiring, supports, etc.) should not be shown in detail. However, for large changes, sufficient breakdown of the weight and moment changes should be provided to make it clear that all impacts have been addressed. Also, when weight is removed from one location in the aircraft and added at another, the moment arm of the net change will be far removed from the locations of the physical changes: in such cases the Items Removed and the Items Added should be listed separately, in order to make clear the source of the net arm and moment values.

“This TD affects the basic weight and moment as follows:

	<u>POUNDS WEIGHT</u>	<u>INCHES AFT OF REF DATUM</u>	<u>MOMENT/-----</u>
<u>ITEMS REMOVED</u>			
** _____	---	---	----
** _____	---	---	----
_____	---	---	----
<u>ITEMS ADDED</u>			
** _____	---	---	----
** _____	---	---	----
_____	---	---	----
<u>*NET CHANGE</u>	---	---	----

*Enter on Chart C in the Weight and Balance Handbooks of affected aircraft.
 **(Delete from) and (add to) Chart A in the Weight and Balance Handbooks of affected aircraft.”

D-3.6.11.5 Changes to Chart A Basic Weight Checklist Record. If the TD involves deletion, addition or relocation of readily-removable items of greater-than-threshold weight, then each such item shall be listed as shown above, together with the footnote instruction regarding how to change the Chart A. The threshold weights are one pound for vehicle basic weight less than 5000 pounds, two pounds for basic weight between 5000 and 50,000 pounds and five pounds for basic weight greater than 50,000 pounds. Deleted items shall be listed using the same nomenclature as in the existing Chart A. Weight, arm and moment values shall be shown to the same number of decimal places as in the existing Chart A, and the moment constant shall be that used for the affected aircraft (1000 for most aircraft but 100 for some small aircraft). If the changes to Chart A are extensive, then replacement page(s) or a complete new Chart A should be provided, together with appropriate instructions for insertion into the Weight and Balance Handbooks of the affected aircraft. Replacement page(s) and new Chart A's shall be submitted to the Weights Division at NAVAIR HQ for review and approval prior to finalization of the TD.

D-3.6.11.6 Changes to Chart E Load Data. If a TD deletes, adds or relocates variable or expendable load items, such as stores or weapon suspension and release equipment, then the relevant weight and balance shall be provided in the format shown above together with the footnote “*** (Delete from) and (add to) Chart E of Aircraft Weight and Balance Handbook.”. Removed items shall be listed using the same nomenclature as in the existing Chart E. If the TD affects other data provided in the Chart E, such as fuel quantities, passenger seating arrangements or capacities of cargo compartments, then suitable instructions for revising the Chart E shall be provided. Weight, arm and moment values shall be shown to the same number of decimal places as in the Chart E of the affected aircraft, and the moment constant shall be that used for the affected aircraft. If the changes are extensive, then replacement page(s) or a complete new Chart E should be provided, together with appropriate instruction for insertion into the Weight and Balance Handbooks of the affected aircraft. Replacement page(s) and new Chart E's shall be submitted to the Weights Division at NAVAIR HQ for review and approval prior to finalization of the TD.

D-3.6.11.7 Requirement to Weigh Vehicle. If the TD has a major effect on vehicle weight or balance, then a requirement to weigh the vehicle in accordance with NAVAIR 01-1B-50 after completion of the modification shall be included in this element. As a guideline, a change should be considered as “major” if it changes basic weight by more than 1% (i.e., the additions or the removals total more than 1%) or changes basic weight center of gravity by more than 0.5% of Mean Aerodynamic Chord (MAC) for fixed wing aircraft or more than 2.0% of the maximum allowable center of gravity range for rotary wing aircraft.

D-3.6.12 RECORDS AFFECTED. The “RECORDS AFFECTED” element shall contain instructions for actions to be taken on records affected by TD compliance. This shall include, as a minimum, instructions for recording TD compliance in the Technical Directive Status Accounting (TDSA) system. When applicable, such

instructions shall also include: recording TD compliance in equipment records; recording component replacement intervals or explosive device expiration dates on appropriate OPNAV 4790 forms; and adding or deleting items from the Aircraft Inventory Record. Sample TD compliance statements include:

D-3.6.12.1 Record accomplishment of this TD in the aircraft/equipment log book, technical directive section, OPNAV form 4790/24A and/or ATDR Lists 02 and 04 as applicable. Compliance shall be reported through MAF OPNAV form 4790/60 and through the Technical Directive Status Accounting (TDSA) system (for AFCs and PPCs).

D-3.6.12.2 Compliance shall be reported through MAF OPNAV form 4790/60 and through the Technical Directive Status Accounting (TDSA) system (for AVCs, AYCAs, AACs, ASCs, etc.).

D-3.6.12.3 Make appropriate entry in support equipment custody and maintenance records on OPNAV form 4790/51. Compliance shall be reported through MAF OPNAV form 4790/60 and through the Technical Directive Status Accounting (TDSA) system (for SECs and SSCs).

D-3.6.13 **VERIFIED BY.** The “VERIFIED BY” element of each TD shall include the name of the verifying activity and the date the verification occurred. If the TD has an exception to the verification requirement, “Not required” shall be stated. The element shall also include the bureau number(s) of the aircraft upon which verification was performed, when applicable. If verification is waived, the statement “Verification Waived” shall be entered and the reference (e.g., message, letter, etc.) waiving verification shall be identified. TD amendments/revisions that do not require additional verification shall state, “This amendment does not generate any change which invalidates the verification performed on the basic technical directive”.

D-3.6.14 **TARGET COMPLETION DATE.** The “TARGET COMPLETION DATE” element shall be either 30 June or 31 December.

D-3.6.15 **RELATED INSTRUCTIONS/INFORMATION.** The “RELATED INSTRUCTIONS/INFORMATION” element shall be used to provide instructions/information which is not appropriate for inclusion in other elements of the RAMEC TD. For each instruction directed, a responsible addressee shall be identified. This element shall include as a minimum:

a. Justification for the RAMEC.

Cite, for example, the number of failures, frequency of problems, Mean Time Between Failure (MTBF), or other substantive values that will show why the change is needed. Benefits that accrue from the modification shall also be cited (i.e., improved reliability, reduced maintenance man-hours, or operational improvement). STRONG justification is essential where total man-hours or documentation costs exceed RAMEC guidelines.

b. Date(s) and result(s) of stock check(s):

A statement indicating the date that a stock check was accomplished confirming availability of parts/materials to modify affected items.

NOTE

If the stock check revealed that supply system assets were insufficient, a statement to that effect shall be included in the proposed RAMEC TD. The sponsor shall also include a recommendation for CCB approval for implementation on a subsequent issue date based on projected availability of the necessary parts/material. Upon RAMEC approval, the sponsor will submit a special program requirement to the cognizant Inventory Control Point (ICP). If the effective date of the RAMEC is within 90 days, affected reporting custodians shall submit funded requisitions to the ICP coded to indicate the non-repetitive nature of the demand. If the effective date of the RAMEC is more than 90 days in the future, affected controlling custodians may elect to submit planned requirements to the ICP(s) in order to enhance the availability of stock for requisitioning on the effective date.

- c. A list of all drawings, manuals, Maintenance Requirements Cards (MRC), NATOPS, etc., that require updating along with the number of pages that require updating.
- d. The statement, "Proposed change prototyped in (T/M/S and serial number) and will remain installed unless directed otherwise." shall be included along with the DTG of the TYCOM prototype concurrence.
- f. CCB number.

Attachment D-1

RAMEC SUITABILITY CHECKLIST

The preparing activity shall complete this form to ensure that all requirements on this list are met in order for a proposed modification to qualify for RAMEC status and receive a RAMEC number.

	Proposed RAMEC:	Ö
1.	Was not initiated by a PMA, Naval Air Systems Command Headquarters, or contractor(s).	
2.	Will not affect retrofit of, or satisfy logistics requirements resulting from, Class II production changes.	
3.	Is confined to a simple change that can be easily and rapidly incorporated.	
4.	Does not require extensive technical review or work effort.	
5.	Will require no more than 8 man-hours per installation to accomplish.	
6.	Can be authorized for incorporation by O or I level maintenance activities, including regular contractor maintenance support at those levels. (Note: Depot (D) level incorporation is not authorized except in the case of RAMEC's for support equipment that is used at both the I and D levels.)	
7.	Will use only standard stock items and/or raw material, source-coded items that may be manufactured by the NAVAIRDEPOT. (Note: Items procured for specific applications and local open-purchase items are not considered "standard stock items".)	
8.	Will use material readily obtainable by a requesting activity through normal supply system requisitioning procedures.	
9.	Will not exceed a total material cost of \$1500 per installation.	
10.	Can be complied with as directed by the applicable TD, but not later than the next calendar/phase inspection requiring access to the area/zone containing the item(s) to be changed after receipt of the parts, or next induction of the item(s) into a I level maintenance activity.	
11.	Can be coordinated with, and agreed to by, each affected controlling custodian, PMA, and NAMTRAGRU (when trainers under its cognizance are affected).	
12.	Will provide for modification of spares and trainers, if affected.	
13.	Will not require the development, fabrication, procurement, or stocking of retrofit kits.	
14.	Will not be used to amend or supplement an existing interim or formal TD.	
15.	Will not generate a requirement for additional or new support equipment.	
16.	Will not generate a change to support equipment.	
17.	Will not affect operational or avionics automatic test equipment or missile subsystem test sets, or the software programs and/or tapes associated therewith.	
18.	Will not require changes to general purpose electronic test equipment under the technical/procurement cognizance of the Space and Naval Warfare Systems Command.	
19.	Will not generate a requirement for new technical manuals.	
20.	Will not apply to items having a Source, Maintenance, and Recoverability (SM&R) code of "D" in the fourth position, with the exception of support equipment items.	
21.	Will not apply to nonconsumable items procured and managed by another service.	

> **If any items have not been checked, an explanation shall be written for each item on the back of this form.**

Sponsor's Signature: _____ Date: _____

Attachment D-2

**PREPARING ACTIVITY
RAMEC TD CHECKLIST**

#	TASK	✓
1.	Obtain sponsorship authorization for prototype installation. Operating activity obtain from supervising Type Commander/controlling custodian. FSTs may sponsor the RAMECS they initiate and shall obtain prototype authority and support from Type Commander/controlling custodian.	
2.	Prototype/evaluate one item per OPNAVINST 4790.2.	
3.	Prepare proposed RAMEC TD message in accordance with NAVAIR 00-25-300, Appendix D.	
4.	Provide completed RAMEC Suitability Form with request for RAMEC number to Senior Logistician in activity.	
5.	Submit proposed RAMEC to controlling custodian(s) for verification.	
6.	Provide cost data for updating drawings/publications to the sponsor, with info copies to PMAs and NATEC.	

Attachment D-3

**SPONSOR
RAMEC TD CHECKLIST**

#	TASK	✓
1.	Evaluate whether proposed changes can be accomplished within limits of RAMEC program using the completed RAMEC Suitability Form presented by the preparing activity.	
2.	Coordinate review of proposed RAMEC with affected TYCOMs/controlling custodians, PMAs, FSTs, NATEC, NAVICP/DLA, and NAMTRAGRU.	
3.	Request FST coordinate documentation update, part number changes, and associated costs.	
4.	Perform stock check to determine availability of parts/material in supply system to support RAMEC incorporation.	
5.	Ensure completeness and accuracy of TD.	
6.	Prepare, in accordance with NAVAIR 00-25-300, Appendix D, and forward final proposed RAMEC TD by message or letter to the cognizant PMA.	

Attachment D-4

**TYCOM/CONTROLLING CUSTODIAN
RAMEC TD CHECKLIST**

#	TASK	✓
1.	Determine need for verification.	
2.	Assign verification task to an activity of the same maintenance level as that proposed for compliance in the TD.	
3.	Ensure that verification is completed within thirty days.	
4.	Re-address and disseminate RAMEC TDs to subordinate activities.	

Attachment D-5

**PROGRAM MANAGEMENT
RAMEC TD CHECKLIST**

#	TASK	✓
1.	Conduct review upon receipt of request from the RAMEC sponsor.	
2.	Concur or non-concur via message to sponsor with INFO to controlling custodians, PMAs, FSTs.	
3.	Consider production incorporation.	
4.	Prepare CCB package and conduct final technical engineering and logistics review of proposed changes.	
5.	Coordinate funding.	
6.	Schedule for CCB review and approval.	
7.	Obtain AIR-3.0 and AIR-4.0 concurrence and release final message.	

APPENDIX E**GLOSSARY**

3M -	Maintenance Material Management
ACN -	Activity Control Number
ACRN -	Accounting Classification Reference Number
AD -	Air Worthiness Directive (FAA)
AFB -	Airframe Bulletin
AFC -	Airframe Change
AIG -	Address Indicator Group
AIMD -	Aircraft Intermediate Maintenance Department
AMARC -	Aviation Maintenance and Reclamation Center
AMO -	Aircraft Maintenance Office
APMC -	Assistant Program Manager for Contracting
APML -	Assistant Program Manager for Logistics
APMSE -	Assistant Program Manager for Systems Engineering
ATDR -	Aircraft Technical Directive Record
ATE -	Automatic Test Equipment
AVB -	Avionics Bulletin
AVC -	Avionics Change
CAGE -	Contractor and Government Entity Code
CASS -	Consolidated Avionics Support System
CCB -	Change Control Board
CDRL -	Contract Data Requirements List
CFA -	Cognizant Field Activity
CFE -	Contractor Furnished Equipment
CKA -	Central Kitting Activity
CM -	Configuration Management
CMC -	Commandant of the Marine Corps
CMSS -	Configuration Management Support System
CNATRA -	Chief of Naval Air Training
CNAVRESFOR -	Commander Naval Reserve Forces
CNO -	Chief of Naval Operations
COG -	Cognizant
COMNAVAIRLANT -	Commander Naval Air Force Atlantic
COMNAVAIRPAC -	Commander Naval Air Force Pacific
COMNAVAIRSYSCOM -	Commander Naval Air Systems Command
CSE -	Common Support Equipment
D Level -	Depot Level of Maintenance
DCAO -	Defense Contracting Administration Office
DCAS -	Defense Contract Administration Services
DCS AIR -	Deputy Chief of Staff for Air
DCC -	Dynamic Component Change
DCB -	Dynamic Component Bulletin
DI MGMT -	Data Item Management
DID -	Data Item Description
DPRO -	Defense Plant Representative Office
DRIPR -	Disposal, Redistribution, Referral/Issue on Backorder, Procurement & Repair Schedule
DSN -	Distribution Systems Network
DTG -	Date Time Group
EI -	Engineering Investigation
ECP -	Engineering Change Proposal
FAA -	Federal Aviation Administration
FMS -	Foreign Military Sales
FMT -	Field Modification Team

FST -	Fleet Support Team
FUNCWING -	Functional Wing
GFE -	Government Furnished Equipment
GFM -	Government Furnished Material
HQ -	Headquarters
IAFC -	Interim Airframe Change
IAVC -	Interim Avionics Change
ICP -	Inventory Control Point
IFF -	Identification Friend-or-Foe
I Level -	Intermediate Level of Maintenance
ILS -	Integrated Logistic Support
INC -	Incorporated
IPB -	Illustrated Parts Breakdown
IPT -	Integrated Process/Program Team
IRAC -	Interim Rapid Action Change
ISST -	In-Service Support Team (Obsolete term replaced by FST)
ITD -	Interim Change Technical Directive
KIN -	Kit Identification Number
KITMIS -	Kit Management Information System
LECP -	Logistics Engineering Change Proposal
LEM -	Logistics Element Manager
LES -	Local Engineering Specification
LM -	Logistics Manager
3M -	Maintenance Material Management
MAC -	Mean Areodynamic Chord
MAF -	Maintenance Action Form
MALS -	Marine Aviation Logistics Squadron
MCC -	Material Control Code
MIF -	Master Inventory File
MIL-STD -	Military Standard (followed by a number)
MILSTRIP -	Military Standard Requisition and Issue Procedures
MIM -	Maintenance Instruction Manual
MODMIS -	Modification Management Information System
MRC -	Maintenance Requirement Card
MSD -	Material Support Date
MTBF -	Mean Time Between Failure
MWO -	Maintenance Work Order (Army)
NADEP -	Naval Air Depot
NALDA -	Naval Aviation Logistics Data Analysis
NAMP -	Naval Aviation Maintenance Program
NAMT -	Naval Aviation Maintenance Trainer
NAMTRAGRU -	Naval Air Maintenance Training Group
NAMTRAU -	Naval Air Maintenance Training Unit
NARR -	Narrative
NAST -	Naval Air Systems Team
NATEC -	Naval Air Technical Data & Engineering Service Command
NATO -	North Atlantic Treaty Organization
NATOPS -	Naval Air Training and Operating Procedures Standardization
NAVAIR -	Naval Air Systems Command
NAVICP -	Naval Inventory Control Point
NAVSEALOGCEN -	Naval Sea Logistics Center
NAVSUP -	Naval Supply Systems Command
NAWC -	Naval Air Warfare Center
NAWCAD -	Naval Air Warfare Center Aircraft Division
NAWCATSD -	Naval Air Warfare Center Training Systems Division
NAWCWD -	Naval Air Warfare Center, Weapons Division
NICN -	National Item Control Number
NINC -	Not Incorporated
NLL -	Naval Logistics Library

NOMMP -	Naval Ordnance Maintenance Management Program
NSC -	Navy Supply Center
NSD -	Navy Support Date
NSN -	National Stock Number
OFT -	Operational Flight Trainer
O Level -	Organization Level of Maintenance
OPNAV -	Chief of Naval Operations Staff
OT -	Operator Trainer
PDF -	Portable Document Format
PEO -	Program Executive Officer
PMA -	Program Manager (AIR)
PN -	Part Number
PPB -	Power Plant Bulletin
PPC -	Power Plant Change
PSE -	Peculiar Support Equipment
QEC -	Quick Engine Change
QDR -	Quality Deficiency Report
RAC -	Rapid Action Change
RAMEC -	Rapid Action Minor Engineering Change
RFM -	Requiring Financial Manager
RIC -	Routing Identifier Code
ROD -	Report of Discrepancy
SCP -	Software Change Proposal
SE -	Support Equipment
SEC -	Support Equipment Change
SEPO -	Support Equipment Program Office
SERD -	Support Equipment Recommendation Data
SM & R -	Source Maintenance and Recoverability Code
SMIC -	Special Material Identification Code
SSA -	Software Support Activity
SSC -	Support Software Change
SSIC -	Standard Subject Identification Code
T/M/S	Type/Model/Series
TCD -	Target Completion Date
TCTO -	Time Compliance Technical Order (Air Force)
TD -	Technical Directive
TDC -	Technical Directive Code
TDDDS _	Tech Directive Detail Data Sheet
TDKSR -	Technical Directive Kit Shipment Report
TDSA -	Technical Directive Status Accounting
TDSAR -	Technical Directive Status Accounting Report
TIR -	Transaction Item Record
TPDR -	Technical Publications Deficiency Report
TSPM -	Training Systems Program Manager
TYCOM -	Type Commander
UIC -	Unit Identifier Code
VAL -	Validation
VER -	Verification
WST -	Weapon System Trainer
WUC -	Work Unit Code

