TECHNICAL MANUAL

METHODS AND PROCEDURES

AF TECHNICAL ORDER LIFE CYCLE MANAGEMENT

(ATOS)

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Page No.	*Change No.	Page No.	*Change No.	Page No.	*Change No.
Title	0				
A	0				
i - xviii	0				
1-1 - 1-10	0				
2-1 - 2-6	0				
3-1 - 3-20	0				
4-1 - 4-8	0				
5-1 - 5-16	0				
6-1 - 6-3	0				
6-4 Blank	0				
7-1 - 7-10	0				
8-1 - 8-26	0				
9-1 - 9-8	0				
10-1 - 10-17	0				
10-18 Blank	0				
11-1 - 11-8	0				
12-1 - 12-23	0				
12-24 Blank	0				
13-1 - 13-10	0				
14-1 - 14-4	0				
15-1 - 15-2	0				
16-1 - 16-5	0				
16-6 Blank	0				
A-1 - A-22	0				
B-1 - B-8	0				
C-1 - C-7	0				
C-8 Blank	0				
D-1 - D-3	0				
D-4 Blank	0				
E-1 - E-9	0				
E-10 Blank	0				
F-1 - F-3	0				
F-4 Blank	0				
G-1 - G-5	0				
G-6 Blank	0				
H-1 - H-10	0				

*Zero in this column indicates an original page

TABLE OF CONTENTS

Chapter Page

1 INTRODUCTION, TOOLS AND MANAGEMENT ROLES 1-1

1.1 Purpose 1-1
1.1.1 Terms and Acronyms 1-1
1.1.2 Supplements and Changes 1-1
1.2 Concept 1-1
1.2.1 Policy 1-1
1.2.2 Scope 1-1
1.2.3 TO Acquisition 1-1
1.2.4 TO Sustainment 1-2
1.3 Technical Order Management and Production Tools 1-2
1.3.1 Joint Computer-Aided Acquisition and Logistics Support (JCALS) System 1-2
1.3.2 Enhanced Technical Information Management System (ETIMS) 1-2
1.3.3 Automated Technical Order System (ATOS) 1-3
1.3.4 TO Management and Retrieval Tool (TO.MART) 1-3
1.3.5 Acquisition & Sustainment (A&S) Tool Kit 1-3
1.3.6 Commercial and Government-Furnished Software 1-3
1.3.7 Other Tools 1-3
1.3.8 Tools and Systems Updating 1-4
1.4 Wholesale Level Technical Order System Roles 1-4
1.4.1 Program Manager (PM) 1-4
1.4.2 Supply Chain Manager (SCM) 1-4
1.4.3 Chief Engineer 1-4
1.4.4 TO Manager 1-5
1.4.5 Technical Content Manager (TCM) 1-7
1.4.6 Flight Manual Manager (FMM) 1-8
1.4.7 TO System (JCALS/ETIMS) Subject Matter Expert (SME) 1-8
1.5 ETIMS Application Roles: Description, Assignment Responsibility, and Management Processes 1-8
1.5.1 ETIMS Application Roles Hierarchy 1-8
1.5.2 Staffing 1-8
1.5.3 Super Admin 1-8
1.5.4 ETIMS-Admin 1-8
1.5.5 TOMA 1-8
1.5.6 Data Quality Team (DQT) Reviewer 1-9
1.5.7 eTool Admin 1-9
1.5.8 eTool 1-9
1.5.9 eTool Group Admin 1-9
1.5.10 ETIMS TM Account POC (TODO) (Added - not a TAM role.) 1-9
1.5.11 Help Desk - Support Team 1-9

2 RESPONSIBILITIES 2-1

2.1 General 2-1
2.1.1 TO Management 2-1
2.1.2 Location 2-1
2.2 HQ Air Force Materiel Command (AFMC) 2-1
2.2.1 Directorate of Logistics - Life Cycle Management Division (A4U) 2-1
2.2.2 Directorate of Operations - Standardization/Evaluation Division (A3V) 2-1
2.2.3 Directorate of Communications and Information (A6) 2-1
2.2.4 Engineering Directorate (EN) 2-1
2.3 Other Acquisition Organizations 2-1
2.4 Air Education and Training Command (AETC) 2-2
2.5 Using Commands/Depot Maintenance Wings 2-2
2.6 Air Logistics And Product Center (ALC & PC) Technical Order Home Offices 2-2

2.7 Air Force Nuclear Weapons Center (NWC) 2-2
2.7.1 708th Nuclear Sustainment Squadron (708 NSUS) 2-2
2.7.2 708 NSUS Technical Support Flight (NWLT) 2-2
2.7.3 Joint Nuclear Weapons Publication System (JNWPS) 2-3
2.7.4 498 Nuclear Systems Division (NSD)/NWW 2-3
2.8 OO-ALC/GHGMA, Ogden Air Logistics Center (OO-ALC), Global Ammunition Control Point (GACP), and OO-ALC/GHGAMA, Warner Robins Air Logistics Center (WR-ALC), GACP Air Superiority Cell (ASC) 2-3
2.9 Air Force Metrology and Calibration (AFMETCAL) 2-4
2.10 OC-ALC/ENGL, Technical Orders and Software Systems Branch 2-4
2.11 754 Electronic Systems Group (ELSG)/ILMT 2-4
2.12 46 SK/SKA, Air Force Seek Eagle Office (AFSEO) 2-4
2.13 412 Test Wing (TW), Technical Order Development Office 2-4
2.14 Air Armament Center (AAC)/AQY 2-5
2.15 Detachment (DET) 63, HQ Air Combat Command (ACC) 2-5
2.16 309 Aerospace Maintenance and Regeneration Group (AMARG) 2-6
2.16.1 AMARG Processes 2-6
2.16.2 AMARG Reclamation Removal Work Packages 2-6

3 TECHNICAL ORDER SECURITY REQUIREMENTS AND BUSINESS PRACTICES 3-1

3.1 Technical Order Security Requirements 3-1
3.1.1 General 3-1
3.1.2 Classification Upgrades 3-1
3.1.3 Classification Downgrade/Declassification 3-2
3.1.4 Scientific and Technical Information (STINFO) Distribution Limitations 3-2
3.1.5 Digital TO Security 3-3
3.1.6 Controlling Distribution of Technical Orders 3-4
3.1.7 Electronic Distribution 3-5
3.1.8 Secure Distribution via E-Mail 3-5
3.1.9 Protection of Controlled, Unclassified Information (CUI) on Electronic (E-) Tools 3-5
3.1.10 Release of Restricted TOs and Data 3-6
3.2 Technical Order Management Procedures 3-6
3.2.1 TO Management 3-6
3.2.2 Flight Manual Management 3-6
3.2.3 Engineering Approval 3-6
3.2.4 Management Location 3-6
3.2.5 Delivery Requirements 3-6
3.3 Acquisition Procedures (Figure 3-1) 3-7
3.3.1 Existing Data Usability 3-7
3.3.2 TO Development 3-7
3.3.3 Commercial Off-The-Shelf (COTS) Manuals and Other Commercial/Contractor Data 3-7
3.3.4 Exemptions 3-9
3.3.5 Integrating TOs 3-9
3.3.6 Digital (Electronic) TOs (Figure 3-2) 3-9
3.3.7 Hazardous Materials (HAZMAT) and Ozone Depleting Substances (ODS) 3-9
3.3.8 Preliminary TOs (PTO) 3-9
3.3.9 TO Quality Assurance (QA) (Chapter 9) 3-9
3.3.10 TO Verification 3-10
3.3.11 Source Data 3-10
3.3.12 Reading Grade Level (RGL) 3-10
3.3.13 Referencing Computer Program Identification Number (CPIN) Items 3-10
3.4 Sustainment Procedures 3-10
3.4.1 Manage TO Index information 3-10
3.4.2 Request Shipping Label Decks for Initial Distribution (ID) and Requisition (RQN) Shipments 3-10
3.4.3 Establish Shipping Priorities 3-11
3.4.4 Correct TO Configuration and Management Information Errors 3-11
3.4.5 Monitor Warehouse Inventories 3-11
3.4.6 Establish TO Stock Management Levels 3-11
3.4.7 Manage Backorders 3-11

3.4.8 Screen TO Subscriptions and Requisitions Requiring "Proponent (Sponsor) Approval" (Paragraph 3.1.6.1) 3-11
3.4.9 Manage TODPS Transactions 3-11
3.4.10 Manage Outside Agency Requests for Air Force TOs 3-11
3.4.11 Ensure Configuration Control of Multi-Media TOs 3-12
3.4.12 Technical Content Mangers (TCM)/Equipment Specialists (ES) 3-12

4 PLANNING, BUDGETING AND SPECIAL REQUIREMENTS 4-1

4.1 General 4-1
4.2 Acquisition Strategy 4-1
4.2.1 Program Planning 4-1
4.2.2 Requirements Conference 4-1
4.2.3 Proposal Evaluation (Chapter 6) and Contract Award 4-1
4.2.4 Guidance Conference 4-1
4.2.5 TO Development 4-1
4.2.6 Verification 4-1
4.2.7 Pre-Publication Reviews 4-1
4.2.8 Publication and Delivery 4-1
4.2.9 TO Sustainment 4-1
4.2.10 Foreign Military Sales 4-1
4.2.11 TO Disposition 4-2
4.3 Initial Planning 4-2
4.3.1 Program Basis 4-2
4.3.2 TO Integrated Product Team (IPT) 4-2
4.3.3 TO Planning/Requirements Conference (TOP/RC) 4-2
4.3.4 Request for Proposal (RFP) 4-2
4.3.5 TO Management Plan (TOMP) 4-2
4.3.6 Support Requirements 4-3
4.4 Budgeting and Funding for Technical Orders 4-3
4.4.1 TO Initial Acquisition and Sustainment Budgeting and Cost Estimating 4-3
4.4.2 Modifications 4-3
4.4.3 Spares Replacement 4-3
4.4.4 Calibration TOs 4-4
4.5 Technical Order Development 4-4
4.5.1 Early TO Development 4-4
4.5.2 TO Guidance Conference (Chapter 7) 4-4
4.5.3 Later TO Development 4-4
4.5.4 TO Verification Plan (TOVP) (see Appendix C) 4-4
4.6 Technical Order and System Sustainment 4-4
4.7 Special Purpose Technical Order Requirements 4-4
4.7.1 Aircraft Battle Damage (Assessment and) Repair (ABDR) (-39 Series) TOs 4-4
4.7.2 Nuclear Weapon (Categories 11N and 60N) TOs 4-5
4.7.3 Ballistic Missile Codes (21M-XX-16 Series) TOs 4-5
4.7.4 Calibration and Metrology (Category 33K and System-Unique) TOs and Procedures 4-5
4.7.5 Corrosion Control (1-XX-23, 10-XX-9, and 21-XX-22 Series) TOs and Procedures 4-5
4.7.6 TO 00-105E-9, *Aerospace Emergency Rescue and Mishap Response Information (Emergency Services)* 4-5
4.7.7 Explosive Ordnance Disposal/Render Safe Procedures (EOD/RSP) (Category 60) Manuals and Source Data 4-6
4.7.8 Make-Safe Procedures for Public Display (TO 00-80G-Series) 4-6
4.7.9 Nonnuclear Munitions Loading (-33 Series), Weapon Delivery (-34 Series) and Positioning and Tiedown (-38 Series) TOs 4-6
4.7.10 Other Nonnuclear Munitions TOs 4-6
4.7.11 Non-Destructive Inspection (NDI) (1-XX-36, 2-XX-9 or 21M-XX-26 Series) TOs and Procedures 4-7
4.7.12 Work Unit Code (WUC) (-06 Series) Manuals and REMIS "Push-Down" Tables 4-7
4.7.13 Critical Alloy and Precious Metals Conservation Procedures and Requirements 4-7
4.7.14 SEEK EAGLE Certification 4-7
4.7.15 Organic Coatings 4-7

4.7.16 TO 00-25-255, *General Reference Manual --Electronic Cable Assembly Components, Volumes 1 & 2* 4-7
4.7.17 Powered Aerospace Ground Equipment (AGE) Generic Servicing Inspection Workcards 4-7
4.7.18 Inspection and Maintenance Manual 4-7
4.7.19 Aircraft Cross-Servicing Guide....4-7
4.7.20 List of Applicable Publications (LOAP) 4-8
4.7.21 Commercial Vehicle Fleet Maintenance Manuals....4-8

5 CONTRACTING 5-1

5.1 General....5-1
5.1.1 Net-Centric Operations and Warfare Reference Model (NCOW RM) 5-1
5.1.2 TO Program Inputs....5-1
5.1.3 Joint Acquisition Programs 5-1
5.2 Data And Data Management (ref: Defense Acquisition Guidebook, Paragraphs 4.2.3.7 & 5.1.3.3) 5-1
5.2.1 Definition 5-1
5.2.2 Scope....5-1
5.2.3 Total Life Cycle Systems Management (TLCSM) 5-1
5.2.4 Data Management Defined....5-2
5.2.5 Strategy 5-2
5.2.6 Access vs. Delivery 5-2
5.2.7 Protecting Data 5-2
5.2.8 Additional Guidance....5-2
5.3 Integrated Data Systems....5-2
5.3.1 Criterion 5-2
5.3.2 Management Planning (see Chapter 4)....5-2
5.3.3 IDS Development and Delivery....5-3
5.4 Requests for Proposal and Contracts 5-3
5.4.1 Proposals....5-3
5.4.2 Proposal Contents 5-3
5.4.3 Source Selection 5-3
5.4.4 CDRLs, TMCR and CLIN 5-3
5.5 Statement of Objectives 5-3
5.5.1 Definition and Purpose....5-3
5.5.2 Phrasing Objectives 5-4
5.6 Work Statements....5-4
5.6.1 Statement of Work 5-4
5.6.2 Performance-based Work Statements (PWS) 5-4
5.7 Evaluation Criteria....5-4
5.8 Instructions to Offerors (ITO)....5-4
5.9 DD FORM 1423, Contract Data Requirements List (CDRL), and Data Item Descriptions (DID)....5-4
5.9.1 Use of CDRLs 5-4
5.9.2 CDRL and CLIN for TOs....5-5
5.9.3 Options....5-5
5.9.4 DIDs....5-5
5.9.5 Justification....5-5
5.10 Technical Manual Contract Requirements (TMCR) Document, TM-86-01 5-5
5.10.1 Description....5-5
5.10.2 Tailoring....5-6
5.11 Technical Order Development 5-6
5.11.1 Digital TO Formats 5-6
5.11.2 Use of TMSS Digital Support Suites (DSS - See Definitions)....5-6
5.11.3 Development of Digital Support Suites....5-7
5.11.4 Obtaining TO Numbers....5-7
5.12 Deliverables 5-7
5.12.1 Contracting Assistance 5-8
5.12.2 Digital Delivery 5-8
5.12.3 Delivery Acceptance....5-8
5.13 Use of Technical Manual (TM) Specifications and Standards (TMSS) 5-8

5.13.1 TMSS Selection 5-8
5.13.2 TMSS Approval 5-8
5.13.3 New TO Types 5-8
5.13.4 Upgrading TMSS 5-8
5.14 Specification/Standard Tailoring, Interpretation, Deviations and Waivers 5-8
5.14.1 Tailoring Guidance 5-8
5.14.2 Tailoring Documentation 5-8
5.14.3 TMSS Clarification 5-9
5.14.4 Deviations and Waivers 5-9
5.14.5 Copies 5-9
5.15 Source Data for Technical Orders 5-9
5.16 Identification of Additional Contract Technical Order Requirements 5-9
5.16.1 Submittal 5-9
5.16.2 Approval 5-9
5.16.3 Numbering 5-9
5.17 Rights in Technical Data 5-9
5.17.1 Unlimited Rights 5-9
5.17.2 Government Purpose Rights 5-10
5.17.3 Limited Rights (DFARS 252.227-7013(a)(13) 5-10
5.17.4 Copyrights 5-10
5.17.5 Proprietary Rights 5-10
5.17.6 Digitization 5-10
5.17.7 Contracting for Greater Data Rights 5-10
5.18 Request for Proposal Quality Assurance Provisions 5-11

6 PROPOSAL EVALUATION AND NEGOTIATION 6-1

6.1 General 6-1
6.2 Developing Evaluation Criteria and Checklists 6-1
6.3 Technical Evaluation 6-1
6.3.1 Purpose 6-1
6.3.2 TO Manager Role 6-1
6.3.3 Reporting 6-2
6.3.4 Evaluation Notices (EN) 6-2
6.4 Contractor Costs 6-2
6.4.1 Direct Costs 6-2
6.4.2 Indirect Costs 6-2
6.5 Specific Technical Order Proposal Evaluation Guidelines 6-2
6.5.1 Areas Subject to Double Charging 6-2
6.5.2 TO Sizes 6-3
6.5.3 Historical Data 6-3
6.5.4 Technical Order Data Rights 6-3
6.5.5 Evaluation 6-3
6.5.6 Evaluation Assistance 6-3
6.6 Protecting Proposal Records and Data 6-3
6.7 Contract Negotiation 6-3
6.8 Post Contract Award 6-3
6.8.1 Negotiations 6-3
6.8.2 Additional Evaluations 6-3
6.8.3 Contract Adjustments 6-3

7 CONFERENCES AND REVIEWS 7-1

7.1 GENERAL 7-1
7.1.1 Involvement 7-1
7.1.2 Preparation 7-1
7.1.3 Evaluation 7-1
7.1.4 Preliminary and Critical Design Reviews (PDR & CDR) 7-1
7.1.5 Support Equipment Recommendation Data (SERD) Reviews 7-1
7.1.6 Sustainment Meetings 7-1

7.2 Technical Order Planning/Requirements Conference (TOP/RC) 7-1
7.2.1 Purpose 7-1
7.2.2 Role of the TO IPT 7-2
7.3 Technical Order Guidance Conference 7-2
7.3.1 Management and Scheduling 7-2
7.3.2 Objectives 7-2
7.3.3 Participation 7-2
7.4 Commercial Manual Review 7-2
7.4.1 Commercial Off-The-Shelf (COTS) Manuals 7-2
7.4.2 Contractor Evaluation 7-2
7.4.3 Use of MIL-PRF-32216 7-2
7.4.4 Government Reviews of COTS and Commercial Manuals 7-3
7.5 Technical Order In-Process Reviews 7-3
7.5.1 Scheduling and Purpose 7-3
7.5.2 IPR Guidelines 7-3
7.5.3 Focus and Support 7-3
7.5.4 Non-Procedural Data Verification 7-3
7.5.5 Interactive Electronic Technical Manuals (IETMs) and Other Digital TOs 7-3
7.6 Technical Order Pre-Publication Reviews 7-4
7.7 Technical Order Post-Publication Reviews 7-4
7.7.1 Command Reviews 7-4
7.7.2 Currency Reviews 7-4
7.8 Contractor Furnished (Aeronautical) Equipment (CFAE/CFE) Notice Processing and Tracking Procedures 7-4
7.8.1 CFEN Content 7-5
7.8.2 Federal Stock Class (FSC) 7-5
7.8.3 PM Procedures 7-5
7.8.4 CFEN Approval 7-5
7.8.5 CFEN Disapproval 7-5
7.8.6 Military Specification TOs 7-5
7.8.7 SERD Review 7-5
7.8.8 CFEN Review 7-5
7.8.9 Contractor Data 7-5
7.8.10 Commercial Off-The-Shelf (COTS) Manual 7-5
7.8.11 CFEN Status 7-5
7.8.12 Developing Supplemental Data 7-5
7.8.13 COTS Manual Records 7-6
7.8.14 Responsibility Transfer 7-6
7.9 SERD/eSERD Process (AFMCMAN 23-3, *Cataloging and Standardization*) 7-9

8 TECHNICAL ORDER SUSTAINMENT MANAGEMENT 8-1

8.1 Technical Order Numbering and Indexing 8-1
8.1.1 On-Line JCALS TO Numbering Procedures 8-1
8.1.2 Off-Line JCALS TO Numbering Procedures 8-2
8.1.3 Assigning Numbers 8-2
8.1.4 Renumbering Technical Orders 8-2
8.1.5 Numbering and Indexing Digital TO Files 8-3
8.1.6 Numbering Digital Media 8-7
8.1.7 Changes to Numbering Policy 8-8
8.1.8 Indexing 8-8
8.1.9 Uploading, Distributing and Viewing eTOs 8-8
8.1.10 Supersedure 8-10
8.1.11 Rescission 8-10
8.1.12 Indexing TOs Published on the Internet 8-10
8.1.13 Supplement Processes 8-11
8.1.14 Numbering and Indexing Supplemental TO Manuals and Parent TOs 8-11
8.1.15 Unit Price 8-11
8.2 Air Force Technical Order (AFTO) Form Development 8-11
8.2.1 Development 8-11

8.2.2 AFTO Form Availability 8-11
8.3 Preliminary Technical Orders 8-12
8.3.1 Management 8-12
8.3.2 Numbering and Indexing Procedures 8-12
8.3.3 Verifying and Formalizing PTOs 8-12
8.3.4 Preliminary TCTOs 8-12
8.4 Transitioning Technical Orders to Digital-Only Distribution 8-12
8.4.1 TOs on Digital Media 8-12
8.4.2 Grouping TOs on Digital Media 8-12
8.4.3 Transition Responsibilities 8-12
8.4.4 Transition Planning 8-12
8.4.5 Digital vs. Paper Distribution 8-12
8.4.6 Publishing eTOs to ETIMS 8-13
8.5 Technical Order Rescissions 8-13
8.5.1 TCM Procedures 8-13
8.5.2 TO Manager Procedures 8-13
8.5.3 Nuclear Weapons TOs 8-13
8.5.4 Joint Service TO Retention 8-14
8.6 Reinstatement of Technical Orders 8-14
8.7 Transfer of Technical Order Management Responsibility 8-14
8.7.1 Business Practices 8-14
8.7.2 Gaining Organization Procedures 8-14
8.7.3 Losing Organization Procedures 8-14
8.7.4 Identify Gaining POCs 8-14
8.7.5 JCALS POC Procedures 8-14
8.7.6 Help Desk Actions 8-14
8.7.7 Print Ownership Transfer 8-15
8.8 Technical Order Management Practices Using JCALS 8-15
8.8.1 JCALS System or Equipment Data Related to Technical Order Acquisition 8-15
8.8.2 Establishing Sponsor Approval (See paragraph 3.1.6.1) 8-15
8.8.3 Processing Subscription or Requisition Transactions Requiring Sponsor Approval 8-15
8.8.4 Completing Recommended Change (RC - Chapter 12) Evaluation 8-15
8.8.5 TO Numbering (paragraph 8.1) 8-15
8.8.6 Manage TM Index (paragraph 8.1.6) 8-15
8.8.7 Preparing and Submitting Reproduction Packages (Chapter 10) 8-15
8.8.8 Managing Due-Ins and Shipping Labels (Chapter 10) 8-16
8.8.9 Stock Control and the TO Archives 8-16
8.8.10 TCTO Rescission Review 8-16
8.8.11 Reports 8-16
8.8.12 TODO (TM) Accounts 8-16

9 QUALITY ASSURANCE 9-1

9.1 General 9-1
9.1.1 Process Controls 9-1
9.1.2 Verification 9-1
9.2 Reading Grade Level (RGL) 9-1
9.2.1 Methods 9-1
9.2.2 Contractor TO Development 9-1
9.2.3 Organic TO Development 9-1
9.3 The Contractor Certification Process 9-1
9.3.1 Certification Requirements 9-1
9.3.2 Performance Certification 9-1
9.4 Verification 9-2
9.4.1 Scheduling 9-2
9.4.2 Use of PTOs 9-2
9.4.3 Partly-Verified TOs 9-2
9.4.4 TO Verification Plan 9-2
9.4.5 Participation 9-2
9.4.6 Contractor Support 9-3

9.4.7 Verification Waivers....9-3
9.4.8 Use of Substitute Items....9-3
9.4.9 Using Command Responsibilities....9-3
9.4.10 Prioritization....9-3
9.4.11 Combining Contractor Certification and Verification....9-3
9.4.12 Explosive Ordnance Disposal Technical Orders....9-4
9.4.13 Nuclear Weapons TOs....9-4
9.4.14 Non Nuclear Munitions and Explosives TOs....9-4
9.4.15 Exemptions....9-4
9.4.16 Re-Verification After Digital Format Conversion....9-4
9.4.17 Calibration Technical Orders....9-4
9.4.18 Minor Sustainment Updates....9-4
9.5 Verification Methods....9-4
9.5.1 Performance....9-5
9.5.2 Simulation....9-5
9.5.3 Desktop Analysis....9-5
9.6 Verification Procedures....9-5
9.6.1 Verification Site....9-5
9.6.2 Verification Team Manager (VTM)....9-5
9.6.3 Pre-Verification Meeting....9-5
9.6.4 Verification Tasks....9-5
9.6.5 Verification Updates....9-5
9.6.6 Post-Verification Meeting....9-5
9.6.7 Verification Review Boards....9-6
9.6.8 Post-Digital Conversion Verification Procedures....9-6
9.6.9 Documentation....9-6

10 TECHNICAL ORDER REPRODUCTION AND DISTRIBUTION....10-1

10.1 Technical Order Distribute and Print Services (TODPS)....10-1
10.1.1 TODPS Concept of Operation....10-1
10.1.2 Managing TODPS Implementation....10-1
10.1.3 Funding for Sustainment of TOs and TODPS Operations....10-1
10.1.4 Requirements for TODPS Operations....10-2
10.1.5 TODPS Operations....10-2
10.1.6 TODPS Help Desk Procedure....10-3
10.2 Technical Order Reproduction....10-3
10.2.1 Reproduction Methods....10-3
10.2.2 Reproduction Quantities....10-3
10.2.3 Reproduction Media....10-3
10.2.4 Printing and Reproduction....10-3
10.2.5 Weapon System Contractor Printing....10-4
10.2.6 Quality Assurance....10-4
10.2.7 GPO Printing Contract Maintenance....10-4
10.2.8 Electronic Media....10-4
10.2.9 TO Warehouse Requirements....10-4
10.3 Technical Order Distribution Practices....10-5
10.3.1 Preliminary TOs....10-5
10.3.2 Operational Use PTOs....10-5
10.3.3 Formal TOs....10-5
10.3.4 Restrictions....10-5
10.3.5 TO Shipments....10-5
10.4 Legacy Technical Order Printing/Reprinting Processes....10-5
10.4.1 General....10-5
10.4.2 Notification and Confirmation....10-5
10.4.3 Create Print Orders....10-5
10.4.4 Printing Fold-out/Fold-up Pages....10-6
10.4.5 Reprinting Department of the Army (DA) Publications....10-6
10.5 Reproducible Material Procedures....10-6
10.5.1 Reproducible Material Storage....10-6

10.5.2 Posting Changes 10-6
10.5.3 Requesting Reproducible Materiel 10-6
10.5.4 Reproducible Material for Rescinded TOs 10-6
10.6 Screening Technical Order Requisitions 10-7
10.6.1 Requisitions Requiring Proponent (“Sponsor”) Approval (paragraph 3.1.6.1) 10-7
10.6.2 Review Label Decks 10-7
10.6.3 Justification 10-7
10.6.4 Manage Outside Agency Requests for Air Force TOs 10-7
10.7 Printing Quantity Determination 10-7
10.7.1 Determine Print Quantities 10-7
10.7.2 TO Change Quantities 10-8
10.7.3 TCTO Quantities 10-8
10.8 Publishing Technical Orders on Digital Media 10-8
10.8.1 CD/DVD Contents 10-8
10.8.2 Update Intervals 10-8
10.9 Electronic Distribution of Technical Orders 10-8
10.9.1 Distribution Using ETIMS 10-9
10.9.2 Distribution Using E-Mail 10-9
10.9.3 Distribution Using the Internet 10-10
10.9.4 Other Distribution Methods 10-10
10.10 Generate JCALS Shipping Labels 10-10
10.10.1 Receive Due-In Quantity 10-10
10.10.2 Request Shipping Labels 10-11
10.10.3 Control ID Label Decks 10-11
10.10.4 Generate Labels for One Time Requisition 10-11
10.10.5 Establishing Stock Levels for POD 10-11
10.11 Errata Sheets 10-11
10.11.1 Limitations 10-11
10.11.2 SAP/FMS Customers 10-12
10.11.3 Errata Sheet Procedures for POD (TODPS) and ETIMS Distribution 10-12
10.12 Requisitions Using AFTO Form 276, ***Special Requisition for Air Force Technical Order*** 10-12
10.12.1 Warehouse “Walk-Through” Requisitions 10-12
10.12.2 FMS Customer Use 10-12
10.12.3 Foreign Disclosure Office (FDO) Review of FMS AFTO Form 276 10-12
10.13 Shipping/Distribution Records 10-12
10.14 Technical Order Warehouses and Repositories 10-12
10.14.1 Manage Backorders 10-12
10.14.2 TCTOs 10-13
10.14.3 Repositories 10-13
10.15 Official Air Force Technical Order Archives (Repository) 10-13
10.15.1 Business Practice 10-13
10.15.2 Transfer to the National Museum of the USAF 10-13
10.15.3 Servicing Requests for Inactive TOs 10-13
10.16 Technical Order Stock Disposal Actions 10-14
10.16.1 Incomplete Sets 10-14
10.16.2 Procedures 10-14
10.16.3 Other Service Joint Users 10-14

11 TECHNICAL ORDER UPDATES DURING ACQUISITION 11-1

11.1 General 11-1
11.1.1 RFPs and Contracts 11-1
11.1.2 Engineering Change Proposals (ECP) 11-1
11.1.3 Update Submittal 11-1
11.1.4 Update Approval and Incorporation 11-1
11.1.5 Formal TOs 11-1
11.1.6 Preparation 11-1
11.1.7 Verification 11-1
11.2 Types of Preliminary Technical Order Updates 11-1
11.3 Procedures for AFTO Form 27 11-2

11.3.1 General 11-2
11.3.2 Use Period 11-2
11.4 Processing AFTO Form 27 11-2
11.4.1 Emergency RCs 11-2
11.4.2 Urgent RCs 11-2
11.4.3 Routine RC 11-2
11.4.4 Disposition 11-2
11.4.5 Interim Update Procedures 11-3
11.5 Control and Tracking of Recommended Changes 11-3
11.6 Classified Recommended Changes 11-3
11.7 Technical Order Updates Due to Equipment Modification or Replenishment Spares Procurement 11-3
11.7.1 Coordination and Advisement 11-3
11.7.2 Processes 11-3
11.8 Update Distribution and Filing 11-3
11.9 Recommended Changes and the Innovative Development through Employee Awareness (Idea) Program 11-3
11.9.1 Restrictions 11-3
11.9.2 Ineligible Updates 11-3
11.9.3 Submission 11-3
11.9.4 Stand-Alone Ideas 11-4

12 TECHNICAL ORDER CHANGE PROCESSING DURING SUSTAINMENT 12-1

12.1 JCALS Functions and Corresponding Forms 12-1
12.1.1 JCALS “Recommend a TM Change” Function 12-1
12.1.2 JCALS Prepare TM Change Package Function 12-1
12.1.3 ECSS Recommended Change 12-1
12.1.4 AFTO Form 22 12-1
12.1.5 AF Form 847 12-1
12.1.6 AFTO Form 27 12-1
12.1.7 Source, Maintenance and Recoverability (SMR) Code Change Request 12-1
12.1.8 AFMC Form 202 12-1
12.1.9 AFTO Form 252 12-1
12.1.10 IETM Change Process 12-2
12.1.11 IUID-Related TO Updates 12-2
12.1.12 Special Packaging Instruction (SPI) Related TO Updates 12-2
12.2 Processing Technical Order Recommended Changes 12-2
12.2.1 General 12-2
12.2.2 Emergency RCs 12-3
12.2.3 Urgent RCs 12-3
12.2.4 Routine RC 12-3
12.2.5 TO Updates for Obsolete Systems and Commodities 12-3
12.2.6 TO Manager Procedures 12-3
12.2.7 TCM RC Procedures 12-4
12.2.8 RC Completion 12-5
12.2.9 Recommended Changes Applicable to Multiple TOs 12-6
12.2.10 Recommended Changes Applicable to Depot TOs 12-6
12.3 Evaluating Recommended Changes on Joint Service Technical Manuals 12-7
12.3.1 Air Force-Managed Technical Manuals 12-7
12.3.2 TO Manager Procedures for TMs Managed by Other DoD Components 12-7
12.3.3 TCM Procedures for TMs Managed by Other DoD Components 12-7
12.3.4 Change Incorporation 12-7
12.4 Processing Idea Program Packages 12-7
12.4.1 Stand-Alone Ideas 12-7
12.4.2 Confirmatory Ideas 12-7
12.4.3 Disputing Findings 12-7
12.5 JCALS “Prepare TM Change Package” Procedures 12-7
12.5.1 Technical Content Manager Procedures 12-8
12.5.2 Routing and Coordination 12-8
12.5.3 Originator’s Data 12-9

12.5.4 Approval Signature 12-9
12.5.5 Early Implementation 12-9
12.6 Technical Order Change and Revision Practices 12-10
12.6.1 Digital Updates 12-10
12.6.2 Revisions 12-10
12.6.3 New or Revised Technical Manual Specifications and Standards (TMSS) 12-11
12.6.4 Numbering Changes and Revisions 12-11
12.6.5 Pre-Publication Reviews 12-11
12.6.6 Periodic Pre-Publication Review 12-12
12.6.7 Formal Supplements 12-12
12.6.8 TO Updates Related to TCTOs 12-12
12.6.9 Joint Service TMs 12-12
12.6.10 Country Standard TO (CSTO) Updates 12-12
12.6.11 Federal Aviation Agency (FAA) Manuals 12-12
12.7 Digital Technical Order Supplement Procedures 12-12
12.7.1 Development 12-12
12.7.2 Posting Supplements to Basic TO File 12-12
12.7.3 Annotations 12-12
12.7.4 Indexing and Distribution 12-13
12.7.5 Supplementing IETMs 12-13
12.7.6 MAJCOM and Base Supplements 12-13
12.7.7 MAJCOM Supplements to MPTOs 12-13
12.8 CD-ROM/DVD Procedures 12-13
12.8.1 Responsibilities 12-13
12.8.2 CD-ROM/DVD Format 12-13
12.8.3 Digitally-Distributed TO File Sustainment 12-14
12.9 Technical Order Update Package Processing 12-14
12.9.1 Screen and Submit Update Packages 12-14
12.9.2 Record Copy 12-14
12.9.3 TO 00-5-Series Training Updates 12-14
12.10 Technical Order Update Publication 12-15
12.10.1 General 12-15
12.10.2 Existing Contracts 12-15
12.10.3 New Contract 12-15
12.10.4 Organic Preparation 12-15
12.10.5 Distribution Controls 12-15
12.11 Depot Level ICBM Operation And Maintenance Control Manuals 12-15
12.11.1 Description 12-15
12.11.2 Deficiency Reporting 12-15
12.11.3 Processing 12-15
12.11.4 Implementation 12-16

13 INTERIM TECHNICAL ORDERS AND RAPID ACTION CHANGE PROCEDURES 13-1

13.1 General 13-1
13.1.1 Description 13-1
13.1.2 Interim Safety Supplements (ISS) 13-1
13.1.3 Interim Operational Supplements (IOS) 13-1
13.1.4 Rapid Action Changes (RAC) 13-1
13.1.5 Timelines 13-1
13.1.6 Security Assistance Program (SAP)/Foreign Military Sales (FMS) Support 13-1
13.1.7 Advance Notification (See Table 13-2) 13-2
13.2 Procedures 13-2
13.2.1 Developing Interim Supplements 13-2
13.2.2 Creating Rapid Action Changes (RAC) 13-2
13.2.3 Approval and Release 13-3
13.2.4 Indexing 13-3
13.2.5 Distribution 13-3
13.2.6 Merging RACs with Basic TO Files 13-4
13.3 Rapid Action Change Notification and Distribution 13-4

13.3.1 RAC Notification Messages 13-4
13.3.2 Distribution 13-5

14 ENVIRONMENTAL, SAFETY AND OCCUPATIONAL HEALTH 14-1

14.1 General 14-1
14.1.1 Safety Offices 14-1
14.1.2 Commercial Manuals 14-1
14.2 Technical Order Manager Responsibilities 14-1
14.3 Environmental, Safety and Occupational Health (ESOH) Requirements 14-1
14.3.1 Safety Review 14-1
14.3.2 Health Review 14-1
14.3.3 Exemptions 14-1
14.3.4 Special Review Lists 14-2
14.4 Ground Safety 14-2
14.4.1 TO Safety Reviews 14-3
14.4.2 TO Procedures 14-3
14.4.3 Electrostatic Discharge Sensitive (ESDS) Devices 14-3
14.5 Pollution Prevention 14-3
14.5.1 Reduced Use of HAZMAT and ODS 14-3
14.5.2 Establishing POCs 14-3
14.5.3 Waivers to Use Ozone Depleting Substances (ODS) 14-3
14.6 Weapon and Flight Safety 14-3
14.6.1 Flight Safety 14-3
14.6.2 Explosive Safety Requirements 14-3
14.6.3 Nuclear Surety 14-3
14.6.4 Missile Safety 14-3
14.7 Nuclear Surety Requirements 14-3
14.7.1 Technical Evaluation 14-3
14.7.2 Documentation and Marking 14-4
14.7.3 Procedures for Non-Weapon Nuclear Materials 14-4

15 SECURITY ASSISTANCE TECHNICAL ORDER PROGRAM 15-1

15.1 General 15-1
15.2 Responsibilities 15-1
15.2.1 HQ USAF/A4M and Secretary of the Air Force (SAF)/AQIK 15-1
15.2.2 Air Force Flight Standards Agency (AFFSA) 15-1
15.2.3 SAF/IAPD 15-1
15.2.4 Air Force Security Assistance Center (AFSAC)/XP 15-1
15.2.5 TO Manager Responsibilities 15-1
15.2.6 Releasability Reviews 15-1
15.2.7 Translations 15-1
15.3 Types of SATOP Manuals 15-1
15.3.1 USAF TO 15-1
15.3.2 Country Standard TO (CSTO) 15-2
15.3.3 Consortium TO 15-2
15.3.4 Baseline TO 15-2
15.3.5 M-Symbol TO 15-2
15.4 Overseas Workload Program (OWLP) 15-2

16 SOURCE DATA 16-1

16.1 General 16-1
16.1.1 Types of TOs Requiring Source Data 16-1
16.1.2 Procedural Source Data 16-1
16.1.3 Source Data OPRs 16-1
16.1.4 Delivery 16-1
16.2 Acquisition of Source Data 16-1
16.2.1 Development 16-1

16.2.2 Acquisition Procedures 16-1
16.3 Nonnuclear Weapons Delivery Source Data - Weapons Source Data Package (Aircraft -34 Series Technical Orders and TO 1-1M-34) 16-2
16.3.1 Requirements 16-2
16.3.2 Contents 16-2
16.3.3 Development 16-2
16.3.4 Procedures and Responsibilities 16-2
16.4 Nonnuclear Munitions Loading Source Data - Standard Source Data Package (Aircraft -33 Series Technical Orders and TO 1-1M-33) 16-3
16.4.1 Requirements 16-3
16.4.2 Contents 16-3
16.4.3 Development 16-3
16.4.4 Nonnuclear Munitions Loading TOs 16-3
16.4.5 Participants 16-3
16.4.6 Procedures for New Munitions 16-3
16.4.7 Procedures For Existing Munitions 16-4
16.5 Nonnuclear Explosive Ordnance Disposal (EOD)/Render Safe Procedures (RSP) Source Data 16-4
16.5.1 EOD TOs 16-4
16.5.2 Air Force Liaison 16-5
16.5.3 Requirements 16-5
16.5.4 Participants 16-5
16.5.5 Delivery 16-5
16.5.6 EOD SDP Procedures 16-5

A GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION A-1

A.1 List of Referenced and Related Publications A-1
A.2 List of Referenced and Related Forms A-4
A.3 List of Acronyms A-4
A.4 Definitions A-15

B GENERIC TECHNICAL ORDER MANAGEMENT PLAN (TOMP) B-1

B.1 Introduction B-3
B.2 Policy B-3
B.3 Purpose B-3
B.4 Program Summary B-3
B.4.1 Weapon System Description B-3
B.4.2 Operational Concept B-3
B.4.3 Maintenance Concept B-3
B.5 Reference Material B-3
B.6 Definitions B-3
B.7 Responsibilities B-3
B.7.1 TO Manager B-3
B.7.2 Using Commands B-5
B.7.3 Air Logistics Centers B-5
B.7.4 Air Education and Training Command (AETC) B-5
B.7.5 Other Affected Units B-5
B.8 Scope of Technical Order Requirements B-5
B.8.1 General B-5
B.8.2 TOs To Be Developed B-5
B.9 Acquisition Process B-6
B.9.1 Segment Efforts B-6
B.9.2 Delivery Options B-6
B.9.3 TO Preparation B-6
B.9.4 Maintenance of TOs B-8
B.9.5 Management of Time Compliance TOs (TCTOs) B-8
B.9.6 Schedules B-8
B.9.7 Financial Plan B-8

C GENERIC TECHNICAL ORDER VERIFICATION PLAN (TOVP) C-1

C.1 Introduction C-3
C.2 Purpose C-3
C.3 Scope C-3
C.4 References C-3
C.5 Annexes C-3
C.6 Verification Plan General Provisions C-3
C.6.1 General C-3
C.6.2 Organizational Structure C-3
C.6.3 Definitions C-3
C.6.4 Policy C-3
C.7 Responsibilities* C-4
C.7.1 TO Manager C-4
C.7.2 Central Technical Order Control Unit C-4
C.7.3 Administrative Unit C-5
C.7.4 Verification Team Manager (VTM) C-5
C.7.5 System Verification Manager (SVM) C-5
C.7.6 Technical Order Review Board (TORB) C-5
C.7.7 Flight TORB (FTORB) C-6
C.7.8 Contractor Personnel C-6
C.7.9 Using and Participating Agencies C-6
C.8 Procedures for Verification* C-6
C.9 Administrative Procedures C-7
C.9.1 RC and Comment Sheet Control and Tracking C-7
C.9.2 AFTO Form 27, *Preliminary Technical Order (PTO) Publication Change Request (PCR)/TO Verification Record/Approval* C-7
C.9.3 Verification Records C-7

D POINTS OF CONTACT D-1

E GUIDANCE FOR DEVELOPING REQUEST FOR PROPOSAL (RFP) EVALUATION CRITERIA AND INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS OR QUOTERS E-1

E.1 Introduction E-1
E.1.1 General E-1
E.1.2 Roles E-1
E.1.3 Responsibilities E-1
E.2 Request for Proposal E-1
E.2.1 RFP Contents E-1
E.2.2 RFP Development E-1
E.2.3 Evaluation Criteria E-1
E.2.4 Referenced Documents E-2
E.2.5 TOs as Key Objectives E-2
E.3 TO Program Requirements E-2
E.3.1 TO Development E-2
E.3.2 TO Quality E-2
E.3.3 Data Rights (Defense Federal Acquisition Regulation Supplement (DFARS) clauses 252.227-7013) E-2
E.3.4 Classification, Distribution, Destruction, Disclosure, and Export Control Notices E-2
E.3.5 TO Delivery E-2
E.3.6 Schedule E-3
E.3.7 Time Compliance Technical Orders (TCTOs) E-3
E.4 Evaluation Criteria E-3
E.4.1 TO Selection E-3
E.4.2 TO Preparation E-3
E.4.3 TO Quality Assurance E-4
E.4.4 Verification Support E-4
E.4.5 TO Delivery E-4

E.4.6 TO Sustainment E-4
E.4.7 TCTO Development E-4
E.5 Instructions to Offerors E-4
E.5.1 TMCR Tailoring E-5
E.5.2 Commercial Manuals E-5
E.5.3 Contractor Furnished Aeronautical Equipment/Contractor Furnished Equipment (CFAE/CFE) Notices E-5
E.5.4 Source Data E-5
E.5.5 Guidance Conference E-6
E.5.6 TO Development E-6
E.5.7 TO Classification and Distribution Controls E-6
E.5.8 TO Numbering E-6
E.5.9 Quality Process E-6
E.5.10 Conferences and Reviews E-6
E.5.11 TO Procedures Certification E-7
E.5.12 Verification Support E-7
E.5.13 Delivery E-7
E.5.14 Data Rights E-7
E.5.15 TO Reproduction Management E-7
E.5.16 TO and Source Data Maintenance E-8
E.5.17 Time Compliance Technical Orders (TCTOs) E-8

F ADDING EQUIPMENT NUMBERS TO A JCALS TECHNICAL ORDER RECORD F-1

F.1 Update Technical Order-to-Equipment Cross Reference F-1
F.2 Adding New Equipment Part Numbers to JCALS F-1
F.3 Updating Equipment Part Numbers in JCALS F-3

G DEVELOPING TECHNICAL ORDER TITLES G-1

G.1 General G-1
G.2 Rules G-1
G.2.1 Administrative G-1
G.2.2 Technical G-1
G.2.3 Supplemental Manuals G-1
G.2.4 Technical Order Type G-1
G.2.5 Restricted Use G-2
G.2.6 MIL-PRF-83495 Organizational Maintenance Manuals G-2
G.2.7 Technical Order Subject or Equipment Covered G-2
G.2.8 Titles for Classified Technical Orders G-2
G.2.9 Sectionalized Technical Orders G-3
G.2.10 Software-Related Instructions G-3
G.2.11 Title Notations G-3
G.2.12 Commercial Manuals G-3
G.2.13 Contractor Data G-3
G.3 System Application G-3
G.3.1 Weapon System Identification (Appendix F) G-4
G.3.2 Equipment Identification G-4
G.3.3 TCTO Headers, General and MPTOs G-4
G.3.4 Data Entry Formats G-4
G.4 Catalog Notes G-4
G.4.1 Joint Service Technical Orders G-4
G.4.2 Application Notes G-4
G.4.3 Location Notes G-5
G.4.4 Format Notes G-5
G.4.5 Configuration Notes G-5
G.5 Equipment Identification (Appendix F) G-5
G.5.1 Nomenclature and Manufacturer G-5
G.5.2 Equipment Data G-5
G.5.3 Contract Information G-5

H TECHNICAL ORDER MANAGEMENT TRAINING H-1

SECTION I TRAINING PLAN H-1

H.1 Purpose H-1
H.2 Training Premise H-1
H.3 Knowledge Now H-1
H.3.1 Air Force Knowledge Management H-1
H.3.2 AFMC Help Center H-1
H.3.3 Defense Acquisition Deskbook H-1
H.4 Air Force Institute of Technology (AFIT) Courses H-1
H.4.1 AFIT System 110 ..... H-1
H.4.2 AFIT System 230 ..... H-2
H.5 Seminars and Workshops H-2
H.6 TO Manager and Tech Content Manager (TCM) On-The-Job-Training (OJT) H-2
H.7 TODO/TODA/Library Custodian Training H-2
H.8 TO Training Products Access List H-2

SECTION II TECHNICAL ORDER MANAGER TRAINING SYLLABUS H-4

H.9 Month 1 – Basic Technical Order System Familiarization H-4
H.9.1 Reading H-4
H.9.2 Formal Training Requirements H-4
H.9.3 Training Tool H-4
H.9.4 Trainee Familiarization H-4
H.9.5 Trainee Participation H-4
H.10 Month 2 – Technical Order Life Cycle Management Introduction H-4
H.10.1 Reading H-4
H.10.2 Training Tool H-4
H.10.3 Trainee Familiarization H-4
H.10.4 Trainee Participation H-5
H.11 Months 3 & 4 – Basic Technical Order Acquisition Program Familiarization H-5
H.11.1 Reading H-5
H.11.2 Formal Training Requirements H-5
H.11.3 Training Tool H-5
H.11.4 Trainee Familiarization H-5
H.11.5 Trainee Participation H-5
H.12 Month 5 – Interfacing Organizations, Contracting for Technical Orders, and Contractor Proposals H-6
H.12.1 Reading H-6
H.12.2 Formal Training Requirements H-6
H.12.3 Training Tool H-6
H.12.4 Trainee Familiarization H-6
H.12.5 Trainee Participation H-7
H.13 Months 6 & 7 – Basic Technical Order Sustainment Program Familiarization H-7
H.13.1 Reading H-7
H.13.2 Formal Training Requirements H-7
H.13.3 Training Tool H-7
H.13.4 Trainee Familiarization H-7
H.13.5 Trainee Participation H-8
H.14 Month 8 – Updating Technical Orders (AF Form 847, AFTO Forms 22, 27, 158 & 252) H-8
H.14.1 Reading H-8
H.14.2 Formal Training Requirements H-8
H.14.3 Training Tool H-8
H.14.4 Trainee Familiarization H-8
H.14.5 Trainee Participation H-9
H.15 Month 9 – Requisition Processing, Freedom of Information, Release of Technical Orders to the Public, and Release Under AFI 61-204 ..... H-9
H.15.1 Reading H-9

H.15.2 Formal Training Requirements H-9
H.15.3 Training Tool H-9
H.15.4 Trainee Familiarization H-9
H.15.5 Trainee Participation H-9
H.16 Month 10 – Time Compliance Technical Order Management H-10
H.16.1 Reading H-10
H.16.2 Formal Training Requirements H-10
H.16.4 Trainee Familiarization H-10
H.16.5 Trainee Participation H-10
H.17 Month 11 – OJT Instructor's End Of Course Evaluation H-10

LIST OF ILLUSTRATIONS

Number Title Page

1-1 ETIMS Role Hierarchy 1-10
3-1 TO Acquisition Sequence Flow Chart 3-15
3-2 Digital TO Acquisition Decision Tree 3-19
5-1 DD Form 1423-1, Contract Data Requirements List (CDRL) 5-12
5-2 AFTO Form 585, Contractor Data Requirements Substantiation 5-15
7-1 SERD Process Flow Chart 7-8
7-2 Support Equipment Recommendation Data (SERD) Evaluation/Notification Form 7-10
8-1 TO Numbering and Indexing Flow Chart 8-23
9-1 AFTO Form 124, Computation of Technical Order Reading Grade Level 9-8
10-1 AFTO Form 30 10-15
10-2 TO Reproduction and Storage Flow Chart 10-17
11-1 AFTO Form 27, Preliminary Technical Order (PTO) Publication Change Request (PCR)/TO Verification Record/Approval 11-5
11-2 AFTO Form 158, Technical Order Review Comment Sheet 11-8
12-1 TO Improvement Process Flow Chart 12-19
12-2 CD-ROM/DVD Disk and Case Label Formats 12-20
12-3 AFTO Form 252, Technical Order Publication Change Request 12-21
13-1 IOS/ISS/RAC Flow Chart 13-6
E-1 Example of Contract Line Item Numbers (CLINs) for TO Exhibit E-9

LIST OF TABLES

Number Title Page

3-1 STINFO Distribution Statements and Corresponding Reasons for Use 3-12
7-1 IPR Completion Percentage Guide 7-4
7-2 Technical Order Review Evaluation Guide 7-6
8-1 JCALS DI Table 2, Mandatory Index Entries 8-17
8-2 Policy-Mandated JCALS Index Entries 8-21
8-3 Establish TM Proponent Checklist 8-24
8-4 Indexing Matrix for Paper and Digital TOs 8-24
12-1 Recommended Change Processing Time Limits 12-16
13-1 ITO/RAC Approval Signature Levels 13-7
13-2 Advance Notification Requirements for IOSs/ISSs/RACs 13-8
13-3 Additional ITO/RAC Distribution Addresses 13-9
14-1 Exempted TO Types 14-1
14-2 Exempted Update Types 14-2
14-3 Special Review Lists 14-2
F-1 Technical Order to Equipment Part Number Cross Reference Report F-1

F-2 Adding New Equipment Part Numbers to JCALS (Version 2.0, 10 Sep 03) F-2
F-3 Updating Equipment Part Numbers in the JCALS Index (Version 2.0, 10 Sep 03) F-3

CHAPTER 1
INTRODUCTION, TOOLS AND MANAGEMENT ROLES

1.1 PURPOSE.

This Technical Order (TO) provides System Program Managers/Program Managers/Product Group Managers (SPM/PM/PGM), TO Managers, Flight Manual Managers (FMM), Technical Content Managers (TCM) and Major Command (MAJCOM) Functional Managers with guidance and procedures for life-cycle management of TOs, Time Compliance TOs (TCTO) and updates to support initial acquisition, sustainment and modification of system and equipment hardware and software. The procedures in this TO are designed to implement the TO System Vision: "...to provide user-friendly, technically accurate, secure and up-to-date digital technical data at the point of use that is acquired, sustained, distributed and available in digital format from a single point of access for all technical data users." This TO is used in conjunction with the referenced and related publications and forms listed in Appendix A.

1.1.1 Terms and Acronyms. Terms and acronyms used in this TO are defined in the Glossary (see Appendix A). Addresses for organizations and activities with whom TO management personnel may require direct communication are listed in Appendix D.

1.1.2 Supplements and Changes. MAJCOMs and Air Force Materiel Command (AFMC) Centers may supplement this TO in accordance with (IAW) TO 00-5-1, *AF Technical Order System*. Copies of all supplements will be sent to HQ AFMC/A4UE, 4375 Chidlaw Rd, Ste 6, Wright-Patterson AFB, OH 45433-5006, e-mail: AF.TOPP@wpafb.af.mil; and to Oklahoma City Air Logistics Center, OC-ALC/ENGLA, 7851 Arnold St, Bldg 3, Rm 206, Tinker AFB OK 73145-9131, e-mail: ocalc.engl.Workflow@tinker.af.mil. Submit suggested changes to this TO IAW TO 00-5-1.

1.2 CONCEPT.

Air Force Publications AFPD 63-1/AFPD 20-1, *Acquisition and Sustainment Life Cycle Management*, and AFI 63-101, *Acquisition and Sustainment Life Cycle Management*, specify TO System policies and instructions. TO 00-5-1 contains TO user procedures. This TO covers life-cycle TO management practices and procedures. TOs 00-5-15, *Air Force Time Compliance Technical Order Process*, 00-5-18, *USAF Technical Order Numbering System*, and 00-5-19, *Security Assistance Technical Order Program*, provide additional management procedures supporting equipment modifications, TO numbering and Foreign Military Sales (FMS) programs. AFI 11-215, *USAF Flight Manuals Program (FMP)*, contains policy and procedures unique to flight manuals.

1.2.1 Policy. Paper and Compact Disc-Read Only Memory (CD-ROM)/Digital Versatile Disc (DVD) TO versions shall be reproduced and distributed by the DLA Document Services TO Distribute and Print Services (TODPS), using Print on Demand (POD) for follow-on requisitions (see paragraph 10.1.2). Digital TOs distributed electronically (eTOs) shall be numbered and indexed with a "-WA-1" TO number suffix, and shall be optimized, uploaded and delivered through the Enhanced Technical Information Management System (ETIMS). TO proponent organizations shall use the Comprehensive Air Force Technical Order Plan (CAFTOP) to plan and schedule compliance with these requirements. Exemptions and deviations must be authorized by waivers (see waiver procedures and format at https://afkm.wpafb.af.mil/ASPs/docman/DOCMain.asp?Tab=0&FolderID=OO-EN-TO-PI-15&Filter=OO-EN-TO-PI). Type 2 Interactive Electronic Technical Manuals (IETM) are exempt until ETIMS becomes capable of handling these database eTOs.

1.2.2 Scope. TO acquisition (Figure 3-1) involves the TO Manager, using command, support agencies and the contractor working together to deliver verified formal TOs prior to or concurrently with hardware delivery to the operational unit (AFI 63-101). It also includes acquisition of new TOs and TCTOs to support program modifications. Acquisition and sustainment of TOs must be effectively managed through the life cycle of the military system or commodity that the TOs support, as envisioned by the Air Force TO Vision and Concept of Operations (CONOPS) (https://afkm.wpafb.af.mil/ASPs/docman/DOCMain.asp?Tab=0&FolderID=OO-EN-TO-PI-15&Filter=OO-EN-TO-PI).

1.2.3 TO Acquisition. TO acquisition includes the development and/or procurement of technical data and TOs to operate and maintain centrally-acquired and managed military systems and commodities. TOs for individual systems and commodities are acquired by assigned TO Managers (see paragraph 1.4.4). FMMs manage the acquisition of Flight Manual Program publications (AFI 11-215) under the guidance of the TO Manager.

1.2.4 TO Sustainment. TO sustainment refers to all activities required to maintain the currency, accuracy, and availability of TOs in the post-acquisition phases of a program life cycle. It includes TO updating, verifying, indexing, controlling configuration, storing, archiving, distributing, superceding, rescinding, reinstating, and retiring. It also includes acquiring new TOs and TCTOs to support program modifications. Continuing support for FMS customers is part of TO sustainment.

1.3 TECHNICAL ORDER MANAGEMENT AND PRODUCTION TOOLS.

All TO System data input, management practices, and TO acquisition, sustainment and use procedures will be performed using the Joint Computer-aided Acquisition and Logistics Support (JCALS) system, AF-sanctioned interfacing program tools, and the Enhanced Technical Information Management System (ETIMS). Exceptions are listed in TO 00-5-1 and this TO.

1.3.1 Joint Computer-Aided Acquisition and Logistics Support (JCALS) System. The JCALS System is a joint service, distributed technical management information system. The JCALS System automates the wholesale (supplier) Air Force TO system functions of manage, acquire, improve, publish, stock and distribute. The JCALS System connects TO users and managers in the operational environment.

1.3.1.1 JCALS Roles and Privileges. JCALS users are assigned “roles” that include a set of system privileges using a specific role name to provide capability to perform various functions. TO management functions require that a user profile contain at least the JCALS System default roles of Technical Manual (TM) Manager, Equipment Specialist (ES) and Distribution Manager. These roles are normally shared by several people. Other commonly required roles include Writer/Editor, Quality Assurance (QA) Manager, Ad Hoc Browser User and TM Account Point of Contact (POC).

NOTE

ETIMS (paragraph 1.3.2 below) will use a similar system of roles and privileges to control access and use of system functions (see Figure 1-1). Some of the ETIMS roles may use different terms; e.g., TODO/ TODA/Library are called “ASL” (Account/Subaccount/Library) for short.

1.3.1.2 JCALS Desktop Instructions (DI). Procedures for on-line use of JCALS functions are documented in JCALS DI and service bulletins, distributed to JCALS on-line users by site POCs. Related procedural updates are posted in Functional User Guides on the AF Technical Order Managers CoP (https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=21298) and in this TO. All on-line JCALS users must ensure they are using a current copy of the DI and have applicable DI bulletins.

1.3.2 Enhanced Technical Information Management System (ETIMS). ETIMS is a secure web, GCSS-AF application accessible via the AF portal with the TO cataloging, ordering and account management functions. ETIMS also features an eTO content repository, an eTO publisher/transformer, and an eTO viewer with online, connected and portable, disconnected modes. Primary users are TO managers, TODO personnel, TO Distribution Account (TODA) personnel, TO Library Custodians, eTool administrators and TO users. The ETIMS TO print and distribute functions are implemented through the DLA Document Services TODPS system that prints and ships Print on Demand (POD) TOs directly to users. To access ETIMS, prospective users must first obtain a CAC or an External Certificate Authority (ECA) with a minimum of a favorable National Agency Check (NAC) to establish access to the AF Portal. Once logged on to the AF Portal home page, ETIMS is accessed from the “Application A-Z Listing.”

1.3.2.1 Wholesale TO Management. TO Managers access JCALS to manage TO indexing, subscriptions, and requisitions. They access TODPS through DLA Document Services On-Line to manage POD requisitions and Initial Distributions (ID). TO Managers access ETIMS using the GCSS-AF eTO Services eTO Viewer, where the TO Manager is provided special privilege to upload eTOs to the Repository for electronic distribution. After eTOs are optimized and uploaded, TO Managers access the ETIMS Catalog to validate that the TOs loaded properly.

1.3.2.2 Retail TO Management. Once assigned a JCALS TM Account, TODOs access the corresponding ETIMS account to establish subscriptions for individual TOs and TCTO Series Headers, place One-Time Requisition (OTR) requests, authorize access to eTO libraries, manage eTools and disconnected eTO libraries, record receipt of TO shipments, generate reports and perform required reviews.

1.3.2.3 ETIMS eTools. Both wholesale and retail ETIMS access and use can be performed using available desktop computers, linking through AF Portal accounts. For off-line use at the point of maintenance, users will need server, desktop and/or laptop computers and web connections for periodic updating of eTO files. Cabinets for storing, recharging, and updating MWS(s) may be used when multiple server, desktop and/or laptop computers are required at a location.

1.3.2.4 ETIMS Table of Contents (TOC) TOs. (See TO 00-5-1) ETIMS TOC TOs enhance navigation between the ETIMS electronic TOs (eTOs) listed in the TOC TO through the use of Hyperlinks (00-5-1 and 00-5-3). The eTOs listed in the ETIMS TOC TO are normally associated with a specific weapon system. The ETIMS TOC TOs have Category 0 numbers (e.g., the ETIMS TOC TO for the C-17A would be "0-0-1C-17A-TOC-1-WA-1"). See the detailed procedures on the Air Force Technical Order Managers CoP at https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=21298.

1.3.2.5 The TO management and database functions currently performed by JCALS will be subsumed along with ETIMS as part of the Expeditionary Combat Support System (ECSS).

1.3.3 Automated Technical Order System (ATOS). ATOS is a loose-leaf publication and document management system for developing, maintaining and sustaining Air Force TOs, operating at the three Air Logistics Centers. ATOS receives, stores and maintains digital TOs and TO change page data and is capable of producing Adobe® Portable Document Format (PDF) output to meet POD requirements in a paperless environment. ATOS consists of seven subsystems; production control, text capture, text generation, graphics capture, graphics generation, review and output. ATOS has the capability to convert technical data from a paper source to SGML and accept SGML deliveries from outside sources. The Standard Generalized Markup Language (SGML) output data is Technical Manual Specifications and Standards (TMSS) compliant.

1.3.4 TO Management and Retrieval Tool (TO.MART). TO.MART is AF-developed software that provides an indexing tool to navigate digital technical order libraries by providing a means to develop a top-down break-down structure, simplifying access to complete weapon systems digital libraries. The software also manages real time updates for field level use, keeping data accurate at the point of use by substituting outdated documents embedded on read only media (i.e., DVD) with updated manuals. TO.MART capabilities are provided by the GCSS-AF TO Viewer for on-line eTOs.

1.3.4.1 The TO.MART software with User's Manual may be downloaded from https://techdata.wpafb.af.mil/field/ToolsMenu.htm.

1.3.4.2 TO Managers and TCMs shall provide copies of the TO.MART software and User Instructions on CD-ROM and DVD used to distribute digital TOs. Additional information about this application is available from the User Manual provided with the software.

1.3.5 Acquisition & Sustainment (A&S) Tool Kit. The A&S Tool Kit is designed to provide standard, repeatable processes to guide the acquisition and sustainment workforce and facilitate life cycle up front planning and programming. The Tool Kit consists of the A&S Processes Matrix, A&S Checklists, and A&S Kneepad Checklist. These files can be accessed at https://afkm.wpafb.af.mil/ASPs/DocMan/DocMain.asp?Filter=OO-LG-MC-37&Folder=OO-LG-MC-37-38&Tab=0.

1.3.5.1 Training. A&S Tool Kit training has been incorporated into several Air Force Institute of Technology (AFIT) and Defense Acquisition University (DAU) courses. Additional information on the Tool Kit is available on the HQ AFMC Product Support Campaign CoP (https://afkm.wpafb.af.mil/ASPs/docman/DOCMain.asp?Tab=0&Filter=OO-LG-MC-37&Filter=OO-LG-MC-37).

1.3.5.2 Management. HQ AFMC/A4A sponsors the AF-wide team that performs A&S Tool Kit expansion and continuous process improvements. The team includes Subject Matter Experts (SME) from the Product and Logistics Centers, various offices within HQ AFMC, and other experts as required. The A&S Tool Kit and its configuration control is the functional responsibility of HQ AFMC/A4A.

1.3.6 Commercial and Government-Furnished Software. Some TO Managers and TCMs will require additional software applications to manage digital TO files. Adobe® Acrobat™ is required for publishing and managing PDF digital files. The Digital TO (DiTO) Change Management Software (https:/ /techdata.wpafb.af.mil/field/ToolsMenu.htm) automates some of the processes to update and re-link Indexed PDF (IPDF) files. Some programs use commercial publishing tools such as Arbortext, FrameMaker and Interleaf to develop SGML-tagged TO files, and government personnel will need these tools to establish an organic TO sustainment capability. TO Managers and their support organizations will need Display Formatting Output Specification Instances (DFOSI), ArborText Editor and Command Publishing Suite (CPS) software to publish SGML-tagged files as HTML eTOs for the AF eTO viewer.

1.3.7 Other Tools. There are specialized management systems used for various sub-categories of TOs, for example: the Security Assistance TO Data System (SATODS) used to manage FMS TO programs; the Automated Explosive Ordnance Disposal (EOD) Publication System (AEODPS) used to publish and manage EOD TOs; the Comprehensive Integrated TO Management System (CITOMS) used in conjunction with JCALS to acquire and manage TOs at Ogden (OO)-ALC and the AF Nuclear Weapons Center (708 Nuclear Sustainment Squadron [NSUS]); the Digital Legacy Data Storage System

(DLDSS) used for digital TO storage and the Defense Integrated and Management of Nuclear Data Services (DIAMONDS; a classified system) used by the Defense Threat Reduction Agency (DTRA) and the AF Nuclear Weapon Center (708 NSUS) to manage and distribute Joint Nuclear Weapons Publications System (JNWPS). The capability to use DIAMONDS must be approved by DTRA and the AF Nuclear Weapons Center, and a stand-alone DIAMONDS terminal must be installed. DIAMONDS is not currently available via SIPRNET. At Warner Robins (WR)-ALC, the TO warehouse functions have been automated by the Prime TO Warehouse System (PTOWS), with digital copies of the entire inventory of assigned TOs hosted on the Centralized TO Repository (CTOR) System. OO-ALC is also storing some TOs on the CTOR System. Oklahoma City (OC)-ALC is using their "TO Virtual Library (TOVL)" for storing digital TOs and the E-3 Program is using the E-3 Integrated Data for Maintenance (E3IDM) system to publish and distribute paper and Portable Document Format™ (PDF) TO files and Electronic Technical Manuals (ETM) from SGML-tagged files. The Reliability & Maintainability Information System (REMIS) is used to track TCTO compliance and equipment configuration.

1.3.8 Tools and Systems Updating. For those systems to be subsumed or eliminated by ETIMS and ECSS, only critical changes and routine maintenance are allowed – other updates must be approved by waiver submitted through HQ AFMC/A4UE to HQ USAF/A4LX.

1.4 WHOLESALE LEVEL TECHNICAL ORDER SYSTEM ROLES.

1.4.1 Program Manager (PM). A PM can be a System Program Director (SPD) or Product Group Manager (PGM) for a system or product line, and serves as the single-face-to-the-user for the system or products. PMs are responsible for the Total Life Cycle System Management (TLCSM) of assigned programs or products. TLCSM is the implementation, management, and oversight of all activities associated with the acquisition, development, production, fielding, sustainment, and disposal of a DoD weapon or materiel system across its life cycle (DoD Directive [DODD] 5000.1, *Defense Acquisition System*). PMs are responsible through the Chief Engineer (paragraph 1.4.3), for preserving attributes of operational safety, suitability, and effectiveness (OSS&E) and mission assurance throughout the operational life, per AFI 63-1201, *Life Cycle Systems Engineering*.

1.4.1.1 The responsible PM or Supply Chain Manager (SCM - paragraph 1.4.2) must establish authorizations and funding for personnel to staff the TO Manager function at the appropriate location IAW 00-5-series TOs. It is imperative the TO Manager be established as soon as possible, but no later than the "Technology Development" phase of a program or during initial staffing for any system or commodity buy, modification or sustainment effort. Authorized personnel will be shown in the JCALS Index Record for each TO. **EXCEPTION:** When the responsible TO manager/FMM is not assigned to the PM organization, the PM will appoint an in-house person to perform program-specific TO Manager/FMM functions.

1.4.1.2 For programs involving the acquisition or sustainment of aircraft, the PM will appoint FMMs to perform similar functions for flight manual TOs, IAW AFI 11-215, *USAF Flight Manuals Program (FMP)*.

1.4.1.3 The PM requests training and guidance, as required, for newly assigned personnel.

1.4.1.4 For acquisition and modification programs, both the PM's acquisition and sustainment functional Offices of Primary Responsibility (OPR) will participate in requirements determination and preparation of inputs for the Request for Proposal (RFP) and TO Management Plan (TOMP), help determine TO types and depth of coverage required, and review and approve or disapprove Contractor Furnished (Aeronautical) Equipment (CFAE/CFE) Notices (CFEN). Ensure requirements meet the using command's digitalization plan/requirements. Ensure sufficient technical data rights are obtained to provide life-cycle support of the weapon system, including priced options for additional rights if support concepts change.

1.4.1.5 The PM will manage the pre-notification, development, release approval and issue of Interim TOs (ITO) and Rapid Action Changes (RAC) for TOs supporting program equipment and commodities.

1.4.2 Supply Chain Manager (SCM). SCMs are designated individual(s) at an Air Logistics Center (ALC) responsible for managing a line of National Stock Number (NSN)-coded items. SCM functions include requirements determination; cataloging, standardization and engineering data management; stock control and distribution; technical management functions; and pricing for their assigned items. SCMs report to ALC Commanders, but are responsible for supplying, repairing, and managing materiel (including TOs) to support PMs. SCM functions are combined with PM functions in this TO.

1.4.3 Chief Engineer. The Chief Engineer is responsible and accountable to the PM for consistent application of disciplined engineering processes, which are documented in the program's System Engineering Plan (SEP) and/or Life Cycle Management Plan (LCMP), to ensure that the system or end-item OSS&E attributes are preserved for the life of the program (AFMCI 63-1201, *Implementing Operational Safety, Suitability, and Effectiveness (OSS&E) and Life Cycle Systems*

Engineering). The Chief Engineer is responsible for approving the technical content of all TOs, unless he delegates this authority in writing IAW AFI 63-1201, *Life Cycle Systems Engineering*. Changes to technical data for end items and commodities must be coordinated with the Program Managers/Chief Engineers of all weapons systems that they will be or are used on prior to issuing any changes, unless the authority has been delegated in writing to the PM/SCM owning the TO.

1.4.4 TO Manager. The TO Manager is responsible for managing some or all of the TOs for a specific military system or commodity program. Management responsibilities include acquisition, sustainment, format, publishing, storage and distribution of TOs and related technical data IAW AFPD 63-1/AFPD 20-1, AFI 63-101, and 00-5-series TOs. When acquisition is being performed at a product center, and sustainment will be managed at an ALC, the PM will ensure TO logistics supportability issues are coordinated with the candidate ALC TO Manager to assure compliance with applicable technical data guidance. During system sustainment, many of the below functions are performed by TCMs, Distribution Managers, and other support functions as delegated. TO Managers will:

1.4.4.1 Initiate and coordinate pre-contract planning for procurement and/or maintenance of TOs. Ensure that all affected commands and agencies (see Chapter 4 and Appendix D) identify and document TO-related requirements. Review and coordinate on test plans to ensure that sufficient time and resources are allocated for TO verification.

1.4.4.2 Prepare, coordinate, and distribute a TOMP (https://techdata.wpafb.af.mil/toprac/working.htm), when required, to all agencies affected. This plan will be developed as soon as possible in the acquisition program, and updated as required (See Chapter 4 and Appendix B) throughout the program life cycle.

1.4.4.2.1 Include processes to review and formalize TOs, review and approve TO and Preliminary TO (PTO) change requests, and review and recommend corrective actions on deficiency reports affecting TOs. Establish controls to ensure that verified TOs are distributed prior to or concurrently with deployment of operational assets. For FMP publications, the FMM performs these functions IAW AFI 11-215.

1.4.4.2.2 Establish satellite activities, such as TO Control Units (TOCU) and Central TOCUs (CTOCUs) when required to assist with management of TO acquisition and sustainment functions. This may include exercising program insight over contractors, assisting with reviews, providing local printing specialist support, or performing government receiving inspection.

1.4.4.2.3 When cost effective, establish a Memorandum Of Agreement (MOA) with the local Defense Contract Management Agency (DCMA) to provide expertise and assistance with contractor TO Program management.

1.4.4.3 Prepare TO-related inputs to all applicable contractual documents and other program documentation. Participate in contract fact finding and negotiations as required. Ensure that RFPs include Contract Line Item Numbers (CLINs) for data rights adequate to support the weapon system for its entire life cycle. If the support concept includes contractor support, ensure that priced options are included for additional data deliveries and increased data rights if support concepts change from contract to organic. See Chapter 5. The TO Manager is responsible for evaluating contractor proposals to ensure that exit criteria for TO verification are adequately defined in the Integrated Master Plan (IMP), that adequate resources and Government Furnished (Aeronautical) Equipment (GFE/GFAE) are planned for incremental verification, and that costs are reasonable and supported by the proposal. See Chapter 6.

1.4.4.4 Ensure that the TM-86-01, *Technical Manual Contract Requirements (TMCR)*, TMSS, Data Item Descriptions (DID), and other contract documents are tailored to the extent necessary to impose only the essential needs for a particular application. Air Force acquisition programs shall use the TMSS specified in the latest version of the TMCR to develop MIL-SPEC TOs, unless existing commercial manuals can be used with no degradation of system or equipment OSS&E.

1.4.4.4.1 Ensure the manner and degree of TMSS tailoring accomplished during contract development is limited to selection of options allowed in the Specification or standard itself, and does not alter Document Type Definition (DTD) requirements. Submit TMCR tailoring that applies to multiple programs and suggested changes/updates to HQ AFMC/A4UE, 4375 Chidlaw Rd Ste 6, Wright-Patterson AFB, OH 45433-5006, e-mail: AF.TOPP@wpafb.af.mil, for possible incorporation into the TMCR.

1.4.4.4.2 Ensure all requested waivers and deviations to TMSS are controlled, documented, and forwarded to HQ AFMC/A4UE for approval or disapproval and possible incorporation into the affected document. Ensure any contractor proposals to use commercial, Non-Government Specifications (NGS) are reviewed by 754 ELSG and approved by HQ AFMC/A4UE.

1.4.4.4.3 Early in the TO acquisition program, use the JCALS “Request a TM Number” process to obtain new TO numbers from OC-ALC/ENGLA. As Preliminary TOs are developed, index them in JCALS so prospective users can begin

establishing subscriptions. For each new TO category, establish a TCTO Series Header for the program's TOs. Maintain TO metadata currency in the index throughout the program life cycle. See Chapter 8.

1.4.4.5 Plan, conduct and co-chair all TO conferences, meetings, reviews, and other joint agency efforts related to the TO acquisition program (Chapter 7). Coordinate with the using command and support agencies to ensure their participation in all TO acquisition activities. Request contracting officer representation in meetings with the contractor as required.

1.4.4.6 Evaluate the contractor's certification process (Chapter 9) (IMP entrance and exit criteria, site visits, past performance) during proposal evaluation. Ensure TO development processes have adequate checks and balances, and procedures to cover standardization of writing. Ensure prime contractors levy certification requirements on vendors and subcontractors.

1.4.4.7 Provide the Responsible Test Organization (RTO) with PTOs to use during Operational Test and Evaluation (OT&E) or TO verification.

1.4.4.7.1 Support the Air Education and Training Command (AETC) with PTOs and other materials for training programs. The TO development effort will not be accelerated solely to furnish PTOs for training purposes.

1.4.4.7.2 During acquisition, deliver copies of preliminary data to verifying units no later than 30-days prior to the scheduled verification or in-process review. For verification of TO updates during sustainment, deliver draft updates to the verifying unit as early as possible before the scheduled verification.

1.4.4.8 Coordinate with other PM functions, ALCs, and the using command(s) to ensure that TOs are compatible with the ETIMS eTO Viewer, program tapes and computer programs and equipment used in the maintenance and operation of systems and commodities.

1.4.4.9 During acquisition, ensure that TO technical content, method of presentation, style and level of writing are in line with the established maintenance concept, and within the skills and training of personnel projected to operate and maintain the equipment. That is, TOs comply with the Technical and System Requirements Documents (TRD/SRD) and applicable TO MIL-SPECs. (During sustainment, the TCM is responsible for TO content.)

1.4.4.9.1 Ensure existing source data is used to the maximum extent possible and is not duplicated for TO development. Review source data to detect errors, deficiencies and nonessential material.

1.4.4.9.2 Ensure newly-developed TO procedures prevent pollution by reducing the use of hazardous materials and the release of pollutants into the environment. TO contents should comply with AFPD 32-70, *Environmental Quality*, Air Force 32-70 series instructions, and Federal Acquisition Regulations (FAR).

1.4.4.10 Establish and manage a quality Air Force verification program. Develop a TO Verification Plan (see Appendix C, TOVP, and https://techdata.wpafb.af.mil/toprac/working.htm) not less than 120 days prior to the scheduled start of verification. Involve all appropriate government and contractor agencies. Coordinate with the using command to obtain personnel to perform the tasks to be verified. Develop and submit adequate budgets to support verification.

1.4.4.11 Review and, in coordination with the using command and support agencies, recommend contractual approval or disapproval of CFAE/CFE Notices (DI-TMSS-80067) recommending program manuals. Review Support Equipment Recommendation Data (SERD) for any TO impacts.

1.4.4.12 Develop budget requirements for TO acquisition and sustainment (Chapter 4). Temporary Duty (TDY) expenses incurred as a result of attending TO acquisition or management functions will be funded IAW AFI 65-601V1. Budget inputs will include modification-related TO update integration costs and the removal of before and after data.

1.4.4.13 If required, authorize, with the written agreement of the lead and using commands, the use of verified PTOs (red-line, mark-up, or clean copies) on specific programs.

1.4.4.14 Ensure proper Distribution Statements (AFI 61-204, *Disseminating Scientific and Technical Information*), are applied to the title pages of all assigned TO-numbered technical manuals and related data, and both the statement code (A-F or X) and primary reason are reflected in the index record for the TOs (paragraph 3.1.4). Ensure TOs authorized for public release have been assigned a case number by the local Public Affairs (PA) office (AFI 35-205, *Air Force Security and Policy Review Program*). Ensure other required title page statements and warnings are applied IAW AFI 16-201, *International Affairs and Security Assistance Management*, and MIL-STD-38784, *Standard Practice for Manuals, Technical: General Style and Format Requirements.*

1.4.4.15 Develop print packages for distribution of printed copies to users. Print packages, consisting of digital TO reproduction master files and an Initial Distribution (ID) label file, are submitted to DLA Document Services TODPS. For follow-on One-Time Requisitions (OTR), use Print On Demand (POD) procedures to the maximum extent possible to avoid creating warehouse stocks. See Chapter 10.

1.4.4.16 Issue all ITOs/RACs affecting the assigned weapon system/commodity. The FMM will perform this duty for changes affecting flight manuals.

1.4.4.16.1 In conjunction with using MAJCOMs, establish and maintain Outlook e-mail distribution lists for ITO and RAC message distribution. **EXCEPTIONS:** When the TO Manager/FMM is not assigned to the PM organization, the PM will appoint an in- house function to perform the TO Manager/FMM responsibilities.

1.4.4.16.2 Index all ITOs and RACs in JCALS and ensure the TO Archive, OC-ALC/ENGLA, TM Account F*10SJ, is an addressee (Outlook address: ocalc.engla.Archive.Repository@tinker.af.mil).

NOTE

Some AFMC Centers are compiling TOs and updates monthly on a CD-ROM/DVD for submittal to the Tinker Archives.

1.4.4.17 In conjunction with the using command, determine the need for a TO command review based on the number of modifications made to affected equipment, the complexity and extent of modifications and resultant TO changes, and the number of Recommended Changes (RC) from other sources (JCALS, Air Force TO [AFTO] Forms 22, *Technical Manual (TM) Change Recommendation and Reply*, or AF Forms 847, *Recommendation for Change of Publication*) received since the last review.

1.4.4.18 Submit new items discovered during TO acquisition and sustainment to the local Lessons Learned office.

1.4.4.19 When programmatic issues interfere with the timely delivery of TOs or updates, ensure TO customers are informed of possible delays using program web sites or TODO e-mail memos.

1.4.4.20 Ensure ETIMS Data Discrepancy Reports (DDR) are corrected within 7 calendar days (paragraph 3.4.4).

1.4.4.21 Join the Air Force Technical Order Managers CoP at https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=21298 and subscribe to folders containing functional user guides (FUG) to ensure automatic e-mail alert when new or revised FUGs are uploaded.

1.4.5 Technical Content Manager (TCM). The TCM is an individual responsible for the accuracy, adequacy, modification, classification and review of TO procedures, engineering data and the related technical contents of a TO. For new acquisitions or major modifications, the TCM role is usually performed by a PM-designated logistician, TO Manager or prime contractor, assisted by an Integrated Product Team (IPT) of engineers, Equipment Specialists (ES) and users. The TCM role for TOs supporting equipment in the sustainment phase is usually performed by the ES responsible for the equipment. TCMs are not generally responsible for style and format or other non-technical aspects of TOs. TCMs will:

1.4.5.1 Manage the content of assigned TOs, and apply the most appropriate Distribution Statement (AFI 61-204) to control the content's dissemination.

1.4.5.2 Approve release of assigned limited distribution TOs to personnel and organizations over and above those authorized by the Distribution Statement. (During acquisition, this function is performed by the TO Manager.)

1.4.5.3 Evaluate Recommended Changes (RCs) for assigned TOs.

1.4.5.4 Develop and coordinate updates to assigned TOs, including ITOs and RACs when urgency requires electronic distribution of the updates. Verify all procedural maintenance or operation task changes, in coordination with the system/equipment Lead/Using command.

1.4.5.5 Perform currency reviews on unclassified TOs which have not been changed for five years, and on classified TOs annually. TCMs must develop a tracking mechanism to ensure their TOs are reviewed in a timely manner.

1.4.5.6 Determine if Service Bulletins, Operations Manual Bulletins, Federal Aviation Administration (FAA) Airworthiness Directives, temporary revisions and like data apply to TO-numbered flight and maintenance manuals, and whether they will be referred to by their commercial numbers or have the data extracted for inclusion in the TO(s).

1.4.6 Flight Manual Manager (FMM). The FMM is the individual responsible for managing the technical content and format of assigned FMP publications. The FMM may also perform some of the TO Manager functions for some Flight Manual TO publications. These duties encompass initial acquisition and verification, maintenance, and periodic reviews. See AFI 11-215.

1.4.7 TO System (JCALS/ETIMS) Subject Matter Expert (SME). The TO System SME is a focal point available to assist users with implementation and use at sites where JCALS and/or ETIMS is available. The TO system SME will:

1.4.7.1 Guide and assist site JCALS and/or ETIMS users to become proficient and productive with system tools and processes to accomplish assigned TO System duties. Assist TO Managers to index, optimize and upload eTOs to ETIMS for distribution to subscribers. Assist TODOs and TO users to establish libraries and eTools for eTO viewing.

1.4.7.2 Guide and direct personnel to obtain and complete necessary JCALS and ETIMS functional training.

1.4.7.3 Assist users with preparation of DD Forms 2875, *System Authorization Access Request (SAAR)* or GCSS-AF Forms 41 (same title) as required. Review and approve DD Forms 2875 requesting JCALS access and ensure only required roles and privileges are requested, consistent with AF policy. Forward approved forms to the JCALS Systems Administrator (SA). GCSS-AF Forms 41 are used to request an AF Portal account so ETIMS can be accessed.

1.4.7.4 JCALS Only: Assist JCALS SA with evaluation of JCALS System performance, submission of Help Desk Resolution Center (HDRC) tickets and to establish JCALS user organization structure and assign system roles. Assist JCALS SA and JCALS user personnel with installation and set up of JCALS System software and necessary system workflow templates to complete assigned duties.

1.4.7.5 ETIMS Only: Assist users with identification and reporting of ETIMS system and functional problems.

1.5 ETIMS APPLICATION ROLES: DESCRIPTION, ASSIGNMENT RESPONSIBILITY, AND MANAGEMENT PROCESSES.

1.5.1 ETIMS Application Roles Hierarchy. Figure 1-1 below illustrates the ETIMS role hierarchy. Users in administrative roles can assign AF Portal users (having an AF Portal Identification [ID]) to roles shown below the admin role in the hierarchy. For instance, a Super Admin can assign any AF Portal user to any other role. An ETIMS Application Admin user can assign portal users to any of the subordinate roles in the third tier of the hierarchy. AF Portal users assigned admin roles will use the GCSS-AF Tivoli Access Manager (TAM) Admin service to assign roles to duly authorized and designated AF Portal users. The ETIMS roles have corresponding GCSS-AF TAM roles.

1.5.2 Staffing. The ETIMS PMO, 754 ELSG is responsible for staffing Super Admin and ETIMS Application roles. Initially, the 754 ELSG will staff two Super Admin roles. The names of the Super Admin users will be documented in the GCSS-AF Load Letter that establishes the ETIMS application in the AF Portal. The number of ETIMS Application Admin roles is not determined at this time. However, 754 ELSG/ILMT will establish processes and responsibility for the management and assignment of subordinate roles in line with the descriptions documented below for each Role shown in the hierarchy.

1.5.3 Super Admin. (TAM name: A47_A4M_ETIMS-SuperAdmins). OPR: 754 ELSG/ILMT. Super admin users can assign portal users to any of the roles numbered 2 through 7 in the hierarchy, but will typically only assign portal users to an ETIMS Admin role. Super Admin users are designated by name and documented in GCSS-AF ETIMS Application Load letter.

1.5.4 ETIMS-Admin. (TAM name: A47_A4M_ETIMS-Admins). OPRs: 754 ELSG/ILMT and AF TO Functional Support Team (AF TOFST). ETIMS Admin users can assign portal users to the ETIMS TO Management Activity (TOMA), Data Qualtity Team (DQT) DQT Reviewer, eTool Admin, or eTool Group Admin roles. Requests for ETIMS Admin role are forwarded to and approved by 754 ELSG/ ILMT and AFMC/A4N.

1.5.5 TOMA. (TAM name: A47_A4M_ETIMS-TOMAUsers). OPR: Product / Logistics Center TO Home offices. The ETIMS TOMA role can optimize, upload and manage eTOs in ETIMS eTO repository. Only complete AF eTOs including changes and annotated AF level TO Supplements, if any, should be loaded to the ETIMS repository. Individuals given the ETIMS TOMA role must also have the JCALS TO Manager role. The TO Home Office POC will forward approved DD Form 2875 along with the user's AF Portal ID to the 754 ELSG/ILMT at etims@wpafb.af.mil. The ILMT ETIMS Admin user will validate that the user is a TO Manager in JCALS, and then assign the ETIMS TOMA role. The TO Home office is

also responsible for notifying 754 ELSG when a user no longer possesses JCALS TO Manager role or when roles change from one individual to another. Procedures will be documented in this TO and TO 00-5-1.

1.5.6 Data Quality Team (DQT) Reviewer. (TAM name: A47_A4M_ETIMS-DataQualityTeamUsers). OPR: HQ AFMC/A4N. Individuals assigned this ETIMS role will have access to DQT Reviewing function in ETIMS to address user-reported data quality issues with TO Catalog. All field requests for the DQT Reviewer role will be forwarded to HQ AFMC/A4N for approval at Stacy.Teate@robins.af.mil. A4N will notify 754 ELSG/ILMT to assign the DQT Reviewer role to approved personnel. This TO and TO 00-5-1 will be updated to implement this process.

1.5.7 eTool Admin. (TAM name: A47_A4M_ETIMS-eToolAdmins). OPRs: TO account management office at OC-ALC (OC-ALC/ENGLA), 754 ELSG/ILMT. An individual that has the ETIMS eTool Admin role will have access to ETIMS functions to register Master eTools, associate TO libraries and audit assigned Master eTool status. Initial assignment of eTool Admin role should be done as part of the MAJCOM eTO Deployment Plan and sent to 754ELSG/ILMT at etims@wpafrb.af.mil. Follow-on assignment of the role will coincide with the designation of a primary and alternate TODO POC as Lead TODOs on the AFTO Form 43. Upon review and approval of the AFTO Form 43, OC-ALC/ENGLA will forward the approved AFTO Form 43 to the 754 ELSG at etims@wpafb.af.mil. New forms must be submitted whenever the Lead TODO personnel change. The approved AFTO Form 43 will also be provided to the Group eTool Admin who will move eTools to the new eTool Admin user. TO 00-5-1 will be updated to require Lead TODO designation on the AFTO Form 43 as well as the process for forwarding approved AFTO Forms 43 to 754 ELSG for assignment of the eTool Admin role to users designated as eTool Admin users.

NOTE

Once a TODO is assigned the eTool Admin role, they need go into ETIMS and select the TO viewer link. Once the TO viewer is open you should see the eTool Admin link on the menu bar. If the link is present then you are registered, then click the link to enter the eTool Admin area. Lead TODOs must do this once to self-register after they have received a message saying they were successfully registered in GCSS.

1.5.8 eTool. (TAM name: A47_A4M_ETIMS-eTools). OPR: Using Organization eTool Admin users. This role contains the Master eTools. The eTool role enables an ETIMS registered Master eTool to validate itself with GCSS-AF to receive eTO distribution from ETIMS. This role is assigned once an eTool is registered as a Master eTool. Registration requires that an eTool be assigned a GCSS-AF Lightweight Directory Access Protocol Identification (LDAP ID). The LDAP ID is then used to obtain a PKI client machine certificate for the eTool. Once the certificate is installed in the eTool, the eTool may then be registered as a Master eTool. TODOs having the eTool admin role will request LDAP IDs for eTools from 754 ELSG. TODOs will coordinate support of their local CSA to install PKI certificates on eTools designated as Master eTools. The ETIMS installation and set up guide will document this process in detail.

1.5.9 eTool Group Admin. (TAM name: A47_A4M_ETIMS-eToolGroupAdmins). OPR: 754 ELSG/ILMT. A user with the eTool Group Admin role can view eTool currency metric reports and transfer eTools between eTool Admin users. Assignment of this role is restricted to ETIMS System Administrator and AF Technical Order Functional Support Team.

1.5.10 ETIMS TM Account POC (TODO) (Added - not a TAM role.). OPR: OC-ALC/ENGLA, TO Account Management Office. A primary or alternate TODO POC will be assigned as ETIMS TM Account primary or alternate. These users will manage assignment of users to sub-account and sub-account library primary and alternate roles to other organization ETIMS users. Once OC-ALC/ENGLA approves an AFTO Form 43 assigning or changing TODO POC users, it will be forwarded to the ETIMS Application Admin to add the users to the ETIMS Person List. Users no longer designated as TODO Primary or Alternate must be removed from the Person Table.

NOTE

There is no risk if a user remains in the Person Table unless they remain associated with a TM Account. User/account association may be managed locally by a user designated as TM Account primary or alternate.

1.5.11 Help Desk - Support Team. (TAM name: RFILE-ADMINS-ETIMS). OPR: Managed by GCSS-AF Ops & Support. This TAM role does not fall under the control of ETIMS application. This is an additional role (not shown in hierarchy) that is used by ETIMS Help Desk and Support Team users. This role allows portal users to access technical log files for the purpose of debugging reported incidents. If portal users assigned this role need to be changed, the 754 ELSG must send a formal Memo to GCSS-AF requesting the change.

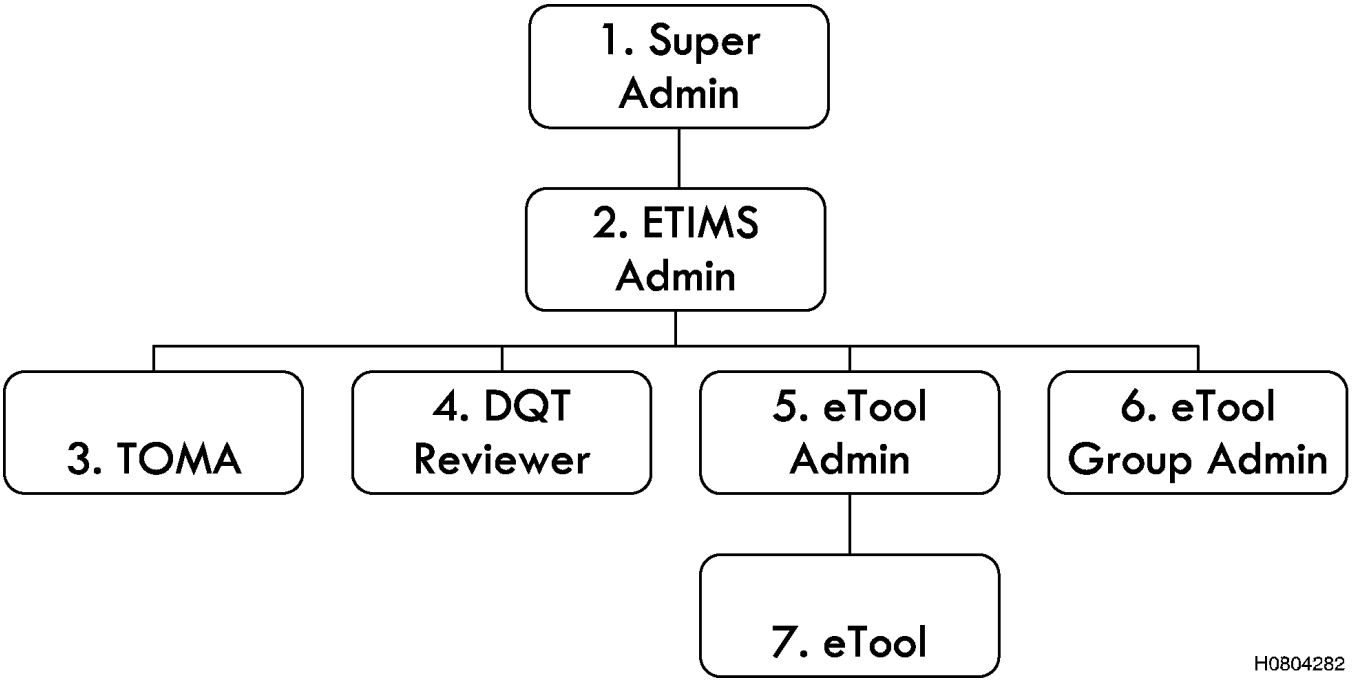

Figure 1-1. ETIMS Role Hierarchy

CHAPTER 2
RESPONSIBILITIES

2.1 GENERAL.

2.1.1 TO Management. The Program Manager (SPM/PM/PGM) responsible for a program or commodity manages TO acquisition and sustainment by establishing a TO Management Organization. The Chief Engineer or equivalent will review and approve all TOs affecting the system or commodity Operational Safety, Suitability and Effectiveness (OSS&E) baseline IAW the Systems Engineering Plan (SEP - AFI 63-1201).

2.1.2 Location. If an acquisition or modification program is managed at a product center, the primary TO Manager responsibilities will be there also. The prime ALC will normally assume full TO Manager responsibility after system maturity (see definitions) or modification completion.

2.2 HQ AIR FORCE MATERIEL COMMAND (AFMC).

2.2.1 Directorate of Logistics - Life Cycle Management Division (A4U). A4U has overall responsibility for AF policy governing the TO system. A4U issues Air Force policy for managing the TO system and provides the final authority for waivers to that policy, ensures compatibility between the Flight Manuals Program (FMP) and the TO system; and approves all service tests and studies of new techniques for use in all facets of the TO system. A4U is also responsible for developing, coordinating and implementing AFMC TO system policies. In addition, A4U:

2.2.1.1 Is the Air Force and AFMC TO system point of contact for receipt, interpretation and dissemination of AF policy, business practices and procedures on the TO system. Reviews and approves or disapproves requests for waivers to Air Force TO policy, and assists users with problem resolution.

2.2.1.2 Ensures AFMC organizations comply with AFJI 21-301, *Interservicing of Technical Manuals and Related Technology*, for the acquisition and sustainment of joint service military systems and commodity TMs. Cooperates with other services to encourage cross-utilization of TOs.

2.2.1.3 Is the TCM for 00-5-series TOs and Air Force/AFMC 20-x series publications on the TO system. Is the TCM for 00-20-series TOs on Maintenance Data Documentation.

2.2.1.4 Manages and controls the Air Force TMCR, TM-86-01 (https:/ /techdata.wpafb.af.mil/toprac/working.htm).

2.2.1.5 Manages and controls the Data Item Descriptions (DID) used with the Air Force TO System.

2.2.2 Directorate of Operations - Standardization/Evaluation Division (A3V). A3V is the Air Force Flight Manual Program Management Office of Primary Responsibility (OPR). A3V is the OPR for AFI 11-215 and manages the FMP for HQ AFMC.

2.2.3 Directorate of Communications and Information (A6). A6 responsibilities include the Information Assurance (IA) program and various communications programs.

2.2.4 Engineering Directorate (EN). EN is responsible for oversight of the Systems Engineering process for all weapon systems. EN also disseminates and implements AF and AFMC Scientific and Technical Information (STINFO) policy and procedures.

2.3 OTHER ACQUISITION ORGANIZATIONS.

Other organizations involved in TO acquisition, such as the Air Force Network Integration Center (AFNIC) (formerly the Air Force Communications Agency [AFCA]), will perform functions and responsibilities similar to those of HQ AFMC (paragraph 2.2).

2.4 AIR EDUCATION AND TRAINING COMMAND (AETC).

AETC will assist the TO Manager with TO acquisition by participating in TO Planning/Requirements Conferences, Guidance Conferences, In-Process Reviews (IPR), verification, and pre-publication reviews as required to determine training needs and requirements.

2.5 USING COMMANDS/DEPOT MAINTENANCE WINGS.

The Using Command (or the affected Depot Maintenance Wing when depot-level TOs are involved) will:

2.5.1 Designate a command focal point for each command TO acquisition program and inform the TO Manager of the designated name, office symbol, and phone number. For acquisition of TOs to support new depot taskings, the affected depot maintenance wing will identify a focal point.

2.5.2 Provide qualified personnel to support TO acquisition activities, with signature authority to represent for their respective organizations. The Using Command functional manager or Depot Maintenance Wing maintenance chief will ensure that command/depot systems and end items, support equipment, tools, facilities and consumables are made available to support verification IAW schedules developed in coordination with the TO Manager. Program-unique hardware and support equipment will be provided by the PM. Provide qualified personnel, including a Verification Team Manager (VTM) if required, to support the verification effort. The same people should be available for any future related or follow-on verification efforts to provide continuity of effort.

2.5.3 Develop a TO digitization strategy for new acquisition programs and existing TOs to meet the guidelines established in the AF TO CONOPS. Assist the TO Manager to determine the scope of technical material to be included in TOs and the overall needs of the user.

2.5.4 Perform verification of TOs for assigned military systems and commodity end items IAW approved verification plans. The TO Manager, in coordination with the Using Command, may designate or delegate this responsibility to a separate organization.

2.5.5 Notify the TO Manager of any TOs which require post-publication reviews.

2.6 AIR LOGISTICS AND PRODUCT CENTER (ALC & PC) TECHNICAL ORDER HOME OFFICES.

The ALC or PC TO Home Offices will provide oversight of Center TO Management processes.

2.6.1 Act as the ALC or PC single point of contact for interpretation and dissemination of policy and procedures affecting TOs. Be responsible for submitting center positions on proposed policy and procedure changes to OPRs for resolution and approval.

2.6.2 Develop proposals and criteria for TO system improvements and submit to HQ AFMC/A4UE for coordination and approval.

2.6.3 Provide specialized assistance, training and guidance to PMs, SCMs, Chief Engineers, TO Managers and Technical Content Managers (paragraph 1.4, Wholesale Level TO System Roles) as required.

2.6.4 Be the Center POC for TO Management checklists and inspections of Center TO Management processes.

2.7 AIR FORCE NUCLEAR WEAPONS CENTER (NWC).

2.7.1 708th Nuclear Sustainment Squadron (708 NSUS). 708 NSUS is responsible for Category 11N and 60N TOs, -16 Weapons Loading, Air Transportation and Delivery TOs and -25/-30 Aircrew Delivery TOs during a nuclear weapon system's life-cycle. In addition, 708 NSUS is the AFMC focal point for management of Category 1 nuclear weapon loading, air transport and delivery TOs, and Category 11N air-launched missile warhead mate/demate TOs listed in TO 0-1-11N-1-CD-1; individual managers are assigned as TCMs and FMMs. Authority for acquisition of nuclear weapon system TOs is assigned to an aircraft or missile PM located at either a Product Center or an Air Logistics Center. Acquisition responsibilities are shared between the PM and 708 NSUS.

2.7.2 708 NSUS Technical Support Flight (NWLT). During the acquisition phase of a system, the 708 NSUS/NWLT will:

2.7.2.1 Establish initial requirements by submitting responses to data calls from PM data managers.

2.7.2.2 Assist TO Managers or other representatives designated by the TO Manager to ensure development of adequate nuclear weapons TOs. Review and coordinate on contractor-prepared plans when nuclear weapons TOs are included. Attend, support, and provide guidance at reviews and conferences for nuclear weapons TOs. Attend verification of nuclear weapon TOs.

2.7.2.3 Coordinate, review and approve or disapprove CFAE/CFE Notices related to nuclear weapons systems and commodities.

2.7.2.4 Process Recommended Changes (RCs - AF Forms 847, AFTO Forms 22 and AFTO Forms 252, *Technical Order Publication Change Request)* on nuclear weapon TOs IAW applicable directives. Process AFTO Forms 27, *Preliminary Technical Order (PTO) Publication Change Request (PCR)/TO Verification Record/Approval*, according to individual acquisition program TOMPs.

2.7.2.5 Establish and maintain responsibility for numbering, indexing, storing and requisitioning nuclear weapon TOs. Issue Initial Distribution (ID) labels for assigned TOs. Print and distribute formal nuclear weapon TOs and supplements.

2.7.3 Joint Nuclear Weapons Publication System (JNWPS). 708 NSUS Nuclear Weapons Logistics Operation Flight (NWLO) is the Air Force Executive agent for JNWPS publications. As such, 708 NSUS NWLO staffs, coordinates, approves, and represents the Air Force on all matters relating to JNWPS manuals which bear an Air Force designator. JNWPS procedures and specifications covering publication system management, general style, format, and technical content requirements are in TO 11N-1-1, *Joint Nuclear Weapons Publication System Operating Procedures, Specifications and Standards*. JNWPS includes maintenance, inspection, transportation, and general procedures manuals for gravity ordnance, warheads, reentry vehicles and bodies, and joint test assemblies. JNWPS manuals provide weapon summary data, assembly, test, maintenance, storage information, EOD and control procedures.

2.7.4 498 Nuclear Systems Division (NSD)/NWW. 498 NSD/NWW will:

2.7.4.1 Review and approve Intercontinental-Ballistic Missile (ICBM) Critical Component TOs prior to publication.

2.7.4.2 Evaluate, review changes and maintain process records of proposed Operation Certification (OPCERT) procedures for ICBM Critical Components.

2.8 OO-ALC/GHGMA, OGDEN AIR LOGISTICS CENTER (OO-ALC), GLOBAL AMMUNITION CONTROL POINT (GACP), AND OO-ALC/GHGAMA, WARNER ROBINS AIR LOGISTICS CENTER (WR-ALC), GACP AIR SUPERIORITY CELL (ASC).

OO-ALC/GHGMA executes the Air Force GACP mission and provides timely, efficient and cost effective inventory, transportation, safety and demilitarization services to Air Force and Foreign Military Sales (FMS) customers for conventional munitions and explosives. The OO-ALC/GHGAMA executes the GACP ASC mission and provides support for tactical missile logistics, engineering and research, development, test and evaluation, technical sustainment, product assurance, and life-cycle sustainment to support all MAJCOMs and FMS customers. The control points are TCMs for all munitions and explosives TOs and custodians of all munitions loading Standard Data Packages (SDP) (Chapter 16). These control points will:

2.8.1 Assist in development of nonnuclear munitions TO specifications.

2.8.2 Attend TO acquisition reviews and verification, provide explosive safety standards and criteria, and ensure standardization of terminology and procedures in nonnuclear munitions TOs.

2.8.3 Incorporate nonnuclear munitions source data into existing general conventional munitions, missile and explosives TOs (Categories 11, 21, 31, 33 and 35).

2.8.4 Publish source data to other agencies responsible for munitions TO development and update.

2.8.5 (OO-ALC only) Maintain, update and distribute formal munitions family-group SDPs.

2.8.6 (OO-ALC only) Prepare and distribute a -33 SDP index quarterly.

2.9 AIR FORCE METROLOGY AND CALIBRATION (AFMETCAL).

AFMETCAL will:

2.9.1 Provide an Air Force member to the Department of Defense (DoD) Joint Technical Coordination Group for Calibration and Measurement Technology (JTCG-CMT), IAW AFI 21-113, *Air Force Metrology and Calibration (AFMETCAL) Program*. Provide support to sub-group activities according to the Joint Program Operational Plan.

2.9.2 Procure and manage calibration TOs numbered in Category 33K, and publish and maintain Air Force Weapon System Calibration and Measurement Summary (CMS) TOs (AFI 21-113). Review and approve calibration procedures in other category TOs.

2.9.3 Periodically issue routine Category 33K Interim TO (ITO) updates with distribution limited to USAF Precision Measurement Equipment Laboratories (PMEL) who require the changed calibration data. This may include use of an AFMETCAL information management (electronic bulletin board) system to manage, index, and distribute electronic versions of Air Force calibration TOs.

2.10 OC-ALC/ENGL, TECHNICAL ORDERS AND SOFTWARE SYSTEMS BRANCH.

2.10.1 ENGLA manages and controls the processes for TO numbering and TCTO data codes (TOs 00-5-18 and 00-5-15), assigns TODO Codes for TO System users, operates a “Help Desk” function for TODOs, manages the Air Force TO Archives (Repository), and is the JCALS/ETIMS POC for Tinker AFB.

2.10.2 ENGLB manages the Automated Computer Program Identification Number System (ACPINS), and is responsible for the ACPINS Database.

2.10.3 ENGLC manages the SAP/FMS TO Section and the Security Assistance Technical Order Data System (SATODS).

2.11 754 ELECTRONIC SYSTEMS GROUP (ELSG)/ILMT.

2.11.1 The Technical Data Section of ILMT manages the sustainment and modification of legacy technical data management systems, including JCALS, ETIMS, ATOS and the Joint Engineering Drawings Management Information and Control System (JEDMICS), among others. ILMT also maintains the TO System Information web page.

2.11.2 ILMT is designated as Preparing Activity for the majority of the TMSS for the Air Force (AF), including AF S1000D business rules (BRs), once formalized as a DTL spec in ASSIST. As such, ILMT develops and maintains currency of assigned TMSS in coordination with AF and other Services’ users and interested industry associations. ILMT coordinates in reviews of requests for deviation or waiver to AF TMSS and assists customers and users with problem resolution.

2.12 46 SK/SKA, AIR FORCE SEEK EAGLE OFFICE (AFSEO).

AFSEO provides support for most nonnuclear munitions and aircraft stores acquisition and modification programs (Chapter 16). AFSEO will:

2.12.1 Assist the munitions and aircraft TO Managers with development of contracts and plans for nonnuclear munitions and stores source data and TO acquisition.

2.12.2 Act as TCM for nonnuclear munitions TO specifications and data item descriptions. Assist with specification interpretation.

2.12.3 Attend TO reviews and verifications to ensure use of standardized formats, terminology and procedures.

2.12.4 Develop aircraft or stores unique procedures for delivery, loading and handling of nonnuclear munitions and aircraft stores.

2.12.5 Provide technical expertise for development of updates to -33 and -34 data.

2.13 412 TEST WING (TW), TECHNICAL ORDER DEVELOPMENT OFFICE.

The 412 TW, Edwards AFB CA, is the RTO for Development Test and Evaluation (DT&E) of most aircraft and many aircraft systems acquisition and upgrade programs. The TO Development Office, 412 TW, is a center of expertise for

assisting program TO Managers with the acquisition, development, review and verification of TOs. When tasked by the PM (usually in a Program Introduction Document - PID), the 412 TW will:

2.13.1 Assist missile and aircraft TO Managers with planning and development of RFPs, TMCRs, TOMPs, and TOVPs.

2.13.2 Participate with the Integrated Product Team (IPT) in TO reviews to ensure compliance with style, format, and technical content requirements. Assist the IPT with insight into the contractor's certification processes.

2.13.3 Manage the government's TO verification program.

2.13.4 Participate in TO Review Boards (TORBs) and manage the formalization and maintenance of TOs.

2.13.5 When a Flight Manual Manager (FMM) is assigned by the Program Manager during acquisition of a new weapon system, the FMM will assist the 412 TW in managing the Flight TO verification program and he will participate in Flight Technical Order Review Boards (FTORB). The FMM will manage the formalization of new Flight TO's.

2.14 AIR ARMAMENT CENTER (AAC)/AQY.

AAC/AQY, Eglin AFB FL, is the TO Home Office and center of expertise for assisting program TO Managers with the acquisition, development, review and verification of TOs. AQY will:

2.14.1 Act as TCM for nonnuclear munitions standard volumes; TOs 1-1M-33, 1-1M-34 and 1-1M-34-1. AQY will lead the Integrated Product Team (IPT) in TO reviews to ensure compliance with style, format, and technical content requirements for the munitions standard volumes.

2.14.2 Serve as the AF JCALS Information Systems Security Officer (ISSO) providing security guidance and oversight to all AF JCALS sites.

2.14.3 Act as the focal point for the Help Desk Resolution Center (HDRC), https://techdata.wpafb.af.mil/hdrc/db/index.asp, for all AF JCALS sites. Track and report JCALS system metrics to the Air Force PM for all HDRC tickets and JCALS hardware and software problems.

2.14.4 Assist AF JCALS sites to resolve technical issues with JCALS, and assist ETIMS users to resolve technical issues with ETIMS and with TODO account management.

2.14.5 Review draft copies of TO guidance, policies and automated computer programs prior to AF implementation in regards to ETIMS/JCALS processes.

2.14.6 Create and manage TO manager related functional user guides (FUG) and upload and manage these FUGs on the Air Force Technical Order Managers CoP.

2.15 DETACHMENT (DET) 63, HQ AIR COMBAT COMMAND (ACC).

Det 63, HQ ACC, 2008 Stump Neck Road, Indian Head MD 20640-5099, e-mail: NIPRnet - det63@navy.mil; SIPRnet - det63@jeodnet.smil.mil, is the Air Force focal point and liaison to the Naval Explosive Ordnance Disposal Technology Division (NAVEODTECHDIV) for Category 60 EOD TOs. Det 63 will:

NOTE

NAVEODTECHDIV develops, manages and assigns Air Force Category 60 TO numbers to Joint Service EOD TOs. They distribute joint service nonnuclear EOD TOs, using the Automated EOD Publication System (AEODPS), for all services.

2.15.1 Assist the NAVEODTECHDIV with joint service verification and determine usability of EOD TOs.

2.15.2 Manage and assign EOD TODO Account Codes.

2.15.3 Distribute nonnuclear EOD TOs using the AEODPS according to records maintained by NAVEODTECHDIV.

2.16 309 AEROSPACE MAINTENANCE AND REGENERATION GROUP (AMARG).

The 309 AMARG, Davis-Monthan AFB AZ, is responsible for receiving, storing, regeneration and salvage of aircraft, missiles, components and manufacturing equipment for the Air Force, other DoD components, and other U.S. Government agencies.

2.16.1 AMARG Processes. AMARG performs field and depot level maintenance on aircraft and missiles in their custody, including inspection, preservation, regeneration to operational status, parts removal, packaging, shipping, and salvage of parts and equipment no longer required.

2.16.2 AMARG Reclamation Removal Work Packages. TO extracts used to perform AMARG processes are maintained in Mission/Design/Series (MDS)-specific reclamation removal work packages, and are authorized for use IAW TO 00-5-1. TOs and extracts included in Reclamation Work Packages may not be the most current editions according to the AF TO Catalog, but will be the latest versions applicable to the MDS covered.

2.16.2.1 TO extracts used for locating parts and equipment on AMARG aircraft will be marked “FOR REFERENCE ONLY.”

2.16.2.2 TO extracts used for maintenance must be marked to show the date and version of the parent document (unless the document title page showing this data is part of the extract). They do not require the reproduction date or FOR REFERENCE ONLY markings.

CHAPTER 3
TECHNICAL ORDER SECURITY REQUIREMENTS AND BUSINESS PRACTICES

3.1 TECHNICAL ORDER SECURITY REQUIREMENTS.

3.1.1 General. TOs can contain classified data up to and including Secret Restricted Data. The following procedures apply to classified and unclassified TOs containing data whose distribution must be controlled. TO Managers and TCMs/Flight Manual Managers will:

3.1.1.1 Verify TO data classification using the applicable Security Classification Guide (SCG). For contractors, the applicable SCG may be listed in the DD Form 254, *Contract Security Classification Specification, Department of Defense*. Ensure the TO title page and each page and paragraph in a classified TO is marked IAW DoD 5200.1-R, *DoD Information Security Program Regulation*, and AFI 31-401, *Information Security Program Management*.

3.1.1.2 Issue classified technical data in supplemental TOs to the maximum extent possible to keep the majority of TOs unclassified (TO 00-5-1). TO titles will be unclassified to the maximum extent possible.

3.1.1.3 Use the applicable SCG as authority to classify TO data needing security protection. Review contractor-prepared classified PTOs to ensure they have the proper security markings annotated IAW DoD 5200.1-R and AFI 31-401. Advise the contractor of any required revisions to the PTOs or DD Form 254.

3.1.1.4 Review classified technical data during every TO update action or at least annually for possible classification downgrading according to the applicable SCG or DoD 5200.1-R. TCMs must develop a tracking mechanism to ensure their TOs are reviewed in a timely manner. The task schedule should be set for less than one year to allow time to complete the review within the required one-year period. Initial data for overdue currency review tracking may be obtained from HQ AFMC/A4UE.

3.1.1.5 TO classification changes are disseminated via a TO change or revision and listed in the "Search New, Updated and Inactive TOs" function of the AF TO Catalog.

3.1.1.6 Issue unclassified updates to Classified TOs whenever possible. When indexing unclassified updates to a classified TO, TO Managers must first index the updates in JCALS, which will assign the parent TO classification to the update. Then the TO Manager must change the classification **of the unclassified update only** to "Unclassified," ensure the JCALS indexing fields "PUB TITLE SECURITY" and "PUB SECURITY" indicate "Unclassified," and verify that both fields match.

NOTE

If the Security fields do not match, the JCALS index record will default to the parent TO classification, which will cause misidentification of an Unclassified change as Classified.

3.1.1.7 Do not use the "Not for Foreign Release" (NOFORN) marking on TOs. In accordance with DoD 5200.1-R, *Information Security Program,* this code is only authorized for U.S. intelligence information.

3.1.2 Classification Upgrades. HQ AFMC must concur in the interpretation of the cited classification authority for upgrading the classification of an already-distributed TO (if the TO was too widely distributed, reclassification may not be possible.) Notify HQ AFMC/A4UE and the local Information Security Program Manager (ISPM) (Security Forces) of the circumstances requiring an upgrade by classified message. Include the new level of security classification, the classification authority, the number of copies issued, the length of time the information has existed at a lower classification and if the information is available from unclassified sources.

3.1.2.1 A4UE shall consult with HQ AFMC/A7FXP to determine whether the security classification action is Original Classification Authority directed. If so, a classified message furnishes authority to begin the upgrade action.

3.1.2.2 The TCM issues an Emergency Interim Operational Supplement (IOS) or RAC IAW Chapter 13 to upgrade the affected TO, and notifies the responsible TO Manager to update the TO index entry.

3.1.2.3 The TO Manager notifies the warehouse responsible for stocking the TO of classification upgrades. The warehouse will re-mark existing copies in stock, transfer them to a classified storage area, and update the stock location in JCALS.

3.1.3 Classification Downgrade/Declassification. The TO Manager will issue an update directing the appropriate downgrade or declassification actions IAW DoD 5200.1-R/AFI 31-401. The warehouse will remark all stock of downgraded or declassified TOs before making further distribution. Transfer declassified TOs to unclassified TO storage and update the location in JCALS.

NOTE

Downgrade of a small amount of material that does not change the overall classification of the TO should not be the sole justification for issuing a TO update. However, notification of the downgrading action and the data involved must be provided to users of the TO.

3.1.4 Scientific and Technical Information (STINFO) Distribution Limitations. Distribution Statements specified in DoDD 5230.24, *Distribution Statements on Technical Documents*, shall be used IAW AFI 61-204 to mark all TOs and other technical data to specify availability for secondary distribution, release and disclosure without additional approval or authorization from the Controlling DoD Office (See Table 3-1). (Primary distribution is made by the Controlling [originating] DoD Office.) A distribution statement marking is distinct from and in addition to a security classification marking assigned IAW DoD 5200.1-R/AFI 31-401. Air Force personnel who originate or are responsible for technical documents must follow guidance contained in AFI 61-204, summarized below:

NOTE

Do not confuse the distribution statements formerly used for standard, non-technical publications (AFI 33-360, *Publications and Forms Management*) **with those used for TOs and technical data (AFI 61-204).** The latest revision to AFI 33-360 has replaced these distribution codes (F, X, and L) with a releasability statement. However, the old codes will continue to appear on older AF publications for some time. The code "F" meant "Public Release" for standard publications, but no release without Controlling DoD Office permission for technical data. AFI 33-360 used "Limited (L) Distribution" or "Special (X) Distribution" for restricted distribution. Code "X" in AFI 61-204 indicates "Export Controlled" technical data.

3.1.4.1 Distribution Statements. TO Mgrs, FMMs and TCMs shall mark interim and formal TOs, TCTOs, PTOs, TO updates, source data, and other technical data (see definitions) with proper distribution statements before disseminating them. Apply the single most appropriate distribution statement (A, B, C, D, E, F or X - Table 3-1) from AFI 61-204. Use both the letter designator and the verbiage from AFI 61-204, and fill in up to three reasons, the date of determination, and the controlling DoD office (normally the PM or TO Manager office symbol). Other changes to these distribution statements are prohibited. Ensure these codes and their reasons are reflected in the index record for individual TOs.

3.1.4.1.1 Significant Military Equipment. For purposes of determining the appropriate distribution markings for Air Force TOs, and other technical documents, controlling offices shall refer to the United States Munitions List (USML), the Commerce Control List (CCL), and the Military Critical Technologies List (MCTL) IAW AFI 61-204 AFGM1. The USML designates some technical data items as Significant Military Equipment. Technical data supporting items with this designation contains information that justifies higher levels of protection. This technical information shall be restricted solely to U.S. DoD activities or U.S. DoD contractors who hold contracts to specifically support such military equipment or have a legitimate business relationship with the Department of Defense. The Department of Defense has the sole responsibility for determining that a legitimate business relationship exists since the only purpose is to provide access to information created by or under the control of the Department of Defense. Acceptable distribution statements are "D," "E," or "F." Lower levels of protection may be justified for technical data in the USML that is not designated SME. Acceptable distribution statements are "B," "C," or "X." Higher levels of protection may be applicable based on the specific content of the documents. Technical data not specifically related to items on the USML, CCL, or MCTL will be assigned a distribution statement justified by the content of the document.

3.1.4.1.2 Distribution Statement "A" (public release). TOs for public release must be reviewed and assigned a case number by the local PA office prior to release. Add the following statement immediately below the distribution statement wording: "Public Affairs (PA) Case (*or Certificate)* Number _____. Submit recommended changes (*or problems*) with this TO to the TO Manager's office listed in the AF TO Catalog." The exact wording is not critical.

3.1.4.1.3 Proprietary Data. If the distribution statement reason is "Proprietary Data" (distribution statements B and E only), add a TO title page statement of government rights to disseminate, use, copy, etc., the data (paragraph 5.17). When creating a

technical document containing company proprietary data, in addition to the distribution statement on the title page, the data owner shall mark each page that contains proprietary information with the word “proprietary” and the name of the company (e.g., “Boeing Proprietary”).

3.1.4.1.4 Supplements and Derived Data. Publish supplements using the distribution statement applicable to supplement contents, not necessarily the parent TO’s distribution statement. If derived documents are generated from the parent technical data, apply the parent document distribution control markings to the derived documents, unless the purpose was to publish unrestricted data in an unrestricted document.

3.1.4.1.5 JCALS FOUO Code. Do not use the “For Official Use Only (FOUO)” code when indexing TOs in JCALS, but select the Limited Distribution statement code and reason assigned to the TO.

3.1.4.1.6 COTS Manuals. Distribution Statements must be assigned to Commercial Off-the-Shelf (COTS) manuals when they are adopted as TOs. In cases where the Air Force has unlimited rights, this may be Distribution “A,” because these manuals are publicly available (a PA release certificate is still required). In some cases, the vendor may have copyrighted the manuals, and if the Air Force does not have a copyright release (usually marked on the title page), the distribution statement should be “C” or “D.” In rare cases, non-commercial contractor manuals may contain proprietary data -in order to be considered proprietary, they must be marked by the vendor/contractor as shown in paragraph 3.1.4.1.3, and will carry distribution statements “B” or “E.” Distribution statements and other title page notices and warnings listed below shall be placed on an Identifying Technical Publication Sheet (ITPS) filed in front of the COTS manual title page.

3.1.4.2 Export Control Statement. Mark documents that contain export-controlled technical data IAW the Arms Export Control Act or the Export Administration Act of 1979, as amended, with one of the following export control statements. Use the abbreviated statement only on documents without sufficient title page/label space to include the full statement, e.g., CD-ROM/DVD labels, reduced size TOs, etc.:

> “***WARNING*** – This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C. 2751, et seq.) or the Export Administration Act of 1979, as amended Title 50, U.S.C., App. 2401, et seq. Violations of these export-control laws is subject to severe criminal penalties. Dissemination of this document is controlled under DoD Directive 5230.25.”

or

“***WARNING*** – Export Controlled.”

3.1.4.3 Disclosure Notice (MIL-STD-38784). Apply a disclosure notice to all classified and unclassified TOs approved for release to a foreign government, except those assigned Distribution Statement A. The disclosure notice will be on all classified and unclassified nuclear TOs. On CD/ROMs/DVDs, the Disclosure Notice will go in the content.txt file, as well as on the opening screen of each TO on the disk.

3.1.4.4 Disposition and Destruction Notices. Assign a Disposition Notice (for public release documents) or Handling and Destruction notice (for all other technical documents) IAW MIL-STD-38784. See TO 00-5-1 for specific disposition/destruction procedures for unclassified paper TOs and digital media.

3.1.4.5 Dissemination Notice (AFI 61-204, Attachment 7). A copy of this notice must accompany every shipment of export controlled TOs outside the DoD, including to U.S. contractors. The notice may be a file included on electronic media used for physical distribution. For digital distribution, include the notice in/attach to the e-mail message making distribution.

3.1.4.6 If necessary, the TCM shall request assistance with determining STINFO markings from the local STINFO or Foreign Disclosure Officer (FDO). For additional training on the STINFO program, see the courses on the web at https://afkm.wpafb.af.mil/ASPs/DocMan/DocMain.asp?Filter=OO-EN-MC-02&FolderID=OO-EN-MC-02-6–1&Tab=0.

3.1.5 Digital TO Security. Security issues and procedures are covered in DoD 5200.1-R, AFI 31-401, AFI 33-119, AFI 33-129, *Web Management and Internet Use*, AFI 33- 200, *Information Assurance Management*, Air Force Systems Security Instruction (AFSSI) 8520, *Identification and Authentication*, and AFI 61-204 among others. User access to and distribution methods for digital TO files must provide adequate security for classified and limited-distribution TO data files (paragraph 10.9). Classified TO files must be encrypted using a National Security Agency (NSA)-approved encryption algorithm, while limited-distribution files require a National Institute of Standards and Technology (NIST)-approved encryption system prior to being hosted on servers. Except for distribution statement “A” documents, TO files must be encrypted and hosted on a secure Internet https server with Public Key Infrastructure (PKI) certificate or user name and password access control (AFI 33-129).

3.1.5.1 Encryption. NIST has approved use of “strong” encryption technology (128-bit capable/export controlled) provided by the Secure Socket Layer (SSL) protocol for use with unclassified, limited distribution technical data. Each organization planning to provide access to TO/TO updates via the Internet must establish a secure server with the SSL protocol installed. Access to the server must be controlled by the use of PKI certificates or user names and passwords. In some cases, domain restrictions (.mil,.gov) might be used for DoD and/or government agency access, combined with user name and password access for authorized contractors. Additional information and assistance should be obtained from the local Communications (Comm) Squadron.

3.1.5.2 Password Protection. There are two levels of password protection available; on the server and on individual files. All secure servers must be protected by PKI certificates or user name/password access controls. Individual TO files may be password protected as well, if not all persons with access to the server need access to all the files.

3.1.5.2.1 The SA is responsible for assigning user names and passwords for protection of a secure server. When necessary, the user name and password will be provided in a secure e-mail message to TODOs requiring access to RACs and new baseline TO files. The SA is also responsible for periodically changing passwords to help prevent unauthorized access and protect the information on the site.

CAUTION

Passwords are not embedded in the file. If the owner forgets the passwords to a document, the file cannot be recovered. Store passwords in a separate secure location to prevent loss.

3.1.5.2.2 The TO Manager or TCM assigns passwords to protect TO and RAC files from inadvertent changes. EXAMPLE: To protect an Adobe® Portable Document Format™ (PDF) file, use procedures in the Adobe® Acrobat Exchange™ Help function. Microsoft® Office Word© files can be protected using the “Tools,” “Protect Document” function. Other word processing or publishing applications have similar features for protecting documents created using the application.

NOTE

The TO Manager or TCM should not password protect HTML eTO’s as this precludes the merging of changes and supplements.

3.1.6 Controlling Distribution of Technical Orders. TO Managers must control the distribution of TOs to eligible recipients IAW DoD 5200.1-R/AFI 31-401, AFI 61-204, and for reasons specified in this TO. For Air Force TO System implementation of the STINFO Process, TO Distribution Offices (TODO) are considered “Controlling DoD Offices (CDO)” and may make primary distribution to any Accounts and sub-accounts based on mission requirements. If Proprietary TOs must be distributed to Government-Owned, Contractor-Operated (GOCO) Accounts, the contractor personnel must have signed non-disclosure agreements on file with their company.

3.1.6.1 JCALS Proponent (Sponsor) Approval Process. Use the JCALS “Add a Pub Stock Number” screen to set the “Prop. Approval Req.” flag to “Yes” on all TOs for which initial subscription and distribution requests must be justified, reviewed and approved prior to issue (indicated separately for TCTO Series Headers since Series Headers do not have PSNs). These sponsor approval required TOs include classified and Special Access Required (SAR) TOs; TOs with no distribution statements or distribution statement “F”; TOs containing “Proprietary” data (codes“B” and “E”); specialized publications (e.g., JNWPS, EOD, etc.); and commercial manual TOs with limited reproduction/distribution rights. Proprietary data may be automatically approved for release to F*xxxx TO Accounts, but may only be released to the contractor account owning the proprietary rights. Orders for TO quantities in excess of the “Maximum Issue Quantity” (MIQ) automatically require sponsor approval. The TO Manager, in conjunction with the TCM, will determine the need to screen distribution of other unclassified TOs.

3.1.6.2 Export Controlled TOs. The TO Manager, in conjunction with the TCM, will determine if any TOs containing export controlled data (DoDD 5230.24 and AFI 61-204) require sponsor approval to satisfy the distribution control requirements of AFI 61-204. In general, export controlled TOs may be released to all F*xxxx and E*xxxx accounts. FMS (D*xxxx) accounts must request TOs through the SATODS and have Foreign Disclosure Office (FDO) approval prior to release for initial subscription or requisition. AFMC Centers will document local procedures for controlling the distribution of export controlled data in a supplement to this TO.

3.1.6.3 Proprietary and Copyrighted Data. When a program acquires copyrighted data, the Air Force must receive at least limited rights allowing reproduction and distribution of the data for government purposes, IAW Defense Federal Acquisition

Regulations Supplement (DFARS) clauses (paragraph 5.17). Unlimited rights are recommended whenever possible. Proprietary data must be marked IAW paragraph 3.1.4.1.3, and distribution limited to government personnel, unless specifically released by the owner of the data.

3.1.6.4 Linking to Other TOs or Web Sites. When a TO references other TOs or documents, "hot" links may only be used when the referenced TO or other data is of the same or lower restriction/classification. References may be made to other TOs or other data which have a higher restriction/classification, but not linked. The same rule applies to unclassified/unrestricted Internet sites: you can only hot link to other unclassified/unrestricted sites, although you can list the URLs of restricted sites.

3.1.7 Electronic Distribution. The methods specified in paragraph 10.9 shall be used for secure electronic distribution of digital Controlled, Unclassified Information (CUI). CUI includes technical data and TOs, engineering data, and other information listed in DoDD 5230.24 and AFI 61-204, and assigned distribution codes "B" through "F" and "X."

3.1.8 Secure Distribution via E-Mail. This policy applies to all methods used for e-mail, including BlackBerry and other handheld devices, Outlook Web Access, and remote e-mail via Virtual Private Network (VPN) or Remote Procedure Call (RPC) over secure hypertext transfer protocol. While current policy does not require BlackBerry and other handheld Personal Digital Assistant (PDA) users to obtain Common Access Card (CAC) readers, those without CAC readers must send and open signed, encrypted e- mails on a CAC-equipped computer (HQ AFMC/A6 policy memo, *Air Force Public Key Infrastructure (PKI) Policy on Encrypting and Digitally Signing E-Mail Messages,* 6 Mar 07).

NOTE

- For security reasons, unsigned, unencrypted Simple Mail Transfer Protocol (SMTP) e-mail can only be used for transmitting distribution "A" (public release) Interim TOs, RACs or ITCTOs. Any Outlook messages containing restricted-distribution data (codes B-F and X) must be digitally signed and encrypted using a CAC or External Certification Authority (ECA) certificates (paragraph 10.9.2.1 NOTE).
- Personnel who do not have certificates published to the Global Address List (GAL) may have to exchange e-mails to get their certificates recognized. Public key certificates for DoD personnel can be obtained at DoD Global Directory Services (GDS) web site https://dod411.gds.disa.mil/ (.mil domain and CAC required).

3.1.8.1 Digitally Signing E-Mails. Digital signatures shall be used whenever it is necessary for the recipient to be assured of the sender's identity, have confidence the e-mail message has not been modified, or when non-repudiation is required. Examples include formal direction to a government employee or contractor, messages that stipulate an Air Force official position on any matter, and messages committing, authorizing or denying funding in some manner. Do not sign messages containing only unofficial information and not containing an embedded hyperlink and/or attachment. Refer to guidance in AFI 33-119, *Air Force Messaging,* for policies concerning the authentication of e-mail.

3.1.8.2 Encrypting E-Mail. E-mails shall be encrypted when they contain For Official Use Only (FOUO) information; Privacy Act Information; Personally Identifiable Information (PII); individually identifiable health information, DoD payroll, finance, logistics, personnel management, proprietary and foreign government information; contract data; export controlled technical data or information; and operational information regarding status, readiness, location, or operational use of forces or equipment. Encryption increases bandwidth and resource requirements; therefore, e-mail encryption should be used to protect only the above types of information, and the number of E-mail recipients should be kept to a minimum. (This includes technical data with STINFO codes "B" through "F" and "X.") DoD PKI-based encryption is not authorized for protection of classified information on non-secure systems, such as the Non-classified Internet Protocol Router Network (NIPRNET).

3.1.9 Protection of Controlled, Unclassified Information (CUI) on Electronic (E-) Tools. No particular controls are required for personal computers stored and used in limited access areas, such as a military base, controlled access contractor facility, etc. However, CUI data stored on mobile computing devices such as laptops, tablet computers, Personal Digital Assistants (PDA), or BlackBerry devices must be encrypted while "at rest" (not actively in use). In general, only DV-R removable magnetic media can be used to store CUI data as long as certain protective measures are taken. Follow the guidance in AFI 33-200, *Information Assurance Management*, and AFSSI 8502, *Organizational Computer Security.*

NOTE

Air Force units **SHALL NOT** purchase their own data encryption software.

3.1.9.1 Encrypting Data at Rest (DaR). The Air Force DaR encryption process will be a part of a larger Combat Information Transport System (CITS) deployment (specifically, CITS Vulnerability Lifecycle Management System [VLMS] Spiral 2) in order to gain efficiencies and cost savings. The CITS AF-wide DaR encryption solution will be incorporated into the AF Standard Desktop Configuration (SDC) which contains a suite of security products. For implementation of the AF-wide DaR encryption solution, units **SHALL NOT** purchase their own solutions.

3.1.9.2 In addition, all devices which contain restricted data must be marked with the most restrictive distribution statement applicable to any data installed on the device (the "Reason" would usually be "Administrative/Operational Use"). It is a good business practice to include the owning office's return address information on portable devices in case of loss.

3.1.9.3 Personnel traveling overseas with CUI on laptops and not on a unit deployment shall ensure every effort is made to maintain security of the data in accordance with appropriate AF regulations.

3.1.10 Release of Restricted TOs and Data. TO Managers and Flight Manual Managers are responsible for distributing TOs to authorized users. In some cases, this could include determining (in conjunction with the TCM) whether to release or withhold TOs requested by individuals or companies through the Freedom of Information Act (FOIA) process. FOIA requests for TOs marked "D," "E," or "F" for Administrative or Operational Use, Proprietary Data or Direct Military Support shall be refused using Exemption number 3 (DoD 5400.7-R, *DoD Freedom of Information Act Program*). For determining whether it is appropriate to release a TO, it is USAF interpretation of DoD policy that Air Force Technical Orders are solely intended for direct support of military and weapon systems. As such, release shall only be authorized to U.S. DoD contractors as defined in DoDD 3200.4 *DoD Scientific and Technical Information (STI) Program (STIP)*, and DoDD 5230.24, *Distribution Statements on Technical Documents*. Other requests for Air Force TOs shall be referred to the DoD Controlling Office (TO Manager or FMM). Distribution statement "D" TOs may only be released to DoD contractors with active contracts for the weapon system covered by the TOs in question. Contractors responding to Requests for Proposal (RFP) may access relevant weapon system TOs in a "Bidders Library" maintained by the RFP-issuing Program Office.

3.2 TECHNICAL ORDER MANAGEMENT PROCEDURES.

TOs to support new acquisition or modification programs for military systems or commodities are acquired on a schedule imposed by contract to meet the requirements for development, review, verification, and delivery of formal TOs. TO sustainment (paragraph 1.2.3) may be accomplished in-house by the TO proponent or under a contract by prime or overflow contractors.

3.2.1 TO Management. The PM or SCM responsible for a weapon system or commodity program will assign TO Managers to be responsible for all aspects of TO acquisition and sustainment. The PM/SCM will also assign responsibility for the content of applicable TOs to a TCM (usually the ES responsible for the equipment being supported by the TOs). The functions (but not the responsibilities) may be delegated to distribution, editorial, and other specialists as required.

3.2.2 Flight Manual Management. For aircraft programs, the TCM function for FMP publications is assigned to an FMM, who may also perform the TO Manager functions in some cases (AFI 11-215).

3.2.3 Engineering Approval. Chief Engineers or their delegated representatives will coordinate and approve all TO updates which could affect system or commodity OSS&E certification (AFI 63-1201).

3.2.4 Management Location. If an acquisition or modification program is managed at a product center, the primary TO Manager responsibilities will be there also. The prime ALC will normally assume full TO Management responsibility after system maturity (see definitions) or modification completion.

3.2.5 Delivery Requirements. Delivery of PTOs shall be prior to or concurrent with delivery of the hardware for development testing and/or operational need dates. Formal organizational level (on-equipment) TOs and preliminary intermediate level (off-equipment) TOs will be delivered prior to or concurrently with the delivery of the first production configured system or commodity to the first operational unit. Intermediate-level manuals must be formalized by the Initial Operational Capability (IOC) date.

3.2.5.1 For the two-level maintenance concept, field level TOs meeting the definitions of "on-equipment" and "off-equipment" must meet the delivery requirements of Organizational and Intermediate-level manuals, respectively. Preliminary depot level TOs will be delivered prior to depot prototype overhaul and must be verified and formalized prior to depot activation.

3.2.5.2 If TOs cannot be delivered according to this policy, the TO Manager must revise verification schedules, update the TO Management Plan (TOMP), and recommend interim support for the using command [use of verified or partly verified PTOs (paragraph 3.3.8), Interim Contractor Support (ICS, AFI 63-111, *Contract Support for Systems, Equipment and End-Items*, etc.) until the manuals are delivered. Any such actions must be coordinated with and approved by the appropriate PM and the using command.

3.3 ACQUISITION PROCEDURES (FIGURE 3-1).

TOs will be acquired IAW DoD 5010.12-M, *Procedures for the Acquisition and Management of Technical Data*, on a separate Contract Line Item Number (CLIN), using a contract exhibit consisting of a DD Form 1423, *Contract Data Requirements List (CDRL)*, with a program-specific (tailored) TM-86-01, *Technical Manual Contract Requirements (TMCR)* document (see Chapter 5). The TMCR is managed by HQ AFMC/A4UE in coordination with other acquisition agencies. A copy is available on the Internet through the TO System Information Page (https://techdata.wpafb.af.mil/toprac/to-syste.htm). Contracts should provide an opportunity for government review and approval of revisions, changes, and supplements to program TOs.

3.3.1 Existing Data Usability. Maximum use will be made of existing data. Available Technical Manuals (TM) from other government departments or agencies will be reviewed to determine adequacy and application to particular programs. TMs for joint-service use will generally list the proponent service's TM/TO number first, followed by the participating services' TM/TO numbers.

3.3.1.1 TMs adopted for wide-spread Air Force use will have TO numbers added to the TM title page. The exception is an approved TM without an Air Force TO number pending the next routine update and when limited AF usage does not warrant adding a TO number. TMs without Air Force TO number are managed in the TM system of the proponent service. See TO 00-5-1 for ordering instructions.

3.3.1.2 If users believe that another service's TM they use would benefit from management in the AF TO System, they can recommend that a TO number be added, through their AF Centralized TO Management (CTOM) committee representative (see membership listing at https://afkm.wpafb.af.mil/ASPs/docman/DOCMain.asp?Tab=0&FolderID=OO-EN-TO-PI-14-4&Filter=OO-EN-TO-PI).

3.3.2 TO Development. Any TMs/TOs developed for the government (at government expense) must be developed to current DoD TMSS or a government-approved NGS IAW this TO.

3.3.2.1 Deviations from Air Force TMSS formats require prior approval of HQ AFMC/A4UE with the concurrence of 754 ELSG/ILMT. Pre-approval is also required for use of commercial NGS in lieu of TMSS for TO development (DoD 4120.24-M, *Defense Standardization Program Policies and Procedures*).

3.3.2.2 For joint-service acquisition programs, TMs should be developed in a single format usable by all services involved, rather than developing individual manuals for each service.

3.3.3 Commercial Off-The-Shelf (COTS) Manuals and Other Commercial/Contractor Data. COTS manuals for centrally procured and managed (NSNs assigned) equipment, no matter the format, will be evaluated for effectiveness and content IAW MIL-PRF-32216, *Evaluation of Commercial Off-The-Shelf (COTS) Manuals and Preparation of Supplemental Data*. If acceptable, or if they can be supplemented to be acceptable, they will be adopted as TOs (given a TO number) and indexed in JCALS. This will NOT include COTS manuals for locally purchased (Non-NSN) equipment. Local purchase manuals and software must be controlled and managed by the procuring unit.

3.3.3.1 Existing commercial operating instructions, parts breakdown handbooks, and repair manuals will be acquired instead of developing new TOs if no degradation in system operation, safety, support or reliability will result. Using existing data will save money and time for the TO program. COTS manuals will be reviewed and evaluated by the TO Manager, using command and assigned Equipment Specialist (ES) IAW MIL-PRF-32216.

3.3.3.2 Commercial aircraft maintenance and operations (flight) manuals (FMP) proposed for use by Air Force personnel must be reviewed by the TCM and FMM against both MIL-PRF-32216 and MIL-DTL-7700, *Flight Manuals, Air Refueling Procedures, and Abbreviated Checklists* requirements. Air Force and commercial roles and responsibilities for flight crews

and ground crews are different. Reviewers must consider the possibility that commercial manuals may allocate maintenance and operations tasks differently than military manuals, and if there are differences take action to include changes in both the appropriate flight crew and maintenance manuals. Failure to consider this possibility could result in aircraft accidents or incidents.

3.3.3.3 Approved manuals will be adopted for Air Force use, assigned a TO number and managed in the TO system unless a waiver is approved. Manuals which are initially disapproved will be supplemented if possible to make them acceptable; supplements will be written according to the parent manual style and format. See MIL-PRF-32216 for exceptions. Supplements are numbered as routine formal supplements and filed behind the COTS manual IAW TO 00-5-1. When supplementing is not adequate, new TOs will be developed to military TMSS or approved commercial specifications. Careful consideration of future support costs, incorporation of commercial updates, and ease of use will determine whether military or commercial specifications should be used.

3.3.3.4 When military systems or end items use mixed maintenance support (organic and CLS), the policy in this TO will be used to accept any COTS manuals and manuals developed from contractor data, and determine whether to include or exclude the manuals in the TO System. The decision to number, manage, and use commercial manuals in or outside the TO system will be made jointly by the TO Manager, user and appropriate TCM. Manuals used for organic (Air Force) operations or maintenance will be included in the TO System unless a waiver is approved by HQ AFMC/A4UE. When different user organizations have different operation or maintenance support concepts, manuals will be managed in the TO System unless cost prohibitive.

3.3.3.5 PMs must ensure, through the TO Manager, that all contracts issued for procurement or sustainment of commercial or militarized commercial systems and commodities require delivery of applicable FAA, manufacturer or vendor technical data updates (service bulletins, operations manual bulletins, FAA airworthiness directives, temporary revisions, etc.) during the entire program life cycle.

3.3.3.5.1 Use a DID (when available), or ensure the CDRL for TO delivery requires delivery of these updating publications.

3.3.3.5.2 The TCM, TO Manager, depot engineering or technical support activity and/or FMM will determine if any updates received apply to TO-numbered flight and/or maintenance manuals, and if the updates will be referenced by the commercial number or will have the information extracted for inclusion in supplements or other TO updates.

3.3.3.5.3 When a COTS TO user becomes aware of a later version of the COTS manual that applies to their equipment (and not just to a later model/version of the equipment), they should notify the ES/TCM so that he/she can evaluate the later manual version for adoption by the Air Force. If adopted, the TO will be indexed in JCALS.

3.3.3.6 For programs using temporary or Interim Contractor Support (ICS) contracts (support required until organic capability is attained), data used by the contractor to fulfill the terms of the contract is excluded from numbering and management in the TO System. However, if this data will transition to the Air Force, it is subject to review and verification by Air Force personnel. COTS and contractor manuals transferring to the Air Force will comply with this TO and MIL-PRF-32216. Data developed for system or equipment contractor internal use, if later purchased by the government, will be treated the same as COTS data.

3.3.3.7 When operation and/or maintenance are planned to be Contractor Logistics Support (CLS), whether the military system or end item is commercially available or is developed specifically for the Air Force, the PM or SCM acquires, numbers, and manages the Operations and Maintenance (O&M) data outside the TO system (no TO numbers are assigned). However:

3.3.3.7.1 The data is subject to Air Force technical content, reproducibility and rights reviews to ensure it is adequate for competition of follow-on contractor support (‘Adequate’ meaning usable by another contractor with comparable skills and experience to fulfill the terms of the contract).

3.3.3.7.2 Data developed or modified specifically for the CLS contract shall be validated or certified by the contractor; Air Force verification is not required.

3.3.3.7.3 Pre-existing, unmodified commercial data shall be certified for adequacy and accuracy by the contractor acquiring the data for the CLS contract.

3.3.3.7.4 When existing military systems or end items are transitioned from organic support to CLS, TOs which will continue to be used primarily by Air Force personnel will remain in the TO system. TOs which are peculiar to the system or end item to be used totally (or with Air Force assistance) by the contractor, will normally be rescinded from the TO system

and managed as directed by the CLS contract. However, CLS contracts will require the contractor to use and maintain any MIL-SPEC manuals in the MIL-SPEC format.

3.3.3.7.5 When CLS programs are transitioned to organic support, the policy in this TO will be used to evaluate, approve, number and manage CLS manuals.

3.3.3.8 Factory Test Equipment (FTE) and Special Test Equipment (STE) and its support data are designed by a contractor for internal use and are not commercially available. However, if the government decides to acquire the FTE and/or STE for organic use, the policy in this TO will be used to accept the support data and to determine if it is included in or excluded from the TO system.

3.3.4 Exemptions.

3.3.4.1 TMs and data used in programs or program segments (such as depot or intermediate-level maintenance) operated solely (or with Air Force assistance) by CLS personnel are exempt from management within the TO system.

3.3.4.2 Manuals to support local purchase items (NOT centrally-procured, stock-numbered COTS equipment) are also exempt (TO 00-5-1). The activity purchasing the item is responsible for acquiring, accepting, maintaining, controlling and distributing these publications.

3.3.5 Integrating TOs. TOs for the operation and maintenance of end items which are composed of interconnected configuration items will be maintained under the TO system. The agency or contractor developing the end item will normally develop the integrating operations and maintenance instructions.

3.3.6 Digital (Electronic) TOs (Figure 3-2). The *Defense Acquisition Guidebook (DAG)*, section 11.12 says: "DoD policy requires the maximum use of digital operations throughout the system life cycle." "Program managers should establish a data management system within the IDE (Integrated Data Environment) that allows every activity involved with the program to cost-effectively create, store, access, manipulate, and exchange digital data." "Unless analysis verifies prohibitive cost or time delays, or a potential compromise of national security, new contracts should require the contractor to provide on-line access to programmatic and technical data. Contracts shall give preference to on-line access (versus data exchange) through a contractor information service or an existing IT (Information Technology) infrastructure." HQ AFMC/A4UE and 754 ELSG/ILMT must be contacted for assistance prior to developing contractual documents to ensure standardization of digital system hardware, software and TOs to the maximum extent possible within the Air Force and DoD.

3.3.7 Hazardous Materials (HAZMAT) and Ozone Depleting Substances (ODS). Procedures in TOs must minimize the generation, use and disposal of HAZMAT and ODS IAW AFPD 32-70 and associated instructions. Any use of HAZMAT and ODS must be justified by the contractor and approved by appropriate government personnel.

3.3.8 Preliminary TOs (PTO). A TO is considered "preliminary" from the time the publication has a number assigned until the TO is formalized. PTOs must complete the contractor quality process (paragraph 9.3) before delivery to the government for verification. Formatted PTOs should be used to the maximum extent possible to support Air Force Test and Evaluation (T&E) (AFI 63-101). PTOs are also used for development of training plans and course syllabuses. Air Force personnel may use unverified data during system T&E or for routine maintenance performed in conjunction with the verification effort on new or modified hardware or software. PTOs are formalized after they are successfully verified and all corrections are made.

3.3.8.1 Every effort shall be made to replace organizational-level PTOs with formal TOs prior to or concurrent with delivery of the first production-configured system or commodity to the first operational unit. See AFI 63-101 for policy on use of verified PTOs in the operational environment.

3.3.8.2 Verification Status Pages (VSP) or screens will be included in all TOs and PTOs which contain unverified procedures (MIL-STD-38784). Non-procedural TOs (certain Methods and Procedures TOs such as this one, Illustrated Parts Breakdowns [IPB], Work Unit Code [WUC] manuals, etc.), do not require VSPs.

3.3.9 TO Quality Assurance (QA) (Chapter 9). The contractor is responsible for providing **adequate, safe** and **accurate** TOs which **conform** to government requirements. TOs and data must be approved by the contractor internal certification process prior to delivery for Air Force verification (this should be one of the "exit criteria" in the contractor IMP [see Appendix E]). The government will provide necessary Government Furnished (Aeronautical) Equipment (GFE/GFAE) required to enable the contractor to test TO procedures. The government will participate in the contractor quality process through the TO IPT, and will perform verification when PTOs are delivered.

3.3.10 TO Verification. Verification policy requires 100 percent 'hands on' performance of all procedural (operational, maintenance, calibration, etc.) tasks contained in TOs and supplements to commercial manuals. Verification must be performed on production-configured military system and commodity items (or inert versions of explosive items) by using command personnel. Non-procedural data will be verified during IPRs or by Desk-Top Analysis. Verification may be combined with the contractor QA process under certain circumstances (Chapter 9). Use of unverified procedures except under controlled conditions could result in injury to personnel or damage to equipment. Unverified procedures must NOT be used in the operational environment, except during the verification process. See Chapter 9 for exceptions and acceptable verification methods.

3.3.10.1 The program verification schedule must be developed in conjunction with the Air Force test plan, production schedules and deployment schedules to ensure the availability of hardware, software, and equipment to support the verification effort. The tentative schedule must be provided to offerors in the Request For Proposal (RFP) to allow development of supportive schedules.

3.3.10.2 TO verification will make maximum use of other scheduled events, such as test and evaluation, prototyping, and maintainability demonstrations. Activities should not be duplicated. Use unscheduled events such as equipment failure to verify applicable procedures, when possible.

3.3.11 Source Data. Technical documentation produced during the hardware development or modification process should not be redeveloped for use in program TOs. The government should not pay twice for development of the same data. Source data for TOs may consist of, but is not limited to, supportability analysis data, engineering drawings, test reports, and other technical data. It is up to the contractor to decide which source data to use. See Chapter 16.

3.3.11.1 When separate TMs are required for joint-service programs, common source data will be used to the maximum extent possible for development.

3.3.11.2 Acquisition agencies will acquire source data for use in the generic servicing inspection workcards for powered Aerospace Ground Equipment (AGE) (TO 35-1-256WC-1), and for update of other TOs not managed by the TO Manager (i.e., Crash and Rescue, Static Display, EOD, etc. - see Chapter 4 and Chapter 16).

3.3.12 Reading Grade Level (RGL). TOs will be written not to exceed a ninth-grade RGL (MIL-STD-38784, AF requirement). Exceptions include: FMP TOs (AFI 11-215); tabular TOs (e.g., -06 Work Unit Code Manuals, -4 Illustrated Parts Breakdown Manuals); abbreviated TOs (e.g., workcards, checklists); MIL-PRF-83495, *Performance Specification: Technical Manuals-On-Equipment Maintenance Manual Set* (e.g., Job Guides [JG], Schematic Diagram [SD] and wiring diagram [WD] manuals); IETMs, and 00-25-113-series (Precious Metals) TOs.

3.3.13 Referencing Computer Program Identification Number (CPIN) Items. Software program tapes and control documentation will be referenced in TOs using only the basic CPIN. CPIN revision numbers shall not be published in TOs without written approval of the applicable Program Manager. If revision numbers are used, the TOs must be updated on a priority basis to reflect changes in the revision numbers and dates of programs authorized for use in the Automated CPIN System (ACPINS).

3.4 SUSTAINMENT PROCEDURES.

The above acquisition procedures will also be performed during program sustainment wherever applicable. TO Managers will:

3.4.1 Manage TO Index information. Enter TO configuration and management information for all TOs/TO increments into the JCALS TM Index IAW the JCALS Desktop Instructions (DI) (see Table 8-1and Table 8-2). Store digital file masters and working copies of formal TOs in a repository accessible only by TO managers and TCMs. Electronic (e)TO files may also be hosted on LAN file servers accessible to users. Those electronic (e)TO files used for O&M shall be indexed with TO numbers ending in "-WA-n" and a PSN ending in "11." TO increments (revisions, changes, and supplements) shall not be marked "Available For Published Index" until the increment is ready for print (for paper) or has been optimized and uploaded to ETIMS (for -WA-1).

3.4.2 Request Shipping Label Decks for Initial Distribution (ID) and Requisition (RQN) Shipments. Use JCALS to produce ID label file for upload to TODPS. Prior to migration to TODPS, use JCALS to produce label files for use by Air Force-sanctioned systems to produce ID and RQN shipping labels when required to make initial distribution of a TO/TO Update or to fill one-time requisitions.

3.4.3 Establish Shipping Priorities. Direct the TO Warehouse and commercial printers to use classified mailing procedures (DoD 5200.1-R) when distributing classified TOs. Direct use of first-class mail for all emergency requisitions and for ID shipments of TOs and TCTOs to APO/FPO destinations. Distribute FMS publications to freight forwarders by traceable means. When using the DLA Document Services TODPS for Initial Distribution (ID), local DLA Document Services facilities will distribute copies to subscribers in their service areas. FMS distribution will be handled by OC-ALC/ENGLC.

3.4.4 Correct TO Configuration and Management Information Errors. Verify and correct TM Index record errors within 7 calendar days after receiving notification of the error. All JCALS users will correct errors in the data they are authorized to modify, or will contact the responsible data owner to make corrections. The ETIMS TO Catalog function provides users the capability to report such TM Index data quality errors as DDRs.

3.4.5 Monitor Warehouse Inventories. Not required for TOs migrated to TODPS. Prior to migration, monitor and control TO warehouse inventories through the JCALS System. Develop print/reproduction orders when required; submit paper and digital reproduction masters to the DLA Document Services, and monitor expenditure of printing funds. Update the JCALS inventory record of the TO or TCTO when stock is received using the Due-In Receipt function (for ID) or the "Adjust TM Stock Item Quantities" function for replenishment stock. Not applicable when using Print on Demand or Just-in-Time printing instead of physical stockpiling.

NOTE

As PMs transfer printing to the DLA Document Services TODPS for ID and OTR POD, TO warehouse use will diminish, and residual warehouse stock will be moved to the Army Warehouse in St. Louis, MO.

3.4.6 Establish TO Stock Management Levels. For non-POD managed TOs, use the JCALS Publication Stock Number (PSN) functions to establish TO warehouse stock management information (see TO 00-5-1 for PSN format). Use the JCALS "Manage TM Index, Add Pub Stock Number" screen to:

3.4.6.1 Establish the Reorder Point Quantity ("Reorder Pt. Qty") at a level that allows sufficient time ("Months Lead Time" - normally 60 to 90 days) to receive additional stock without generation of backorders. Does not apply to Print-on-Demand (POD) managed TOs.

3.4.6.2 Establish Maximum Issue Quantities (MIQ) at a level that will be issued to a TODO without additional justification. Requests for a higher quantity will automatically be cancelled, unless Advice Code "2L" is included in the order. The "2L" Advice Code will allow the orders to process, but will require proponent approval (paragraph 3.1.6.1). Does not apply to TOs accessed electronically.

3.4.6.3 Establish a Total Minimum Reserve ("Total Min. Reserve") to provide sufficient copies for emergency single issue during out-of-stock periods (depending on reprint turnaround time and TO demand). The TO proponent organization must always retain at least one copy of all active paper TOs and increments for use in reprinting, compiling assembly sheets, etc., until there is a digital reproduction master.

3.4.7 Manage Backorders. When the stock balance reaches the Reorder Pt. Qty, requisitions are backordered. JCALS will send an internal "Reorder Notification" e-mail message to the TO/Distribution Manager when stock is depleted below the Reorder Pt. Qty. For POD TOs, TO Managers often enter a stock quantity of"9999" into JCALS.

3.4.8 Screen TO Subscriptions and Requisitions Requiring "Proponent (Sponsor) Approval" (Paragraph 3.1.6.1). Screen and approve new subscriptions and requisitions when the TO is"flagged" for Prop. Approval Req. in the PSN screen of the JCALS index record; when the requisition quantity exceeds the Maximum Issue Quantity (MIQ); and when the request comes from non-account holders. Obtain concurrence of the TCM when necessary, before approving the subscription/requisition. Approval/disapproval shall be completed within 30 calendar days of submittal by TODO.

3.4.9 Manage TODPS Transactions. Ensure Proof and Funding approval, Sponsor Approval and Emergency Requisitions are processed IAW timelines (paragraph 10.6.1.1). Ensure Held Transactions are processed IAW timelines (paragraph 10.6.1.2).

3.4.10 Manage Outside Agency Requests for Air Force TOs. Process requisitions from other U.S. government agencies, contractors and civilians IAW TO 00-5-1 and AFJI 21-301. Process Freedom of Information Act (FOIA) requests for TO data strictly IAW DoD 5400.7-R/AF Supplement, DoD *Freedom of Information Act Program*, DODD 5230.25, *Withholding of Unclassified Technical Data From Public Disclosure*, this TO and TO 00-5-1.

3.4.11 Ensure Configuration Control of Multi-Media TOs. When TOs are published in more than one medium (e.g., in paper and on CD-ROM), information about the configuration of the TO (TO Index data) and all media formats must reflect the same content configuration (see TO 00-5-1). The digital online (-WA-1) version shall be optimized and uploaded to ETIMS, and the"Available for Published Index" and "Available for Distribution" flags set to "Yes" when other media types are submitted to DLA Document Services for reproduction. This ensures eTOs are deployed at same time or before other media.

3.4.12 Technical Content Mangers (TCM)/Equipment Specialists (ES). TCMs and ESs will:

3.4.12.1 Manage TO content by evaluating and coordinating recommended changes, deficiency reports, accident/incident reports, and other source data. In conjunction with program engineers, ensure approved changes will not negatively affect system or equipment Operational Safety, Suitability and Effectiveness (OSS&E).

3.4.12.2 Verify TO procedural changes IAW Chapter 9 (see paragraph 3.3.10above), and ensure updates do not alter the distribution or security restrictions of the parent manual.

3.4.12.3 In conjunction with the TO Manager, perform a Pre-publication Review (PPR - paragraph 12.6.5) on Change/Revision packages before they are reproduced and/or distributed.

Table 3-1. STINFO Distribution Statements and Corresponding Reasons for Use

STATEMENTS
DISTRIBUTION A. Approved for public release; distribution unlimited. (Approval given by local Public Affairs Office)
DISTRIBUTION B. Distribution authorized to U.S. Government agencies only (reason) (date of determination). Refer other requests for this document to (controlling or originating DoD office).
DISTRIBUTION C. Distribution authorized to U.S. Government agencies and their contractors (reason) (date of determination). Refer other requests for this document to (controlling or originating DoD office).
DISTRIBUTION D. Distribution authorized to Department of Defense and U.S. DoD contractors only (reason) (date of determination). Refer other requests for this document to (controlling or originating DoD office).
DISTRIBUTION E. Distribution authorized to DOoD components only (reason) (date of determination). Refer other requests for this document to (controlling or originating DoD office).
DISTRIBUTION F. Further dissemination only as directed by (controlling or originating DoD office) (date of determination) or DoD higher authority (list the specific authority--unless a classified document).
DISTRIBUTION X. Distribution authorized to U.S. Government Agencies and private individuals or enterprises eligible to obtain export-controlled technical data in accordance w/DoDD 5230.25 (date of determination). Controlling DoD office is (insert).

REASONS	STATEMENT						
	A	B	C	D	E	F	X
PUBLIC RELEASE (Approval required by Public Affairs Office)	X						
ADMINISTRATIVE OR OPERATIONAL USE. To protect technical or operational data or information from automatic dissemination under the international exchange program or by other means. This protection covers publications required solely for official use or strictly for administrative or operational purposes. This statement may be applied to manuals, pamphlets, technical orders, technical reports, and other publications containing valuable technical or operational data.		X	X	X	X		
CONTRACTOR PERFORMANCE EVALUATION. To protect information in management reviews, records of contractor performance evaluation, or other advisory documents evaluating programs of contractors.		X			X		
CRITICAL TECHNOLOGY. To protect information and technical data that advance current technology or describe new technology in an area of significant or potentially significant military application or that relate to a specific military deficiency of a potential adversary. Information of this type may be classified.		X	X	X	X		

Table 3-1. STINFO Distribution Statements and Corresponding Reasons for Use - Continued							
DIRECT MILITARY SUPPORT. To protect export-controlled technical data of such military significance that release for purposes other than direct support to DoD (to bid or perform on a Government contract) may jeopardize an important technological or operational U.S. military advantage. Designation of such data is made by competent authority in accordance with DoD Directive 5230.25.					X		

Table 3-1. STINFO Distribution Statements and Corresponding Reasons for Use - Continued

FOREIGN GOVERNMENT INFORMATION. To protect and limit distribution in accordance with the desires of the foreign government that furnished the technical information. Information of this type normally is classified at the CONFIDENTIAL level or higher in accordance with DoD 5200.1-R.		X	X	X	X		
PREMATURE DISSEMINATION. To protect patentable information on systems or processes in the developmental or concept stage from premature disclosure that might jeopardize the inventor's right to obtain a patent.		X			X		
PROPRIETARY INFORMATION. To protect information not owned by the U.S. Government and protected by a contractor's "limited rights" statement, or received with the understanding that it not be transmitted outside DoD or the U.S. Government without the permission of the proprietary rights owner.		X			X		
SOFTWARE DOCUMENTATION. Releasable only in accordance with DoD Instruction 7930.2 and AFI 33-114.		X	X	X	X		
SPECIFIC AUTHORITY. To protect information not specifically included in the above reasons and discussions but which requires protection in accordance with valid documented authority such as Executive Orders, classification guidelines, or DoD or DoD-Component regulatory documents. When filling in the reason cite "Specific Authority (identification of valid documented authority)."		X	X	X	X		
Statement F is normally used only on classified technical documents (cite DoD 5200.1-R, para 5.208), but may be used on unclassified technical documents when specific authority can be cited.						X	
EXPORT-CONTROLLED TECHNICAL DATA. To protect export-controlled technical data (listed in the Commerce Control List or the Munitions List). Use when statements B, C, D, E, or F do not apply.							X

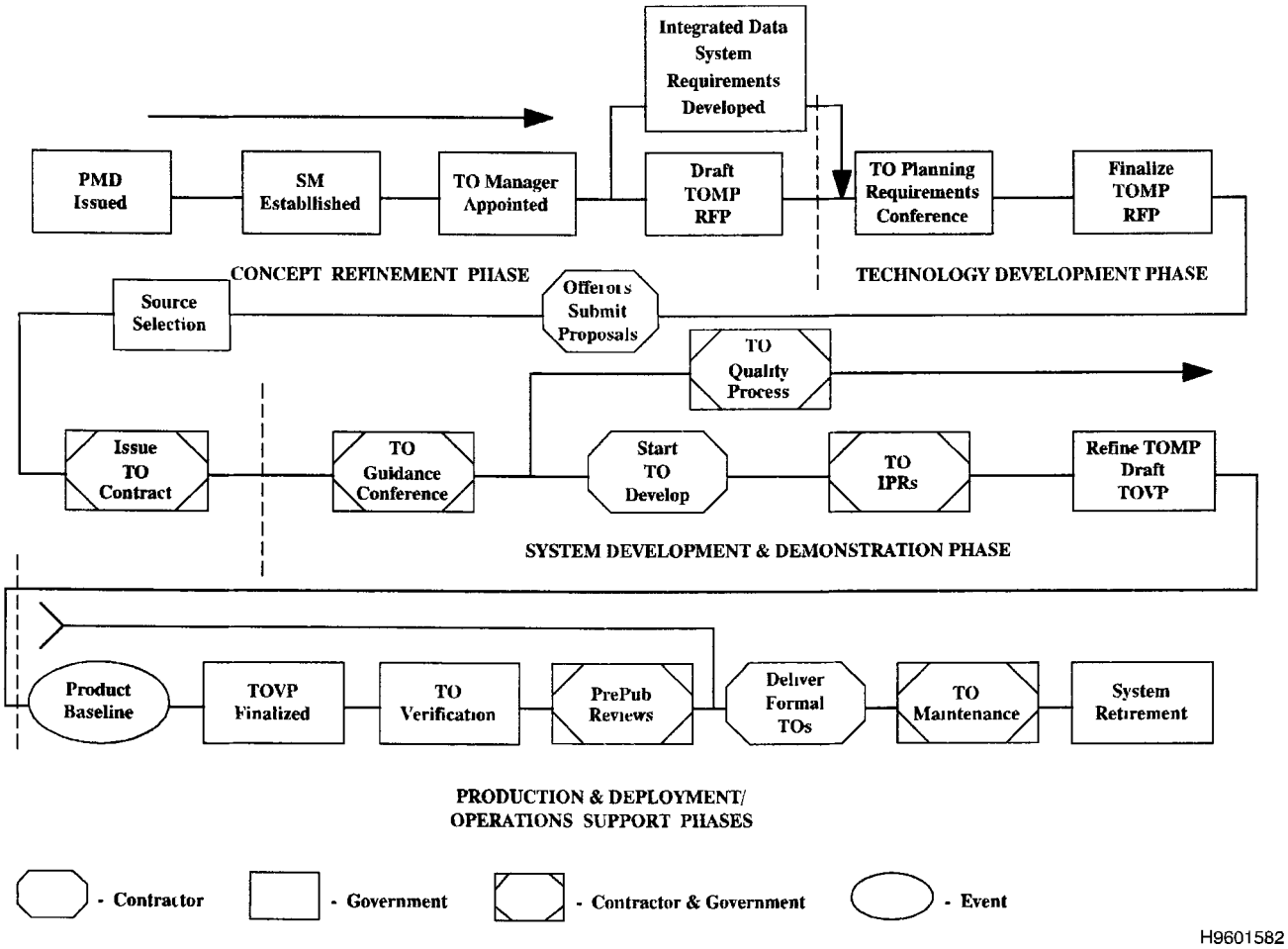

Figure 3-1. TO Acquisition Sequence Flow Chart (Sheet 1 of 4)

I Program Management Directive (PMD) Issued – This is the first step in establishing an acquisition program. The PMD is based on a verified need of a Using Command.

II Program Office Established – A Program office to manage the acquisition is established under the control of a Program Manager (PM). PMs may be System Program Managers, Supply Chain Managers or Product Group Managers, depending on the system or commodity being acquired (Chapter 2 and Definitions). Most major acquisition programs are managed at an AFMC Product Center. Air Logistics Centers manage acquisition of sustainment contracts, modifications, replenishment spares, and some commodities.

III TO Manager Appointed – The PM will appoint a TO Manager, or assign TO management duties to an Integrated Product Team (IPT), early in the program. The TO Manager is responsible for developing TO budgets, RFP inputs and TO Management/Verification Plans. (Chapter 2)

IV Integrated Data System (IDS) Requirements Developed – The IDS is developed by an IPT including the TO Manager, Data Manager, and Engineering Data Manager, to document and provide guidance on program implementation of Electronic Data Management principles for data development and delivery. Critical inputs for TO Management include compatibility with ETIMS and/or JCALS, digital TO development, distribution and viewing formats, and delivery options. The IDS is included in the RFP as Government Furnished Information (GFI). (Chapter 5)

V Draft TOMP and RFP – The TO Manager drafts TO-related RFP inputs and a TOMP (https://techdata.wpafb.af.mil/toprac/working.htm) for consideration by the TO IPT. The TO IPT consists of the TO Manager, system sustainment personnel, using command representatives, training command representatives, and representatives of any special TO requirements. RFP inputs may include a Statement of Objectives (SOO) or Statement of Work (SOW), Evaluation Criteria, Instructions To Offerors (ITO), Contract Data Requirements Lists (CDRL - DD Form 1423), and a Technical Manual Contract Requirements (TMCR) document, TM-86-01 (https://techdata.wpafb.af.mil/toprac/working.htm). The TOMP documents the overall TO management philosophy for the program. (Chapters 4 and 5)

VI TO Planning/Requirements Conference (TOP/RC) – This conference brings together the members of the TO IPT to review program documentation such as the PMD, Operations and Maintenance Concepts, etc., to determine TO requirements and management plans for the program. The draft RFP inputs and TOMP developed by the TO Manager are used as a starting point for the conference. (Chapters 4 and 7)

VII Finalize TOMP and RFP – The TO Manager uses the requirements developed by the planning conference to finalize the TOMP and RFP inputs. The TO data requirements are provided to the program Data Requirements Review Board (DRRB) for approval and inclusion in the RFP sent out for bid. (Chapter 4)

VIII Offerors Develop and Submit Proposals – Interested offerors develop specific cost and technical proposals for TO development and delivery based on all information and direction provided in the RFP. Proposals may include a SOW, Work Breakdown Structure (WBS), Integrated Master Plan and Schedule (IMP & IMS), recommended CDRLs, and a fully-tailored TMCR. TO program costs must be shown in a separate Contract Line Item Number (CLIN) of the proposal. (Chapters 5 and 6)

IX Source Selection – The government forms a team (or teams) to review, evaluate and compare offeror proposals. The number of proposals received may be "down-selected" to a manageable number

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Figure 3-1. TO Acquisition Sequence Flow Chart (Sheet 2)

before going to source selection, using some objective criteria based on program needs and risk areas. (Chapter 6)

X Issue TO Contract – After source selection, the government will negotiate any areas of dispute with the winning offeror, and a contract will be issued. The contract must include, as a minimum, a separate CLIN, CDRL and tailored TMCR for TO development and delivery. At this point, the "offeror" becomes the "contractor," and becomes part of the TO IPT. (Chapter 6)

XI TO Guidance Conference – A TO Guidance Conference or Technical Interchange Meeting is held, usually within 60 days of contract award, to discuss the contract, introduce TO program participants, finalize strategy and schedules, and in general, resolve any issues not specifically detailed in the contract. The contract cannot be changed without Procuring Contracting Officer (PCO) approval. (Chapter 7)

XII TO Quality Process – TO quality is assured through the use of quality processes in the development, testing and delivery of individual manuals. The TO IPT maintains insight into quality through participation in all aspects of the contractor process, without interfering or hampering the free accomplishment of tasks. Quality TOs are adequate, safe and accurate; conform to government requirements; are compatible in depth and scope with maintenance and logistics support concepts; and comply with requirements for Reading Grade Level (RGL) and security classification and distribution restriction marking. Quality processes are on-going for the life of the program. (Chapter 9)

XIII Start TO Development – After the Guidance Conference, the contractor will begin the TO development process. In some cases, where the program involves acquisition of commercial products, commercial manuals may already exist, in which case the manuals will be reviewed for suitability to support the Air Force operations and maintenance concepts. In most cases, however, the TOs must be developed from scratch, using AF-approved TMSS listed in the TMCR (https://techdata.wpafb.af.mil/tmss/index.html). All data, including TOs, must be delivered in digital format unless this is proven not economical over the program life cycle. TOs should be developed using Standard Generalized Markup Language (SGML) or Extensible Markup Language (XML) tagging according to the Document Type Definitions (DTD) attached to the TMSS. (Chapter 5)

XIV TO IPRs – In-Process Reviews (IPRs) are held periodically to review preliminary TOs for accuracy, compliance with contract requirements, adequate depth of coverage for Air Force support, and usability. These reviews may be held at specified TO completion percentages, or as determined necessary by the TO IPT. Generally, the more critical and complex a TO is, the more frequent are the reviews. Reviews may be conducted on-line via a telecommunications infrastructure established with a Contractor when possible. (Chapter 7)

XV Refine TOMP / Draft TOVP – The TO Manager and TO IPT must continually refine the TOMP to account for changes in schedules, programs, plans, etc. The IPT must draft a TO Verification Plan (TOVP) (https://techdata.wpafb.af.mil/toprac/working.htm), to cover such areas as the timing, location, support requirements, personnel, etc. for verification of the program TOs. The TOVP may be an appendix or attachment to the TOMP. (Chapter 4)

XVI Product Baseline – This is not strictly a TO program event, but most of the following TO processes are dependent on having a baseline (or "production-configured") product as a reference

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Figure 3-1. TO Acquisition Sequence Flow Chart (Sheet 3)

XVII TOVP Finalized – At least 120 days before the first preliminary TOs are delivered to the government for verification, the TOVP must be finalized and provided to all participants. (Chapter 4)

XVIII TO Verification – Verification should begin as soon as possible after a base-line product is available. Verification involves the actual performance, under field conditions, of all procedures and processes detailed in TOs. The procedures should be performed by personnel of the same training and experience as personnel expected to use the system. Procedures which present a hazard to personnel or equipment, or which expend items such as explosive devices, may be verified by simulation or desk-top analysis. Non-procedural data may be verified by desk-top analysis or during IPRs. Any errors detected during verification are reviewed and provided to the contractor for correction of the TO. (Chapters 9 and 11)

XIX Pre-Publication Reviews – Pre-Pub Reviews may be required before finalizing and formalizing preliminary TOs. The determining factors are TO complexity and the number and complexity of changes resulting from verification. This determination may be made by the TO Review Board (TORB) or Flight TORB (FTORB), if chartered to review and control configuration after PTO delivery to the government for verification. The TORBs are usually composed of TO IPT members. The TORBs will approve PTOs for formalization. (Chapters 7 and 8)

XX Deliver Formal TOs – The preferred method for TO delivery is via secure on-line access to the contractor database. Delivery will be via SGML- or XML-tagged files developed IAW the appropriate MILSPECs and Digital Support Suites (DSS) provided for this purpose. (Chapter 5)

XXI Reproduction and Distribution -- Reproduction involves paper TO printing or digital TO reproduction on CD-ROMs or DVDs. Initial Distribution (ID) of physical products is controlled by shipping labels generated by JCALS based on user subscriptions. Electronic (e)TOs are uploaded to ETIMS and automatically delivered to TO Distribution Office Accounts based on subscriptions. There are other distribution methods based on urgency of need. (Chapter 10)

XXII TO Maintenance – Once TOs have been formalized and delivered to the Air Force, the sustainment phase begins. Sustainment involves periodically updating TOs to maintain currency and accuracy (Chapters 12 and 13). Factors driving updates include equipment modification, correction of errors, and improved methods of performing procedures, among others (TOs 00-5-1 and 00-5-15). Sustainment also involves managing the requisition, distribution, reproduction and archiving of TOs. Maintenance begins once the TOs are formalized and continues through rescission of the TOs after the end item or system is retired from the inventory. Most Air Logistics Center programs fall into the TO sustainment category. Although contracts for sustainment may use abbreviated procedures for contract preparation, basic requirements do not change: there must be a CLIN and contract exhibit (TO CDRL and tailored TMCR document); engineering reviews and TO update verification will be required; etc.

XXIII System Retirement – This is the "grave" of cradle-to-grave program management. TOs do not necessarily "die" when a system is retired – frequently, TOs must be maintained to support Foreign Military Sales (FMS) programs. In addition, all TOs are maintained in the AF Archives for at least six years after the system is retired for AF use (Chapter 10).

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Figure 3-1. TO Acquisition Sequence Flow Chart (Sheet 4)

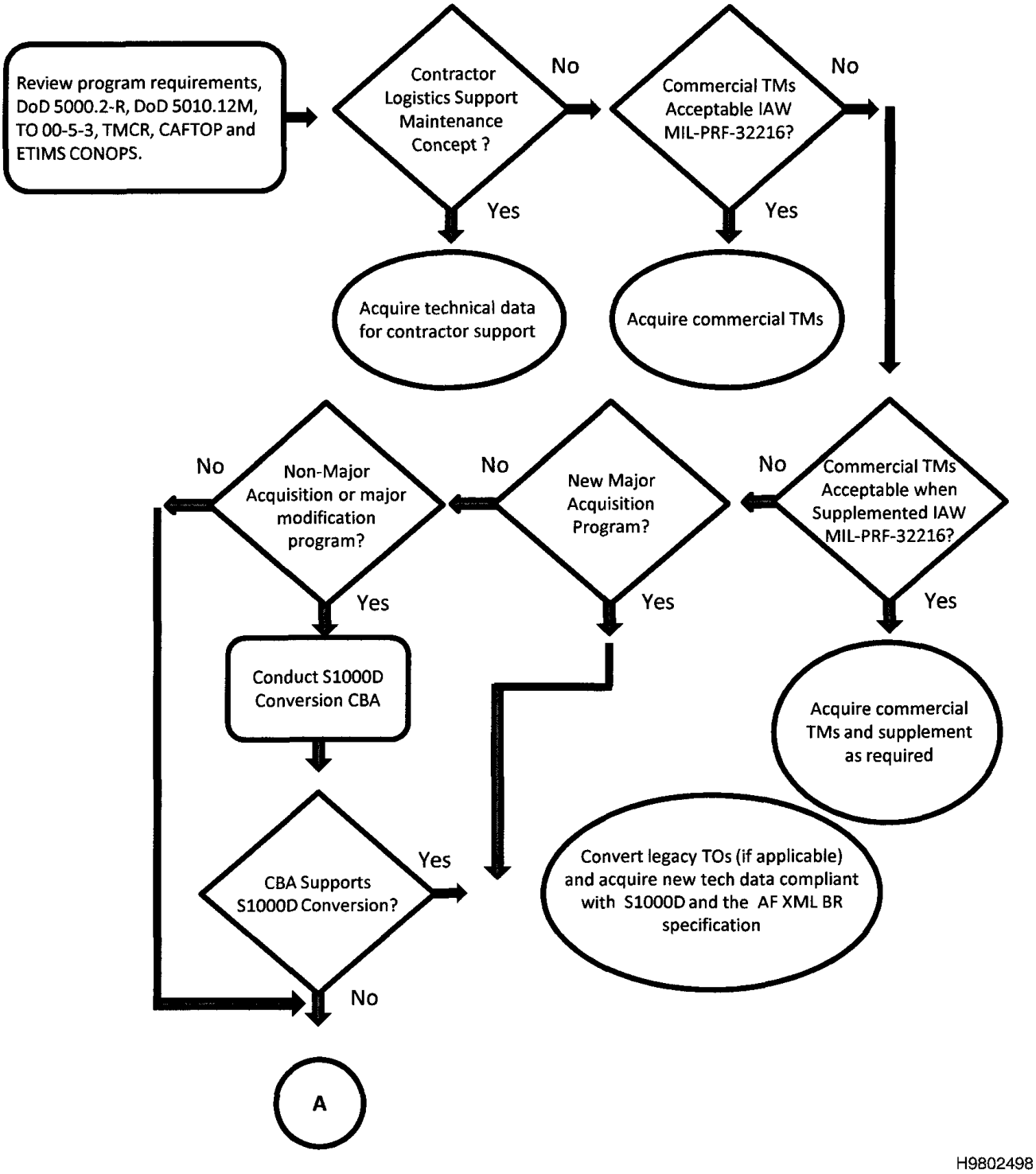

Figure 3-2. Digital TO Acquisition Decision Tree (Sheet 1 of 2)

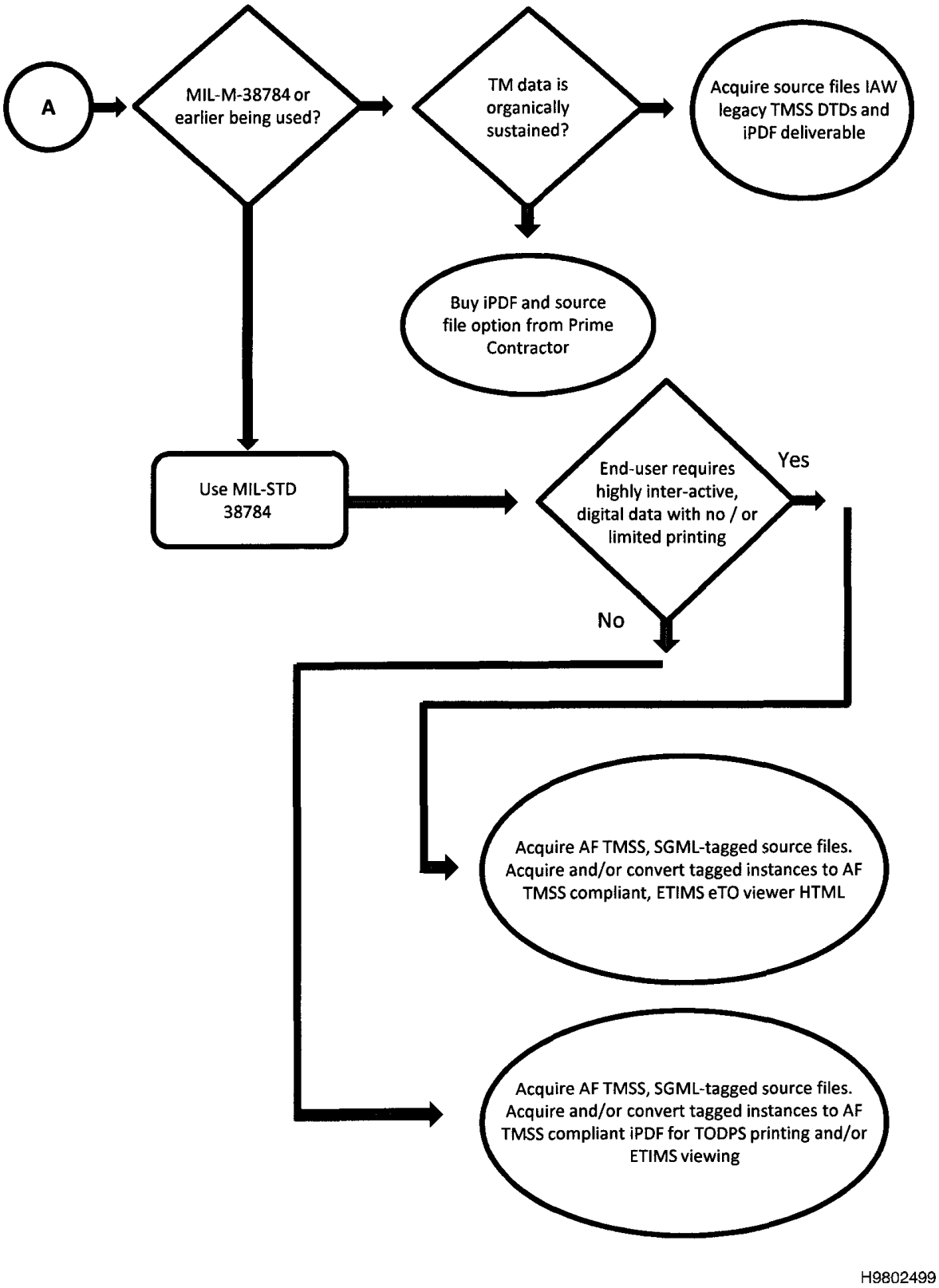

Figure 3-2. Digital TO Acquisition Decision Tree (Sheet 2)

CHAPTER 4
PLANNING, BUDGETING AND SPECIAL REQUIREMENTS

4.1 GENERAL.

TOs are a primary consideration in the dynamic process that produces a balanced logistic support concept for new or modified military systems and commodities. Planning must acknowledge the relationship between TO development, military system and/or commodity testing, other logistics activities, production, deployment and use. Because each program has unique characteristics, this chapter will address generic program phases. The TO Manager should translate these phases to terms used for the specific program.

4.2 ACQUISITION STRATEGY.

The following paragraphs outline a typical TO acquisition program for a major new system. Detailed procedures are covered in the referenced chapters. Programs of lesser scope (such as for commodities or modification of existing equipment) may not require all steps or functions.

4.2.1 Program Planning. The first step in any program or project is to determine the requirements. The TO Manager initiates this process for TOs by reviewing program documentation and developing a preliminary plan of action (paragraph 4.3). Ensure requirements meet the using command digitization strategy and the intent of the AF TO CONOPS.

4.2.2 Requirements Conference. The TO Manager will call and chair a TO Planning/Requirements Conference (TOP/RC) for new program starts. TOP/RC membership is the nucleus of the IPT working a TO program and includes the Lead and Using Commands, other AFMC managers and support agencies. The TOP/RC finalizes the requirements to input to the RFP, and formalizes the initial TOMP (paragraph 4.3 and Chapter 7).

4.2.3 Proposal Evaluation (Chapter 6) and Contract Award. During source selection, contractor proposals will be evaluated using RFP section M criteria, and will be ranked according to several factors (including such things as past performance, demonstrated understanding of requirements, and price.) A contract is negotiated and awarded to the winning offeror.

4.2.4 Guidance Conference. The IPT, with the contractor included, holds a Guidance Conference (Chapter 7) where program plans are reviewed and approved, and schedules are established. The timing is usually within 60 days after contract award to avoid delaying contractor tasks. The contractor can initiate TO preparation after the TO guidance conference.

4.2.5 TO Development. During TO preparation, the IPT conducts IPRs (Chapter 7) to evaluate progress and compliance with contractual requirements. TO format and content requirements are imposed by the contract. Safety and health reviews (Chapter 14) will be included in IPRs. The contractor will apply quality management principles to ensure TO adequacy and accuracy during the development process.

4.2.6 Verification. All PTOs shall be verified by the government to the maximum extent possible prior to formalization and use in the operational environment (Chapter 9).

4.2.7 Pre-Publication Reviews. The TO Manager and IPT will ensure that verification comments and corrections are incorporated and that manuals meet contractual requirements. A formal pre-publication review may be required.

4.2.8 Publication and Delivery. The TO Manager will arrange for reproduction and ID of TOs and updates IAW Chapter 10 and TO 00-5-1. The distribution of all PTOs is the responsibility of the TO Manager. A copy of all TOs and updates will be sent to the Air Force Archives at Tinker AFB on CD-ROM or DVD.

4.2.9 TO Sustainment. The TO Manager, in conjunction with the TCM, will maintain accuracy and adequacy of TOs for the entire life cycle of the military system or commodity, IAW AFI 63-101, TO 00-5-1 and this TO.

4.2.10 Foreign Military Sales. When applicable, the TO Manager will establish contracts and manage development of Country Standard TOs (CSTO) to support Foreign Military Sales (FMS) programs (Chapter 15 and TO 00-5-19).

4.2.11 TO Disposition. The TO Manager will supersede or rescind TOs when they have been replaced or are no longer required, IAW this TO. TOs will be retained in the Archives until six years after the equipment supported leaves the inventory.

4.3 INITIAL PLANNING.

The TO Manager for an acquisition program must be established as early as possible to develop cost management planning requirements and inputs to the Statement of Objectives (SOO), Evaluation Criteria and Instructions to Offerors (ITO) sections of the Request for Proposal (RFP) (Chapter 5).

4.3.1 Program Basis. The TO Manager will review the Initial Capabilities Document (ICD), Capability Development Document (CDD), Operational Concept, Maintenance Concept, draft Air Force TMCR document, and other documents to develop a preliminary TO Management Plan (TOMP) and wording for the SOO, Evaluation Criteria, and ITO.

4.3.1.1 The SOO should specify TO objectives in performance-based terminology. Evaluation Criteria must support the SOO and be traceable to the ITO sections.

4.3.1.2 The ITO must be explicit enough to allow the contractor to tailor a TMCR for submittal with the proposal.

4.3.2 TO Integrated Product Team (IPT). The TO Manager must assemble an IPT consisting of all the agencies affected by program TOs, or ensure the agencies are part of the overall program IPT. As a minimum, the team must include representatives from other AFMC activities, including the FMM when appropriate, the prime ALC equipment specialists and sustainment TO Manager, and the using command(s). The safety and nuclear surety offices (see Chapter 14), Air Education and Training Command (AETC) and the Responsible Test Organization (RTO) should be included on the team. Contractor representatives should be included as soon as the contract is issued, with contracting officer concurrence.

4.3.2.1 Acquisition of certain types of TOs and/or source data requires unique management and coordination efforts (see paragraph 4.7 and Chapter 16).

4.3.2.2 The TO Manager must ensure that OPRs for the applicable “Special Requirements TOs” (paragraph 4.7 and subparagraphs) are included in the initial TO requirements conference, and OPR requirements are included in the TOMP and RFP package.

4.3.3 TO Planning/Requirements Conference (TOP/RC). The TOP/RC, held before the program data call, brings together the members of the TO IPT to plan the TO program. Membership continuity in subsequent conferences and reviews must be maintained whenever possible. Once the program TO requirements are developed, inputs to the RFP are drafted and the TOMP is finalized. If required, prepare a draft Memorandum of Agreement (MOA) or Program Introduction Document (PID) between the PM and any test organizations tasked to support the development effort. The MOA or PID is required to justify organization manning and funding.

4.3.3.1 When a customer establishes requirements for more expensive or extensive TOs, it is the responsibility of the IPT to question and evaluate the increased requirements. Consideration should be given to cost versus effectiveness, trade-offs, alternatives, the using command digitization plan, and the AF TO CONOPS. When disagreements cannot be resolved, the TO Manager will elevate the matter for resolution.

4.3.3.2 When a significant change in hardware configuration occurs, such as a MDS, a separate set of basic or supplemental TOs must be considered. Presenting changed information in new TOs makes the changes easier to understand and use, and simplifies the control of classified or restricted information. When specified by the program office (see MIL-STD-38784, paragraph 6.2), Difference Data Sheets shall be used to provide information on additional models of equipment which constitute minor changes from the basic design. Separate Difference Data Sheets shall be prepared for each additional model covered. The first page of the Difference Data Sheets shall conform generally to MIL-STD-38784, Figure 31.

4.3.4 Request for Proposal (RFP). The TO Manager will make inputs to the PM data call to ensure that TO-related data is placed on contract. The TO Manager must ensure that the proper FAR/DFARS data rights clauses are included in the RFP. These requirements will not be altered by the PM or Data Manager without the concurrence of the TO Manager, using command and support agencies. The ITO will inform contractors responding to the RFP about information to be included in the proposal. Evaluation Criteria (section M of the RFP) must be traceable to both the SOO and ITO.

4.3.5 TO Management Plan (TOMP). The TOMP is developed, coordinated and approved at the TOP/RC. It outlines management policies and procedures for the development, acquisition, reproduction, and distribution of TOs on any military system or commodity program. The TOMP must address timely acquisition of PTOs or source data with a format and depth

of coverage adequate to support test activities. It is a dynamic management tool and should be updated as required during the entire TO program life cycle. It may be an attachment to the Life Cycle Management Plan (LCMP). The TOMP is mandatory for major programs and should be considered for ALL programs. Air Force TO proponents for joint DoD and international weapon system acquisition programs shall develop and maintain copies of the AF TOMP and TOVP (paragraph 4.5.4) for the life of the program. See Appendix B for a draft TOMP tailorable for program requirements.

4.3.6 Support Requirements. The TO Manager will work with other PM functions during the contracting process to ensure that TO program support requirements (such as engineering data and hardware to support verification) are in the final contract.

4.4 BUDGETING AND FUNDING FOR TECHNICAL ORDERS.

4.4.1 TO Initial Acquisition and Sustainment Budgeting and Cost Estimating. The TO Manager is responsible for estimating the cost of TOs needed to support the military system or commodity. The cost of acquiring TOs includes writing, editing, supporting conferences and reviews, verification, preparation of reproducible masters, printing and distribution, routine maintenance, and TO-related travel (AFI 65-601V1, *Budget Guidance and Procedures*). TO costs are chargeable to the same budget program activity code used to finance hardware costs during initial acquisition. The TO Manager must begin the cost estimating process shortly after assignment to ensure adequate program funds are available. All information sources should be explored, including but not limited to historical data from other programs, contractor estimates, and prior experience. The PM must ensure the annual program budget submission includes TO requirements.

4.4.1.1 PMs/TO Managers will use the Air Force Knowledge Management (AFKM) Comprehensive Air Force TO Plan (CAFTOP) Working Group CoP (https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=OO-EN-MC-TO) to access the CAFTOP Handbook, *The Technical Order Requirements Process* (formerly Chapter 85 of the Financial Management Reference System). Use CAFTOP Handbook procedures to develop a weapon system/commodity-specific CAFTOP Annex for submission to the appropriate Lead Command (AFPD 10-9, *Lead Operating Command Weapon Systems Management*, or AFI 10-901, *Lead Operating Command - Communications and Information Systems Management*) in time to support a budget submission for the current Future Years Defense Plan (FYDP).

4.4.1.2 Funding for physical-distribution digital media (e.g., CD-ROMs or DVDs) is managed the same as funding for individual TOs, through the CAFTOP process.

4.4.2 Modifications. The PM will address all Time Compliance TOs (TCTOs), new Operations and Maintenance (O&M) TOs, and O&M TO updates required to support planned modifications in the Technical Order Financial Brochure (TOFB) and CAFTOP Annex submitted to the Lead Command for funding. However, TCTO and related new TOs or TO Updates are funded by the specific modification project.

NOTE

Some acquisition program contracts provide for system upgrades as part of the contracted effort. Sustainment programs must use modification funding for all TCTOs and TCTO-related TO updates, publication and distribution.

4.4.2.1 The TO Manager ensures funding requirements for TCTO acquisition, verification, related TO updates, printing and distribution have been considered in modification funding packages. Requirements include costs to remove “before” and add “after” data (before and after modification) in TOs.

4.4.2.2 The TO Manager annotates the fund citation or modification number in the print package submitted to the local DLA Document Services facility. If the package also contains non-modification-related changes, the annotation will show the related fund citations and the percentage chargeable to each.

4.4.2.3 Inspection program (-6 TO) changes that require depot maintenance actions change Depot Programmed Equipment Maintenance (DPEM) funds obligations. The responsible Production Management Activity (PMA) (for TCTO modification kits) will contact the ALC DPEM funds point of contact to ensure that adequate funds are available. The PMA will procure and manage the available funds per AFI 65-601V1 and associated AFMC supplements.

4.4.3 Spares Replacement. Acquisition funds and the stock fund are used to acquire new TOs or TO Updates driven by the need to replace existing spare parts and components with new items. The PGM provides the TO Manager with a printout of the replacement item cost computation. The TO Manager annotates the total dollar requirement for the maintenance of commodity TOs resulting from the acquisition of replacement spare items. The TCM will assist the TO Manager with

computing the impact of spares replenishment on weapon systems TOs based on history and known future acquisitions. The TO Manager provides budget requirements by weapon system.

4.4.4 Calibration TOs. The Air Force Metrology and Calibration Program, TO Management Office, AFMETCAL, submits and manages budget requirements for calibration TOs and updates.

4.5 TECHNICAL ORDER DEVELOPMENT.

4.5.1 Early TO Development. Early TO development covers the acquisition period when TO contracts are issued, contractor guidance conferences are held, and the contractor actually begins development of the required TOs. It is critical to establish proper TO formats and coordination channels to streamline the development process.

4.5.2 TO Guidance Conference (Chapter 7). The TO Manager will hold a TO Guidance Conference with the IPT and contractor to ensure understanding of contract requirements. The IPT will review schedules, support requirements, additional TO specification tailoring, and procedures for all phases of TO development and production.

4.5.3 Later TO Development. During the later stages of development, hardware and software design is becoming stable, and development tasks in many areas are nearing completion. IPRs (Chapter 7) are taking place during this period, and the TO Manager may be required to conduct many reviews within a short period of time. As hardware becomes available, the contractor provides PTOs for Air Force verification, pre-publication reviews, and formalization. The TO Manager must monitor formation of the verification team and performance of verification, review and approval of changes generated by verification, and the final TO approval process, among other tasks. The TO Manager may be required to refine TO schedules to support verification opportunities. Equipment availability must be closely monitored. Testing may cause equipment failures which could deny assets to the TO verification effort.

4.5.4 TO Verification Plan (TOVP) (see Appendix C). Planning for verification of TOs should be initiated at the TO Planning/Requirements Conference (or by the TO Manager if no conference is held), based upon the needs of the using command and other affected agencies. Identification of procedures to be verified, the verification site, the Verification Team Manager (VTM), support equipment and consumables required, schedules, use of substitute equipment and contractor support must be accomplished well in advance of beginning a verification program (contractor support is determined in the contract).

4.5.4.1 Verification must be given a priority equal to other development activities, if a supportable military system is to be delivered. The TOVP must be finalized during the Engineering and Manufacturing Development phase of acquisition. The TOVP should be maintained throughout the TO program life cycle. See Appendix C for a draft TOVP tailorable for program requirements.

4.5.4.2 Lessons learned indicate that where verification is left to ‘targets of opportunity,’ TOs are not usable at delivery. The TO Manager must take advantage of unscheduled opportunities for verification, while maintaining a constant emphasis on meeting the verification schedule.

4.6 TECHNICAL ORDER AND SYSTEM SUSTAINMENT.

TO management responsibility usually remains with the PM acquisition team through the early “Production and Deployment” phase. When the program moves into the “Operations Support” phase, this responsibility usually transfers to the assigned TO Manager at the prime ALC. Regardless of where assigned, the TO Manager must ensure the TOs remain current and accurate (Chapter 11 and Chapter 12), oversee the completion of any remaining verifications, conduct reviews and manage any TO updates. TOs move into the sustainment phase on an individual basis as they are formalized. Formal TOs are sustained IAW TO 00-5-1 and this TO.

4.7 SPECIAL PURPOSE TECHNICAL ORDER REQUIREMENTS.

Most weapon system acquisition programs will require procurement of special purpose TOs and source data, requiring different acquisition and management procedures. These TOs and data require coordination with or even management by agencies outside the standard process. The types of TOs or source data requiring special treatment include, but may not be limited to the following:

4.7.1 Aircraft Battle Damage (Assessment and) Repair (ABDR) (-39 Series) TOs. These manuals are developed IAW MIL-PRF-87158 (*Manuals, Technical: Aircraft Battle Damage Assessment & Repair*), and managed IAW AFI 21-105, *Air and Space Equipment Structural Maintenance*. (“Assessment” is very seldom used in referring to these TOs.) HQ

AFMC/A4RC, 2704 D St, Wright-Patterson AFB, OH 45433-7413, DSN 785-6179, is the Air Force OPR for ABDR, and must be notified of acquisition activities involving these procedures. Developers may request A4RC-TSO for assistance in developing procedures.

4.7.2 Nuclear Weapon (Categories 11N and 60N) TOs. The 708th Nuclear Sustainment Squadron (NSUS) Technical Support Flight (NWLT) is responsible for these TOs and manuals as specified in this TO and TO 00-5-1. The 708 NSUS/NWLT must be included in all activities related to the acquisition and maintenance of these TOs.

4.7.3 Ballistic Missile Codes (21M-XX-16 Series) TOs. The National Security Agency (NSA), Section V62, is the focal point for the acquisition agency TO Manager for Inter-Continental Ballistic Missile (ICBM) launch and targeting codes and procedures. NSA retains this responsibility for the entire life cycle of the military system. The TO Manager shall ensure developmental codes data and procedures are routed to this organization for coordination and approval.

4.7.4 Calibration and Metrology (Category 33K and System-Unique) TOs and Procedures. AFMETCAL, 813 Irving-Wick Dr W, Ste 4M, Heath OH 43056-6116, e-mail: afmetcal.toqap@afmetcal.af.mil, is the Air Force OPR for calibration and metrology procedures.

4.7.4.1 AFMETCAL will approve calibration requirements and intervals, and verify and approve calibration procedures in TOs. AFMETCAL will also determine if requirements are to be included in system O&M TOs or if a separate TO is required.

4.7.4.2 AFMETCAL usually prepares stand-alone TOs from source data acquired from the contractor by the TO Manager. Procedures to be included in other TOs are usually contractor-developed and must be verified and approved by AFMETCAL.

4.7.4.3 AFMETCAL must review and approve or disapprove Contractor Furnished (Aeronautical) Equipment (CFAE/CFE) Notices which identify commercial or MIL-PRF calibration manuals. AFMETCAL provides TO numbers for both MIL-PRF TOs and approved commercial manuals.

4.7.4.4 When requested, AFMETCAL will assist the TO Manager with calibration procedure development and acquisition. Developers may also request AFMETCAL assistance in developing calibration procedures.

4.7.5 Corrosion Control (1-XX-23, 10-XX-9, and 21-XX-22 Series) TOs and Procedures. These TOs and corrosion control procedures will be developed by the contractor IAW the technical requirements of MIL-DTL-87929, *Detail Specification Technical Manuals, Operation and Maintenance Instructions in Work Package Format* (For USAF Equipment). AFRL/MLS-OLR, 325 Richard Ray Blvd, Bldg 165, Robins AFB GA 31098-1639, e-mail: afcorr@robins.af.mil, is the Air Force OPR for corrosion control. The TO Manager must contact AFRL early in the planning stages to establish requirements and schedules for TO review and approval. The PM must establish a Corrosion Prevention Advisory Board (CPAB) to evaluate the adequacy of corrosion prevention measures included in the system and/or commodity design, review the contractor approach to prevention, and advise on corrosion prevention matters. Membership and responsibilities of the CPAB are contained in AFI 21-105. The contractor, through the TO Manager, may request AFRL assistance to develop new procedures.

4.7.6 TO 00-105E-9, *Aerospace Emergency Rescue and Mishap Response Information (Emergency Services)*. TO 00-105E-9 describes aircraft emergency procedures that must be used by military and civilian fire departments that might have to respond to military aircraft accidents.

4.7.6.1 The source data for these procedures will be developed by the contractor IAW DID DI-TMSS-81532, *Aerospace Emergency Rescue and Mishap Response Information (Emergency Services) Source Data*, and provided to the Air Force Civil Engineering Support Agency (AFCESA)/CEXF, with a copy to Detachment (Det) 63, HQ ACC (paragraph 4.7.7). The DID is required for ALL aircraft programs to include modifications affecting the list in paragraph 4.7.6.2.

4.7.6.2 The TO is only available electronically. Military or civilian users, whose duties are related directly or indirectly to the performance of aerospace emergency rescue and mishap response, may request access by completing the DoD Electronic Registration Form, inlcuding the Terms of Agreement, on the DoD Firefighter Certification site, http://www.dodffcert.com/00-105E-9/index.cfm (restricted access membership required). Users experiencing technical issues with this web site should contact the TO Administration Center at AFCESA/DEXF, DSN 523-6150, e-mail: HQAFCESA.CEXF@tyndall.af.mil.

4.7.6.3 To help ensure safety and rapid response of crash/fire/rescue personnel responding to aircraft mishaps, TO managers and users will coordinate TO 00-105E-9 changes that affect the following aircraft subject areas with AFCESA/CEXF:

- Fire hazards
- Personnel hazards (intakes, exhausts, radar emitting devices, hot brake areas, auxiliary power unit (APU) ports, etc.)
- Aircraft entry (normal and emergency)
- Engine or APU shutdown (normal and alternative methods)
- Oxygen and fuel shutoff valves
- Ejection or escape system changes in safing, releasing and extraction
- Stationary seat restraint systems
- Changes to flammable systems (oxygen, fuel, hydraulics, batteries and miscellaneous chemicals)
- Fuselage skin penetration points
- Cabin arrangements and personnel locations, or number of personnel on board
- Alternative engine shutdown access areas
- Airframe materials (types of metals and advanced composites)

4.7.7 Explosive Ordnance Disposal/Render Safe Procedures (EOD/RSP) (Category 60) Manuals and Source Data. Det 63, HQ ACC, 2008 Stump Neck Road, Indian Head MD 20640-5099, e-mail: det63@jeodnet.mil, is the Air Force liaison to the Naval EOD Technology Division (NAVEODTECHDIV), Indian Head MD. Det 63 is the single point of contact for the Navy-managed joint service nonnuclear EOD publications, responsible for technical acceptance of EOD source data for Air Force weapon systems and commodities, and development of Category 60 EOD TOs to support those systems and commodities. Additional responsibilities for Det 63 are specified in DoDD 5160.62, *Single Manager Responsibility for Military Explosive Ordnance Disposal Technology and Training,* and AFI 32-3001, *Explosive Ordnance Disposal Program.*

4.7.7.1 The TO Manager is responsible for acquisition of EOD/RSP source data for development of nonnuclear Category 60 TOs (Chapter 16), using DID DI-SAFT-80931, *Explosive Ordnance Disposal Data.*

4.7.7.2 Nuclear warhead and reentry vehicle EOD procedures (Category 60N TOs) will be developed IAW the 1964 Joint Nuclear Weapons Publication System (JNWPS) Agreement between the Department of Energy (DOE) and DoD. In essence, that agreement provides that nuclear source data will be prepared by the Defense Threat Reduction Agency (DTRA) and submitted to the agency responsible for preparing EOD TOs for integration with the nonnuclear interface data. The TO Manager is responsible for providing this interface data.

4.7.8 Make-Safe Procedures for Public Display (TO 00-80G-Series). HQ AFMC/SE is the Air Force OPR for Make Safe procedures. The contractor will develop the procedures IAW TO 00-80G-1, *Make Safe Procedures for Public Static Display*, and MIL-STD-38784. The procedures must be reviewed and approved by HQ AFMC/SE.

4.7.9 Nonnuclear Munitions Loading (-33 Series), Weapon Delivery (-34 Series) and Positioning and Tiedown (-38 Series) TOs. The procedures for -33 and -34 TOs and source data are covered in Chapter 16.

4.7.9.1 Positioning and Tiedown (-38) TOs . For -38 TOs, the munitions TO Manager will acquire source data IAW MIL-PRF-9977, *Manuals, Technical and Checklists: Munitions/Weapons Loading Procedures, Nuclear and Nonnuclear // Packages, Standard Data: Munitions Loading Procedures, Nonnuclear*, from the prime contractor for the munitions item, and provide the data to the USAF GACP, OO-ALC/GHGMA, Hill AFB UT, e-mail: 784CBSG/GACP@hill.af.mil., for development of the TOs.

4.7.9.2 Strategic Systems TOs. TOs for munitions used with strategic aircraft systems are acquired from the contractor like any other operation and maintenance TOs. HQ ACC/XRS and/or 98 Range Wing (RANW), 3770 Duffer Drive Bldg 200, Nellis AFB NV 89191, perform verification of these TOs.

4.7.9.3 Combat Sortie Generation (CSG) (-33-1 through -33-4) TOs. These munitions and stores loading TOs provide procedures for hot loading of aircraft in combat situations. (“Hot” loading includes simultaneous munitions loading, aircraft maintenance, and refueling with one or more engines running.) The procedures are based on a Systems Safety Engineering Analysis (SSEA) performed by HQ AFMC/SES IAW AFI 91-202, *The US Air Force Mishap Prevention Program.* CSG TOs will not be changed without prior approval from HQ AFMC/SES.

4.7.10 Other Nonnuclear Munitions TOs. TOs in Categories 11, 21, 31, 33 and 35 and source data for updating general Category 11 TOs relating to nonnuclear munitions and explosive components will be acquired by the TO Manager and managed by the USAF GACP, or for air-launched missiles, the USAF GACP ASC. These TOs and data cover such areas as commodity item maintenance (-7 series), 11A-1-10, *Munitions Serviceability*, 11A-1-42, *General Disposal of Conventional Munitions*, 11A-1-46, *Hazard Classification and Fire-Fighting*, 11A-1-61 series, *Storage & Outloading Drawings*, and 11A-1-63, *Inspection & Assembly of Nonnuclear Munitions*, for munitions and explosives. The TOs and data must be reviewed

and approved by the GACP or ASC. Any tasking for EOD support in these TOs must have prior coordination with Det 63, HQ ACC.

4.7.11 Non-Destructive Inspection (NDI) (1-XX-36, 2-XX-9 or 21M-XX-26 Series) TOs and Procedures. These TOs and NDI procedures will be developed by the contractor IAW the technical requirements of MIL-DTL-87929. AFRL/MLS-OL, 4750 Staff Drive, Tinker AFB OK 73145-3317, e-mail: afrl.mls-ol@tinker.af.mil, is the Air Force OPR for the NDI program. The TO Manager must contact AFRL prior to initiating contracts for TO development for any military system or commodity, to establish requirements and schedules for TO development, review (including IPRs), and approval. The PM must establish an NDI Advisory Board with membership and responsibilities as specified by AFI 21-105. The contractor may contact AFRL/MLS-OL through the TO Manager for assistance.

4.7.12 Work Unit Code (WUC) (-06 Series) Manuals and REMIS "Push-Down" Tables. System-specific coding in these manuals and tables is the responsibility of the prime ALC TCM. HQ AFMC is OPR for the other data elements listed in TO 00-20-2, *Maintenance Data Documentation* (Support General WUCs, How Malfunctioned Codes, etc.) For a specific system, the PM procures the equipment listing from the contractor, and the prime ALC is responsible for assigning the codes IAW MIL-PRF-38769, *Performance Specification: Manuals, Technical; Work Unit Code - Preparation of.*

4.7.13 Critical Alloy and Precious Metals Conservation Procedures and Requirements. The TO Manager will acquire source data for these procedures from the contractor and provide the data to the prime ALC to develop, prepare, and publish the 00-25-113-series TOs and changes or supplements required for assigned systems and commodities IAW TO 00-25-113, *Conservation and Segregation of Critical Alloy and Precious Metal Bearing Parts and Scrap.* The source data shall conform with TO 00-25-113 requirements.

4.7.14 SEEK EAGLE Certification. SEEK EAGLE (AFI 63-104, *The SEEK EAGLE Program*) is the Air Force program to certify all aircraft and store configurations (including weapons, fuel tanks, dispensers, pods, etc.) for loading, safe carriage and employment, and ballistics accuracy. The Air Force SEEK EAGLE Office (AFSEO), 46 SK/SKA, 205 West D Avenue, Ste 348, Eglin AFB FL 32542-6865, monitors this certification process. SEEK EAGLE products are source data for inclusion in the aircraft operational flight program and in Category 1 aircraft and stores TOs. The affected munitions, stores, and aircraft TO Managers must coordinate with the AFSEO to determine user priorities and which TOs will be specifically monitored for the SEEK EAGLE certification process. The TO Managers must provide copies of status reports on the selected TOs to the AFSEO, and ensure that the TOs and/or updates are published in time to meet using command need dates. See Chapter 16.

4.7.15 Organic Coatings. When applicable, the TO Manager must ensure that source data on new systems is acquired to update TO 1-1-8, *Application and Removal of Organic Coatings, Aerospace and Non-Aerospace Equipment.* The OPR is 542 MSUG/GBMUDE.

4.7.16 TO 00-25-255, *General Reference Manual --Electronic Cable Assembly Components, Volumes 1 & 2*. 542 MSUG/GBMUDE is the OPR for these general reference TOs. This series of TOs provides data for military and commercial electronic cable components for aircraft and test equipment. The source data for new connectors, cables and wiring in any Air Force system or commodity will be identified by the contractor and provided to 542 MSUG/GBMUDE.

4.7.17 Powered Aerospace Ground Equipment (AGE) Generic Servicing Inspection Workcards. There is a set of generic servicing inspection workcards for powered AGE (TO 35-1-256WC-1, *Service Inspection Workcards -- Powered Aerospace Ground Equipment)* which contain all known and relevant inspection requirements. 542 MSUG/GBMUDE manages these workcards. The TO Manager acquiring new AGE must ensure that source data to update these workcards is provided to GBMUDE.

4.7.18 Inspection and Maintenance Manual. There shall be one inspection and maintenance (-6) TO prepared for applicable weapons (i.e., aircraft, air/ground launched missiles, rocket, drone, C-E, and support systems). The need for additional manual(s) shall be as determined by the acquiring activity (see MIL-DTL-5096, *Detail Specification; Preparation of Inspection and Maintenance Requirements, Functional Check Manuals, Inspection Work Cards, and Checklists Technical Manuals*). When Depot maintenance schedules or workload are affected, see paragraph 4.4.2.3.

4.7.19 Aircraft Cross-Servicing Guide. Aircraft cross-servicing guides are additional manuals that accompany aircraft tasked to deploy in support of North Atlantic Treaty Organization (NATO) and Air Standardization Coordinating Committee (ASCC) activities. The manuals are developed IAW the guidance in MIL-DTL-22202, *Detail Specification: Aircraft Cross-Servicing Manuals, Technical, Preparation Of,* and numbered by OC-ALC/ENGLA. Cross-servicing guides are not part of the organizational maintenance manual set (MIL-PRF-83495). However, the guides provide cross-references for various

types of servicing and loading equipment used by ground personnel and are used in conjunction with aircraft servicing and loading TOs.

4.7.20 List of Applicable Publications (LOAP). This "-01" TO type is required for all new and existing weapon and military systems. It will be used by ECSS to establish and maintain the system's structure in the database. It shall be developed IAW MIL-PRF-8031, *List of Applicable Publications (LOAP) - Preparation,* and shall be maintained current throughout the system's life cycle by the TO Manager.

4.7.21 Commercial Vehicle Fleet Maintenance Manuals. Whenever the Air Force procures new fleet vehicles, maintenance manuals are typically delivered with the new vehicle. Concurrent with the procurement, the manuals will be entered into the TO system to support TODO one-time requisition requests. Such requests require sponsor approval justification in ETIMS, including:

- Make
- Model
- Air Force Vehicle Registration Number (Tag Number)
- Vehicle Identification Number (VIN)

4.7.22 (NEW) The USAF is applying Item Unique Identification (IUID) labels to allow the automatic scanning of data matrices on parts and improve the reliability and usability of the Air Force's future Information Technology systems. See paragraph 12.1.11 for processing IUID-related updates to published TOs.

CHAPTER 5
CONTRACTING

5.1 GENERAL.

TOs are usually developed and acquired through a hardware acquisition or standalone TO contract with a prime or integrating contractor. In some cases, TOs may be developed by an independent contractor or organic government resources. TO program objectives are specified in RFP and detailed requirements are listed in a negotiated contract (paragraph 5.4).

5.1.1 Net-Centric Operations and Warfare Reference Model (NCOW RM). Program Managers will use the NCOW RM as a means and mechanisms to describe their transition from the current environment (described in the Global Information Grid (GIG) Architecture Version 1) to the future environment (described in GIG Architecture Version 2) for acquisition. In addition, the NCOW RM will be a key tool during program oversight reviews for examining integrated architectures to determine the degree of net-centricity a program possesses and the degree to which a program can evolve to increased net-centricity (Defense Acquisition Guidebook [DAG], paragraph 7.2.1.4). TOs and TO delivery systems must fit into this net-centric architecture.

5.1.2 TO Program Inputs. TO program inputs are included in either a Statement of Objectives (SOO - paragraph 5.5) or work statement such as a Statement of Work (SOW - paragraph 5.6) or Performance-based Work Statement (PWS - AFI 63-124, *Performance-Based Services Acquisition (PBSA)*. The SOO is the preferred method for most new acquisition efforts, while the PWS is preferred for services contracts. Additional inputs are made to the Evaluation Criteria (paragraph 5.7), Instructions to Offerors (ITO - paragraph 5.8), and must include DD Forms 1423 (CDRL - paragraph 5.9) and a TMCR (paragraph 5.10). Evaluation Criteria inform offerors of the minimum requirements for the program.

5.1.3 Joint Acquisition Programs. Procedures for the joint acquisition of TOs with or through other government agencies are specified in AFJI 21-301.

5.2 DATA AND DATA MANAGEMENT (REF: DEFENSE ACQUISITION GUIDEBOOK, PARAGRAPHS 4.2.3.7 & 5.1.3.3).

NOTE

DoD policies and procedures for data and data management in this and the next section are directly applicable to procedures for Technical Order development and management in this TO. Italicized statements were added for clarity.

5.2.1 Definition. Data are defined as recorded information regardless of the form or method of recording. The term includes technical data (*including TOs*), computer software documentation, management information, representation of facts, numbers, or datum of any nature that can be communicated, stored, and processed to form information required by a contract or agreement to be delivered, or accessed by, the Government. The term includes similar information generated directly by Government activities, as well. The data are used to gain insight and provide management and guidance to systems development programs.

5.2.2 Scope. For purposes of this chapter, “data” refers to (the TOs and source data) necessary for or associated with product development and sustainment, including the data associated with system development; modeling and simulation used in development or test; test and evaluation; installation; parts; spares; repairs, usage data required for product sustainment; source and/or supplier data; reclamation; re-use; and cannibalization of the system and its associated commodities. Data specifically not included would be data relating to tactical operations information; sensor or communications information; financial transactions; personnel data; transactional data; and other data of a purely business nature. Guidance for logistics data can be found in (*the below paragraphs*).

5.2.3 Total Life Cycle Systems Management (TLCSM). Under TLCSM, the program manager is responsible for Data Management for the system throughout its life cycle. Data Management is an important part of Life-Cycle Logistics. In that context, Data Management consists of the disciplined processes and systems that plan for, acquire and/or access, manage, and use data throughout the total system life cycle.

5.2.4 Data Management Defined. Data Management is defined as the process of applying policies, systems and procedures for identification and control of data requirements; for the timely and economical acquisition of such data; for assuring the adequacy of data; for the access, distribution or communication of the data to the point of use; and for analysis of data use. This section concentrates on technical, product, and logistics data in support of the development, production, operation, sustainment, improvement, demilitarization and disposal of a system. This includes both government and contractor created data.

5.2.5 Strategy. The program manager should develop a long-term strategy that integrates data requirements across all functional disciplines to include logistics. A performance-based approach should be used to identify the minimal data required to cost-effectively operate, maintain and improve the fielded system and to foster source of support competition throughout the system life cycle. Data should be available in a format that is compatible with the intended user's environment and a quality assurance program should be implemented to guarantee the accuracy and completeness of the data. The program manager should assess the long-term needs for technical data rights to support weapon systems and correspondingly, to develop acquisition strategies that address those needs. Because a weapon system may remain in the defense inventory for decades the decisions made at the time of acquisition can have far-reaching implications for weapon system support over the system's life cycle, and the failure to negotiate adequate technical data rights may impede the government's ability to sustain the weapons system. It is during the development of the solicitation and the subsequent negotiation of a proposed contract that the government is the best position to negotiate and secure required technical data rights. The program manager should consider requiring an acquisition strategy that provides for a future delivery of sufficient technical data should the need arise to select an alternative source or to offer the work out for competition.

5.2.6 Access vs. Delivery. In many cases, leaving Government acquired data in the physical possession of the contractor and having access to the contractor's data system is the ideal solution. In addition to data access, the requirement for Government use, reproduction, manipulation, altering or transfer of possession of data should be part of the data acquisition and management strategy. The contract should specify appropriate Government rights to the data acquired, in addition to requirements for delivery or access. Data, whenever it is delivered to the government, should be formatted in accordance with accepted data standards to ensure usability by the government. A list of data (*specification and*) standard examples can be found in (*the Air Force TMCR, https://techdata.wpafb.af.mil/toprac/working.htm*). These decisions should be made early in the acquisition life cycle to avoid unexpected costs to procure, reformat and deliver data.

5.2.7 Protecting Data. Whether the data is stored and managed by the government or by industry, the program manager is responsible for protecting system data (see Chapter 3). Policy applicable to data protection, marking, and release can be found in the following: DoDD 5230.24, DoDD 5230.25, DoD 5400.7-R, and Defense Federal Acquisition Regulations Supplement (DFARS) Part 252.227-7013& 7014. The Air Force implementing instruction is AFI 61-204.

5.2.8 Additional Guidance. Industry standards from organizations such as the Government Electronics and Information Association (GEIA), International Standards Organization (ISO) and American National Standards Institute (ANSI), provide high level principles to guide integrated data management planning, and implementation. The GEIA Handbook GEIA-HB-859, *Data Management*(http://www.techstreet.com/cgi-bin/detail?product_id=1173665), is a guide that may be helpful for program managers and data managers. This handbook outlines principles and processes for the management of data including data interoperability and longevity, best practices, and long term electronic storage, use, and recovery of data. Additional references include a guide to Configuration Management written by ASC/ENSC (https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=OO-EN-CD-M1, and a Data Management CoP at https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=OO-AQ-DM-SP.

5.3 INTEGRATED DATA SYSTEMS.

5.3.1 Criterion. The Data Management strategy should be supported by an Integrated Data System (IDS) that meets the needs of both the warfighter and the support community. Data systems supporting acquisition and sustainment should be connected, real-time or near real-time, to allow logisticians to address the overall effectiveness of the logistics process in contributing to weapon system availability and life cycle cost factors. Melding acquisition and sustainment data systems into a true total life cycle integrated data environment provides the capability needed to reduce the logistics footprint and plan effectively for sustainment, while also insuring that acquisition planners have accurate information about total life cycle costs.

5.3.2 Management Planning (see Chapter 4). The program manager should develop a plan for managing defense system data during each phase of the system life cycle. Government inspection and acceptance is required for technical publications, product definition data elements, and other data that will be used by DoD Component personnel for the installation, operation, or maintenance of equipment or software. Establishing data exchange formats promotes data reuse,

fosters competition, and helps to ensure that data can be used consistently throughout the system, family of systems, or system of systems.

5.3.3 IDS Development and Delivery. IDS requirements will specify program data interchange standards and formats, and should be developed by the program IPT in conjunction with the TO Manager. IDS requirements should accompany the RFP as GFI to the offerors.

NOTE

The procedures in both Chapter 5 and Chapter 6 apply equally to competitive solicitations and to sole source buys, and in both the acquisition and sustainment phases of a program's life cycle.

5.4 REQUESTS FOR PROPOSAL AND CONTRACTS.

The TO IPT (paragraph 4.3.2) develops draft TO program objectives and criteria as inputs for the work statement or SOO, Evaluation Criteria and ITO. The drafts are provided to the program contracting office and data manager, along with a partly-tailored TMCR for inclusion in the RFP system performance specification. Other TO program-related data, such as reference material, lists of acronyms and definitions, etc., may be included in the proposal Technical Library. TOs releasable under provisions of AFI 61-204 shall be provided to the prospective bidders. TOs that are not releasable shall be made available for review in a bidder's library at the buying location. For those TOs which are only distributed as ETIMS electronic TOs (eTOs), the contracting office may need to download the eTOs and the eTO viewer to a CD or DVD either for release or for review in the bidder's library. TO requirements must not conflict with other contract schedules, locations or tasks. The TO Manager must ensure that all affected agencies review the finalized RFP prior to transmittal to offerors for proposal preparation.

5.4.1 Proposals. Offerors respond to an RFP with proposals for satisfying Air Force objectives. The TO Manager and TO IPT review and evaluate the proposals to determine how fully the provisions support program objectives. The IPT must determine the impact of any differences between proposals and the RFP, and whether or not the differences are acceptable (Chapter 6). The TO Manager works with the offerors (through the contracting office) to resolve these issues. In formal source selections, this effort is generally accomplished by the Source Selection Evaluation Team (on which the TO Manager should be a member).

5.4.2 Proposal Contents. Offeror proposals submitted in response to an RFP will include any documents the RFP requires. That will usually include some combination of a work statement, completed (separately priced) TMCR for TOs, recommendations for any other data required, an Integrated Master Plan (IMP - see Appendix A), and/or an Integrated Master Schedule (IMS -Appendix A) covering the management and control of the acquisition program. Offeror responses indicate how the contractor intends to satisfy RFP requirements.

5.4.3 Source Selection. During source selection the government will review and clarify any issues with the TMCR and RFP. Source Selection rules determine how the government will ask questions and negotiate unresolved issues. On-site visits to contractors may be required. The final evaluation results are presented to a Source Selection Authority to determine which offeror best satisfies the RFP. That offeror is subsequently awarded the contract. Once contracts are awarded, the provisions may only be changed through the Procuring Contracting Officer (PCO).

5.4.4 CDRLs, TMCR and CLIN. The government shall develop a draft TMCR for the RFP. This TMCR shall be updated based on approved contractor data recommendations for inclusion in the final contract. The TMCR is attached to the CDRL for delivery of TOs. The TMCR shall require a separate Contract Line Item Number (CLIN) for delivery of Technical Manuals, and shall become a separately-priced exhibit to the contract (DFARS 227.7103-2, *Acquisition of Technical Data*, and DoD 5010.12-M). The RFP must include a separate CLIN asking for a priced option to obtain unlimited rights to technical data if the Offeror has proposed only limited rights (paragraph 5.17.7).

5.5 STATEMENT OF OBJECTIVES.

5.5.1 Definition and Purpose. The SOO is a government-prepared attachment to either Section J or L of the RFP. The SOO provides the basic, top-level objectives of the acquisition program. Additionally, program objectives focus on the higher risk areas individually, so each area can be addressed directly in the evaluation criteria. These higher risk areas are usually valid discriminators in the source selection process. Areas of relatively low risk are generally covered by higher level objectives. The SOO allows the offeror maximum flexibility to develop cost-effective solutions and to propose innovative alternatives to meet the stated objectives. The SOO also allows the government to assess offeror understanding of the effort

to be performed, by eliminating the "how to" instructions typically provided in a SOW (MIL-HDBK-245, *Preparation of Statement Of Work (SOW)*).

5.5.2 Phrasing Objectives. Depending on the level of risk, TO objectives will be addressed in a variety of ways. For most acquisition programs, the TO objective would be covered with a statement such as "Provide quality technical manuals, source data and options for the Government to obtain data acquisition rights to support the objective of Air Force organic system operation and field and depot-level maintenance for the system life cycle." Actual wording will depend on program operations and maintenance concepts. Where TOs are considered a low-risk area, TO objectives may be covered by the more general logistics support objective.

5.6 WORK STATEMENTS.

5.6.1 Statement of Work. A SOW defines, either directly or by reference to other documents, all tasks to be performed for the program covered by the contract. The SOW is limited to what is required - qualitative, quantitative and other requirements (how, when and where) will be contained in specifications, the IMP and CDRLs (MIL-HDBK-245 and DoD 5010.12-M). Use of a SOW in the RFP is usually limited to follow-on or small program contracts, as directed by the PM.

5.6.1.1 Government-Prepared SOWs. For government-prepared SOWs, TO requirements should be limited to performance-based statements, e.g., "The contractor shall develop the technical order types specified in the TMCR (Exhibit __) to support (program name). (CDRL (#))." Additional statements, covering the applicable task areas (see Appendix E, ITO suggestions), may either be added to the SOW or to the first section of the TMCR as required to fully describe TO program requirements.

5.6.1.2 Offeror-Prepared SOWs. Offeror-prepared SOWs may vary in detail, dependent upon the detail in the IMP. The proposal SOW and IMP together should specify the tasks, events and processes the offeror will use to satisfy RFP requirements.

5.6.2 Performance-based Work Statements (PWS). A PWS defines the requirements in terms of results rather than the method of performing the work. It cites referenced directives by specific process/procedure (e.g., paragraph or chapter) rather than the entire publication. At a minimum, a PWS includes a description of Services/General Information (definitions, etc.); a Services Summary; a list of Government-Furnished Property and Services, if applicable; and Appendices such as workload estimates, labor hour rates, square footage, etc.

5.7 EVALUATION CRITERIA.

Evaluation criteria, Section M of the RFP, will be developed based upon the SOO and will drive development of the ITO (Section L of the RFP). TO inputs will be prepared by the TO Manager to support and establish standards for evaluation of an offeror response to the RFP (see Chapter 6). Section M informs offerors how the government will evaluate and rank proposals. For TOs, a primary criterion is development IAW Air Force TMSS to ensure JCALS/ETIMS compatibility. Other criteria include complete program coverage, acceptable in-house processes to ensure delivery of technically accurate documents and data, past performance and support of government verification. See Appendix E for guidance.

5.8 INSTRUCTIONS TO OFFERORS (ITO).

The ITO, Section L of the RFP, identifies how the offerors must submit proposals and what proposals must cover for the government to evaluate the proposal according to the evaluation criteria in Section M. For example, the ITO may require a tailored TMCR, associated SOW tasks, and IMP program event entrance and exit criteria. The ITO essentially addresses topics contained in TMCR Section 1. Offerors will be required to select and tailor applicable TMSS - listed in the TMCR - for the types of TOs required by the program. See Appendix E for guidance on preparing ITO statements.

5.9 DD FORM 1423, CONTRACT DATA REQUIREMENTS LIST (CDRL), AND DATA ITEM DESCRIPTIONS (DID).

5.9.1 Use of CDRLs. All TOs, source data and management data to be delivered by a contractor must be listed on a CDRL (Figure 5-1) IAW DFARS 215.470 (b). All new CDRLs must have a current DID or the TMCR listed in the "Authority" block (DoD 5010.12-M). The Acquisition Streamlining and Standardization Information System (ASSIST) Quick Search database (https://assist.daps.dla.mil/quicksearch/) lists the DIDs authorized by the Office of Management and Budget for the acquisition of data. TOs may be grouped on one CDRL, grouped by TMCR Table on several CDRLs, or listed by TO type on separate CDRLs.

5.9.2 CDRL and CLIN for TOs. A separate CDRL, identified as an exhibit to the contract, shall be used in conjunction with the CLIN for TOs. CDRL Block 4, "Authority," shall list the Air Force TMCR, TM-86-01, in place of a Data Item Description (DID) or TMSS. The TMCR must be tailored to list only the military specifications or standards applicable to the contract. Multiple TO CDRLs may be used to price TOs by work segment, e.g., Organizational level TOs, Depot level TOs, and Operational TOs. The respective TMCRs will be attached to the CDRLs. For convenience, multiple TO CDRLs may be grouped together in one contract exhibit or separate contract exhibits may be established for each CDRL. In either case a separate price for each CDRL should be in the exhibit or on the CDRL. Figure E-1 is an example of a CLIN.

5.9.3 Options. There are two options for the use of CDRLs:

5.9.3.1 The TO Manager may include draft CDRLs for known data requirements in the RFP. The CDRL for TO delivery (if included), with the TMCR attached, will be referenced in RFP section J. The ITO will require the offerors to develop SOW paragraphs, complete CDRL tailoring and submit any other suggested data requirement CDRLs with the proposals.

5.9.3.2 If CDRLs are not included in the RFP, the ITO will require offerors to propose all data requirements, including TOs. In this case, a partly-tailored TMCR may be placed in either the system specification or the Proposal Technical Library.

5.9.4 DIDs. Following is a listing of most of the TO program-related Data Items which may be required if the contractor will develop/deliver the data:

- DI-TMSS-80067, *Technical Manual (TM) Contractor Furnished Aeronautical Equipment or Contractor Furnished Equipment (CFAE/CFE) Notices*
- DI-TMSS-80229, *Technical Order Improvement Report and Reply* (AFTO Form 22)
- DI-TMSS-81532, *Aerospace Emergency Rescue and Mishap Response Information (Emergency Services) Source Data*
- DI-ALSS-81531, *Time Compliance Technical Order (TCTO) Supply Data* (AFTO Form 874)
- DI-SAFT-80931, *Explosive Ordnance Disposal Data*

NOTE

The below DID is the only one authorized for use when procuring commercial off-the-shelf (COTS) manuals.

- DI-TMSS-80527, *Commercial Off-the-Shelf (COTS) Manual and Associated Supplemental Data*

5.9.5 Justification. Offerors must justify each data requirement included in proposals. The TO Manager or program data manager will complete DD Forms 1423 (CDRLs - Figure 5-1) or AFTO Forms 585, *Contractor Data Requirements Substantiation*, (Figure 5-2), for approved requirements. See DoD 5010.12-M for DD Form 1423 instructions. Complete the AFTO Form 585 IAW Figure 5-1.

5.10 TECHNICAL MANUAL CONTRACT REQUIREMENTS (TMCR) DOCUMENT, TM-86-01.

A TMCR is used in all contracts for acquisition, sustainment or modification of systems and equipment when TOs must be developed or updated. The TMCR is included in the RFP either as an exhibit, as part of the system performance specification, or in the Technical Library, and is referenced in section J. The exhibit will have a separately-priced CLIN in the formal contract (DoD 5010.12-M). The latest version of the TMCR, located on the TO System Information Page at https://techdata.wpafb.af.mil/toprac/to-syste.htm under"TO Acquisition Tools," must be used for all new contracts.

NOTE

TMCR requirements apply equally to contracted TO development efforts and to in-house TO development and updating.

5.10.1 Description. The TMCR consists of three sections; TO Program Requirements, TM Type and Delivery Requirements, and Specification/Standards Interface Records (SIR). The first section includes instructions to offerors in performance-based language. The second section includes tables listing TO types and related TMSS, source data requirements, specific TOs requiring update, and commercial manual requirements; and matrices providing delivery instructions for various phases of the program. Section 3 contains the SIRs for joint-service TMSS with Air Force tailoring specified. The TO Manager should tailor sections 1 and 2 to specify known program TO requirements. The offeror completes the tailoring of these sections to propose the minimum number of TO types required to support the program. The contractor will tailor section 3 to document additional tailoring and options proposed for the joint-service specifications and add SIRs (if required) for any AF-only or commercial specifications or standards specified in section 2.

5.10.2 Tailoring. Tailoring serves two purposes; to delete TMCR requirements excess to program needs, and select options presented within specifications and standards. Tailoring guidance may be provided as part of the RFP Technical library. See paragraph 5.14. Only those TM Type Selection Tables, TM Delivery Requirements Matrices and SIRs applicable to a particular contract are left in the TMCR.

NOTE

Updates to existing TOs and new TOs for existing programs may be acquired in "same style and format" when this is satisfactory to all affected agencies and is cost effective over the program life cycle. In these cases, list the TOs affected in TMCR Table 2. However, if any existing SGML-tagged formats are not TMSS compliant and cannot be viewed on the eTO Viewer (eTOV), revisions and new TOs which will be converted to HTML and distributed as eTOs must be brought into compatibility with the eTOV. If this is not possible (funding limitations, contractual issues, etc.), the PM must obtain approval from the Lead Command and get an AFMC/A4UE waiver to host eTOs on a program server, and index them as "-WA-2," per paragraph 8.1.4.6. If the TOs can be distributed in PDF, no re-writes are required.

5.11 TECHNICAL ORDER DEVELOPMENT.

NOTE

Contractors who cannot access restricted (https) web sites to obtain TMSS related files and information may contact the TMSS, 754 ELSG/ILMT at SGMLSupport@wpafb.af.mil.

5.11.1 Digital TO Formats. All new major acquisition programs must acquire TOs in a Type 2 Interactive Electronic Technical Manual (IETM) database format (see definitions) IAW AIA-S1000D, *International Specification for Technical Publications Utilizing a Common Source Database* and the Air Force XML Business Rules (BR) specification (Figure 3-2). Other new acquisition programs and all major modification programs must perform a Cost Benefit Analysis (CBA) and, if supported, acquire TOs and convert legacy, page-based TOs to a Type 2 IETM database format IAW AIA-S1000D and the AF SML BR specification. Otherwise, acquire linear-structured TOs in an SGML-tagged digital format in compliance with current TMSS (version 6 or higher). Before converting legacy (existing) TO data to a digital authoring format, use and changeability must be considered. In many cases, converting hard-copy TOs to word-searchable PDF files is sufficient for user needs, and is compatible with the ETIMS distribution and viewing system.

5.11.1.1 Linear-structured TOs and data must be compatible with the ETIMS TO Viewer, which means they must be TMSS compliant SGML-tagged files for rendering as HTML or IPDF files. When the TO users require highly interactive TOs, HTML rendered TOs are preferred. Otherwise, IPDF TOs are acceptable for both ETIMS viewing and printing by TODPS. TOs and data must comply with the Air Force TO Concept of Operations (CONOPS). This should be one of the areas covered by the Integrated Data System.

5.11.1.2 To ensure compatibility, organically sustained TO files shall be acquired and authored as tagged instances according to the TMSS specified in the TMCR using SGML or Extensible Markup Language (XML) as defined in the Document Type Definitions (DTD) appended, by reference, to MIL-STD-38784 and each Air Force-approved TM specification. Air Force TMSS are available on the 754 ELSG/ILMT (https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=OO-LG-MC-38). SGML/XML-tagged TO files shall include required illustrations in one of the approved graphics exchange specifications listed on the TMSS web page - select "Guidelines" and then "Graphics."

5.11.1.3 To deviate from AF TMSS or use NGS when acquiring or converting to Type 1 SGML TOs, TO Managers must request a program waiver through their Program Manager and the Lead Command/A4 to HQ AFMC/A4. The request must include a CBA showing savings over the life-cycle of the program and proof of compatibility with ETIMS/ECSS.

5.11.2 Use of TMSS Digital Support Suites (DSS - See Definitions). Before placing SGML or XML on contract, the ultimate use of the data should be considered. If the data will be used to publish page-oriented (page-based) TOs, use of less structured SGML/XML-tagged source data may be cost-effective; and for low maintenance data, consider accepting delivery in Adobe® Acrobat® IPDF format.

5.11.2.1 If the data is complex, will be maintained and used digitally, and/or will be used in a hyper-linking, web-browser type of environment, the more structured, AF TMSS SGML-tagging DTDs **must** be used. 754 ELSG/ILMT maintains a Web site where all of the standard DSS are maintained and made available to acquisition organizations (see paragraph 5.11.1.2). These DSS provide the SGML templates to be used in acquisition, and are part of the governing specification or

standard. The DSS categorized as “new acquisition” are very capable of deriving hyper-linked, interactive AF TOs. Those DSS categorized as“legacy” are not as compliant to the current TMSS, but have options built in to allow existing (legacy) TOs to be captured in a more standardized format using SGML. If the program requires hyper-linked, interactive TOs, legacy DSS will not provide the desired outcome.

5.11.2.2 The following guidelines apply to DSS decisions:

5.11.2.2.1 When cost effective, always choose the “new acquisition” DSSs. This ensures TO data is delivered in the most current AF format for immediate digital uses and allows efficient reformatting and reuse of the data.

5.11.2.2.2 Make full use of the hyper-linking capabilities that are provided in AF DSSs. These capabilities include full and complete use of SGML constructs “IDREF,” “XREF,” “EXTREF,”“EXREFID,” HYTIME linking, and calls to external processes wherever applicable in the data.

5.11.2.2.3 When a hyper-linking, Web browser-type application is required and the contractor is converting legacy TO data that does not comply with the new acquisition TMSS, re-authoring may be required to apply appropriate structure (primary paragraphs, subparagraphs, steps, etc.) and titles must be applied (created) where missing in the legacy TO, using the new acquisition TMSS as a guide.

5.11.2.2.4 Ensure that page-oriented output produced for distribution from SGML (or other structured source formats) is generated through use of the same publishing system that will be utilized for sustainment of the technical order data. Failure to do so can result in increased printing and distribution costs since the output produced by different publishing systems differs even when the same structured source data is utilized for publishing.

5.11.3 Development of Digital Support Suites. Contractors proposing use of commercial TM specifications or other NGS, obsolete TMSS or TMSS with no Air Force DTD/schema and/or Formatted Output Specification Instance (FOSI)/stylesheet available from 754 ELSG/ILMT, may develop DSS components needed for use as a final resort. The contractor will be responsible to support the associated costs of DTD and FOSI maintenance and update for the usable lifetime of the DSS. The only exception is when ILMT adopts the DSS for Air Force use. If the acquiring organization authorizes the contractor to construct their own DTDs/schemas or DSS (including stylesheets, such as XSLT, XSL-FO, CSS, and RSS), the contractor must contact 754 ELSG/ILMT for guidance prior to initiating the development process. The following procedures shall be followed:

5.11.3.1 For TOs that will not be organically maintained, the contractor must submit any proposed DSSs through the PCO and TO manager to 754 ELSG/ILMT for approval to ensure compatibility with the standard AF architectures.

5.11.3.2 For TOs that will be delivered to the AF and organically maintained, the contractor must submit a proposed complete DSS through the PCO and TO Manager to 754 ELSG/ILMT for approval to ensure complete compatibility with JCALS and the AF Viewer.

5.11.3.3 754 ELSG/ILMT is the AF approval agency for all non-AF DTDs/schemas and FOSIs/stylesheets to be used for AF organic TO maintenance. Approved offeror-proposed specifications will be added to the program TMCR, by contract modification if necessary. DSS submitted and approved in execution of a contract become the property of the Government. **EXCEPTIONS:** DSS for Space and Missile TOs are managed and approved by AFSPC. If TOs are to be maintained by the contractor for the life of the system, SGML and XML based tools developed for electronic TOs are not restrained to JCALS compatibility.

5.11.4 Obtaining TO Numbers. The TO Manager will obtain TO numbers as required through the JCALS “Request a TM Number” process (see the JCALS Desktop Instructions [DI] at https://techdata.wpafb.af.mil/QUICKINFO/jcals/homepage.htm). OC-ALC/ENGLA will approve requested numbers through JCALS. See Chapter 8 for a process description. 708 NSUS/NWLT will manage numbering for Category 11N TOs contained in TO Index 0-1-11N-1-CD-1. Det 63, HQ ACC will provide numbers for EOD TOs, and AFMETCAL will number calibration and metrology TOs.

5.12 DELIVERABLES.

Deliverables can include PTOs, formal TOs, source data for TOs, Time Compliance TOs (TCTOs), TO updates, commercial manuals, and reproducible media and/or digital files of any of the preceding. DoD policy is to limit delivery on physical media by contracting for direct on-line access to the offeror data system to the maximum extent practicable. Electronic delivery methods must ensure compliance with all Information Assurance and STINFO requirements for data protection (paragraph 10.9).

5.12.1 Contracting Assistance. TO Managers should contact local staff agencies or 754 ELSG/ILMT for assistance in contracting for digital TO data and Interactive Electronic Technical Manuals (IETMs). Specific descriptions of each type of deliverable can be found in TO 00-5-1 or the applicable specification.

5.12.2 Digital Delivery. The contractor will deliver digital files on-line or on reproduction media as directed by the contract. When the contractor will maintain the TOs, delivery will be in Adobe® Indexed Portable Document Format™ (IPDF) as a minimum. IETM deliveries must always be the SGML instance. When TO maintenance will be organic, the delivery will be an SGML file tagged according to the applicable DSS and viewable on the eTOV.

5.12.3 Delivery Acceptance. The verified, approved file is usually the final delivery for a basic TO, update or TCTO. The Procuring Contracting Officer (PCO) or a designee will document government acceptance and receipt on a DD Form 250, *Material Inspection And Receiving Report*.

5.13 USE OF TECHNICAL MANUAL (TM) SPECIFICATIONS AND STANDARDS (TMSS).

5.13.1 TMSS Selection. Preference shall be given to specifications and standards developed under DoD 4120.24-M, *DoD Standardization Program (DSP) Policies and Procedures*. Air Force TM Standards, MIL-PRF and MIL-DTL specifications (AF-TMSS) with attached DTDs/schemas and FOSIs/stylesheets are required for TO acquisitions.

5.13.1.1 When these are not available for a specific type of TO or a program decision has been made to use non-government standards (except as noted in paragraph 5.13.2), approval to use other government performance or non-government (commercial) specifications and standards may be requested from HQ AFMC/A4UE. The contractor may also suggest or develop commercial substitutes for the approved government TMSS, but use is subject to Air Force approval. RFPs and contracts must reflect this policy.

5.13.1.2 The TO Manager must refer to the ASSIST database to ensure only the latest version TMSS are placed on contract.

NOTE

Because the review and update cycle for TMSS is lengthy, approved Air Force changes are documented in the Specification/Standard Interface Records (SIR) located in the latest version of the TMCR (https://techdata.wpafb.af.mil/toprac/working.htm). These SIRs also apply to programs in sustainment for new and changed TOs.

5.13.2 TMSS Approval. Only AF-approved MIL-STDs and MIL-SPECs listed in the TMCR should be used for Air Force- programs. Other military services' TMSS which have NOT been adopted for Air Force use, but which otherwise meet Acquisition Reform guidelines, may be used on joint-service programs when the TMSS will promote commonality and reduce costs. Approval from the Air Force TMSS preparing activity (754 ELSG/ILMT) and a program-specific waiver from HQ AFMC/A4U are required.

5.13.3 New TO Types. Submit proposals for new (non-MILSPEC) types of TOs to the Air Force preparing activity for TMSS, 754 ELSG/ILMT (https://techdata.wpafb.af.mil/tmss/index.html), for review and disposition. This does not apply to COTS manuals purchased under acquisition reform guidelines and included in the TO system.

5.13.4 Upgrading TMSS. When revised specifications applicable to a program are published, the TO Manager must review them for impact to the program and, in conjunction with the contractor, using command and support agencies, determine if a contract change should be initiated to incorporate the changes. Consider factors such as safety, usability, life-cycle cost and schedule.

5.14 SPECIFICATION/STANDARD TAILORING, INTERPRETATION, DEVIATIONS AND WAIVERS.

5.14.1 Tailoring Guidance. Approved MILSPECs (TMSS) and MIL-STDs (TMSS) may be tailored by selecting from the approved options (para 6.2 in the TMSS), but **no other additions or deletions** are authorized without written approval from the preparing activity, provided IAW DoD 4120.24-M. For AF TMSS, the preparing activity is 754 ELSG/ILMT (or for space and missile TMSS, AFSPC). Only formal DID revisions can add requirements to DIDs. DIDs may be tailored down by removing excess requirements.

5.14.2 Tailoring Documentation. All TMSS tailoring will be documented in the Specification/Standard Interface Record (SIR) for that specification or standard and included in the TMCR, by contract modification, if necessary. The basic TMCR already contains SIRs specifying the AF-only options for joint-service TMSS, but even these TMSS may be further tailored

for a specific program. The ITO will direct the offeror to finish tailoring the joint-service TMSS, and add SIRs for other TMSS recommended for the program. If revised TMSSs replace those on contract, new SIRs are also required.

5.14.3 TMSS Clarification. Contractors may request clarification of specification requirements or government intent through submission of Specification Interpretation Documents (SID - See Appendix E). SID responses which affect the scope of the contract will be documented in the SIR.

5.14.4 Deviations and Waivers. Contractors may also request the TO Manager to apply for deviations from or waivers to provisions in TMSS. These requests must include an objective justification and evaluation of the impact on: (1) time and material for the users (operating command and support agencies); (2) life-cycle cost of the publication and equipment covered by the publication; (3) acquisition cost; and (4) preparation and/or delivery in digital format. The TO Manager will submit deviation and waiver requests to HQ AFMC/A4UE for approval or disapproval. Approved requests will be documented in the applicable SIR.

5.14.5 Copies. Copies of SIRs, SIDs and other program documents which could affect TMSS content will be provided to 754 ELSG/ILMT for information.

5.15 SOURCE DATA FOR TECHNICAL ORDERS.

The ITO will require the offeror to propose development and delivery of source data when the program affects or is affected by TOs from another program, there are special requirements (paragraph 4.7), or when more than one contractor is providing inputs to an integrating contractor to develop a TO. See Chapter 16.

5.16 IDENTIFICATION OF ADDITIONAL CONTRACT TECHNICAL ORDER REQUIREMENTS.

The ITO will require the offeror to propose a method for identifying additional TOs and manuals (those unknown at the time of proposal submission) required for the program. CFAE/CFE Notices (DI-TMSS-80067) or contractor Letters of Recommendation including the same data are the standard methods used.

5.16.1 Submittal. Notices or letters will be submitted when new support equipment is identified, the maintenance concept changes, equipment is modified or other program changes occur which could affect TO coverage. The notices (letters) recommend new TOs or commercial manuals, modification and use of existing TOs, or advise that no additional data is required. The offeror recommendation may include a requirement to supplement commercial manuals to make them suitable for AF use.

5.16.2 Approval. The TO Manager approves the notices or letters after review of the proposed manual (Chapter 7 and MIL-PRF-32216) and coordination by the using command and assigned Equipment Specialist (ES).

5.16.3 Numbering. When a recommendation is approved, the TO Manager will initiate the JCALS“Request a TM Number” process to obtain a TO number. The numbering request is routed to OC-ALC/ENGLA by the JCALS Workflow Manager for approval. See paragraph 5.11.4 for numbering of nuclear weapon, EOD and AFMETCAL TOs.

5.17 RIGHTS IN TECHNICAL DATA.

TOs, commercial manuals, and contractor data may be copyrighted and/or contain proprietary data. TOs and non-commercial contractor data are procured with Unlimited Rights, Government Purpose Rights, or Limited Rights (see below) using Defense Federal Acquisition Regulation Supplement (DFARS) clauses at 252.227-7013. Commercial manuals are procured with the same types of rights using DFARS clauses at 252.227-7015. Unless otherwise agreed between the parties, if the manuals were prepared for or acquired by the government pursuant to the contract, the contractor should grant the government a license allowing reproduction, distribution, use and development of derivative works, or to have others do so for the government. (Derivative works are publications such as checklists and workcards developed from one or more basic manuals.) The distribution of the manuals outside the government shall be done strictly IAW the contract and applicable regulations (DFARS part 227.7103-5, etc.). For example, when the government has only limited rights in the data, the license is limited by the definition of limited rights in the DFARS. In unusual situations, the standard rights may not satisfy the Government’s needs or the Government may be willing to accept lesser rights in data in return for other consideration. However, the licensor is not obligated to provide the Government greater rights and the contracting officer is not required to accept lesser rights than the rights provided in the standard grant of license.

5.17.1 Unlimited Rights. “Unlimited rights” means rights to use, modify, reproduce, perform, display, release, or disclose technical data in whole or in part, in any manner, and for any purpose whatsoever, and to have or authorize others to do so

(DFARS 252.227-7013(a)(15)). Unless other rights as described in paragraph 5.17.2 or paragraph 5.17.3 below have been agreed to in writing IAW DFARS 227.7103-5, the Government shall have a non-exclusive, irrevocable, and worldwide unlimited right to technical data purchased under the terms of the contract. The Government may use the work within the Government without restriction, and may release or disclose the work outside the Government and authorize persons to whom release or disclosure has been made to use, modify, reproduce, release, perform, display, or disclose the work on behalf of the government. The Government's license includes the right to distribute copies of the work to the public for government purposes.

5.17.2 Government Purpose Rights. "Government purpose" means any activity in which the United States Government is a party, including cooperative agreements with international or multi-national defense organizations, or sales or transfers by the United States Government to foreign governments or international organizations. Government purposes include competitive procurement, but do not include the rights to use, modify, reproduce, release, perform, display, or disclose technical data for commercial purposes or authorize others to do so (DFARS 252.227-7013(a)(11)). "Government purpose rights" means the...rights to use, modify, reproduce, release, perform, display or disclose technical data within the Government without restriction; and release or disclose technical data outside the Government and authorize persons to whom release or disclosure has been made to use, modify, reproduce, release, perform display, or disclose that data for U.S. government purposes (DFARS 252.227-7013(a)(12)).

5.17.3 Limited Rights (DFARS 252.227-7013(a)(13). Limited rights permit the Government to use, modify, reproduce, release, perform, display or disclose technical data, in whole or in part, within the Government. The Government may not, without the permission of the party asserting the limited rights, release or disclose the technical data outside the Government; use the technical data for manufacture; or authorize the technical data to be used by another party, except:

5.17.3.1 The Government may reproduce, release or disclose such data or authorize the use or reproduction of the data by persons outside the Government if reproduction, release, disclosure or use is necessary for emergency repair or overhaul; or

5.17.3.2 A release or disclosure of technical data (other than detailed manufacturing or process data) to, or use of such data by, a foreign government that is in the interest of the (U.S.) Government and is required for evaluation or informational purposes;

5.17.3.3 Subject to a prohibition on the further reproduction, release, disclosure or use; and

5.17.3.4 The contractor or subcontractor asserting the restriction is notified of such reproduction, release, disclosure or use.

5.17.4 Copyrights. Rights clauses cover the release of data. Copyrights govern the reproduction and modification of data. According to DFARS clause 252.227-7013(f), any commercial or non-commercial publication TO which carries a copyright shall also contain a notice of copyright as prescribed under 17 U.S.C. 401 or 402. This notice shall be placed thereon by the contractor prior to delivery. If no copyright notice is placed on the work, the Government obtains unlimited rights in the work. Otherwise, when claim to copyright is made the Contractor grants the Government, and others acting on its behalf, a license to the work.

5.17.5 Proprietary Rights. Proprietary information is confidential information that constitutes a trade secret and/or information that is commercial or financial and confidential and privileged. Proprietary data is submitted to the government under a contract and is subject to protection by the contractor and the government. According to AFI 61-204, when creating a technical document containing company proprietary data, in addition to distribution statement (B or E), mark each page that contains proprietary information with the word"proprietary" and the name of the company (e.g., "Boeing Proprietary").

5.17.6 Digitization. Documents, including commercial manuals, which are authorized for government reproduction may be digitized for reproduction and/or distribution without affecting the authorization. Any supplemental data required to make the manual acceptable for use as a TO may be merged with the basic manual during the digitization process, unless specifically prohibited in a limited rights agreement.

5.17.7 Contracting for Greater Data Rights. If the Government needs technical data pertaining to items developed at private expense to establish alternative sources it may, under certain circumstances, acquire greater rights in data. DFARS Subpart 227.7103-5, which sets forth the procedures to acquire greater rights, requires the acquisition of greater rights be stated as a separate CLIN. See Figure E-1.

5.18 REQUEST FOR PROPOSAL QUALITY ASSURANCE PROVISIONS.

The ITO may require the offeror to include details of the contractor QA process in their proposal, if the process has not been previously documented and supported by applicable past performance data or if there is exceptional risk in the program. The process will be evaluated for conformance to accepted commercial standards, such as the ISO 9000 series. The TO Manager will obtain insight into process operation through participation in the IPT. Digital data deliveries are inspected and accepted on several levels: 1) physical media, 2) data exchange formats, and 3) data content and format. Contractors must demonstrate the on-line access service as the basis for government acceptance. TOs delivered pursuant to the contract must meet the requirements of this chapter and the contractor's tailored TMCR. The quality of proposed commercial manuals will be evaluated according to Chapter 9.

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

Form Approved
OMB No 0704-0188

The public reporting burden for this collection of information is estimated to average 110 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the Department of Defense, Executive Services Directorate (0704-0188) Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number **Please do not return your form to the above organization Send completed form to the Government Issuing Contracting Officer for the Contract/PR No listed in Block E**

A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C CATEGORY: TDP _____ TM _____ OTHER _____
D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR

1 DATA ITEM NO	2 TITLE OF DATA ITEM	3 SUBTITLE	17 PRICE GROUP
4 AUTHORITY *(Data Acquisition Document No)*	5 CONTRACT REFERENCE	6 REQUIRING OFFICE	18 ESTIMATED TOTAL PRICE
7 DD 250 REQ	9 DIST STATEMENT REQUIRED	10 FREQUENCY	12 DATE OF FIRST SUBMISSION
8 APP CODE		11 AS OF DATE	13 DATE OF SUBSEQUENT SUBMISSION

16 REMARKS

14 DISTRIBUTION			
a ADDRESSEE	b COPIES		
	Draft	Final	
		Reg	Repro
15 TOTAL →	0	0	0

G. PREPARED BY	H DATE	I. APPROVED BY	J. DATE

DD FORM 1423-1, FEB 2001 PREVIOUS EDITION MAY BE USED Page _____ of _____ Pages

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H0617141

Figure 5-1. DD Form 1423-1, Contract Data Requirements List (CDRL) (Sheet 1 of 3)

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP _____ TM _____ OTHER _____
D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR

16. REMARKS *(Continued)*

DD FORM 1423-1, FEB 2001 Page_____ of_____ Pages

H0915973

Figure 5-1. DD Form 1423-1, Contract Data Requirements List (CDRL) (Sheet 2)

INSTRUCTIONS FOR COMPLETING DD FORM 1423

(See DoD 5010.12-M for detailed instructions.)

FOR GOVERNMENT PERSONNEL

Item A. Self-explanatory.

Item B. Self-explanatory.

Item C. Mark (X) appropriate category: TDP - Technical Data Package; TM - Technical Manual; Other - other category of data, such as "Provisioning,""Configuration Management," etc.

Item D. Enter name of system/item being acquired that data will support.

Item E. Self-explanatory (to be filled in after contract award).

Item F. Self-explanatory (to be filled in after contract award).

Item G. Signature of preparer of CDRL.

Item H. Date CDRL was prepared.

Item I. Signature of CDRL approval authority.

Item J. Date CDRL was approved.

Item 1. See DoD FAR Supplement Subpart 4.71 for proper numbering.

Item 2. Enter title as it appears on data acquisition document cited in Item 4.

Item 3. Enter subtitle of data item for further definition of data item (optional entry).

Item 4. Enter Data Item Description (DID) number, military specification number, or military standard number listed in DoD 5010.12-L (AMSDL), or one-time DID number, that defines data content and format requirements.

Item 5. Enter reference to tasking in contract that generates requirement for the data item (e.g., Statement of Work paragraph number).

Item 6. Enter technical office responsible for ensuring adequacy of the data item.

Item 7. Specify requirement for inspection/acceptance of the data item by the Government.

Item 8. Specify requirement for approval of a draft before preparation of the final data item.

Item 9. For technical data, specify requirement for contractor to mark the appropriate distribution statement on the data (ref DoDD 5230.24).

Item 10. Specify number of times data items are to be delivered.

Item 11. Specify as-of date of data item, when applicable.

Item 12. Specify when first submittal is required.

Item 13. Specify when subsequent submittals are required, when applicable.

Item 14. Enter addressees and number of draft/final copies to be delivered to each addressee. Explain reproducible copies in Item 16.

Item 15. Enter total number of draft/final copies to be delivered.

Item 16. Use for additional/clarifying information for Items 1 through 15. Examples are: Tailoring of documents cited in Item 4; Clarification of submittal dates in Items 12 and 13; Explanation of reproducible copies in Item 14.; Desired medium for delivery of the data item.

FOR THE CONTRACTOR

Item 17. Specify appropriate price group from one of the following groups of effort in developing estimated prices for each data item listed on the DD Form 1423.

a. Group I. Definition - Data which is not otherwise essential to the contractor's performance of the primary contracted effort (production, development, testing, and administration) but which is required by DD Form 1423.

Estimated Price - Costs to be included under Group I are those applicable to preparing and assembling the data item in conformance with Government requirements, and the administration and other expenses related to reproducing and delivering such data items to the Government.

b. Group II. Definition - Data which is essential to the performance of the primary contracted effort but the contractor is required to perform additional work to conform to Government requirements with regard to depth of content, format, frequency of submittal, preparation, control, or quality of the data item.

Estimated Price - Costs to be included under Group II are those incurred over and above the cost of the essential data item without conforming to Government requirements, and the administrative and other expenses related to reproducing and delivering such data item to the Government.

c. Group III. Definition - Data which the contractor must develop for his internal use in performance of the primary contracted effort and does not require any substantial change to conform to Government requirements with regard to depth of content, format, frequency of submittal, preparation, control, and quality of the data item.

Estimated Price - Costs to be included under Group III are the administrative and other expenses related to reproducing and delivering such data item to the Government.

d. Group IV. Definition - Data which is developed by the contractor as part of his normal operating procedures and his effort in supplying these data to the Government is minimal.

Estimated Price - Group IV items should normally be shown on the DD Form 1423 at no cost.

Item 18. For each data item, enter an amount equal to that portion of the total price which is estimated to be attributable to the production or development for the Government of that item of data. These estimated data prices shall be developed only from those costs which will be incurred as a direct result of the requirement to supply the data, over and above those costs which would otherwise be incurred in performance of the contract if no data were required. The estimated data prices shall not include any amount for rights in data. The Government's right to use the data shall be governed by the pertinent provisions of the contract.

DD FORM 1423-1 (BACK), FEB 2001

H0617142

Figure 5-1. DD Form 1423-1, Contract Data Requirements List (CDRL) (Sheet 3)

NOTE

- In **Item 4**, change statement to read: Enter TMCR, Data Item Description (DID) number, military specification number, or military standard number listed in the ASSIST Database, or one-time DID number, that defines data content and format requirements.
- In **Item 9**, change refer in parenthesis to read: (ref AFI 61-204) and add Note at end of statement to read: **NOTE:** Do not specify a distribution statement to be used - this will be determined on a TO-by-TO basis depending on content.
- In **Items E** and **F**, change statement to read: Self-explanatory (to be filled in after source selection but prior to contract award).

CONTRACT DATA REQUIREMENTS SUBSTANTIATION

I. IDENTIFICATION

CONTRACT/PR NUMBER	SYSTEM/ITEM

II. DD FORM 1423 ENTRIES

1 DATA ITEM	2. TITLE OF DATA ITEM	3 SUBTITLE

4 AUTHORITY *(Data Acquisition Doc No)*	5 CONTRACT REFERENCE	6 REQUIRING OFFICE

7 DD 250 REQ	9 DIST STATEMENT REQUIRED/REASON	10 FREQUENCY	12 DATE OF FIRST SUB *(YYYYMMDD)*
8 APP CODE		11 AS OF DATE *(YYYYMMDD)*	13 DATE OF SUBSEQ SUB *(YYYYMMDD)*

16 REMARKS

14 DISTRIBUTION

a ADDRESSES	b COPIES DRAFT	FINAL REG	FINAL REPRO
15 TOTAL			

III. JUSTIFICATION

17 JUSTIFICATION *(State how the data will be used, who will use it and impact if not obtained)*

18 CHECK APPLICABLE BOXES

	YES	NO
CONTRACTOR FORMAT ACCEPTABLE	☐	☐
DID REQUIREMENTS TAILORED	☐	☐
DELIVERY CAN BE DEFERRED	☐	☐

19 REQUESTOR IDENTIFICATION

NAME

ORGANIZATION

PHONE | DSN

DATE *(YYYYMMDD)*

20 DATA REQUIREMENTS REVIEW BOARD DISPOSITION

☐ APPROVED ☐ DISAPPROVED ☐ OTHER

REMARKS

DATE *(YYYYMMDD)* | SIGNATURE

AFTO FORM 585, 20070306 **PREVIOUS EDITION IS OBSOLETE**

H0617143

Figure 5-2. AFTO Form 585, Contractor Data Requirements Substantiation (Sheet 1 of 2)

CONTRACT DATA REQUIREMENTS SUBSTANTIATION (Continuation)

INSTRUCTIONS FOR COMPLETING AFTO IMT 585 (TO 00-5-3)

PART I, IDENTIFICATION

CONTRACT/PR NUMBER: Self-Explanatory (to be filled in after contract award).

SYSTEM/ITEM: Enter name of system/item being acquired that data will support.

PART II, DD FORM 1423

ITEM 1, DATA ITEM: See DoD FAR Supplement Subpart 4.71 for proper numbering.

ITEM 2, TITLE OF DATA ITEM: Enter title as it appears on data acquisition document cited in Item 4.

ITEM 3, SUBTITLE: Enter subtitle of data item for further definition of data item (optional entry).

ITEM 4, AUTHORITY: Enter Data Item Description (DID) number, TM-86-01, military specification or standard number, number listed in ASSIST, or one -time DID number, that defines data content and format requirements.

ITEM 5, CONTRACT REFERENCE: Enter reference to tasking in contract that generates requirement for the data item (e.g., Statement of Work paragraph number).

ITEM 6, REQUIRING OFFICE: Enter technical office responsible for ensuring adequacy of the data item.

ITEM 7, DD 250 REQ: Specify requirement for inspection/acceptance of the data item by the Government (see DOD 5010.12-M for codes).

ITEM 8, APP CODE: Specify requirement for approval of a draft before preparation of the final data item (use "A" when approval is required, or "N/A" when it is not).

ITEM 9, DIST STATEMENT REQUIRED/REASON: For technical data, specify requirement for contractor to mark the appropriate distribution statement on the data (ref. AFI 61-204). When the Distribution Statement and Reasons will vary between submissions, enter "See Blck 16" and indicate in block 16 that a distribution stataement is required and will be provided by the Government before delivery of the data

ITEM 10, FREQUENCY: Specify number of times data items are to be delivered

ITEM 11, AS OF DATE: Specify as-of date of data item, when applicable.

ITEM 12, DATE OF FIRST SUBMISSION: Specify when first submittal (YYYYMMDD) is required.

ITEM 13, DATE OF SUBSEQ SUB: Specify when subsequent submittals are required (YYYYMMDD), when applicable.

ITEM 14, DISTRIBUTION: Enter addressees and number of draft/final copies to be delivered to each addressee. Explain reproducible copies in Item 16

ITEM 15, TOTAL: Enter total number of draft/final copies to be delivered.

ITEM 16, REMARKS: Use for additional/clarifying information for Items 1 through 15. Examples are: tailoring of documents cited in Item 4; clarification of submittal dates in Items 12 and 13; explanation of reproducible copies in Item 14.; desired medium for delivery of the data item.

PART III, JUSTIFICATION:

ITEM 17, JUSTIFICATION: State how the data will be used, who will use it, and impact if not obtained.

ITEM 18, CHECK APPLICABLE BOXES: State how the data will be used, who will use it,

CONTRACTOR FORMAT ACCEPTABLE - YES/NO
DID REQUIREMENTS TAILORED - YES/NO
DELIVERY CAN BE DEFERRED - YES/NO

ITEM 19, REQUESTOR IDENTIFICATION: Self-Explanatory.

ITEM 20, DATA REQUIREMENTS REVIEW BOARD DISPOSITION: To be completed by the DRRB prior to including data item in RFP or RFQ.

AFTO FORM 585, 20070306

H0909995

Figure 5-2. AFTO Form 585, Contractor Data Requirements Substantiation (Sheet 2)

NOTE

- **PART I, CONTRACT/PR NUMBER**, change to read: Self-Explanatory (to be filled in after source selection but prior to contract award).
- **Part II, ITEM 1, DATA ITEM**, change to read: See DoD FAR Supplement Subpart 204.71 for proper numbering.

CHAPTER 6
PROPOSAL EVALUATION AND NEGOTIATION

6.1 GENERAL.

This chapter provides guidance for TO Manager evaluation of TO acquisition or sustainment contract cost and delivery proposals, and participation in subsequent negotiations with the offeror, under the direction of the PCO. The TO Manager should be highly trained and experienced in all relevant areas of TO acquisition or sustainment, and must thoroughly understand program requirements, the RFP, and the evaluation criteria. Assistance and comments should be solicited from appropriate PM or staff agency personnel if some parts of the proposal are beyond TO Manager expertise and experience. During competitive contract bidding, the TO Manager must not contact any bidder directly. There must be no bias or any appearance of conflict of interest.

6.2 DEVELOPING EVALUATION CRITERIA AND CHECKLISTS.

Documented criteria must be developed from program requirements prior to RFP release. These evaluation criteria (or a checklist), must be used to analyze any proposals. The criteria should list the requirements in rank order and establish the minimum acceptable level of compliance for a proposal to be considered acceptable, consistent with the evaluation factors. The criteria may be either quantitative or qualitative depending upon the factors or sub-factors addressed. The criteria will allow all proposals submitted against an RFP to be evaluated to the same standards and help to prevent any charges of bias or unfair practices. The TO Manager, in conjunction with the IPT (paragraph 4.3.2), will develop TO program evaluation criteria.

6.3 TECHNICAL EVALUATION.

The principal TO Manager role is to evaluate the technical merit of the TO portion of the proposal. Other PM activities will evaluate such items as labor rates, overhead rates, hardware requirements and specifications, and so forth.

6.3.1 Purpose. The purpose of the TO technical evaluation is to determine whether offeror proposals meet the requirements of the RFP, and offeror-proposed hours allocated for TO development are realistic, complete, fair and reasonable in relationship to the RFP. The evaluation should assess offeror understanding of and ability to comply with program requirements based on the proposal, Contractor Performance Assessment Reports (CPAR, available from the PCO) or site surveys, interviews, etc. The quality of the contractor processes and ability to provide an acceptable product are primary concerns.

6.3.2 TO Manager Role. Limit TO Manager evaluations to proposal compliance with and understanding of RFP provisions and the adequacy and accuracy of individual elements relating to TO development.

6.3.2.1 Assess whether the proposal is realistic or not by comparing offeror proposed efforts with similar contracts on other programs, both by the same offeror and by other contractors of similar size and capabilities.

6.3.2.1.1 For page-oriented TOs, consider such elements as “hours per page” (new and changed), “number of pages” (new and changed), “types of pages” (text, illustration, and mixed), “travel costs” (location, duration, number of people), and hours for TO-related plans and reports.

6.3.2.1.2 For IETMs, evaluation elements will depend on the offeror units of measurement. Some elements included could be number and complexity of tasks, lines of software code, number, format and complexity of illustrations, etc.

6.3.2.1.3 If the offeror based proposal costs for some elements on historical data, the TO Manager should evaluate the validity of the data used; i.e., “Is this effort similar to the baseline used for the calculations?,” “Is the baseline recent?,” “Are the calculations statistically accurate?,” “Has any upgrade to offeror production equipment been considered?,” etc.

6.3.2.1.4 When comparing hours with those proposed by other contractors, the TO Manager must make allowances for different methods of documenting and allocating labor and hours. The TO Manager may want to consult with other PM or staff experts in this area.

6.3.2.2 There are two components of completeness; complete justification of costs and complete coverage of requirements. “Costs” in this instance are primarily labor hours, with the addition of travel, reproduction, and similar dollar costs.

6.3.2.2.1 Costs should be fully justified and traceable throughout the proposal. The TO Manager should not be concerned with labor rates (dollars per hour) or any indirect rates (such as "General and Administrative," G&A) or overhead rates (such as material overhead), as these are negotiated separately with the offeror by the PCO. However, the TO Manager should verify that upgrades of the offeror equipment are reflected in the rates (usually in lower hours per unit of effort and possibly increased overhead).

6.3.2.2.2 The coverage of offeror proposed efforts must be assessed by comparing the proposal with the RFP scope and effort. Of critical importance are the data rights proposed - are they adequate to support future changes in support and operating concepts? If the program is totally funded by the government, the contractor should propose unlimited rights to all technical data developed for the program. During this portion of the evaluation, the TO Manager may discover that the RFP is misleading or incomplete, or unneeded requirements have been included. In this case, the TO Manager must notify the PCO so that offerors have the opportunity to modify proposals.

6.3.2.3 The TO Manager should provide the PCO with an estimate of contract risk (high or low), based on the scope, period, and technical requirements of the RFP. Higher risk technologies would justify higher percentage profits. For example, is the overall program established or leading edge technology? What percentage is new development versus modification or off-the-shelf? How long is the contract period? Are the TOs traditional page-based formats or IETMs?

6.3.2.4 Offeror ability to comply with program requirements may be assessed by comparing the offeror proposal with the evaluation factors and criteria (did the proposal indicate a complete understanding of the effort involved), by reviewing CPARs of past performance on similar contracts, by site visits, interviews, and other investigation methods.

6.3.3 Reporting. Reporting the evaluation results is critical. The TO Manager must indicate which portion of each proposal is being evaluated, whether that portion meets the requirements documented in the RFP, whether the RFP has any internal problems, what must be done to correct any shortfalls, and a risk assessment of offeror ability to perform. Accuracy, brevity and clarity are the keys to successfully preparing an evaluation report.

6.3.4 Evaluation Notices (EN). During evaluation some aspects or provisions of the proposal may appear deficient or require clarification. If data provided in the proposal fails to address all contract requirements, is inadequate for a proper evaluation or is contradictory, an EN should be submitted through the PCO. ENs must be specific and limited to the aspect of the offeror proposal causing the problem.

6.4 CONTRACTOR COSTS.

Costs for TO development fall into two categories, direct and indirect. "Direct" refers to those costs incurred solely as a result of the TO development effort, such as writing, editing, printing, and so forth. "Indirect" refers to costs which would be incurred whether or not TOs were developed, such as company management, facility operation, and the QA program.

6.4.1 Direct Costs. Offeror costs to perform TO development support functions, such as attendance at meetings and conferences, verification support, etc. should be included as direct labor costs for producing the TOs or source data.

6.4.2 Indirect Costs. QA requirements would not normally be separately priced by the offeror, but would be part of "overhead."

6.5 SPECIFIC TECHNICAL ORDER PROPOSAL EVALUATION GUIDELINES.

6.5.1 Areas Subject to Double Charging. Not all TOs or source data packages require all support functions, and the offeror proposal should clearly differentiate these items. For example, some commercial manuals do not require supplementing, and the only allowable costs should be for development of an Identifying Technical Publication Sheet (ITPS), annotation of title page data, purchase of multiple copies, and administrative processing of the CFE Notices and manual certification. If task development is performed as part of a Supportability Analysis (when on contract), TOs should not also be charged for task development. When MIL-HDBK-863, *Wiring Data and System Schematic Diagrams, Preparation of*, or MIL-PRF-83495, *Technical Manuals - On-Equipment Maintenance Manual Set*, are on contract, engineering drawings are usable in TOs without modification except for addition of TO and page numbers. Drawing development is an engineering cost, and the only costs chargeable to TOs are for numbering and reproduction.

NOTE

Not all engineering drawings are usable in TOs.

6.5.2 TO Sizes. The TO manager should estimate page counts (and/or file lengths, database sizes, etc. for digital TOs) by comparing the program to existing programs for similar military systems or commodities when possible. Is the offeror proposed number of pages in line with this estimation? If TOs are priced individually or by types, compare the number of pages proposed with the number of pages in published TOs of the same type for similar equipment.

6.5.3 Historical Data. If historical data from like systems is not available, the TO Manager should solicit inputs from the PM ALC technical services function.

6.5.4 Technical Order Data Rights. The TO Manager should assess any areas of the proposal where the Offeror has proposed less than full rights to the technical data. The key concern is whether the government will have adequate rights to support the weapon system for its life cycle, including data for alternate repair source selection and competitive spare parts procurement. The TMCR may require a separately priced option that provides for the Government's rights to a future delivery of the technical data.

6.5.5 Evaluation. Other aspects of the offeror proposal which must be evaluated include the selection of TO types, development processes, QA processes, proposed formats and methods of delivery, etc. See Appendix E.

6.5.6 Evaluation Assistance. TO Manager evaluations should be based on experience and judgment to the maximum extent possible, using the resources of other TO Managers and the staff when in doubt. When necessary, ask the offerors specific questions regarding their proposals, **through the PCO**.

6.6 PROTECTING PROPOSAL RECORDS AND DATA.

The effectiveness and integrity of the contracting process requires that all data and information be handled with the utmost discretion to avoid any compromise. All data and information received or developed during proposal evaluation shall be protected from unauthorized disclosure IAW the FAR and DoD 5400.7-R/AF Supplement.

6.7 CONTRACT NEGOTIATION.

The TO Manager may be requested to support the PCO during the initial contract negotiation process, particularly if there are disagreements about the TO development portion of the proposal. TO Manager evaluation comments will be discussed, and the TO Manager must document and be prepared to justify the government position.

6.8 POST CONTRACT AWARD.

6.8.1 Negotiations. Negotiations can also occur during the performance of the contract for Engineering Change Proposals (ECP), Contract Change Proposals (CCP), or as a result of differences in contract interpretation. TO Manager participation remains the same whatever the reason for negotiations, and must be performed through the PCO.

6.8.2 Additional Evaluations. Evaluate ECPs, associated TCTOs, and CCPs against the baseline contract to ensure costs correspond to the original proposal and were not included in the baseline costs. Some TO updates as a result of ECPs should be included in the routine periodic update program, and some proposed additions to the number of TOs developed or acquired may be included in contract baselines. Evaluate the ECPs/CCPs against similar items previously submitted by the contractor.

6.8.3 Contract Adjustments. If, for any reason, the contractor does not perform some functions as originally proposed (for example, when schedules are accelerated and revised need dates prevent some quality checks, or vital support equipment will not be available in time), an equitable adjustment to the contract/order price should be negotiated. The PCO will manage negotiations and may or may not require TO Manager support.

CHAPTER 7
CONFERENCES AND REVIEWS

7.1 GENERAL.

Conferences and reviews conducted by the TO Manager are an essential and formal process, applied within the framework of a TO management program. Attendance must be limited to the minimum number of personnel required to accomplish the purpose of the conference or review. Personal preference must not affect requirements. After the program contract is signed, any modifications to requirements noted during these conferences and reviews must be documented for PCO action. Minutes of proceedings are not authorization to change contracts.

7.1.1 Involvement. The TO Manager should be involved in all aspects of the acquisition program, as there are very few areas that will not affect TO and source data development. The TO Manager should participate in such non-TO program meetings as logistics and program management reviews, supportability and provisioning conferences, Preliminary and Critical Design Reviews (PDR & CDR), and Support Equipment Recommendation Data (SERD) Reviews.

7.1.2 Preparation. The TO Manager shall be prepared to discuss TO issues at logistics and program management reviews. In addition, the TO Manager must assess and coordinate changes to schedules and availability of equipment to support future TO events.

7.1.3 Evaluation. The TO Manager role in supportability and provisioning conferences is to evaluate the effects on TO development. At the supportability conference, individual tasks and reports, including the task analysis and tool listings, will be discussed. The TO Manager should assess the availability and contractor use of the supportability records and reports. At the provisioning guidance conference, schedules for Source, Maintenance and Recoverability (SMR) coding will be developed.

7.1.4 Preliminary and Critical Design Reviews (PDR & CDR). PDRs and CDRs address many issues which affect the TOs. Automatic versus manual testing, maintainability requirements, special tools, unique support equipment, and special skills are discussed. A common contractor practice is to propose changing TO procedures rather than hardware design to overcome deficiencies. TOs must NOT be used to compensate for design deficiencies.

7.1.5 Support Equipment Recommendation Data (SERD) Reviews. Many SERDs will identify support equipment requiring new TOs or additional procedures in existing TOs. The TO Manager must review the SERDs to ensure all TO requirements are identified, and identify the need for CFAE/CFE Notices or contractor Letters of Recommendation.

7.1.6 Sustainment Meetings. During TO sustainment, there are fewer requirements for formal conferences and reviews, but there are still occasions where the TO Manager must meet with other SPO and/or customer personnel to resolve TO issues. Some of these occasions include Center Centralized TO Management (CTOM) groups, TO program IPTs, TO and Recommended Change reviews, post-publication reviews, Commercial Off-The-Shelf (COTS) manual reviews, Configuration Control Boards (CCB), verification conferences, etc.

7.2 TECHNICAL ORDER PLANNING/REQUIREMENTS CONFERENCE (TOP/RC).

7.2.1 Purpose. The TO Manager will conduct a joint TOP/RC with the TO IPT (Chapter 4). The TOP/RC will identify TO program requirements, prepare TO program schedules, determine what source data is required to support TO development, and plan for TO verification. One critical task often overlooked is to review the TO specifications and standards which will be required on the program, and tailor them as specified in Chapter 5. If this is not done by the TOP/RC, then the TO Manager must review the contractor-proposed tailoring before the contract is issued to ensure Air Force requirements are met.

7.2.1.1 The conference may be accomplished through face-to-face meetings, correspondence, telephone or other electronic communication. When the latter options are used, the TO Manager will document all actions and obtain written approval of the final RFP inputs and the TOMP from IPT members. The planning and requirements derived from this conference must follow the established Air Force operation, maintenance and logistics support concepts and plans.

7.2.1.2 When more than one using command is involved, the Lead Command, as identified in the Program Management Directive (PMD), should be the primary source of requirements information. Requirements from other using commands should also be considered in TO planning efforts.

7.2.2 Role of the TO IPT. The IPT should plan for the use of existing TOs and commercial manuals whenever possible, identify required new TO types and specifications, and establish program milestones based on the PMD.

7.3 TECHNICAL ORDER GUIDANCE CONFERENCE.

7.3.1 Management and Scheduling. TO IPT Guidance Conferences are co-chaired by the TO Manager and contractor to ensure understanding of the contract requirements. Hold Guidance Conferences early enough in the development process (normally within 60 days after contract award) to ensure the contractor is not delayed in the start of TO preparation. At this time, the TO Manager clarifies requirements, plans, and schedules and may provide the TOMP to the contractor. Requirements that were not fully defined or could not be defined until hardware selection and applicable operation and maintenance concepts had been analyzed will be finalized during the TO Guidance Conference. Any changes affecting contract performance or costs must be approved by the PCO.

7.3.2 Objectives. Guidance Conference objectives are to clarify TO tasks and planning data resulting from contract and program requirements. Participants will review the military system or commodity support plan, Air Force operation and maintenance concepts, Air Force TO policy and intended user capabilities, needs or environment. When required, the TO Manager will provide specification interpretation and comments on contractor plans and schedules presented as part of the proposal. Specific agenda items should be coordinated well before the conference to ensure maximum utility and productivity.

7.3.2.1 The TO Manager briefs on the purpose, objectives, scope and functions of the conference. Specific agenda items should include a review of the contract to ensure mutual understanding of the requirements; a review of applicable specifications and established Air Force TO policy; a review of basic planning data to ensure mutual understanding of the program and intended users requirements; and establishment of contacts to provide subsequent guidance and information.

7.3.2.2 The results of the conference will be fully documented by contractor minutes, and coordinated with IPT members. The TO Manager will approve the minutes and summarize conference findings and action items, prior to completion of the conference.

7.3.3 Participation. In addition to agencies listed above, participation should include local Defense Contract Management Agency (DCMA) personnel. Air Force attendees should be officers and/or 7/9-level enlisted personnel, or the civilian equivalents. AF attendees should be familiar with Air Force and MAJCOM TO acquisition and system support policies. All participants should understand applicable TMSS, publications, functions, and contract requirements. Conference members must have the authority to make rapid, objective and logical decisions based on contract requirements and Air Force and MAJCOM policies.

7.4 COMMERCIAL MANUAL REVIEW.

Commercial manual reviews are an integral part of the acquisition and sustainment QA process.

7.4.1 Commercial Off-The-Shelf (COTS) Manuals. When the contractor recommends use of commercially available SE or end item components (usually through submittal of a SERD), use of manufacturer manuals customarily provided with the commercial article may also be recommended. Copies of the COTS manuals are attached to the CFEN recommendations for government review and approval IAW MIL-PRF-32216.

7.4.2 Contractor Evaluation. The TMCR requires the contractor to provide an evaluation of any commercial manuals recommended for program support. Contractors must review the “TO-Equipment Cross-Reference” function of the AF TO Catalog, to prevent resubmission of previously approved COTS manuals. The evaluation must indicate if the manuals will require supplementing.

7.4.3 Use of MIL-PRF-32216. MIL-PRF-32216 contains review requirements and must be used to determine the acceptability of COTS and other commercial manuals. MIL-PRF-32216 is NOT meant for development of manuals and must not be used to order preparation of TOs for Air Force use.

7.4.4 Government Reviews of COTS and Commercial Manuals.

7.4.4.1 Two copies of recommended COTS or commercial manuals and the CFEN are normally forwarded by cover letter to the TO Manager for review and evaluation. One copy should be retained in the PM TO library in the event of loss in shipment. A suspense date should be established and follow-up action taken until approval or disapproval is obtained.

7.4.4.2 The using command and assigned equipment specialist perform a commercial manual review, even for those COTS manuals previously approved. The review ensures the manuals accurately cover the equipment and are acceptable according to MIL-PRF-32216.

7.4.4.3 Commercial flight manuals must be reviewed against both MIL-PRF-32216 and MIL-DTL-7700. COTS manuals to support depot operations will be reviewed for acceptability by depot maintenance personnel.

7.4.4.4 Acceptable COTS manuals will be assigned a TO number, controlled and distributed IAW this TO and TO 00-5-1. When requesting TO number assignment for a commercial manual, the commercial manual number shall be included on JCALS screens or the NOTE transaction line ("N01") of the AFTO Form 203.

7.5 TECHNICAL ORDER IN-PROCESS REVIEWS.

7.5.1 Scheduling and Purpose. The contractor will recommend the frequency and percentage of IPRs needed for TO development insight. IPRs are an essential part of the TO QA process. IPRs are scheduled by the contractor in coordination with the TO Manager and are conducted by the TO IPT. IPRs ensure compatibility with engineering source materials, accuracy of descriptive data, and that TO content, style and format are IAW applicable specifications and other contractual requirements. In addition, IPRs are an opportunity for the IPT to identify issues concerning depth of coverage, missing data, data that needs amplification, etc. See Chapter 12 for coordination and approval procedures for updates.

7.5.2 IPR Guidelines. As a general rule, IPRs should be accomplished when the TOs are 30-40 percent and 70-80 percent complete. Table 7-1 is a guide to help determine TO completion percentages. In some cases (e.g., nuclear weapons TOs, certain critical procedures, etc.), a 100 percent IPR may be required. If initial IPRs indicate that the contractor understands the requirements and is producing a quality product, the contract may be modified to reduce the numbers of additional IPRs.

7.5.3 Focus and Support. For earlier IPRs, the primary focus should be on style, format, and planned depth of coverage. Attendees should be E6-E9 military personnel or civilian equivalent, with knowledge of TO style and format requirements, parent organization policies, and organization signature authority. For later IPRs, the focus shifts to the technical content and comprehensibility of the manual, and personnel should also include technicians of the lowest skill level (5-level minimum) expected to operate or maintain the commodity in the field.

7.5.4 Non-Procedural Data Verification. For non-procedural data, verification by Desk-Top Analysis may be accomplished during the IPR; or for TO updates, during a Pre-Publication Review (PPR). A separate verification is not required, unless the IPR was waived or the procedures were incomplete at the time of the IPR. Table 7-2 is a suggested guide to reviewing TOs. Verification will be documented in the IPR minutes developed by the contractor (during acquisition), or on the document creating an update during PPRs (during sustainment).

7.5.5 Interactive Electronic Technical Manuals (IETMs) and Other Digital TOs. IETMs, being relational databases, may have to be under continuous review. The TO IPT will probably view selected tasks and data files and make appropriate comments and corrections electronically. Digital TOs will be reviewed "on-line." The IPR method will be documented in the TOMP. See Chapter 9 for verification of IETMs and TO paper-to-digital format conversion.

NOTE

The following general guidelines may be used to determine readiness for IPRs. Percentages of 35 and 75 were used to develop the suggested guidelines. In general, the percentage of completion reflects the manner in which TOs are prepared, not the order of preparation. The items and percentages are suggestions only and are not all-inclusive.

Table 7-1. IPR Completion Percentage Guide

In-Process Review Level:	35%	75%
TO Section	**Percent Complete**	
TO Title Page	100%	-
Front Matter	-	75%
Introduction	100%	-
General Information	50%	90%
Installation Instructions	25%	70%
Operation Instructions	25%	70%
Theory of Operation	50%	100%
Maintenance Instructions	25%	75%
Checkout and Troubleshooting	-	75%
Circuit Diagrams/Illustrations	25%	75%
Parts Lists	35%	80%

7.6 TECHNICAL ORDER PRE-PUBLICATION REVIEWS.

Pre-publication (pre-pub) reviews are scheduled and conducted by the TO Manager, as called for in the IMP. Pre-pub reviews are an examination of the master TO or update reproducible file prior to delivery to ensure incorporation of changes resulting from verification, recommended changes, and as a final check on contract compliance. Pre-pubs are not required in every case - the TO Manager decides if one is needed on a TO-by-TO basis, depending on number and complexity of changes from verification (IMP entry criterion - Appendix E), contractor performance on updating previous TOs, etc. Every effort should be made to include verification team members (Chapter 9) at pre-pub reviews to enhance continuity.

7.7 TECHNICAL ORDER POST-PUBLICATION REVIEWS.

Perform post-publication reviews to evaluate and improve formal TOs after delivery to the using command. There are two types of post-publication reviews: command reviews and currency reviews.

7.7.1 Command Reviews. Command Post-Publication Reviews (PPR) are conducted after TOs have been delivered to the using command to evaluate and correct the instructions contained in the TOs. The need to conduct a PPR will be determined by the TO Manager based upon equipment modifications, AFTO Forms 22 or AF Forms 847 received, and using command or PM recommendations (see paragraph 1.4.4.17). Participants include the TO Manager, TCM, and using command representatives.

7.7.2 Currency Reviews. The responsible TCM will:

7.7.2.1 Review unclassified TOs that have not been updated for five years for currency, distribution limitation changes, etc.

7.7.2.2 Review classified TOs at every update, but no less than annually, for currency and possible reclassification.

7.7.2.3 In addition to the TO content, JCALS/ETIMS index data and cross-reference data must also be verified for accuracy.

7.8 CONTRACTOR FURNISHED (AERONAUTICAL) EQUIPMENT (CFAE/CFE) NOTICE PROCESSING AND TRACKING PROCEDURES.

CFAE/CFE Notices (often called “CFENs” for short) are submitted by contractors when required by a CDRL item, or by other government agencies developing TOs for the Air Force. The notices identify the purpose and use of specific technical manuals for the operation, maintenance and inspection of equipment used with the end-item system or commodity, and which are not already covered by the TO development contract. The manuals may be MILSPEC TOs, commercial manuals, or contractor data developed for the government.

7.8.1 CFEN Content. CFEN content is specified by DID DI-TMSS-80067, *Contractor Furnished Aeronautical Equipment/Contractor Furnished Equipment (CFAE/CFE) Notices*. Notices should be checked to be sure all blocks are filled in (i.e., contract number and date, submitting contractor name and vendor code, publisher name and vendor code, stock number, configured item number, etc.) Incomplete or inaccurate notices should be returned to the contractor for corrective action. CFENs should be revised and resubmitted or superseded whenever the item represented undergoes significant change or data requirements change.

7.8.2 Federal Stock Class (FSC). The FSC of the equipment covered is listed on the notice. The FSC is used with the D086, *Mission Workload Assignments System*, to determine the prime ALC for management of the commodity and manual involved.

7.8.3 PM Procedures. The PM, through the TO Manager or TCM, shall establish a procedure for reviewing and suspensing CFEN inputs. The procedure must stipulate who reviews CFENs for each type of document recommended and who has ultimate approval authority for acceptance and numbering of the recommended documents.

7.8.4 CFEN Approval. Upon approval of a CFEN, the TO Manager forwards a letter through the appropriate contracting office notifying the contractor of the TO number assigned, title (if other than proposed), license rights and copyright release statements, quantities required, and shipping instructions (if not covered in the contract TMCR).

7.8.5 CFEN Disapproval. If the CFEN is disapproved, full justification must be provided. If the item has been classified as a non-reparable or throwaway item, the appropriate PM must be notified to ensure the equipment is covered in the Supportability Analysis database. If disapproval is due to errors in CFEN preparation rather than unnecessary or unsuitable data, the TO Manager should immediately inform the contractor to allow timely revision and re-submittal of a corrected CFEN to avoid costly delay.

7.8.6 Military Specification TOs. As system or commodity development proceeds, the prime contractor or subcontractors may identify additional hardware support requirements or components of the end item that require separate TOs for operation and maintenance of the commodity. For new Support Equipment (SE), the contractor will submit a SERD (MIL-PRF-49506, *Logistics Management Information (LMI)*, and DI-ALSS-81529, *Logistics Management Information Data Products*), accompanied by any required CFENs (DI-TMSS-80067). The formal SERD process is shown in Figure 7-1 and the SERD form in Figure 7-2. Contractors may develop their own processes for notifying the government of new SE requirements, as long as all LMI required to make accept/reject decisions is provided. For new manuals to support end item components, only the CFEN is required. CFENs may not be required if all TO requirements can be completely defined in advance in the contract (usually on less complex projects).

7.8.7 SERD Review. Each SERD submitted must be reviewed and approved as directed by the PM before the equipment can be used with the end item. Disapproval of the SERD usually disapproves any associated CFENs.

7.8.8 CFEN Review. For approved SERDs and end item components, associated CFENs must be reviewed for applicability, need for a stand-alone manual, depth of coverage recommended, etc., and approved separately.

7.8.9 Contractor Data. In lieu of developing MILSPEC TOs, the contractor may recommend use of in-house contractor-format technical data. The CFENs and the data recommended must be reviewed and approved like commercial manuals (paragraph 7.4).

7.8.10 Commercial Off-The-Shelf (COTS) Manual. When the contractor recommends use of commercially available SE or end item components, use of manufacturer manuals customarily provided with the commercial article may also be recommended. Copies of the COTS manuals are attached to the CFEN recommendations for government review and approval IAW MIL-PRF-32216. CFENs on COTS manuals must include the contractor evaluation of suitability based on MIL-PRF-32216.

7.8.11 CFEN Status. Depending on the number of contractors and volume of COTS data, a database for each contractor should be maintained with summary pages showing status of each notice, as well as individual work sheets on each notice providing more detailed information on actions taken.

7.8.12 Developing Supplemental Data. When supplemental data is required to make the manual acceptable, the contractor should be contacted to determine if the additional data can be obtained from the vendor or if the contractor will have to develop such data. Depending on the reply, the additional data shall be obtained and the manual returned to the prime ALC for reevaluation. If the required data cannot be obtained from the vendor, a cost estimate for development of the

supplemental data should be requested from the prime contractor. Action must be taken to obtain the additional funding required for the supplement, or to reevaluate the support concept for the commodity. After the supplemental data is received, the data and the original manual should be submitted for re-evaluation.

7.8.13 COTS Manual Records. Each program must establish a list to track proposed COTS manuals. The list should include CFAE/CFE Notice numbers, date approved or disapproved (with disapproval reasons), contractor, prime ALC, ship dates for the approved manuals, and whether or not the manuals were received at the appropriate destination. A follow-up letter should be sent to the ALC responsible for the commodity and the supporting manual to ensure receipt and authorize contractor payment.

7.8.14 Responsibility Transfer. TO management responsibility for COTS manuals automatically transfers to the equipment PM's or SCM's TO Manager after signature of the DD Form 250.

Table 7-2. Technical Order Review Evaluation Guide

		YES/NO/NA/COMMENT
1.	Official part number and nomenclature used on title page to identify the equipment covered in the TOs. (See MIL-STD-38784 and Appendix G)	
2.	Distribution, Disclosure, Destruction, and Export Control Notices properly applied. (MIL-STD-38784, AFI 61-204 and Chapter 3)	
3.	Security classification markings properly applied. (DoD 5200-1-R/AFI 31-401)	
4.	Proper inclusion of table of contents, list of tables, list of illustrations and indices, as required. (MIL-STD-38784)	
5.	TO arranged IAW specifications. (Performance/Detail Specification)	
6.	Purpose of TO clearly stated. (MIL-STD-38784)	
7.	Use of TO identified. (MIL-STD-38784)	
8.	Scope of TO outlined. (MIL-STD-38784)	
9.	Inclusion of a listing of ECPs, TCTOs and configuration changes to properly update TO, if applicable. (Performance/Detail Specification)	
10.	Applicable safety precautions included. (MIL-STD-38784)	
11.	Notes, cautions and warnings prepared and used properly and consistently. (MIL-STD-38784)	
12.	All abbreviations and technical terms fully explained and identified as required. (MIL-STD-38784)	
13.	Nomenclature consistent within and between related publications. (MIL-STD-38784)	
14.	Materials referred to using approved Government or commercial specifications and standards where applicable. (MIL-STD-38784)	
15.	Materials used and methods for use of materials comply with AF regulations especially as to effects on health and the environment. (AFOSH STDs and AFI 32-70xx series)	
16.	Theory covered only to the extent necessary. (MIL-STD-38784)	
17.	Complete troubleshooting procedures and corrective procedures presented in a clearly understandable and usable form. (MIL-STD-38784)	
18.	Maintenance schedules (inspections) covered, if applicable. (Performance/Detail specification)	
19.	Special Maintenance that may be required in unusual climatic conditions of cold, heat, wind, altitude and noise included, if applicable. (Performance/Detail specification	

Table 7-2. Technical Order Review Evaluation Guide - Continued

		YES/NO/NA/COMMENT
20.	Maintenance concepts and using personnel skill levels align with maintenance procedures. (TO 00-5-1)	
21.	Calibration instructions accurate and clearly defined. (Performance/Detail specification)	
22.	Dial, meter and switch settings given at the beginning of each operation, if required. (MIL-STD-38784)	
23.	Data flow in a logical order IAW use or repair of the equipment. (MIL-STD-38784)	
24.	Standard test equipment and special tools to be used for job performance listed. (MIL-STD-38784)	
25.	Text supported properly with necessary illustrations, charts and tables. (MIL-STD-38784)	
26.	Drawings properly prepared. (MIL-STD-38784)	
27.	Glossary, if required, is adequate in scope. (MIL-STD-38784)	
28.	Certification forms reviewed to insure that verification was satisfactory and equipment can be operated, tested and maintained with the written procedures. (TO 00-5-3)	
29.	Coverage compatible with other TOs, including Illustrated Parts Breakdown (IPB). (MIL-STD-38784)	
30.	Written not to exceed the 9th Reading Grade Level (RGL). (MIL-STD-38784)	
31.	Short sentences used in preference to long, complex sentences. (MIL-STD-38784)	
32.	Adequate use of necessary cross-references to other chapters, sections, volumes, etc. (MIL-STD-38784)	
33.	No unnecessary duplications of textual material, procedures, routines, diagrams, etc. (MIL-STD-38784)	
34.	Prescribed forms/formats have been discussed with forms management personnel. (AFI 33-360)	

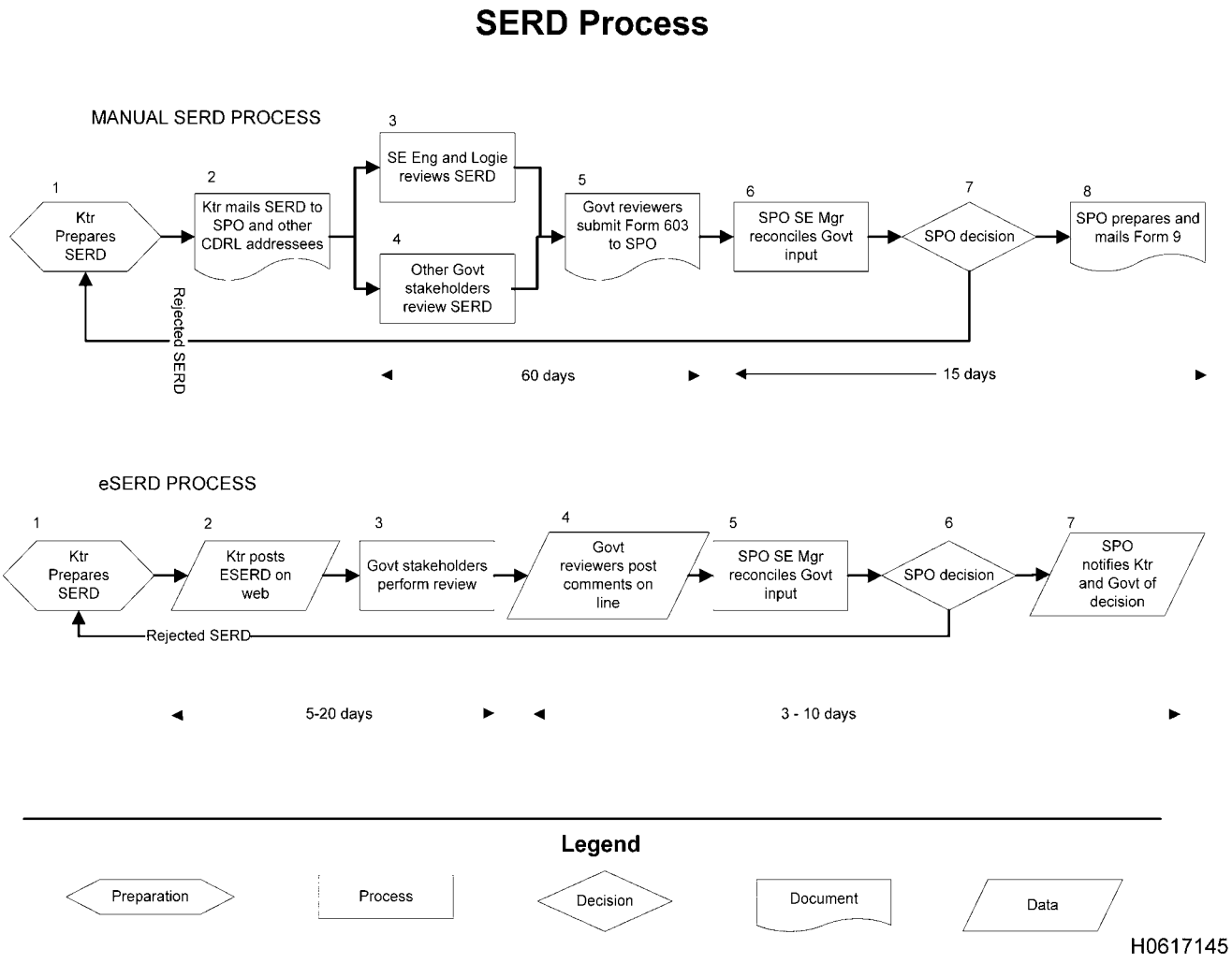


Figure 7-1. SERD Process Flow Chart

7.9 SERD/ESERD PROCESS (AFMCMAN 23-3, *CATALOGING AND STANDARDIZATION*).

The Program Manager (PM) designates Support Equipment Managers or Equipment Specialists (ES) for assigned SE. When a large quantity of new SE is expected, the PM also assigns a SERD focal point to establish document control over the SERD/lectronic SERD (eSERD) process. SERDs are obtained from contractors under Data Item Description (DID) DI-ALSS-81529, *Logistics Management Information (LMI) Data Products*.

Blocks 1 and 2: Contractor prepares/submits a SERD (Figure 7-2). If using an eSERD process, an e-mail is sent to the PM SERD focal point notifying him/her that an eSERD is awaiting review on the web.

Block 3 (and 4 for SERD flow): Government Stakeholders review the SERD/eSERD. Typically, these stakeholders would be the responsible logistician and engineer in the acquisition program office, DLIS-K (Cataloguing), AFMET-CAL (if there are calibration issues), the ALC equipment specialists (for the SE itself and for the prime mission equipment it will support), the using MAJCOM/A4, and the Table of Allowance (TA) functional. The CDRL for DI-ALSS-81529 will identify the organizations/addresses of all required recipients. In the eSERD process, a mail group could be established to ensure electronic notification of an eSERD for review on the web. Some things to consider during this review are:

- Conduct pre-review (if required) prior to formal submission to ensure completeness of data, technical content, intrinsic value, and price reasonableness. The extent of the Pre-SERD review will vary depending on the program involved as determined by the PM.
- Ensure standard/common tools are not submitted on SERDs.
- Review SERD to determine the content and overall acceptability of the logistics data.
- Ensure all concerns addressed at the pre-SERD have been resolved (if applicable).
- Ensure Integrated Logistics Support (ILS) for the SE has been adequately addressed.
- Review SERD to determine the content and overall acceptability of the technical data.
- Determine if the recommended SE is an appropriate solution to the test and repair requirement.
- Assess whether reliability and maintainability have been properly considered.

Block 5 (SERD) or Block 4 (eSERD): Government stakeholders/reviewers submit their comments on the pending SERD/eSERD (the eSERD has a comment template on-line).

Block 6 (SERD) or Block 5 (eSERD): The Support Equipment Manager reconciles comments, as needed. to prepare disposition decision.

Block 7 (SERD) or Block 6 (eSERD): Document SERD disposition (Figure 7-2) and obtain input/coordination/signature from the SE engineer.

Block 8 (SERD) or Block 7 (eSERD): Route disposition decision to the contracting function for preparation of PCO Letter to provide official notification to contractor.

SUPPORT EQUIPMENT RECOMMENDATION DATA (SERD) EVALUATION / NOTIFICATION

(this form is not contractually binding without PCO/ACO approval)

1. LSA Control No	2. Configuration	3. FSCM	4. Contract Number	Nomenclature A. Name	B. Type Designator

6. SERD No.	7. Revision	8. NSN/NSC Number

10. GOVERNMENT REQUIREMENTS / CONTRACTOR RECOMMENDATION

	Govt	Contr		Govt	Contr
A. Configuration Management (Spec Type/Ref Mil Std 490)			E. SE Data		
(1) Development Spec			(1) SE Illustrations		
(2) Product Spec			(2) Calibration/Measurement Requirement Summary (CMRS)		
(3) ___ Process ____Material Spec			(3) Procurement Data		
(4) Status Accounting Required			(4) Installation Data		
B. Design			(5) Request for Nomenclature		
(1) Contractor Specification			(6) SE End Item Funding Report		
(2) Deviation Per SERD OR CI Spec			(7) SE Delivery Schedule/Delinquency Report		
C. Testing			(8) Standard/Modified Hand Tools List		
(1) System Compatibility Testing			(9) Revision to SE Exhibit		
(2) First Article Testing			(10) Consolidated SE List		
(3) First Article Test Plans/Procedures (A(1) & (2) above)			(11) Priced SE List		
(4) First Article Test Report			(12) Repair Level Analysis Record		
(5) Compatibility Test Procedures (C(1) above)			(13) Logistics Support Analysis Record		
(6) Compatibility Test Report			F. Provisioning Data		
(7) Quality Test Report/Procedure			(1) CFAE/CFE Notices (Tech Manuals)		
(8) Acceptance Test Report/Procedures			(2) Recommended Repair Parts List (RRPL)		
D. Reviews/Inspections			G. Software		
(1) Preliminary Design Review (PDR)			(1) Software		
(2) Critical Design Review (CDR)					
(3) Configuration Audits					
(4) Other Reviews (See remarks below)					

11. Remarks

Number of Bases:
Basic Unit of Issue:
Using Command:
Table of Allowance:
Operational Need Date:

Specify if CFE or GFE:
Purchase Request Number if CFE:
Contract Line Item Number:
SMR Code:

Program Managers:
Name:
Office Symbol:
Telephone:

12. Disposition	___Approved (Comment on changes)	___Disapproved (See remarks)	___Pending (See remarks)	___Revise and Resubmit (See remarks)

13. Engineering Official's Signature and Date	14. Logistics Official's Signature and Date	15. Program Manager/Designee Signature and Date

H0617147

Figure 7-2. Support Equipment Recommendation Data (SERD) Evaluation/Notification Form

CHAPTER 8
TECHNICAL ORDER SUSTAINMENT MANAGEMENT

8.1 TECHNICAL ORDER NUMBERING AND INDEXING.

8.1.1 On-Line JCALS TO Numbering Procedures. TO Managers are responsible for requesting numbers for and indexing assigned TOs, using the JCALS "Manage TM Numbering; Assign a Publication Number" or equivalent process, the procedures in the JCALS Desktop Instructions (DI), on-line Help, and the guidance in TO 00-5-18. TCTO series header numbers are assigned IAW TOs 00-5-15 and 00-5-18. See paragraph 8.1.1.6 for procedures with nuclear weapon, EOD and AFMETCAL TOs.

8.1.1.1 Before a number is requested for TOs covering specific equipment and end items (except for complete aircraft and missiles), the TO Manager, in conjunction with the TCM, must ensure that data on the equipment covered by the TO has been entered into JCALS. Use either the TO Catalog "TO-Equipment Cross Reference" function or the JCALS "Generate TM Index Report; Interservice Technical Information Exchange System (ITIES) Cross-Reference Report" to determine if the equipment is already listed in JCALS.

8.1.1.1.1 If the weapon system is not listed, use the JCALS "Perform Acquisition; Add Weapon System Data" or "Update Weapon System Data" processes to add the system. If the equipment is not listed, use the "Perform Acquisition; Manage Item Data" or similar process screens to enter data about a new equipment item. (See Appendix F)

8.1.1.1.2 Any time a TO is updated to cover additional equipment, or additional dash numbers of the supported equipment, the ITIES information must be updated with the complete new part number (See Appendix F). The data is used to set up and change the TO number to equipment number cross-reference data in the TO Catalog.

8.1.1.1.3 Do NOT enter JUST the weapon system MDS (e.g., "F-100" or "B-2") for TOs covering component assemblies or support equipment for the end item. Use the component/SE part numbers from the TO title.

8.1.1.1.4 For General and MPTOs which do not cover specific weapon systems or equipment, use "Not Applicable" in both the "Perform Acquisition; Add Weapon System Data" and "Perform Acquisition; Manage Item Data" screens.

8.1.1.2 TO Managers will develop TO titles IAW Appendix G. An accurate title is an essential element in determining the correct TO number.

8.1.1.3 All numbering requests must be reviewed and approved by the numbering specialist responsible for specific categories and types of TOs. For most O&M, General, Methods and Procedures TOs and Time Compliance TO series headers, this is the USAF Numbering Specialist, OC-ALC/ENGLA. For Precision Measuring Equipment (PME), Nuclear Weapon and EOD TOs, see paragraph 8.1.1.6. All requests for publication of new TOs in Category 00 must first be approved by HQ AFMC/A4UE (TO 00-5-18).

8.1.1.4 Once the USAF TO Numbering Specialist reviews and approves the requested TO number, the TO Manager enters additional information about the TO into the newly established JCALS TM Index record for the TO. The JCALS DI Table 2 (Table 8-1) lists system required information that must be added for a new TO Number. Table 8-2 lists information required by policy. The TO Manager must place the TO Archive (OC-ALC/ENGLA, TM Account F*10SJ) on ID for all new TO numbers assigned. In this latter case, the Archive personnel must establish a subscription for the new TO so future updates are automatically received. Only digital copies of new TOs, TCTOs and TO updates will be sent to the Archives.

8.1.1.5 TO Managers will request OC-ALC/ENGLA to establish a TCTO series header for an aircraft, missile or engine category when a new TO series is established. TO Managers will request new TCTO series headers for other TO categories when the first TCTO is in preparation. A separate TCTO series header must be established when individual TCTOs in the series will be assigned different classifications. Once a TCTO series header number is approved, JCALS will automatically number individual TCTOs in the series. Although JCALS provides the capability to automatically assign TCTO Data Codes when the Index record for a new TCTO is established, the capability allows duplicate Data Code numbers to be assigned across the Air Force JCALS enterprise. Therefore, when a JCALS record for a new TCTO is established, the JCALS-assigned data code must be replaced by the next sequential number from a block of data codes provided by OC-ALC/ENGLA. Contact OC-ALC/ENGLA directly if data codes are needed.

8.1.1.6 AFMETCAL numbers calibration TOs for Test, Measurement and Diagnostic Equipment (TMDE). The 708 NSUS Technical Support Flight numbers nuclear TOs listed in TO index 0-1-11N-1-CD-1. NAVEODTECHDIV numbers joint-service nonnuclear EOD TOs.

8.1.2 Off-Line JCALS TO Numbering Procedures. TO Managers and contractors who do not have on-line access to JCALS will complete AFTO Form 203, *Technical Order Numbering, Indexing, and Control Record*, and AFTO Form 204, *Technical Order Numbering, Indexing, and Control Record (Continuation)*, for numbering actions, as follows:

NOTE

The two forms will no longer be required when ECSS subsumes JCALS processes.

8.1.2.1 The AFTO Form 203 is used to request assignment of TO numbers, to submit TO index source data, to set up the TO index record, and to update, change, or cancel these records when appropriate. The Form is submitted to OC-ALC/ENGLA (or one of the other numbering OPRs, paragraph 8.1.1.6) for TO number assignment.

8.1.2.2 The AFTO Form 204 is used to provide data about the supported weapon system or equipment for creation of a JCALS record, or to update TO number to equipment number cross-reference data for all equipment covered by a TO (including non-Air Force equipment). The AFTO Form 204 is submitted concurrently with AFTO Forms 203 for initial TO number assignment requests, to the ES responsible for the supported equipment and having JCALS access. Equipment data is entered using the JCALS "Perform Acquisition; Manage Item Data" process. The TO number to equipment number cross-reference data reduces the likelihood of procuring duplicate TOs. The AFTO Form 204 is not required for complete aircraft and missiles, or for TOs that are not equipment-related (such as most MPTOs) and TCTOs. CD-ROMs/DVDs and other media containing multiple TO files are also exempt unless the medium covers only one piece of equipment.

NOTE

- Do NOT enter an end-item part number or MDS (e.g., "F-22" or "B-2") for TOs covering component assemblies or support equipment for the end item. Use the component/SE part numbers.
- Any time a TO is updated to cover additional equipment, or additional dash numbers of the supported equipment, the TO-Equipment Cross-Reference information must be updated in JCALS.

8.1.2.3 Data in blocks 1 through 17 of AFTO Form 203 are required as source data for a new TO or TCTO. Only blocks 1, 2, 11, 14, 15 and 16 are required to establish a TCTO series. The Next Higher Assembly (NHA - block 4) and National Stock Class (NSC - block 7) for the equipment covered by the TO are mandatory for TO number assignment (except for weapon system or engine TOs, or MPTOs). If the equipment has been assigned a Materiel Management Aggregation Code (MMAC), the code should be included with the NSC in block 7. The identity of the designated equipment repair facility (if known) should be shown on the AFTO Form 203 in block 17, "Remarks." The nomenclature, NSC and MMAC must be the same on both forms. Requests must be submitted as soon as possible, to permit TO indexing and requirements determination.

8.1.2.4 In the event of a work stoppage or other justified emergency, the PM may contact the OC-ALC/ENGLA Branch Chief via telephone or e-mail for expedited review and approval of the numbering requests. The request must justify use of emergency procedures and provide complete AFTO Forms 203 and 204 data elements.

8.1.3 Assigning Numbers. The USAF TO Number Specialist, OC-ALC/ENGLA (or one of the other numbering specialist organizations, paragraph 8.1.1.6) will assign the TO number IAW rules in TO 00-5-18. OC-ALC/ENGLA returns a copy of the AFTO Form 203 to the initiating TO Manager to provide status of the action requested and show the TO number assigned for new TOs. If the request was submitted on an AFTO Form 203, a copy of the form is returned to the initiator. **EXCEPTION:** ALC and PC Home Offices are authorized to assign an individual to approve new TO numbers containing distribution media suffix codes when requested by users in their organization. These individuals are only authorized to approve existing TO numbers with added distribution media suffix codes (e.g., adding the suffix for TO 00-5-1 to establish TO 00-5-1-WA-1). Requests for completely new TO numbers must still be submitted to OC-ALC/ENGLA for research and approval as described above. The Site POC will direct site JCALS Administrator to include "Number a TM" privilege to the selected individual's JCALS User profile, and modify "Number a TM" workflow to include a branch to route TO Number requests to the selected local numbering specialist or to OC-ALC/ENGLA.

8.1.4 Renumbering Technical Orders. The TO Manager shall only request TO renumbering to correct serious numbering errors caused by erroneous or insufficient source data before the TO is published and distributed. Published TOs will only be renumbered when the assigned number prevents effective location or use of the TO, or the scope or range of the

functionality covered by the TO changes significantly. TOs will not be renumbered to align with local sequence numbers or similar cross-reference identifiers. The responsible TO Manager will renumber a TO using the JCALS "Manage TM Numbering; Renumber a TM" process, after coordinating the new number with OC-ALC/ENGLA. (Coordination is not required to assign or change an FMP Supplement number, or to add Distribution media suffixes to existing TO numbers.) ENGLA will provide spreadsheets for the site representative to populate and feedback information on approved -WA-n suffix numbers to ENGLA weekly. When renumbering a published TO, both the new and former TO numbers will appear in the upper right corner of the title page with the former number preceded by the word "Formerly". Both numbers will remain on the title page until the next revision, at which time only the new number will appear. Only the new TO number will appear on the individual updated pages. Unchanged pages will continue to indicate the old TO number until they are changed for a reason other than simply renumbering, or until the next TO revision. Distribution media suffixes are not included as part of the TO number for the TO itself.

8.1.4.1 On-line TO Managers submit TO renumbering requests using the appropriate JCALS screens.

8.1.4.2 Off-line TO Managers complete and submit AFTO Forms 203 and 204 as above to request TO renumbering, input new equipment numbers and related data under the new TO number, and provide justification for the action.

8.1.4.3 When OC-ALC/ENGLA approves a new number for unpublished TOs, the TO record is updated and subscriptions submitted against the original number are automatically changed to the new one.

8.1.4.4 When published TOs are renumbered, JCALS will automatically convert all past revisions and changes to the new number. However, each supplement is numbered as a separate TO and the TO Manager must renumber them individually.

NOTE

FMS subscriptions will NOT transfer to the new TO number without an FDO review for releasability.

8.1.4.5 When the TO is renumbered, the manager will enter a note about the replaced number in the JCALS index Catalog Notes field. If the TO renumber action was taken solely to establish a unique TO number for the distribution of the TO on specific media, no further action is required (see paragraph 8.1.5.1). If not, issue a TO Change with both the old and new numbers on the title page. The warehouse function must physically re-identify TO stocks to the new TO number and adjust records as appropriate (N/A for POD TOs). The replaced TO number can never be reused, unless action is taken to completely remove it from the TO Index record.

NOTE

The following procedure is a change from previous direction. TO number suffixes were formerly required only when there were multiple versions published. They are now mandatory when indexing any and all non-paper versions of a TO.

8.1.4.6 eTOs distributed from sites other than the ETIMS repository (i.e., media suffix-WA-1) are indicated by a "-WA-2" media suffix, with the host site URL identified in the TO catalog notes. An AFMC/A4UE waiver (paragraph 1.2.1) is required for the use of the WA-2 suffix, except for the IETMs nuclear weapon TOs [11N], ICBM TOs and classified TOs. A WA-2 waiver is also required if a WA-1 suffix version is being distributed via the ETIMS repository and a second media version is to be distributed via a non-ETIMS repository (e.g., an html version for depot operations, distributed from a prime contractor site).

8.1.5 Numbering and Indexing Digital TO Files. The minimum acceptable digital format for Air Force TOs is Adobe® Portable Document Format (PDF). When TOs will be distributed in two or more distribution media, each media version must be separately indexed in JCALS. Each distributed media version will have its own TO Number consisting of the approved TO number plus the appropriate distribution media suffix code (TO 00-5-18). Each TO number indexed will be assigned a corresponding Publication Stock Number (PSN) as specified in TO 00-5-18. See Table 8-4 for specific numbering and indexing guidance and procedures. Digital TOs distributed electronically (on-line) for O&M use are know as "eTOs," and will be indexed using the "-WA-n" suffix codes and a PSN ending in "11." The distribution of eTOs is critically dependent upon the capability to publish updates in a timeframe that meets interim TO (ITO) requirements.

NOTE

- Digital TO files provided to the DLA Document Services for printing and distribution as paper copies are not indexed using the on-line media suffix code ("WA-1"). Digital TO files made available electronically to users for printing missing pages or emergency TO replacement must be indexed as -WA-n electronic (e)TOs if they are also used digitally to support point-of-use O&M functions.

- Users may continue to use digital TO files indexed without media suffix codes for O&M work; available from various ALC and Product Center repositories, but must verify the currency of downloaded files at least weekly. When the digital files are re-indexed as eTOs using media suffix codes, users must submit subscriptions for the eTO.

8.1.5.1 TO Distribution Media Suffix Codes. Media suffixes will only be used when indexing and subscribing to the digital versions of the TO - they will NOT appear on the TO title page. TO Numbers assigned to CD-ROM or DVD disks used for the distribution of single or multiple digital TOs shall reflect the TO number including the media suffix on the disk and case labels (see paragraph 8.1.6).

NOTE

When naming TO files for upload to ETIMS repository, do not use any special characters (e.g., #, &, % etc.) in the file name. The files will appear to load, but users will not be able to access them.

8.1.5.2 Indexing TOs Distributed Electronically (eTOs). When an electronic TO (eTO) version will be distributed, the TO Manager must establish a new eTO Number including the proper suffix, ETIMS eTOs will be numbered using the "-WA-1" suffix on the end of an existing or new TO Number in the JCALS index. Non-ETIMS eTOs will be numbered ending in the "-WA-2" suffix (paragraph 8.1.4.6). The TO Manager will create a new index record in JCALS, and assign a Publication Stock Number (PSN) ending in the Digital On Line media code (11). These actions will ensure that users will be able to subscribe to the eTO and that one-time requisitions for the eTO will not be processed. See Table 8-4 for detailed guidance and procedures.

NOTE

The AF TO FST numbers, indexes, optimizes and uploads MAJCOM supplements to those MPTOs distributed exclusively in pdf eTO format (TO 00-5-1). The TODO is responsible for establishing and MPTO TO manager for approving subscription requests for the merged eTO.

8.1.5.2.1 If the eTO will immediately replace the paper version (i.e., no paper distribution at all), then the TO Manager will renumber the existing TO index record to add the media suffix code (ETIMS eTO - "-WA-1"; non-ETIMS eTO - "-WA-2"), index a new revision with the (11) PSN media code and supersede previous TO increments.

NOTE

Do not replace paper version with an eTO version of an Active Air Force TO with FMS subscribers. If TO printing has not transferred to TODPS, FMS subscribers are indicated by a D* TM account numbers in the ID list. If TO printing has transferred to TODPS, consult the spreadsheet on the Air Force Technical Order Managers CoP at portal link:

https://afkm.wpafb.af.mil/ASPs/docman/DOCMain.asp?Tab=0&FolderID=21298-16&Filter=21298

to determine if there are FMS subscribers. If there are FMS subscribers, or if FMS subscribers were inadvertently dropped during the renumbering of a paper version, utilize the procedures in paragraph 8.1.5.2.2 to maintain or re-establish the paper version for the FMS customers.

8.1.5.2.2 When both paper and eTOs will be distributed, the TO Manager must create a new index record for the eTO using the "-WA-n" suffix and the PSN "11" suffix. Then, when the eTO replaces the paper version after a period of dual distribution, the TO Manager will first remove the eTO number from the JCALS TO Index using the "JCALS Ticket Process" at https://techdata.wpafb.af.mil/QUICKINFO/jcals/homepage.htm. The TO manager should then renumber the paper TO index record to reflect the eTO number. This preserves in a single TO Index record the entire TO configuration history.

NOTE

The paper version of a TO must be retained if there are FMS subscribers, even if the US TODOs only subscribe to the eTO version. If TO printing has not transferred to TODPS, FMS subscribers are indicated by D* TM account numbers. If TO printing has transferred to TODPS, consult the spreadsheet on the Air Force Technical Order Managers CoP at portal link https://afkm.wpafb.af.mil/ASPs/docman/DOCMain.asp?Tab=0&FolderID=21298–16&Filter=21298 to determine if there are FMS subscribers. When only FMS subscribers to a TO remain, set the "AforI" to "NO", keep the "AforD" flags set to "YES" and the "Sponsor" flag to "NO". Add the following JCALS catalog note: "Paper TO version indexed in JCALS to facilitate distribution to FMS customers. TO managers should submit a ticket to have any paper increments removed from ETIMS. The above procedures will also be used if a paper version needs to be re-established because FMS users were inadvertently dropped during a renumbering action.

8.1.5.2.3 Since no distribution labels are required to distribute eTOs (the JCALS Due-In Receipt process is not applicable), TO Managers must manually mark eTO index records as "Available for Distribution" and "Available for Published Index" after the eTO has been optimized, uploaded and validated on ETIMS. ETIMS will then make the eTO available for viewing and distribute to authorized Master eTools.

8.1.5.2.4 The AF TO Functional Support Team (AF TOFST) has developed TO Manager checklists to assist with JCALS standard TO/eTO indexing, eTO bulk loading, eTO mass indexing, and WA-2 and WA-1 conversion. Use of the checklists is CRITICAL for successful accomplishment of TO Managers duties. Checklists are posted on the Air Force Technical Order Managers CoP at URL https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=21298; once in the CoP, TOMA Checklists are under Document Management.

8.1.5.2.5 TO System policy is to distribute all TOs digitally through ETIMS, however the following exemptions are recognized. No waivers will be required to index, print and distribute paper TO copies in these circumstances, but TODO personnel must explain and justify requests for the paper copies.

- TOs routinely used in explosive atmospheres, when certified laptops (intrinsically safe IAW MIL-STD-810) are not available.
- Checklists and workcards which must be used and checked off during munitions loading, end-of-runway pre- and post-flight checks, alert scramble checks, maintenance tasks and similar circumstances where laptops are not efficient or effective.
- Flight Manual Program TOs exempted from digital distribution and use by AFI 11-215.
- Classified TOs which must be taken into and removed from highly restricted areas.
- Active Air Force TOs used by FMS customers who require paper copies.
- Any other circumstances must be approved by HQ AFMC/A4UE based on waiver requests submitted using the waiver format on the AF Portal:

  https://afkm.wpafb.af.mil/ASPs/DocMan/DocMain.asp?Filter=OO-EN-TO-PI&FolderID=OO-EN-TO-PI-15-8&Tab=0

NOTE

When laptops become available to efficiently, effectively and safely use eTOs in the above circumstances, the exceptions for paper reproduction and distribution will be eliminated.

8.1.5.3 Numbering TOs on CD-ROM/DVD. If a single TO or multiple TOs will be distributed on a CD-ROM or DVD, the TO Manager must establish a specific TO Number for the CD ROM or DVD distributed. The TO Number must include the proper suffix (-CD-1 or -DV-1), and a PSN assigned using the appropriate media code ('R' for CD ROM or 'D' for DVD). These actions will ensure that users will be able to subscribe to the CD-ROM/DVD TO or collection of TOs. Refer to Table 8-4 for detailed guidance and procedures throughout.

8.1.5.3.1 If a single TO distributed on CD/DVD will replace a single paper version (no paper distribution at all), the TO Manager will renumber the existing TO index record to add the media suffix code (-CD-1/-DV-1) and index a new revision using the proper PSN media code (R or D) to supersede previous TO increments (see Table 8-4). When a single TO is published on a CD or DVD (paper or IETM database), the number on the TO Index record and on the CD/DVD will be the same.

8.1.5.3.2 The TO Manager for a collection of TOs distributed on CD/DVD will use the JCALS "Associated Publications" procedure of the "Update a TM Index" function to include individual TOs in the index record for the CD/DVD TO

collection. If the CD/DVD distribution will be for an IETM, a Catalog Note will be included listing the TO groups contained on the CD/DVD (IETM) and indicate the viewing application or system required. The TO Number printed on the CD will be the same as the TO Index. See paragraph 8.1.6 for further information on numbering of CD/DVD containing collections of TOs.

8.1.5.3.3 TO Managers for individual TOs included as part of a collection of TOs distributed on CD-ROM/DVD will update the TO index record to add a "Catalog Note" identifying the TO number of the CD/DVD on which the TO is distributed, indicate the digital format of the TO and the viewing application required. Individual TOs contained in the collection will be marked as NOT "Available for Distribution" unless they are available separately for distribution as paper/eTOs (numbered and indexed as described here).

8.1.5.3.4 Since CD/DVD is physical media that may be mass produced, stored and distributed similar to paper TO versions, the JCALS Due-In Receipt process will be used to initiate the process to prepare distribution labels or obtain distribution label files required to distribute CD/DVD. As such, the "available for distribution" flag in the TO Index record will automatically be set once Initial Distribution labels are successfully generated.

8.1.5.4 Publishing and Indexing Digital TO Updates. Indexing of TO updates reflects the publishing process used to produce the TO Updates. The distribution of eTOs is critically dependent upon the capability to publish updates in a time-frame that meets interim requirements. The entire index history for the paper should not be duplicated for the eTO version. The equivalent digital TO (CD/DVD) and eTO versions to a TO also available as paper version are published by re-issuing the TO file with all changes and supplements merged into a single document file. Updates to "digital only" TOs shall be published as revisions, provided the changed content has been properly tagged and the change markings display correctly in the viewer. EXCEPTION: See paragraph 12.6.

8.1.5.4.1 Paper TO updates are published as revisions, changes and supplements. Each is indexed separately.

8.1.5.4.2 Updates to HTML eTOs also available as paper versions will be published as Revisions, Changes or Rapid Action Changes (RAC) only. The use of formal or interim supplements is strictly forbidden. HTML TOs with no paper versions shall be updated using revisions only. See paragraph 12.6 for exceptions. The same rule applies to HTML TOs published by other electronic systems or on CD-ROM or DVD.

8.1.5.4.3 Updates to PDF eTOs also available as paper versions will be published as Revisions, Changes, and Supplements (interim or formal). Updates to PDF eTOs with no paper versions shall be published as revisions only. See paragraph 12.6 for exceptions. These rules also apply to PDF TOs published by other electronic systems or on CD-ROM or DVD.

8.1.5.4.4 Updates to digital TOs also available as paper versions will be published by reissuing the TO file with all updates, changes and supplements merged into a single document file for distribution and viewing. Updated, merged digital TO files are not total revisions (which would repaginate and re-number paragraphs) and will retain the appearance and layout of the paper TO. PDF TO update files distributed in paper via DLA Document Services TODPS will be merged into the basic PDF TO file following Initial Distribution (ID) of the stand-alone TO update. The complete merged PDF file is then uploaded to the TODPS to support Print on Demand processing of ETIMS One-Time Requisitions for the TO. This procedure also applies to PDF eTOs hosted on other systems. Refer to the "PDF TO/eTO Supplement Merging Process document" for specific details.

8.1.5.4.5 All digital file media (-WA-n, -CD-n, and -DV-n) is indexed as revisions with a Publication Date matching the latest paper TO increment (Revision, Change, or Supplement). The entire index history for the paper version should not be duplicated for the eTO version.

8.1.5.4.6 TO files distributed on CD-ROM or DVD will not necessarily have a separate index record -- the following discussion does not apply to them unless they are separately indexed with a "-CD-n" or "-DV-n" suffix.

8.1.5.4.7 When eTO versions of paper TOs are initially indexed in JCALS, they are entered as a Revision with a "-WA-1" or "-WA-2" TO Number suffix and a PSN ending in "11," and having the same date as the latest update in the paper version. Catalog notes for an eTO version not accessible through ETIMS will indicate the location of the repository housing the complete (merged) eTO file. These eTOs/eTO Updates are often published using proprietary publishing capability. TO Managers must take steps to ensure that only current and complete eTOs are available for viewing or distribution.

8.1.5.4.8 The title page of the eTO version will be identical to the paper version (i.e., it will indicate the same basic date and show the latest change and change date. Supplements will be merged (posted) to the TO file IAW TO 00-5-1, annotated and linked from the title page and each affected paragraph). The digital TO (electronic/CD/DVD) version will have a merger statement: "BASIC AND ALL UPDATES HAVE BEEN MERGED TO MAKE THIS A COMPLETE PUBLICATION."

8.1.5.5 Numbering and Indexing Supplements Affecting Digital TO Files.

8.1.5.5.1 Publication of formal TO supplements is incompatible with a digital-only TO publication and distribution process, and they shall not be used for HTML eTOs. However, if the publication of a formal TO Supplement is required to support paper distribution of a TO, number and index the stand-alone supplement as a paper document (TO Number + "S-n" or "SS-n" with a PSN ending in "06"). The formal supplements for PDF eTOs or CD-ROM/DVD TOs will be merged into the digital TO file prior to issue. The Digital TO media (-WA-1, -CD-1, or -DV-1) will be indexed as a Revision with a PSN ending in "11"), and will be dated the same as the paper supplement. Do NOT index an eTO supplement as a stand-alone file with the "-WA-1" media distribution code, as this will prevent loading either file to the ETIMS repository. HTML eTOs must use Changes instead of formal supplements. EXCEPTION: See paragraph 12.6.

8.1.5.5.2 Supplements merged into digital PDF TO files will be posted IAW TO 00-5-1 and fully annotated by the TO Manager or TCM before optimizing and uploading to ETIMS for viewing and distribution. This includes a title page note referencing the supplement as well as hyperlinks to affected paragraphs. Refer to the "PDF TO/eTO Supplement Merging Process document" for specific details. The merged digital TO files will be indexed as a Revision with a PSN ending in "11."

8.1.5.5.3 Interim supplements to digital PDF TOs will be merged into (posted to) the digital TO file prior to uploading to ETIMS. Refer to the "PDF TO/eTO Supplement Merging Process document" for specific details. The merged TO file will be indexed as a Revision with a PSN ending in "11," with a publication date that matches the publication date of the paper supplement. HTML eTOs must use RACs instead of interim supplements.

8.1.5.6 Numbering and Indexing eTCTOs and eTCTO Supplements. If TCTOs are published and distributed as eTCTOs, a "- WA-n" TCTO Series Header Record must be established. Formal TCTOs and TCTO supplements distributed as eTCTOs using ETIMS will be indexed using the "-WA-1" media suffix code and PSNs ending in "11." Non-ETIMS eTCTOs will use the "- WA-2" media suffix code. TCTOs published and distributed as eTCTOs will be numbered as 'TCTO Series-WA-1+specific TCTO number (-501 and higher) (+TCTOS if required). Care must be exercised to correctly sequence the first eTCTO number assigned for the new eTCTO Series. For example, if the latest paper TCTO ended with '513,' establish a corresponding WA-1 TCTO series header record and index the first eTCTO as TCTO Series-WA-1-514. This requires an additional renumber action to change the JCALS generated TCTO Series-WA-1-501 to TCTO Series-WA-1-514. If paper TCTOs continue to be issued in parallel, both must be indexed, i.e., TCTO Series-514 and TCTO Series-WA-1-514. If digital TCTO files are distributed on CD or DVD, number and index the TCTO as "TCTO series -CD (or DV) -1-specific TCTO number (-501 or higher)". If digital TCTO files are distributed on CD or DVD, number and index the TCTO as "TCTO series -CD (or DV) -1-specific TCTO number (-501 or higher)". Interim TCTOs and TCTO Supplements (interim or formal) shall be indexed as described in paragraph 8.1.5.5.2.

8.1.6 Numbering Digital Media. Digital media include CD-ROMs, DVDs, and other physical recording media. The TO Manager will number, index and manage digital media as discreet TOs IAW TO 00-5-18. The only procedural difference in numbering and indexing between the types of media is the suffix used to indicate media type. See paragraph 8.1.5.3 for indexing procedures.

8.1.6.1 Assigning Numbers to Media Containing Multiple TOs. Media containing TO Sets will be assigned TO Numbers in a manner similar to TCTO Series numbers, with the suffix "-CD-n" or "-DV-n" as part of the number. The associated PSNs will end in 'R' for CD-ROMs or 'D' for DVDs. The TO manager will request a TO number for the medium from OC-ALC/ENGLA, based on the following guidance:

8.1.6.1.1 If multiple categories of TOs are contained on a CD/DVD, the lowest category number will be used for the disk.

8.1.6.1.2 If TOs for multiple systems or commodities are included on the CD/DVD, use a disk TO number which will help identify all of the systems/commodities. (See the instructions for establishing a TCTO Series Header Number in TO 00-5-18.)

8.1.6.1.3 If multiple TO types are included (e.g., a disk containing operations, maintenance and inspection TOs), either use the lowest TO type dash (-) number contained on the disk or omit the TO type designator altogether in the CD/DVD TO number.

8.1.6.2 Developing Titles for Media Containing Multiple TOs. Title the CD/DVD to help users identify the general nature and coverage of the TOs contained, and include a short description of the specific TOs on the CD/DVD, for example, "Methods & Procedures TOs (MPTO) - 00-5, 00-20, & 00-25 Series." The complete title will be listed in the TO index, while an abbreviated version without the listing of included TOs will be used on the CD/DVD and sleeve/case labels, for example, 'Methods and Procedures TOs.' When appropriate, add the word "SET" after "TECHNICAL MANUAL" on the labels.

Specify the digital format and viewing software required for files on the CD/DVD in the JCALS index record as a separate "Catalog Note."

8.1.6.3 Numbering Multiple Disks in a Set. If a TO is published in volumes or a TO set is too large for a single disk, the "n" will indicate the volume/disk number. If a TO Set has varying classifications, or a supplemental TO has been published, the "n" can differentiate between differently classified disks. See examples, TO 00-5-18.

8.1.6.4 When indexing a CD-ROM or DVD with multiple TOs published on it, only the CD or DVD TO number will be marked as "Available for Distribution." Individual TOs on the CD/DVD will be marked as "Available for Published Index" but not "Available for Distribution."

8.1.7 Changes to Numbering Policy. OC-ALC/ENGLA submits requests for changes to numbering policy to HQ AFMC/A4UE for approval. OC-ALC/ENGLA provides information copies of the request to all ALCs and PCs for comments and concurrence.

8.1.8 Indexing. When OC-ALC/ENGLA approves a new TO number or a TO update is generated, the TO Manager will:

8.1.8.1 Complete JCALS TO Index information using the "Add Pub Stock Number" and "Update an Index Entry" or equivalent screens. Improper or incomplete index data will prevent cataloguing the TO in the Reference Library, viewing TO index data in the TO Catalog, subscribing to or requisitioning the TO using JCALS/ETIMS, and printing distribution labels. Ensure the TO Record is cross-referenced to the weapon system MDS (if applicable) and supported equipment part numbers (paragraph 8.1.1.1). See Table 8-1, *DI Table 2, Mandatory Index Entries*. Additional policy- mandated entries (Table 8-2) include the unit cost (for FMS), document classification, assigned Distribution Statement Code (A through F or X) and primary Reason assigned for codes B through E.

8.1.8.2 For Preliminary TOs (paragraph 3.3.8) and TO updates, publication ("PUB") Basic, Revision or Change dates will be entered when the reproduction masters are sent for printing and distribution.

8.1.8.3 When indexing unclassified updates to a classified TO, TO Managers must first index the updates in JCALS, which will assign the parent TO classification to the update. Then the TO Manager must change the classification of the unclassified update only to "Unclassified," ensure the JCALS indexing fields "PUB TITLE SECURITY" and "PUB SECURITY" indicate "Unclassified," and verify that both fields match.

NOTE

If the Security fields do not match, the JCALS index record will default to the parent TO classification, which will cause misidentification of an unclassified change as classified.

8.1.8.4 After completing the index update, verify that the Air Force TO Archive, OC-ALC/ENGLA, TODO Code 0086, TM Account F*10SJ, is on subscription for the basic TO/TCTO Header Series, or that the Center has a procedure for monthly submittals to the Archives. If not, establish a subscription of one (1) copy for the Archive.

8.1.8.5 When a new TO, TCTO or TO update is published, send only a digital version on CD-ROM or DVD to the Archive. The preferred archival file format is PDF, but if necessary for non-page-based TOs in other formats, include any proprietary viewing software on the CD/DVD. See paragraph 12.8 for CD/DVD formats.

8.1.8.6 Indexing Interim TOs. Review and index ITOs IAW Chapter 13. Index Interim TOs (ITOs) upon transmittal of the e-mail message, using a PSN with media code "P" (Printed Copy). Interim TOs will be marked as available for published index but not available for distribution. This will ensure that users can see information about the ITO but cannot requisition it. Include the ITO e-mail message date and time of release or other identifying information, the TO numbers of any companion TCTOs, and information on requesting copies of the ITO in the Catalog Notes.

8.1.9 Uploading, Distributing and Viewing eTOs. Once an eTO update is published, it must be uploaded to ETIMS (or another eTO distribution system) for viewing and distribution.

NOTE

If there will be paper TO distribution as well as eTO distribution, the print-ready PDF files should be sent to TODPS just before uploading the eTOs to ETIMS.

8.1.9.1 ETIMS. TO Managers will upload eTOs and Updates (AF HTML or PDF files with a -WA-1 suffix) to ETIMS repository and validate them before the eTO may be viewed or distributed. When uploading PDF eTO files, filenames shall consist of the paper TO number with a ".PDF" extension using all capital lettering (e.g., eTO "00-5-3-WA-1" would be "00-5-3.pdf"). This filename remains static during subsequent update by the TO manager in support of external linking to eTOs within and outside of their management control. Do not confuse the static filename for the ".PDF" file with the ".CAB" filename which is created by the CPS software and should not be changed. Mark the JCALS Index record for the eTO/eTO update "Available for Published Index" and "Available for Distribution." See exceptions below for ETIMS AF HTML eTOs. Once ETIMS recognizes that an eTO Update is available (validated and indexed) for distribution, the eTO will be distributed to Master eTools and made available to view on-line in ETIMS.

8.1.9.2 The GCSS-AF framework imposes a file-size limitation on ETIMS of 128 MB for loading eTO files. If any eTO files are too large to be loaded into ETIMS, the TO must be sectioned into two or more Volumes. TOs may be broken out by chapters or other logical divisions as necessary, and each volume must have its own title page, TO number, LEP and Table of Contents; title pages must have a statement that "This TO is not complete without TO ###"; and the volumes must be indexed in JCALS as "-WA-1" for upload to ETIMS. This requirement is in addition to the rules for multivolume manuals in MIL-STD-38784. See TO 00-5-18 for numbering rules.

NOTE

TO managers will optimize TO files by using the "fast web view" Adobe function prior to upload into the ETIMS repository IAW the functional users guide (FUG) on the AFKn Air Force Technical Order Managers CoP. The same optimized version of the file will be used for printing.

8.1.9.3 Other eTO Distribution Systems. Consult local procedures for uploading eTOs (non-AF HTML or PDF files with a -WA-2 suffix) to other repositories for eTO viewing and distribution operations. Access or distribution of eTOs available or hosted by systems other than ETIMS is dependent upon each system's design for access or distribution. TODOs with subscriptions for these eTOs must independently establish access to these systems.

8.1.9.4 PDF eTOs with Paper Distribution. If a PDF version of a TO will be distributed both in paper and electronically, the same PDF file will be used to support both methods. A copy of the PDF TO or TO update file will be indexed in JCALS and uploaded to the DLA Document Services TODPS (see Chapter 10) for printing and Initial Distribution. Then the TO file and any update files will be merged to make a complete, current TO for follow-on Print-On-Demand (POD) through the TODPS. For distribution as an eTO, the merged PDF TO file will be indexed as a revision having a -WA-n suffix and with the same date as the latest update. It will then be uploaded to ETIMS or another repository for distribution and viewing. See "Technical Order Supplement Merging Process" at https:/ /techdata.wpafb.af.mil/toprac/interim.htm. If unable to access this https site, send an e-mail to "ATOMS@wpafb.af.mil." Distribution of ITO Supplements will be made using one of the methods in paragraph 10.9 (See Chapter 13), after which a PDF copy will be merged and annotated (posted) to the TO file for both POD and eTO distribution.

8.1.9.5 HTML eTOs with paper distribution. HTML TOs can only be updated by Revisions, Changes or RACs - Supplements cannot be used. HTML TO files must be converted to Adobe PDF files for TODPS printing and ID. After ID is complete, the PDF TO file and any PDF update files will be merged into a complete current TO for follow-on POD. The HTML TO file and any HTML update files will be merged to make a complete eTO for distribution.

8.1.9.6 Summary of eTO publication and indexing business rules:

Distribution format requirement	Publication and Indexing rules
eTO only (all)	- Publish TO updates as a Revision. EXCEPTION: See paragraph 12.6. - Index all TO Updates as TO Revisions. - Only complete eTOs will be available for distribution/viewing (ETIMS or other eTO system).
HTML / XML eTO and paper	- Publish formal TO updates as Revisions or Changes and ITO Updates as paper.

Distribution format requirement	Publication and Indexing rules
	- Index all eTO updates as Revisions.
	- Only complete merged TOs will be available for distribution/viewing (ETIMS or other eTO system).
PDF eTO and paper	- Publish formal TO updates as Revisions, Changes or Supplements (S/SS-n).
	- Publish ITO updates as RACs (preferred) or ITO Supplement (IOS/ISS-n).
	- All TO updates to eTO version must be indexed as Revisions with the date of the update.
	- TO Updates to paper version will be indexed according to the type of TO update distributed.
	- Only complete merged TO will be available for distribution/viewing (ETIMS or other eTO system).

NOTE

The publication date of a TO Change or Supplement distributed in paper will be the same date as the corresponding eTO Revision index record. Even though indexed as a Revision, TO Changes will be apparent in the eTO. TO Supplements will be appended, annotated and merged to form complete eTO version before distribution.

8.1.10 Supersedure. *Supersede* TOs and TO increments when replaced by a revision or new increment in the same TO number family or when replaced by or incorporated into another TO in a different number family. Supersede TCTOs when replaced by a new TCTO.

NOTE

Add a “Catalog Note” to the record of any superseded TO replaced by a different TO, similar to “Replaced by TO XXX-XXX-XX.” Add a matching Catalog Note to the replacement TO record, such as “Formerly TO XXX-XXX-XX” or “Includes TOs XXX-XXX-XX,….”

8.1.11 Rescission. *Rescind* TOs and TO increments when they are deleted without replacement (paragraph 8.5). Rescind TCTOs/eTCTOs when rescission dates are reached (TO 00-5-15) or the TCTOs/eTCTOs are no longer required. Extend rescission dates on TCTOs/eTCTOs when required IAW TO 00-5-15. Rescind TCTO/eTCTO series headers when the entire TO series is deleted. Perform warehouse inventory record and digital repository file maintenance as necessary.

8.1.12 Indexing TOs Published on the Internet. TO Managers and TCMs uploading digital TO files onto Web servers will provide the local System Administrator (SA) or Web Master with required TO file information (TO number, date, title, and Change number/date) for the server listing. Additional information, such as the TO Manager and TCM points of contact may also be listed.

NOTE

Media suffix codes (TO 00-5-18) are always used to index digital TOs published electronically or on a physical medium even when the TOs are not published in paper. The suffixes do not appear on the TO title page/opening screen, but are a part of the number for the medium itself.

8.1.12.1 For the initial publication on the Internet (or to correct the index listing for previously-published electronic access TOs), a new TO index record will be created using the TO Number plus a media suffix code of “WA-n” IAW TO 00-5-18, with a PSN ending in “11” (“digital on-line”) to allow subscriptions but prevent any requisitions from being submitted. The JCALS TO Index record, Catalog Notes field will be used to document the Internet address of the host server, the digital format and special viewing software required. The rationale for creating a separate index record is to allow TO users to subscribe to whichever version they can use, and allow TO Managers to determine which subscriptions will drive print quantities and which do not.

8.1.12.2 Prior to uploading eTOs to the ETIMS repository, the Internet address of the TO’s host server will be listed in the index record Catalog Notes field, along with any special viewing software required. Following deployment of ETIMS, Distribution Statement “A” (authorized for public release) TOs will be uploaded to ETIMS for viewing and distribution.

Indicate in the TO Index Catalog Notes field that the eTO is available via ETIMS. The format of eTOs uploaded to ETIMS must be Adobe PDF format or HTML format. ETIMS HTML eTOs must be published using AF TMSS DFOSI and COTS CPS Publishing tool. Access to these eTOs via public web sites will no longer be authorized. EXCEPTION: TOs 00-5-1, 00-5-3 and 00-5-15 will be hosted on a public web site to facilitate access by contractors and other authorized non-military users (paragraph 8.1.12.3).

8.1.12.3 Prior to moving eTOs from a Program Office or Center server to the ETIMS server, ensure users are notified well in advance of the pending location change.

8.1.13 Supplement Processes. The TO Manager numbers and indexes a new TO supplement by using the JCALS DI "Add a Supplement Number to the Index" or equivalent procedure. Supplement sequence numbers are assigned automatically by JCALS, and restart at "1" after each TO revision. The new supplement is then distributed IAW TO 00-5-1. For FMP supplements, which have sequential supplement numbering for the life of the manual, the FMM will submit a JCALS Incident Reporting and Tracking System (IRTS) or Help Desk Resolution Center (HDRC) (https://techdata.wpafb.af.mil/hdrc/db/index.asp) report to request renumbering of the Supplement number proposed by JCALS if required.

NOTE

- Do not use the DI "Renumber TM" procedure to renumber FMP Supplements because it also renumbers the supplements for earlier FM Revisions.
- **Before** assigning a PSN to a new supplement, return to the "Update an Index Entry" screen and select the new supplement TM number. Otherwise, the PSN will be assigned to the basic TO. This is true for changes and revisions as well.

8.1.14 Numbering and Indexing Supplemental TO Manuals and Parent TOs. When a Supplemental Manual (see TO 00-5-1) is published as a "child" to a "parent" TO, both publications must have a supplement notice on the title pages when one cannot be used without the other. Use such statements as "INCOMPLETE WITHOUT TO XX-XX-XX," "USE WITH TO XX-XX-XX," or "THIS PUBLICATION SUPPLEMENTS TO XXXX-XX." The same statements will also be placed in the Catalog Notes for both TOs.

8.1.15 Unit Price. Any TOs to be released to an FMS customer must have an estimated average cost entered in the Unit Price field of the JCALS index record. TO Managers are responsible for adding this data while indexing a new TO or new TO increment when the TO has FMS ID or the TCTO Series Header has FMS ID. The FMS unit cost field must be updated before ID labels are requested. This data is printed on the DD Form 1348-2, *Issue Release/Receipt Document With Address Label*, and provides customs information to Freight Forwarders. Because this data and the TOs affected vary frequently, HQ AFMC/A4UE will update the Unit Price field quarterly for all TOs managed in JCALS. TO Managers are responsible for adding this data to shipping documents for TOs not managed in JCALS.

8.2 AIR FORCE TECHNICAL ORDER (AFTO) FORM DEVELOPMENT.

8.2.1 Development. The TCM responsible for a TO prescribing use of unique AFTO forms (E [electronic] or P [paper]) will manage them IAW AFI 33-360, *Publications and Forms Management*. All AFTO forms are published through 88 CG/SCQIP, 3810 Communications Blvd, Wright-Patterson AFB, OH 45433-5601, DSN 787-7924, e-mail: 88CG.SCQIP@wpafb.af.mil. The TO Manager must coordinate with the 88 CG to release new and revised AFTO forms concurrently with the prescribing TO updates.

8.2.2 AFTO Form Availability. Most AFTO forms are available electronically ("E" versions) on the AF Publishing page (http://www.e-publishing.af.mil/). Under the maroon bar near the top of the screen, select the "Forms" radio button and the subsequent link to "Air Force Technical Order" (right column under "Special"). Manifold or card-stock forms are available from the AF Publications Distribution Center (AFPDC) if you have an e- Publishing account. To establish an account and order products, log in to the AF Portal, then click on the "Library" tab, click "Publications"/"AF Pubs and Forms," and click "AF e-Publishing Physical Products." This provides a window used to establish an e-Pubs account. Forms may be Computer-Generated ("CG") when specifically authorized in the prescribing TO. When forms are not available electronically, the TO Manager may elect to provide a blank copy of AFTO forms authorized for local reproduction at the back of the prescribing TO.

8.3 PRELIMINARY TECHNICAL ORDERS.

8.3.1 Management. JCALS will only manage PTO numbering and indexing. TO Managers must establish procedures to manage and control distribution of PTOs prior to formalization and publication.

8.3.2 Numbering and Indexing Procedures. The TO Manager requests a TO number for PTOs using the word "Preliminary" as part of the TO title. The number request must have a temporary Pub Date assigned. OC-ALC/ENGLA enters the approved number in the JCALS Pub Index. The TO Manager will use the "Manage TO Index, Update Issue Data" screens to delete the temporary Pub Date, verify the flags for "Preliminary Publication" and "Available for Published Index" are set to "Yes," and the flag for "Available for Distribution" is set to "No." The warehouse will not stock, store, or issue PTOs.

8.3.3 Verifying and Formalizing PTOs. After the PTO has been verified to the maximum extent possible (Chapter 9), the TO Manager develops a TO update to convert the PTO to a formal TO. Prior to ID label generation for the formal TO update (JCALS Due-In screen), the TO Manager will enter the Pub Date. The Available for Distribution flag in the TO index is automatically set to "Yes" when the TO Manager completes the JCALS Due-in Receipt function to indicate that stock is available to make ID. JCALS will automatically enter the ID Ship date when the labels are printed, and this date is copied to the JCALS TM Index record "Estimated Distribution Date (EDD)" field. The date is presented to AF TO Catalog users.

8.3.4 Preliminary TCTOs. JCALS will provide TO numbers and data codes for new TCTOs based on the TCTO Header number. Replace the JCALS data code with one from the block of numbers provided by OC-ALC/ENGLA. The TO Manager will use the "Manage TO Index, Update Issue Data" screens to verify the flag for "Preliminary Publication" is set to "Yes," and the flags for "Available for Published Index" and "Available for Distribution" are set to "No." This will prevent ETIMS from indicating a TODO Account error due to a mismatch between the catalog and the account. TODOs will already be on subscription for the TCTO through the TCTO Header Series.

8.4 TRANSITIONING TECHNICAL ORDERS TO DIGITAL-ONLY DISTRIBUTION.

8.4.1 TOs on Digital Media. Some digital media have the capacity to store multiple digital TO files on a single unit of the medium. For example, since a CD-ROM will hold approximately 650 megabytes (MB) of information, and most digital TO files are 10 MB or less, a single CD ROM disk can easily hold many average-size TOs.

8.4.2 Grouping TOs on Digital Media. To conserve increasingly sparse publication and distribution funds, TCMs must take advantage of this capability by grouping TOs on electronic media for distribution whenever possible. Groupings shall be made logically (e.g., by TO category, series, sub-system, subject, distribution limitation, classification, etc.) by the TCM, with the concurrence of the Using/Lead Command. The TCM must revise the CD or DVD whenever any TOs on the disk are updated, and must re-associate the included TOs with the CD/DVD TO number.

8.4.3 Transition Responsibilities. The AF CTOM representative (paragraph 3.3.1.2) at the lead command responsible for the system/item covered by the TO shall coordinate the transition to digital only distribution with the other using commands and the assigned TO manager. The AFMC CTOM representative will coordinate the transition if the system/item covered by the TO is a commodity item. The AF flight manual program manager will manage the transition of all AF flight manuals. The TO manager will support the transition, when requested (paragraph 8.4.5).

8.4.4 Transition Planning. Depending on the users' infrastructure (i.e., hardware and software to display digital TOs at the point of maintenance), the actual transition to digital distribution may have to be phased in gradually as capability is achieved. Reproduction and distribution of paper quantities will be reduced as digital users increase.

8.4.5 Digital vs. Paper Distribution. TO System policy is to distribute all TOs digitally through ETIMS. The AF CTOM representative responsible for coordinating the transition to digital only distribution (paragraph 8.4.3) must periodically assess eTool deployment status at their operational locations to ensure effective eTool programs. This individual will then direct reduction in paper ID quantities as mature and effective eTool capabilities have been attained. When this individual determines the operational locations are able to service users in a digital only environment, they will require TODO accounts remove themselves from paper ID. Through attrition, paper ID requirements will diminish as eTool/eTO capabilities mature. The TO manager will then make the remaining paper copies "Sponsor Approval" and require justification (paragraph 8.1.5.2.5). When paper ID requirements no longer exist, the TO manager will rescind the paper version for Air Force use.

NOTE

TO managers will distribute eTOs as complete files, either revisions or merged basics including both changes and supplements, if any.

8.4.6 Publishing eTOs to ETIMS. There are three steps to publishing an eTO in ETIMS. TO Managers first optimize and upload the eTO into ETIMS, second validate the eTO in JCALS and third mark the eTO as available. Prior to uploading optimized eTOs into ETIMS, TO managers will need to obtain the ETIMS Role of "TOMA."

8.4.6.1 Upload: The TO manager logs into ETIMS and navigates to the eTO Manager pages. For each eTO, the TO Manager enters the eTO metadata and uploads the eTO. ETOs will stay in this upload or staging area until the TO Manager "validates" the eTO. In this manner, the TO Manager can load a set of eTOs and return at a later time.

8.4.6.2 Validation: TO Managers validate the eTO by confirming the metadata in JCALS and the eTO they uploaded are both correct. Once they are satisfied with their review, they click the "validate" button for each eTO.

8.4.6.3 Marking the eTO as Available: The TO Manager logs into JCALS and marks the eTO as "Available for Published Index" and "Available for Distribution." ETIMS receives daily inputs (includes TOs that have a daily Pub Status Date change) or weekly inputs (includes TOs that had a Pub Status Date change older than the current calendar week) from JCALS and uses this data to determine if an eTO needs to be distributed. The data ETIMS receives from JCALS and the data entered on upload by the TO Manager for each eTO must match in order for the eTO to be distributed. Upon a match, ETIMS makes the eTO available for viewing on-line, in C2WEB, and available for distribution to any associated master eTools. If there is no match, ETIMS sends an e-mail to the TO Manager that a mismatch has occurred and a help desk ticket will be required to deploy the eTO. Lastly, ETIMS provides eTO distribution reporting to show when eTOs are distributed and available on all master eTools.

8.5 TECHNICAL ORDER RESCISSIONS.

NOTE

TOs and increments replaced by or combined into new TOs and TO updates will be superseded, not rescinded.

8.5.1 TCM Procedures. The TCM will perform the following actions before recommending rescission of a TO without replacement, whether the need for rescission is identified through field inputs or through a periodic post-publication review (TCTO rescission is covered in TO 00-5-15):

8.5.1.1 Identify all affected users of the TO by requesting an ID report from the TO Manager. This report must be requested from both JCALS (for DoD customers) and from SATODS (for Security Assistance Program [SAP]/FMS customers).

8.5.1.2 Advise all affected users and managers (TODOs, PMs, SAP/FMS, etc.) of the proposed rescission. If the TO is joint-service, follow AFJI 21-301 procedures to notify other DoD activities. Ensure the notification includes, as a minimum, known operational systems, commodities and related TOs involved. Include the part number, type, model and series of items to which the TO proposed for rescission applies, and include information on any replacing data.

8.5.1.3 Ensure the system or commodities affected have been removed from operation and phased out of the inventory by checking the Standard Reporting Designator (SRD) through REMIS.

8.5.1.4 Route rescission requests on published TOs through JCALS to the responsible TO Manager for action.

8.5.2 TO Manager Procedures. If the rescission request is approved, the TO Manager will use the JCALS "Manage TM Numbering, Rescind a TM" function to rescind the TO and update the JCALS Pub Index. The TO record remains in JCALS.

8.5.2.1 If the TO will be rescinded for USAF but retained for FMS support, ensure that warehouse stocks (if any) are retained.

8.5.2.2 If the TO is rescinded for both USAF and FMS, dispose of warehouse stocks, retaining only archive copies.

8.5.3 Nuclear Weapons TOs. Send rescission requests for nuclear TOs to the 708 NSUS Technical Support Flight, 2000 Wyoming Blvd SE, Kirtland AFB NM, 87117-5617.

8.5.4 Joint Service TO Retention. If joint-service-use TOs are still required by another service, transfer TO management, reproduction masters, and warehouse stocks to that service.

8.6 REINSTATEMENT OF TECHNICAL ORDERS.

The TO Manager reinstates TOs using the JCALS "Reinstate a Rescinded TM" and "Update TM Index" screens IAW the JCALS DI. If the TO has been rescinded for less than one year, JCALS will automatically reinstate existing subscriptions for U.S. customers. For FMS, subscriptions must be re-established. If the rescission has been for more than one year, index the TO as a new issue and users will re-establish subscriptions as required.

8.7 TRANSFER OF TECHNICAL ORDER MANAGEMENT RESPONSIBILITY.

8.7.1 Business Practices. Responsibility for TO program and content management usually transfers to the new PM (JCALS Proponent) if the system or equipment covered by the TOs is transferred. Both losing and gaining proponents must agree on the transfer and schedules before any actions can occur. Transfer should include all TOs and all TO family increments in the affected TO series; i.e., all related basics, changes, supplements, TCTOs and TCTO series headers. The losing TO Manager must coordinate proposed transfers to non-AFMC activities with HQ AFMC/A4UE before taking any action. TO Manager and TCM responsibilities must also be transferred within the proponent when the assigned personnel transfer or otherwise become inactive.

NOTE

- Transfer schedules depend on the monthly cut-off date for submission of proponent changes to the Air Force Technical Order Functional Support Team (AF TOFST), AAC/AQY. Contact the AF TOFST Help Desk at DSN 872-9300, for further information and guidance.
- If TO responsibility partially transfers from a product center to an ALC, flight manual management responsibility will remain at the product center until PM and Chief Engineer responsibility transfers to the ALC.

8.7.2 Gaining Organization Procedures. The gaining organization, if **not already established** as a JCALS proponent, will complete the Establish TM Proponent Checklist (Table 8-3) to ensure that all required JCALS System support actions have been accomplished prior to requesting the database changes. The gaining site JCALS POC shall ensure completion of the checklist if required.

8.7.3 Losing Organization Procedures. The losing TO Manager identifies any Work In Progress (WIP) involving the TOs to be transferred, and makes all efforts to close out WIP prior to proponent transfer actions. Examples of WIP are open recommended changes (JCALS workflow jobs), open reproduction order workflows, etc. Minimizing WIP shall be used as one of the factors used in determining the transfer schedule. WIP that cannot be closed out shall be reported to the Help Desk and the gaining TO Manager by the losing TO Manager. The Help Desk will report the technical impacts of transferring TOs with open WIP. The losing TO Manager provides a Microsoft® Excel® spreadsheet to the local JCALS site POC listing the TO Numbers and existing JCALS Proponent ID, Controlling Organization (Inventory Control Point - ICP), Stock Point, JCALS identification ("userid") of the TO Manager, ES and Stock Point Manager for each TO.

8.7.4 Identify Gaining POCs. The gaining TO Manager provides an Excel® spreadsheet to the local JCALS site POC listing the TO Numbers and new JCALS Proponent ID, Controlling Organization (ICP), Stock Point (Warehouse), and JCALS identification ("userid") of the new TO Manager, ES and Stock Point Manager for each TO.

8.7.5 JCALS POC Procedures. The Air Force Technical Order Functional Support Team (AF TOFST), AAC/AQY Proponent Transfer POC will consolidate changes by proponent organization and forward all spreadsheets by the monthly cut-off date. The monthly cut-off allows time to update the JCALS TO Index and SATODS interface files to reflect the database changes needed in time for update of the data in JCALS on the first of the following month. The Help Desk shall determine technical impacts due to Proponent ID/database changes, if any, on any of the various interface files.

8.7.6 Help Desk Actions. The Help Desk will delete the appropriate records in the Global Data Management System (GDMS) database at the losing site, and add them to the GDMS database at the gaining site. The process of changing the data and the resulting checks and validations usually takes place over a weekend to minimize program downtime. Upon completion, the Help Desk notifies both the gaining and losing sites that the databases have been updated. The gaining TO Manager will check a random sampling of TO numbers and/or execute system reports to validate that the database changes have been made.

8.7.7 Print Ownership Transfer. When transferring TO management responsibilities, the losing TO Manager submits a DLA Print Services helpdesk ticket with a Microsoft® Excel® spreadsheet listing the TO Numbers and "TODPG User ID" of gaining TODPG owner for each TO (https://www.dashportal.daps.dla.mil/EDMTicket/HelpDesk.aspx?category=TODPG&ID=APP).

8.8 TECHNICAL ORDER MANAGEMENT PRACTICES USING JCALS.

The TO Manager makes changes to management data about a TO using the appropriate JCALS screens when the correction, addition, or deletion of TO management data elements is required. Use the screen completion procedures described in the DI under JCALS TM Processes for further information.

8.8.1 JCALS System or Equipment Data Related to Technical Order Acquisition. The TO Manager or TCM uses the "Perform Acquisition; Updating an Acquisition" screens to input or update Weapon Systems, Commercial and Government Entity (CAGE) codes and item part numbers.

8.8.2 Establishing Sponsor Approval (See paragraph 3.1.6.1). If a TO Manager desires to review initial subscription and requisition transactions for a TO before they may be processed, the Sponsor Approval flag must be set in the record for the Basic TO increment. All subsequent TO increments established will inherit this Sponsor Approval flag setting. If the Sponsor Approval requirement will be changed for a TO, the JCALS Update TM Index PSN screen must be used to make the change for all currently active and available TO increments.

8.8.3 Processing Subscription or Requisition Transactions Requiring Sponsor Approval. TO Managers will receive notification of a TO ID request requiring sponsor approval through the JCALS To Do List. When the work folder containing the request is opened, the TO Manager will "Open" and "Edit" the folder (which opens the "Order Publication" screen), review the information, verify that justification has been received (if required), and approve or disapprove the request. One-time requisitions (OTR) needing sponsor approval are received through the JCALS "Review Pub Orders for Sponsor Approval" screen.

8.8.4 Completing Recommended Change (RC - Chapter 12) Evaluation. TO Managers and TCMs will review and evaluate RCs using the JCALS "Improve TM; View a Recommended TM Change" screens. Once the RC is opened and the review is complete, go to the "Status" screen and select the appropriate status (approved, abeyance, etc.). Then go to the "Disposition" screen and enter any pertinent comments (changes to RC wording, RC type, benefits, etc.) Then go to the "Options" menu and select "Submit." Ensure off-line JCALS submitters and reviewers are notified of any RC status changes.

8.8.5 TO Numbering (paragraph 8.1). TO Managers will request TO numbers using the JCALS "Manage TO Numbering; Assign a Publication Number" process. Only OC-ALC/ENGLA personnel (and AFMETCAL personnel for calibration TOs) are authorized to have the JCALS System privilege necessary to assign/approve basic TO and TCTO Series Header numbers. EXCEPTION: AFMC Centers may asign the TO Numbering Privilege to an office which may assign and approve distribution media suffixes for existing TO numbers only. OC-ALC/ENGLA will determine which TO numbers are appropriate using TO 00-5- 18 and other standards.

NOTE

Neither nuclear weapons nor EOD TOs are managed in JCALS. Numbering will be managed by 708 NSUS and NAVEODTECHDIV, respectively.

8.8.6 Manage TM Index (paragraph 8.1.6). The TO Manager uses the JCALS "Update an Index Entry" screens, using DI procedures, for changing the TO title, system application, management data, issue data, security classification, joint service use, and PSN. These screens are also used to add (index) TO changes, revisions and supplements, and to mark superseded and rescinded TOs and increments.

8.8.6.1 Data is extracted from the JCALS index and is made available to ETIMS TO users in the ETIMS TO Catalog.

8.8.6.2 ETIMS users report errors in the accuracy or quality of ETIMS TO Catalog data using ETIMS Data Discrepancy Reports (DDR). The TO Manager must correct these errors in the JCALS TM index record. The DDR is also used to report printing / reproduction / distribution errors with received TOs. The TO Manager will work with DLA Document Services to correct these errors.

8.8.7 Preparing and Submitting Reproduction Packages (Chapter 10). The TO Manager will prepare and submit reproduction packages using TODPS. For detailed instructions, refer to the FUG on the Air Force Technical Order Managers

CoP at URL https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=21298. For TOs that have not transitioned to TODPS, the JCALS "Reproduce TM; Prepare a Reproduction Package, Develop a Reproduction Order" screen may be used to initiate the reproduction process.

NOTE

Reproduction Order work folders have to be submitted via signed and encrypted e-mail for restricted distribution TOs.

8.8.8 Managing Due-Ins and Shipping Labels (Chapter 10). TO Managers use the JCALS "Manage Inventory" process to create, change quantities, and receive projected TO stock into the warehouse. Due-Ins must be created before Shipping Labels can be requested. To generate labels for ID or One-Time Requisitions (OTR), use the JCALS "Manage Warehouse; Manage Labels" process. Once TO has migrated to TODPS, OTR labels are no longer processed in JCALS.

8.8.9 Stock Control and the TO Archives. The TO Manager will use the JCALS processes under "Manage Inventory; Adjust TM Stock Item Quantities" to adjust warehouse stock quantities. Use the "Manage TM Index; Update TM Index" screen to toggle the dormant issue status of TO stocks. OC-ALC/ENGLA will use the JCALS "Manage Repository" functions to add Archive locations and assign, change and checkout TOs to/from those locations. TO Managers will use the sub-type "Review Rescinded TM List, Specify Whether to Keep or Dispose Rescinded TM" window to review and recommend disposal of TOs at the end of the required archive period.

8.8.10 TCTO Rescission Review. TCMs will use the JCALS "Perform Post Publication Review" type and sub-type, and select the "Time Compliant Pubs for Rescission" review type to generate a listing of assigned TCTOs approaching rescission dates. For those within 150 days of rescission, the TCM will evaluate whether to extend the rescission dates or to rescind the TOs early or on the specified dates.

8.8.11 Reports. JCALS users can access numerous reports to assist with TO and TODO (TM) Account management. These reports are grouped into Inventory, TM Index, TM Improvement, Quality Assurance, Initial Distribution, One Time requisition and TM Account areas. Procedures for accessing the reports are in the JCALS DI.

8.8.12 TODO (TM) Accounts. The JCALS "Request a new TM Account" procedure is no longer used; use the AFTO Form 43 IAW TO 00-5-1.

Table 8-1. JCALS DI Table 2, Mandatory Index Entries

Ref	Window/ Tab Name	Field Name	Entry	Mandatory	When To Enter	Notes
1	Publication Information	Base Pub Date	DD MMM YYYY	Yes, prior to TM or TM update publication	As soon as publication date (release date) is known. Estimates are not useful. Note: Enter the Date Distributed (Management Dates tab) when ID for the pub is made.	Use the Pulldown Calendar Chooser.
2	Publication Information	Pub Title	Text and Numbers	Yes	Initially entered (required) when complete Request Pub Number window	No Control characters (quotes (“), slashes (/) or hard returns (Enter)) allowed.
3	Issue Data	Available for Published Index	Button: Yes or No	Yes	Indicate Yes once TM Number is approved or when TM increment is available for distribution. eTO only: After increment has been uploaded to the ETIMS on-ramp.	Selecting no will prevent it from appearing on the TM Index.
3a	Issue Data	Available for Distribution	Button: Yes or No	Yes	eTO only: After increment has been uploaded to ETIMS on-ramp.	
3b	Issue Data	Interim Indicator Code	Button: Yes or No	Yes if the TM is an interim increment	Indicate Yes once TM Number is approved	
3c	Management Dates	Estimated Distribution Date	Actual or estimated Initial Distribution Date	Yes	Enter actual/estimated ID Ship Date when ID ship labels will be generated and Available for Published Index flag is set to Yes.	Update TM Index Options, Find Data Element, estimated Distribution Date.
4	Management Information	TM Manager	TM Managers Name, Use Person Chooser	Yes	First opportunity.	Needed by System Templates, etc.

Table 8-1. JCALS DI Table 2, Mandatory Index Entries - Continued

Ref	Window/ Tab Name	Field Name	Entry	Mandatory	When To Enter	Notes
5	Management Information	Equipment Specialist	Equipment Specialists Name, Use Person Chooser	Yes	As above.	Needed by System Templates, etc.
7	Update Pub Stock Number Data (Add a Pub Stock Number)	Air Force Pub Type	Select from Pulldown List	Yes	After TM Pub number is initially assigned and as soon as TM Index record for any TM increment (Revision, Change, Supplement) is created.	Defaults to "TO." Leave as is. Required to "Add" a PSN. A PSN must be assigned to the TM Pub to allow ID for the TM pub to be established.
8	Update Pub Stock Number Data (Add a Pub Stock Number)	Media Code	Select from Pulldown List	Yes	Required information to build Pub Stk. No. (PSN).	Required to "Add" a PSN.
9	Update Pub Stock Number Data (Add a Pub Stock Number)	Pub ID	Specific Number if for a Change	Yes	Required information to build Pub Stk. No.	Defaults to correct entry; leave as is.
10	Update Pub Stock Number Data (Add a Pub Stock Number)	TM Category Code	Select from Pulldown List	Yes	Required information to build Pub Stk. No.	Defaults to correct entry; leave as is. Required to "Add" a PSN.
11	Update Pub Stock Number Data (Add a Pub Stock Number)	Media Code	Select from Pulldown List	Yes	Required information to build Pub Stk. No.	Should match the media code used to assign the PSN (last 2 digits).
12	Update Pub Stock Number Data (Add a Pub Stock Number)	Page Count	Enter Number of Pages	Yes		Required for Repro Orders and FMS use.
13	Update Pub Stock Number Data (Add a Pub Stock Number)	Unit of Issue	Select from Pulldown List	Yes		Defaults to each, leave as is.

Table 8-1. JCALS DI Table 2, Mandatory Index Entries - Continued

Ref	Window/ Tab Name	Field Name	Entry	Mandatory	When To Enter	Notes
14	Update Pub Stock Number Data (Add a Pub Stock Number)	Max Issue	Enter Number	Opt	Not required for digital only distribution	Do not leave as 0.
15	Update Pub Stock Number Data (Add a Pub Stock Number)	Reorder Pt. %	Enter Number	Yes		Not used. Leave at default (50%).
16	Update Pub Stock Number Data (Add a Pub Stock Number)	Reorder Pt. Qty	Enter Number	Opt	Not required for digital only distribution	Defaults to Zero. Leave at zero for eTOs and POD.
17	Update Pub Stock Number Data (Add a Pub Stock Number)	Inventory Ctrl Point	Use Org Chooser Pulldown	Yes		Must match Stock Point
18	Update Pub Stock Number Data (Add a Pub Stock Number)	Stock Item Mgr	Stock Item Manager, Use the Person Chooser.	Yes		Should be user in same org as Stock Point.
19	Update Pub Stock Number Data (Add a Pub Stock Number)	Stock Point	Use Org Chooser Pulldown	Yes		Must match Inventory Ctrl Point
20	Update TM Index, Options, Add a Change	Change No.	Number of the Change	Yes		Use leading zeros, i.e., 003. Must also complete all PSN entries 7 to 18.
21	Update TM Index, Options, Add a Change	Change Date	DD MMM YYYY	Yes		Use the Pulldown Date Chooser. Must also complete all PSN entries 7 to 18.

Table 8-1. JCALS DI Table 2, Mandatory Index Entries - Continued

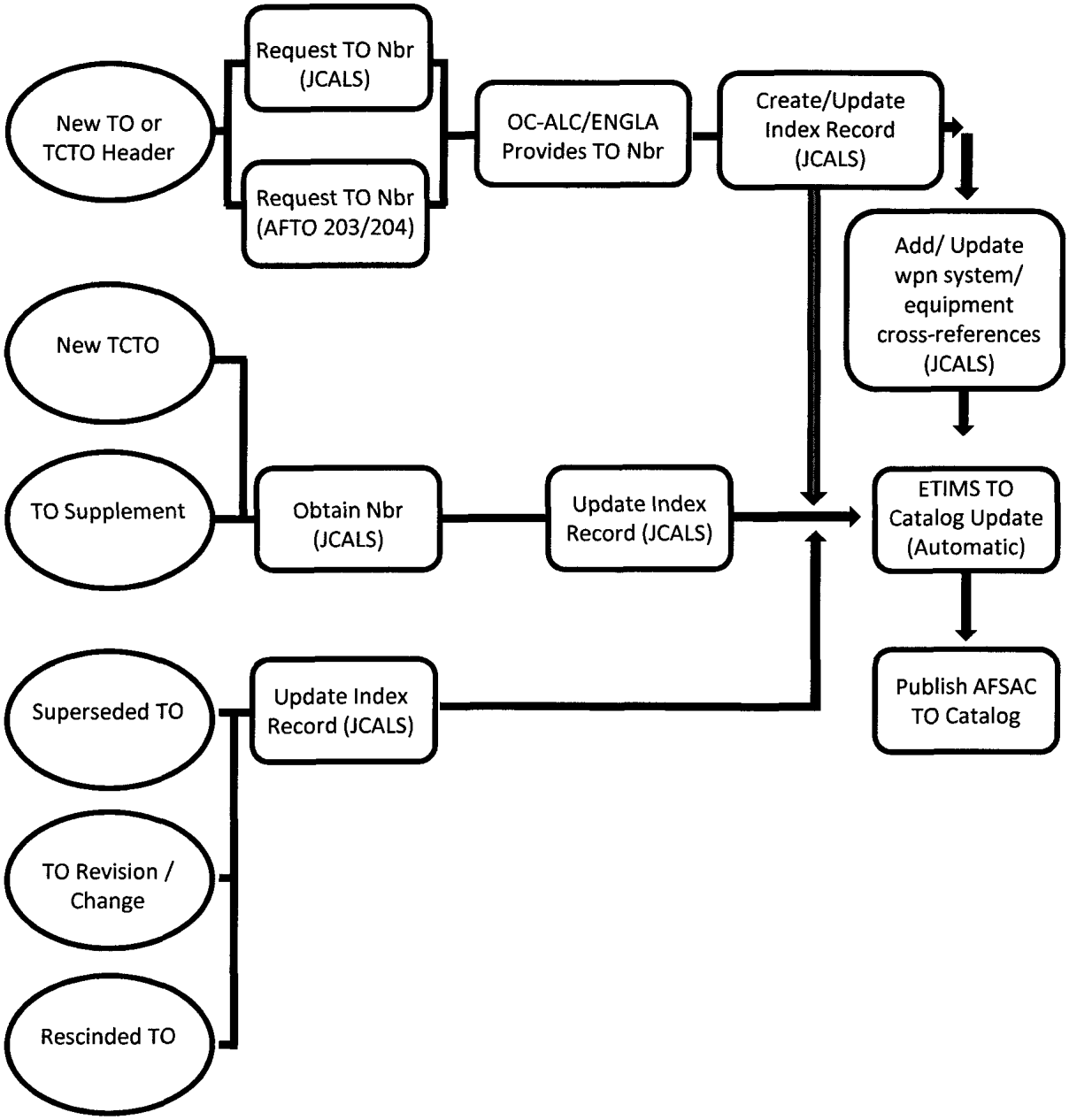
Ref	Window/ Tab Name	Field Name	Entry	Mandatory	When To Enter	Notes
22	Update TM Index, Options, Add a Revision	Revision Date	DD MMM YYYY	Yes		Use the Pulldown Date Chooser. Must also complete all PSN entries 7 to 18.
23	Update TM Index, Options, Add a Revision	Proponent ID	Use Org Chooser Pulldown	Yes		Defaults to Users Org. Must also complete all PSN entries 7 to 18.
24	Update TM Index, Options, Add a Revision	Revision No.	Number of the revision	Yes		Use leading zeros, i.e., 0003. Must also complete all PSN entries 7 to 18.
25	Update TM Index, Options, Add a Revision	Supersede	Yes or No Button	Yes		Set NO if Revision not ready for immediate distribution. Only set YES if Revision Increment AFI flag will be set Yes (paragraph 12.6.4.2).
26	Update TM Index, Options Add a Supplement	Basic Pub Date	DD MMM YYYY	Yes		Use the Pulldown Date Chooser. Must also complete all PSN entries 7 to 18.
27	Update TM Index, Options, Add a Supplement	Publication type	Select from Pulldown List	Yes		Must also complete all PSN entries 7 to 18.
28	Update TM Index, Options, Add a Supplement	Proponent ID	Use Org Chooser Pulldown	Yes		Must also complete all PSN entries 7 to 18.
29	Update TM Index Options, Add a Supplement	Supplement Type	Use Pulldown List	Yes		Ensure type is correct. Must also complete all PSN entries 7 to 18.

Table 8-2. Policy-Mandated JCALS Index Entries

Window/ Tab Name	Field Name	Entry	Mandatory	When To Enter	Notes	Ref
Update Pub Stock Number Data (Add a Pub Stock Number)	FMS Unit Price	Enter the estimated TO value for customs clearance of FMS shipments	Yes	Anytime a new TO, Revision or Change, is indexed	Required for FMS use ($85.00 as of 1 December 2009)	1
Update Pub Stock Number Data (Add a Pub Stock Number)	Pub Security	TO or update Classification	Yes	Anytime a new TO, Revision or Change is indexed	Required for dissemination control	2
Publication Info	Lead Command	Select the Command assigned responsibility for the system/item covered by the TO	Yes	Anytime a new TO, Revision, Change or Supplement is indexed	Entry must match CAFTOP TOIS	2a
Update Pub Stock Number Data (Add a Pub Stock Number)	Pub Title Security	TO or update Classification	Yes	Anytime a new TO, Revision or Change is indexed	Must agree with Pub Title Security	3
Update Pub Stock Number Data (Add a Pub Stock Number)	Dist Stmt Code	Distribution Statement Code A - F or X	Yes	Anytime a new TO, Revision or Change is indexed	Required for dissemination control	4
Update Pub Stock Number Data (Add a Pub Stock Number)	Dist Reason	Distribution Statement Reason	Yes	Anytime a new TO, Revision or Change with Distri B-E is indexed	Required for dissemination control	5
Multiple Items to Pub Assoc.	Weapon System	Select CHOOSE button and enter Weapon System(s)	Yes	Upon initial indexing of new TOs or TCTO Headers for weapon systems	Required for Cross-Reference	6

Table 8-2. Policy-Mandated JCALS Index Entries - Continued

Window/ Tab Name	Field Name	Entry	Mandatory	When To Enter	Notes	Ref
Multiple Items to Pub Assoc.	Equipment Items	Select CHOOSE button and enter PN(s)	Yes	Upon initial indexing of new TOs or TCTO Headers for component and support items	Required for Cross-Reference. Must be built in-to JCALS first, using Perform Acquisition, Management Data.	7
Update Pub Stock Number Data	Prop. Ap-proval Req.	Set Flag for Sponsor Approval to Yes	Opt	Upon initial indexing of TOs and TCTOs	When required IAW TO 00-5-3, para 3.1.6.1	8
Update Pub Stock Number Data	Maximum Issue Quantities (MIQ)	Quantity issued without Proper Approval	Opt, for paper TO distri only	Upon initial indexing of paper TOs and TCTOs	When required IAW TO 00-5-3, para 3.4.6.2	9
Update Pub Stock Number Data	Total Min. Reserve	Quantity of paper TOs held in reserve	Opt, for paper TO distri only	Upon initial indexing of paper TOs and TCTOs. Reserve used to fill Emergency Req'ns during reprinting.	When required IAW TO 00-5-3, para 3.4.6.3	10



Note: Neither Nuclear TOs nor EOD TOs are numbered and indexed in JCALS

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Figure 8-1. TO Numbering and Indexing Flow Chart

Table 8-3. Establish TM Proponent Checklist

Is the PM (proponent) organization hierarchy defined and built on the appropriate JCALS System?	YES / NO
Have Organization-Based Access Controls (OBAC) been established properly for each organization hierarchy level?	YES / NO
Have JCALS users been identified and trained?	YES / NO
Do users have access to and know how to use the JCALS Desktop Instructions (DI)?	YES / NO
Has a JCALS System userid been established for all users?	YES / NO
Have users been properly established in the JCALS PERS table?	YES / NO
Have user roles and privileges been properly identified and assigned to users in the system?	YES / NO
Do users have computers that meet or exceed the technical requirements for JCALS access?	YES / NO
Do users have the latest versions of PC Client and X-Emulation software loaded on assigned PCs?	YES / NO
Have users attempted to log-on to the JCALS System at least once?	YES / NO
Has the site SA set up "User-Profiles" to allow JCALS e-mail notifications to be sent to each user local e-mail service (e.g., MS Exchange)?	YES / NO
Has an Excel spreadsheet (containing the Proponent ID, Controlling Org (ICP), Stock Point, To Manager userid, ES userid and Stock Item Manager userid for each assigned TO Number) been provided to the Help Desk?	YES / NO
Is the Stock Item Manager for each TO Number properly assigned in the PERS table to the Controlling Organization for that TO Number?	YES / NO
Have system workflow templates been tailored and loaded for the proponent organization?	YES / NO
Have mandatory assignments / personnel on applicable workflow tasks in the system templates been properly filled out?	YES / NO
Has a Return Address Code been established for the proponent (for return address on DD Forms 1348-2 or other shipping labels)?	YES / NO
Has internal proponent routing for Incident Reporting and Tracking System (IRTS) been identified and established?	YES / NO

Table 8-4. Indexing Matrix for Paper and Digital TOs

Policy: A separate TO index record is required for each media version (paper or digital) for a distributed TO.

Removing or Rescinding TO Index Records: Evaluate each media version that is (or will be) distributed against the TO media version distributed. Any TO Index record that is not applicable to a distributed media version must be rescinded or removed. Rescind a TO Index record if the TO Index history should be retained. Remove an entire TO Index record from JCALS using the "JCALS Ticket Process" at https://techdata.wpafb.af.mil/QUICKINFO/jcals/homepage.htm.

Indexing a New TO Number: If no TO Index record exists for a desired distribution media version, request a new TO number with the correct media suffix and index using the corresponding PSN media code:

* Paper: TO Number has no distribution media suffix; PSN ends with media code "06".
* eTO: TO Number ends with distribution media suffix; "-WA-1"; PSN ends with media code "11."
*CD: TO Number ends with distribution media suffix "-CD-1"; PSN ends with media code "R."
* DVD: TO Number ends with distribution media suffix "-DV-1"; PSN ends with media code "D."

Table 8-4. Indexing Matrix for Paper and Digital TOs - Continued

Indexing TOs Transitioning from Paper to Digital Media: (normally performed during TO update publication)

* Paper → eTO: Renumber TO adding "-WA-n" suffix. Index a new version with PSN ending in "11."
* Paper → CD: Renumber TO adding "-CD-1" suffix. Index a new version with PSN ending in "R."
* Paper → DVD: Renumber TO adding "-DV-1" suffix. Index a new version with PSN ending in "D."

NOTE:

Do not replace a paper version with an eTO version of an Active Air Force TO with FMS subscribers. See paragraph 8.1.5.2.1 and paragraph 8.1.5.2.2.

Distri-bution	Situation	TO Number	PSN Media Code	Action Required
1. Paper:		No suffix	"06"	
	1) TO # OK; Incorrect PSN	No suffix	Other than "06"	Submit a JCALS Ticket to change PSN to "06"
	2) Incorrect TO#; PSN OK	Has media suffix	"06"	Renumber TO deleting suffix
2. Digital:				
a. eTOs:		-WA-1	"11:	

NOTE:

Any eTO which is not hosted in the ETIMS repository will use the WA-2 media suffix (paragraph 8.1.4.6).

	1) TO# OK; Incorrect PSN	-WA-1	Other than "11"	Submit a JCALS Ticket to change PSN to "11"
	2) Incorrect TO#; PSN OK	Has no or incorrect media suffix	"11"	Renumber TO to change suffix to "-WA-1"
b. CD-ROM TOs:		-CD-1	R	

NOTE:

1. Valid for a single TO on a CD, or for the CD containing a collection/set of TOs.
2. Each TO that is also included in a collection / set is an individual entity and should have its own index record, though it might not be distributed separately.

a. If the paper or eTO is available either alone or in the collection, then it should have its own record, have "Available for Distribution" flagged "Y," and have a catalog note indicating that it is also available on the CD collection.

b. If the TO is only available on the CD collection, then it should still have its own record, but have "Available for Distribution" flagged "N," and have a catalog note indicating that it is only available on the CD collection.

c. If an individual TO is only available digitally on CD, then the TO does not need a separate index record but must carry the -CD-1 distribution media suffix.

	1) TO # OK; Incorrect PSN	-CD-1	Other than "R"	Submit a JCALS Ticket to change PSN to "R"
	2) Incorrect TO#; PSN OK	Has no or incorrect media suffix	"R"	Renumber TO to change suffix to "-CD-1." **NOTE:** "No suffix" indicating a paper version is not the same as no index entry.
c. DVD TOs:		-DV-1	"D"	

NOTES:

1. Valid for a single TO on a DVD, or for the DVD containing a collection/set of TOs.

Table 8-4. Indexing Matrix for Paper and Digital TOs - Continued

2. Each TO that is also included in a collection / set is an individual entity and should have its own index record, though it might not be distributed separately. a. If the paper or eTO is available either alone or in the collection, then it should have its own record, have “Available for Distribution” flagged “Y,” and have a catalog note indicating that it is also available on the CD collection. b. If the TO is only available on the CD collection, then it should still have its own record, but have “Available for Distribution” flagged “N,” and have a catalog note indicating that it is only available on the CD collection. c. If an individual To is only available digitally on CD, then the TO does not need a separate index record but must carry the -DV-1 distribution media suffix.				
	1) TO# OK; Incorrect PSN	-DV-1	Other than “D”	Submit a JCALS Ticket to change PSN to “D”
	2) Incorrect TO#; PSN OK	Has no or incorrect media suffix	“D”	Renumber TO changing suffix to “-DV-1.” **NOTE:** “No suffix” indicating a paper version is not the same as no index entry.

CHAPTER 9
QUALITY ASSURANCE

9.1 GENERAL.

TO Quality Assurance (QA) is the joint responsibility of the development/sustainment contractor and the government. A quality product is achieved by establishing process controls during TO development and update, followed by an in-depth testing process to ensure the intended user can perform the TO procedures IAW established maintenance and operational concepts.

9.1.1 Process Controls. The development process controls are based on using the IPT concept (Chapter 4) to manage and control activities. The controls include such events as Guidance Conferences, In-Process Reviews and Pre-Pub Reviews Chapter 7), and application of contractor internal QA processes. Update process controls are covered in Chapter 11 and Chapter 12.

9.1.2 Verification. The government in-depth testing process is called verification, and is designed to ensure that the intended TO users can effectively use the TO for performing the assigned functions. This could include the interface between different systems and other TOs and procedures, ability to locate required data, ease of troubleshooting, etc.

9.2 READING GRADE LEVEL (RGL).

9.2.1 Methods. RGL computations may be computer-generated or performed manually using any accepted computation procedure. The RGL requirement for Air Force TOs is specified in MIL-STD-38784. See paragraph 3.3.12 for exceptions.

9.2.2 Contractor TO Development. Initial RGL computation should be done by the contractor during TO development. Computations will be reviewed during IPRs.

9.2.3 Organic TO Development. When a TO is developed organically or when updates meet the criteria specified herein (paragraph 12.5.1.2), government personnel will document RGL checks using the AFTO Form 124, *Computation Of Technical Order Reading Grade Level* (Figure 9-1). A copy of the AFTO Form 124 or contractor equivalent will be included in the TO documentation package for each TO maintained by the TO Manager.

9.3 THE CONTRACTOR CERTIFICATION PROCESS.

The contractor certification process will be detailed in the proposal submitted in response to the RFP. The proposed process may be modified if necessary during contract negotiations, and when approved, becomes part of the final contract. The decision to place the process on contract is made by the government IPT based on assessed risk, including contractor past performance and existing TO certification procedures. Approved certification requirements must also be applied to any products or processes supplied by vendors or sub-contractors.

NOTE

Procedures and source data developed organically by the Air Force do not require certification, but must be verified prior to incorporation into a TO.

9.3.1 Certification Requirements. Under Acquisition Reform, the contractor is responsible for the end result of the TO development process; that is, for delivery of **adequate, safe, current** and **accurate** TOs which **conform** to government requirements. The data must be fully **compatible in depth and scope** with the established maintenance concept and the approved logistics support plan. The data must be checked for **security classification, distribution restrictions**, and **RGL**. The contractor might use any or all of the previously mentioned procedures as part of their TO certification management process. These requirements also apply to sustainment contracts.

9.3.2 Performance Certification. When the proposed certification process includes task performance, the following guidance should be followed:

9.3.2.1 Nondestructive malfunctions may be introduced for the purpose of checking procedural and fault isolation tasks or systems tests. Procedures which could cause damage to the hardware or injury to personnel should be simulated.

9.3.2.2 Only support equipment listed in the TO should be used in testing procedures. The TO Manager should be consulted if substitution of support equipment is required. The contractor must identify and request any Government Furnished Equipment (GFE) required to support the TO development effort. The TO Manager will coordinate with applicable program managers if necessary to provide GFE and ensure the equipment will be available to support the weapon system or commodity in the operational environment.

9.3.2.3 Locally fabricated tools or test equipment listed in the TO should be used during testing. Procedures for fabricating these items will be included in the TOs.

9.3.2.4 Tasks will normally be performed at the contractor facility during system or commodity development testing. If required GFE is not available, tasks may be performed at an operational or test site when approved by the procurement/sustainment managing activity. The contractor will coordinate requirements with any affected agencies.

9.3.2.5 When the contractor cannot perform some tasks due to non-availability of GFE resources, the TO Manager shall be notified. The TO Manager may provide the required resources (if available) to the contractor or suggest use of a field location. In some cases, combining contractor certification with AF verification (paragraph 9.4.11) may be authorized. As a last resort, the TO Manager may authorize use of simulation or desk-top analysis of the procedures.

9.3.2.6 Task performance or simulation may be unnecessary for existing manuals and source data that is applicable to the current configuration of the equipment, if a desk-top analysis or publication review proves the manuals are current, adequate, accurate and conform to contract requirements.

9.3.2.7 QA requirements for Category 11N nuclear weapons TOs are in TO 11N-1-1, *Joint Nuclear Weapons Publication System Operating Procedures, Specifications and Standards*. EOD source data procedures only require contractor desk-top analysis; the government will perform any procedures requiring verification.

9.4 VERIFICATION.

Verification is the formal process by which Air Force personnel evaluate and prove TOs and TO updates are accurate, adequate, safe, and usable in the operational environment to support the program O&M concepts. All new and updated technical data will be verified unless waived by the PM IAW AFI 63-101 and this TO. Technical data for Contractor Logistics Support programs need not be verified unless the data will be used by government personnel.

9.4.1 Scheduling. Verification of TOs should be completed in sufficient time to permit correction, publication, and distribution of formal TOs to field operations prior to or concurrent with delivery of the hardware and software to support Operational Test and Evaluation (OT&E). When this is not possible, with command approval, use Interim Contractor Support or authorize use of partially-verified PTOs until verification can be completed.

9.4.2 Use of PTOs. The TO Manager, in coordination with the using command, may issue a waiver to distribute PTOs to operational units for verification using production equipment IAW AFI 63-101. The maximum duration of the waiver is 120 workdays after receipt of all assets (TOs, production hardware, support equipment and supplies). Extension requests must be reviewed by the using command, and be approved by the PM. Operational unit verification must be tightly scheduled to present minimal disruption to mission schedules. This schedule must be coordinated with and approved by the using command and PM, and must be included in the TOVP.

9.4.3 Partly-Verified TOs. The inability to verify certain specific maintenance procedures, such as aircraft wing or missile canister removal and replacement should not delay formalization and distribution of TOs. If a partly-verified TO is issued, the TO will include a Verification Status Page (VSP) or screen, and the first field unit required to use an unverified procedure will perform Using Command Verification IAW TO 00-5-1. Other reasons for issuing partly verified TOs include lack of equipment or other required support to perform verification. When the destructive nature of the procedures prevents verification by performance, use simulation or desktop analysis IAW paragraphs 9.5.2 or 9.5.3.

9.4.4 TO Verification Plan. Verification is accomplished IAW the TOVP (paragraph 4.5.4 and Appendix C), using PTOs provided by the contractor. The TO Manager is responsible for keeping the TOVP updated and coordinated throughout the program life cycle.

9.4.5 Participation. Participation in verification efforts by using command and other affected agency personnel is critical to the development of TOs. Verification activities will not be halted due to lack of attendance by other support agency personnel.

9.4.6 Contractor Support. Contractor support for the verification effort should be part of every contract for the acquisition and/or sustainment of TOs. The support usually consists of a writer and/or engineer. This support is required to minimize delays caused by faulty procedures, lack of spare parts, etc.

9.4.7 Verification Waivers. The TO Manager, with approval of the PM, may waive verification **by performance/simulation** when procedures are similar to other, previously-verified procedures on like equipment. The waiver will be documented on the AFTO Form 27, *Preliminary Technical Order (PTO) Publication Change Request (PCR)/TO Verification Record/Approval* (Figure 11-1), or on the form creating a TO update. Verification of minor updates to previously-verified procedures may be accomplished by simulation or Desk-Top Analysis, whichever the TO Manager and TCM deem more appropriate, without a waiver.

9.4.8 Use of Substitute Items. The TO Manager or Verification Team Manager (VTM) may authorize the use of substitute equipment, facilities, or draft procedures. This authorization may be given when the required items are not available and there will be no appreciable difference in procedures. Any such substitution must be coordinated and documented on the AFTO Form 27, on the form creating a TO update or in the verification minutes.

9.4.9 Using Command Responsibilities. Both the technicians for the verification team and the site for verification are normally provided by the using command. The selection of qualified using command personnel to perform verification depends on the type and level of maintenance established for the military system or commodity being covered. Different teams and verification locations may be required to cover all maintenance types and levels (on- or off-equipment, field or depot) for TO verification. The verification team will normally consist of the VTM, technicians, QA and Safety personnel, other support agency personnel, and the contractor. The technicians should include the lowest grade and skill level (5-level minimum) projected for day-to-day use of the TO. The Using Command may use Support contractors as part of the government team.

9.4.10 Prioritization. The verification schedule must be prioritized based on critical operational and maintenance tasks that affect safety, operational readiness and supportability of the system and commodity during initial deployment. Personnel, hardware, consumables and support equipment will be scheduled to ensure availability for each verification effort.

9.4.10.1 First priority for verification is organizational-level operation and maintenance procedures. Within this grouping, procedures are further prioritized as follows:

- Pilots and/or Operators Manuals
- All Safety of Flight and Operations procedures
- All Critical Safety precautions
- All TOs required for Nuclear and/or Flight Certification
- Day-to-day maintenance and operational tasks in O&M TOs and checklists
- All newly-developed Contractor Furnished Equipment (CFE) TOs used in support of the above TOs and procedures
- All remaining TOs and procedures

9.4.10.2 Second priority is intermediate and depot level maintenance procedures. Depot TO verification should be performed in conjunction with depot prototype overhaul certification to the maximum extent possible. This will ensure that test equipment, software and TOs are compatible, and will reduce the overall cost of the program.

9.4.10.3 New and updated non-procedural data verification will also be prioritized, as listed below. The PM, SCM or designee may waive verification of non-procedural data base on priority and risk - the waiver will be documented on an AFTO Form 27 or the document generating an update.

- Safety-related items (Warnings, Cautions, protective gear, etc.)
- Tool and equipment part numbers
- Consumable item part numbers
- Repair parts lists
- Work Unit Codes
- Theory of Operations
- Correction of typos, references, etc.

9.4.11 Combining Contractor Certification and Verification. Contractor certification and Air Force verification processes may be combined when the following conditions exist and the option is approved by the PM and using command:

9.4.11.1 Formally resolve the question of liability for damage to equipment or injury to personnel between the contractor and the government before joint performance of procedures. The contractor is responsible for any damages or injuries caused by following faulty procedures. Establish a negotiation process to resolve and document any disputes over liability during the combined effort (request assistance from the Contract Law Office if necessary).

9.4.11.2 Tasks should be reviewed for the complexity and hazardous nature of the procedures. Highly complex or hazardous procedures should be certified by the contractor prior to delivery for verification. Each case must be evaluated and agreed upon by the PM and using command.

9.4.11.3 Using command personnel will perform the TO procedures with the guidance and assistance of contractor technicians.

9.4.11.4 The procedures must be in final deliverable format.

9.4.12 Explosive Ordnance Disposal Technical Orders. Category 60 Joint Service EOD publications for U.S. nonnuclear and foreign explosive ordnance are developed by the NAVEODTECHDIV. EOD publications will be accepted as valid for Air Force use upon completion of verification and indexing (indicating acceptance by the Military Technical Acceptance Board). Det 63, HQ ACC, manages Air Force participation in the verification program for EOD publications. Whenever possible, routine munitions disposal procedures developed for inclusion in TO 11A-1-42 will be verified concurrently with the EOD procedures.

9.4.13 Nuclear Weapons TOs. Any TM issued under JNWPS will be verified IAW TO 11N-1-1. The appropriate TCM from the AF Nuclear Weapons Center, 708 NSUS (paragraph 2.7), must participate in the verification.

9.4.14 Non Nuclear Munitions and Explosives TOs. The USAF GACP (paragraph 2.8) must participate in verification of procedures involving nonnuclear munitions and explosives components. The GACP ASC (paragraph 2.8) must participate in verification of air-launched tactical missile system TOs (except AGM-65 Maverick, which falls under the GACP).

9.4.15 Exemptions. COTS publications and those O&M TOs and source data specifically approved by the TO Manager are exempt from verification by performance. TOs for Contractor Logistics Support (CLS) are exempt from AF verification.

9.4.16 Re-Verification After Digital Format Conversion.

9.4.16.1 Re-verify previously verified source data or TOs converted into a digital format, to ensure that: the data has been captured or converted accurately by the capture or conversion process (i.e., there was no distortion of graphics or alteration of the text; changes to the flow of the data between steps or tasks; or mismatching of the relationships or references within the data). Verify that the mark-ups applied to add intelligence (if any) were applied correctly to the converted data IAW the Air Force TMSS or the adopted/approved commercial standard(s). Most importantly, verify the data to ensure accuracy of applied effectivities (e.g., equipment configuration, user skill levels, etc.).

9.4.16.2 Some converted data may require hands-on verification. Hands-on verification will be determined by the acquiring activity. Instances where hands-on verification may be required are:

- When a task required significant change in logical flow;
- When a sampling of tasks has been agreed to by the acquiring activity and the users; or
- When a task is identified by the acquiring activity, user, or contractor as questionable after conversion.

9.4.17 Calibration Technical Orders. Verification of 33K TOs will be performed by assigned field-level Precision Measurement Equipment Laboratories (PMEL) within 45 days after receiving the commercial manual or PTO, as directed by AFMETCAL.

9.4.18 Minor Sustainment Updates. Verification of minor sustainment updates including minor changes to procedural data may use the simplified “Using Command Verification Requirements” procedures in TO 00-5-1. These procedures may be used for either field or depot level TOs.

9.5 VERIFICATION METHODS.

Verification can take any one or a combination of three acceptable methodologies for accomplishment, depending on the type of equipment or instructions being verified.

9.5.1 Performance. Actual performance on production-configured hardware or government-approved inert versions (for explosive items) is the only acceptable means to verify certain tasks. Tasks to be verified by performance include but are not limited to all operating and maintenance procedures.

9.5.2 Simulation. In some instances, actual 'hands on' demonstration of procedures duplicates similar tasks already demonstrated, needlessly subjects equipment to damage, activates "one-time" items such as Electro-Explosive Devices (EED) or exposes the technician to personal injury. In these cases, the procedures may be simulated by observing the operational configuration of the equipment while studying the task to ensure that procedures are logical, effectively descriptive and can be accomplished.

9.5.3 Desktop Analysis. Desktop analysis involves side-by-side comparisons of source data with TO data (text, links, illustrations, etc.). Non-procedural data and any procedural data where verification by performance/simulation has been waived will be verified by desktop analysis. Desktop analysis is usually performed during IPRs (Chapter 7) or (especially during sustainment) pre-publication reviews. When an IPR is waived or new data is incorporated after the IPR, a separate desktop verification will be required.

9.6 VERIFICATION PROCEDURES.

9.6.1 Verification Site. The site selected for any particular verification effort will be jointly determined by the TO Manager or TCM and MAJCOM/Depot Maintenance Activity, based on the availability of support functions, the type of procedure being verified, the level of maintenance, etc. The site should provide facilities as similar as possible to the operational locations where the TO procedures will be used.

9.6.2 Verification Team Manager (VTM). The TO Manager or TCM will act as, or task the MAJCOM to appoint a VTM to control verification. The VTM will coordinate with all affected agencies to ensure the availability of facilities, equipment and personnel to conduct the verification. When the data or procedures are delivered and all required hardware, support equipment, personnel, supplies and data are available, the VTM will schedule and supervise the verification effort, including pre- and post-verification meetings.

9.6.3 Pre-Verification Meeting. The VTM will conduct a pre-verification meeting with the verification team to ensure team members are aware of responsibilities and duties. Subjects to be covered during the meeting include the maintenance concept, any reference documentation available, the specific TOs and procedures to be verified, safety precautions, documentation required and individual team member assignments. Team members will review the procedures prior to beginning any task verification.

9.6.4 Verification Tasks. The VTM will supervise the actual verification effort. The VTM will make every effort to resolve problems on-site to prevent delaying or canceling verification. Checklists will be verified simultaneously with the parent manual. A separate AFTO Form 27 will be completed on each TO or portion of a TO and checklist verified to document discrepancies and the overall results of the verification. The TO VSP will be updated to reflect the verified status. Verification of TO updates may be recorded on the document creating the update (AFTO Form 22, 252 or AF Form 847). Verification of ETMs and IETMs must be performed on the electronic viewing devices (e-tools) designated for operational use. Specific verification tasks include:

9.6.4.1 Performing the procedures to verify usability by personnel with the planned skills and training. Ensuring the arrangement of material and method of presentation support the operations or maintenance concept.

9.6.4.2 Observing and reporting any safety violations or hazardous conditions. STOP operations if necessary.

9.6.4.3 Performing TO RGL computations (paragraph 9.2) if not documented by the contractor.

9.6.4.4 Ensuring all actions and suggested or required TO changes are fully documented (paragraph 9.6.9).

9.6.5 Verification Updates. The TO Manager must ensure updates due to verification are accomplished on an expedited basis. Expedited updates should be restricted to those of a technical nature affecting operation and maintenance procedures. Expedited editorial changes will be restricted to those affecting comprehensibility. Changes based on personal preference must be submitted through the normal TO change process (TO 00-5-1).

9.6.6 Post-Verification Meeting. The VTM will conduct a post-verification meeting to resolve any problems, generate the minutes, and assign action items as required. VSPs will be updated as required. The Verification Record section of an AFTO Form 27 will be used to document any discrepancies found in the TO or procedures during verification, and

recommend either further verification or formalization of the TO. The form will be submitted to the TO Manager (or TORB/FTORB - see below) for approval. When approved by the TO Manager, the AFTO Form 27 recommending formalization will be used as authority to prepare the formal TO. Discrepancies found during verification of TO updates may be recorded on the document creating the update. The program Chief Engineer or equivalent will approve verification results for TO updates.

9.6.7 Verification Review Boards. All comments and changes developed as a result of verification must be approved by a review panel, normally a TO Review Board (TORB) or Flight TORB (FTORB), prior to incorporation in the TO. This review panel should consist of personnel from activities involved in the acquisition or modification program, as determined by the TO Manager, including verification team members and the contractor. The flight manual review panel must include at least three rated officers. After review, coordination and approval, the changes will be sent to the contractor for update of the TO involved, and if verification was completed successfully, preparation of the formal manual. Review boards are not required for TO updates, provided the Chief Engineer approves the changes.

9.6.8 Post-Digital Conversion Verification Procedures.

9.6.8.1 Verification of TOs and data converted to a digital format will be accomplished by desktop comparison of the conversion instance to the source data to determine the accuracy of the conversion and data capture processes:

- Verify logical flow of procedures within the digital conversion file to ensure accuracy of the flow of text, steps and procedures, effectivity, and to ensure Warnings, Cautions, and Notes are displayed where required.
  - In some instances, logical flow may be enhanced to provide additional detail or direction to the user; therefore, logical flow must be 100% reverified.
  - Verify all conditional branches when variable user inputs branch the logical flow.
  - Verify dialog box text and response display.
  - Verify correct graphics and hot spots are displayed for individual steps.
  - Verify correct application of “novice” and “expert” delineations if applicable.
  - For Illustrated Parts Breakdown conversion, in addition to verifying clarity and correctness of graphics, ensure correct application of effectivities and accuracy of converted parts information to include Notes, Alternate Part Numbers, SMR Codes, Cage Codes, and Units Per Assembly. Ensure accurate conversion of non-displayed parts.
  - For digital wiring diagrams, ensure complete/accurate/undistorted conversion of all wiring lines, symbols and reference designators. If the wiring information is interactive, ensure accuracy of interactivity to include signal flow, correct depiction of component operation (i.e. switches, fuses, relays) and correct wiring information display based on effectivity.
  - When verifying -6 Inspection TOs and checklists, ensure similarly-worded steps are all present and correctly sequenced.
- Ensure all links added to enhance the relationships between items in the source data reference the correct data, and no broken links exist in the converted data instance.
- Verify functionality of software/data interaction IAW contract requirements (TMCR, SOW, etc.).
- Parse the instance against the target specification Document Type Definitions (DTDs) to ensure markup tags added to the data are accurate and comply with the DTD.
- Perform analysis of the composed document from the marked-up instance using the designated composition engine, to determine the compliance of the printed or viewed output (only required if paper pages or digital views will also be produced from the instance).

9.6.8.2 Use the certification processes and tools of the conversion contractor to reduce re-verification requirements if appropriate. Contractor certification processes and tools must first be analyzed for accuracy and completeness before adoption in the government re-verification process.

9.6.8.3 Using commands will support re-verification efforts by providing subject matter experts when requested, to assist/perform desktop analysis.

9.6.9 Documentation. Each verification effort requires complete documentation, including minutes and any forms generated. For concurrent contractor/government testing, contractor records will be included with verification documentation. During sustainment, verification can be documented on the form generating a TO Change, e.g., AFTO Forms 22, 252, AF

Form 847, or on a locally-developed form (OI required). The TO Manager will maintain a file of all verification documentation issued for the life of the TO covered, IAW the Records Disposition Schedule at https://www.my.af.mil/gcss-af61a/afrims/afrims/. Portal account and password required.

COMPUTATION OF TECHNICAL ORDER READING GRADE LEVEL

1 T O TITLE	2 T O NUMBER
	3 T O DATE
4 NUMBER OF PAGES OF TEXT IN T O	7 T O MANAGER /OFFICE SYMBOL/DSN
5 READING GRADE LEVEL IAW MIL-STD-38784	
6 COMPUTED OVERALL GRADE LEVEL OF T O	

8 TO COMPUTE READING GRADE LEVEL (RGL) OF T O , USE "READABILITY" CRITERIA PRESCRIBED BY MIL-STD-38784 OR RECORD THE COMPUTER-DERIVED RGL WHEN AVAILABLE

SAMPLE NUMBER A	PAGE NUMBER OF SAMPLE B	NUMBER OF WORDS IN SAMPLE C	NUMBER OF SENTENCES IN SAMPLE D	NUMBER OF SYLLABLES IN SAMPLE E	SAMPLE GRADE LEVEL F
9. PROJECT OFFICER			GRADE	OFFICE SYMBOL	PHONE
10 SIGNATURE					DATE

AFTO FORM 124, 19970401 *(IMT-V1)* PREVIOUS EDITION IS OBSOLETE

H9601657

Figure 9-1. AFTO Form 124, Computation of Technical Order Reading Grade Level

CHAPTER 10
TECHNICAL ORDER REPRODUCTION AND DISTRIBUTION

10.1 TECHNICAL ORDER DISTRIBUTE AND PRINT SERVICES (TODPS).

TODPS is the Print on Demand concept of operation which replaced legacy Air Force Stock, Store and Issue (SSI) processes and reduced reliance on JCALS for process management.

10.1.1 TODPS Concept of Operation. The TODPS provides the central DLA Document Services repository with ready-for-production (print ready) PDF format TO files in support of paper-copy Initial Distribution (ID) and subsequent One-Time Requisition (OTR) transactions for complete TOs or for specific (active) TO Changes and/or Supplements. The TODPS is the central point in a DLA Wide Area Network (WAN) connecting DLA Document Services production sites. The TODPS sends ID/OTR print orders through the DLA network for production, packing and shipment by DLA Document Services sites closest to the TODO customer -worldwide. The TODPS can also accept other TO formats for reproduction and distribution on CD-ROM/DVD.

10.1.1.1 An interface between the Security Assistance TO Data System (SATODS) and the TODPS will manage the printing and distribution of AF TOs directly to responsible freight forwarders when FMS customers are on subscription for Air Force TOs uploaded on the TODPS. Subsequent FMS customer OTR for the (now) POD AF TO will be processed directly from SATODS to the TODPS. TOs are shipped to freight forwarders by traceable means, and order status is automatically sent to SATODS.

10.1.1.2 Until an AF TO migrates to TODPS, AF TO Managers are responsible for distribution of AF TOs and ITOs to FMS customers. Once an AF TO with FMS customers migrates to TODPS, the record of FMS Accounts on ID for the AF TO will be removed from JCALS. At that time, the FMS TO System Section will assume complete responsibility for the distribution of AF TOs and ITOs to authorized FMS Accounts.

10.1.1.3 All OTR transactions are processed by an interface between ETIMS and the TODPS. ETIMS TODO-approved OTR transactions are sent directly to the TODPS where it is determined if the requisitioned TO is Print on Demand (POD) or not. If the correct version of the requisitioned TO is available, the TODPS will distribute the print job (via DLA WAN) to the DLA Document Services site closest to the TODO for printing and direct shipment to the TODO. If not, the OTR transaction is sent to JCALS for processing following legacy JCALS and TO warehouse SSI processes.

10.1.2 Managing TODPS Implementation. This section describes standard practices and procedures required to establish and sustain TODPS for a TO Proponent (TO Program). The TODPS is the AFMC directed system to be utilized for printing of AF TOs. All AF TO Programs with PDF TO file outputs are required to upload and utilize the TODPS for all printing production. Exceptions are the InterContinental Ballistic Missile TO program, classified data, CSTOs, the 11N TO Index, 11N indexed TOs and other Nuclear system related TOs. Flight Manuals and TOs containing wiring diagrams are being implemented incrementally. Contact the Center TODPS POC located in the Home Office for information regarding implementation.

10.1.3 Funding for Sustainment of TOs and TODPS Operations. TO Proponent Managers will use the CAFTOP, TOIS and follow Centralized Asset Management (CAM) processes to document funding requirements for sustainment of TOs, to include printing and distribution using the TODPS. The process shall identify projected costs to update TO content, print TOs and increments, and pack and ship TOs.

10.1.3.1 For TODPS, TO Proponent managers must establish requirements for the printing, packing and shipment of TOs. Once the TOs are implemented into the TODPS for printing, packing and shipping, the TODPS can provide factual costs in the form of canned and ad hoc reports to support the managers in establishing funding requirements.

10.1.3.2 TO Proponent managers must establish fund cites for reimbursement of DLA Document Services production costs for TOs and increments. Besides production costs for ID distribution, projected funding must also include funding for packing and shipping and complete set uploads that occur with each ID job produced. The TODPS provides the capability to enter more than one fund cite per weapon system program. If separate fund cites are required for sustainment production, modification production, TO packing and shipment, TODPS will support. TODPS also allows the user to annotate a split percentage from a fund cite for a specific job. Example: A percentage from a sustainment fund cite and a percentage from a modification fund cite may be used for any single job to total 100% funding.

NOTE

Complete TODPS reporting requirements to support the CAFTOP TOIS will soon be available in production. In the meantime, data can be mined to provide information / data required to complete TO sustainment requirement for POD TOs (migrated to TODPS).

10.1.4 Requirements for TODPS Operations. When implemented, all of these transactions will take place on line. The TO Manager will access the TODPS through DLA Document Services On-Line. Once a TO Proponent is ready to migrate to TODPS from legacy SSI operations, the following requirements apply:

10.1.4.1 Access the TODPS and complete the ordering process for any TO or increment requiring distribution. Upload the PDF master reproduction TO file (paper distribution) or Master CD/DVD files, along with a CSV file of the JCALS shipping addresses on subscription for ID of the TO or increment. Since this is a POD system, NO back-up stock will be ordered. Exceptions would be if the print job is unusually difficult and/or replacement copies of the TO must be immediately available after ID is made.

10.1.4.2 AFTO Forms 30 can be uploaded into the TODPS when the TO Manager has determined it necessary to specify how color or fold-out pages will be collated in the TO shipped to the TODO user.

10.1.4.3 Digital master reproducible files uploaded to the TODPS must be in Adobe PDF format only. Refer to the “Print File Guidelines” document on the ETIMS CoP.

10.1.4.4 For each ID print job uploaded to the TODPS, a JCALS ID label file in CSV format must also be uploaded. The ID label file is obtained directly from JCALS at the time the TO / TO Update will be uploaded to the TODPS for ID.

10.1.4.4.1 Uploading TO changes and TO Supplements for ID. Single TO changes and formal TO supplements uploaded to the TODPS for ID, will be loaded using the JCALS publication stock number and publication date. Once the single increments are loaded for ID a separate task to upload a PDF version of the complete merged TO must be performed. Interim supplements will not be loaded to TODPS, distribution is achieved digitally.

10.1.4.4.2 Mandatory uploads of complete merged TOs. Definition of a complete merged set is: Basic TO, all changes, all supplements to include interims supplements that are active. Once a TO update has been successfully uploaded to the TODPS for ID, the user must perform a separate task to upload a PDF version of the complete merged TO. All changes must be merged and even though interim supplements are not loaded for ID, all supplements formal or interim must be appended in the complete merged TO. Refer to the “Print File Guidelines” documented on the Air Force Technical Order Managers web site: **https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=21298**. Once at the web site, under Document Management select: TOMA Functional User Guides and Checklists, Functional User Guides, TODPS Management, Print file guidelines. The Version Date entered when the complete merged TO is uploaded must be the publication date of the latest TO increment or TO supplement (Formal or Interim). This will facilitate filing future OTRs for the TO. The active, stand-alone To updates will remain in the TODPS to support OTRs for just those increments.

10.1.4.4.3 Technical Order Page Supplements (TOPS). TOPS will not be loaded to the TODPS. If the AF TO contains TOPS, the TOPS must be incorporated into the basic TO as either a change or formal supplement before loading into the TODPS.

10.1.4.5 Once a TO Update has been successfully uploaded to the TODPS for ID, the TO Manager or designee must perform a separate task to upload a PDF version of the complete merged TO including all active changes and supplements, to facilitate filling future OTRs for the TO. The active, stand-alone TO updates will remain in the TODPS to support OTRs for just those increments.

10.1.4.6 The TO Manager has several controls that may be used with the DLA Document Services process: 1) request proof copies (for ID printing only); 2) require funds approval before printing (for both ID and OTR); and 3) establish JCALS Sponsor Approval for the TO to limit requisitions.

10.1.5 TODPS Operations. Once a TO Proponent is ready to migrate to TODPS from legacy stock store and issue operations for the initial distribution of TOs/TO updates and subsequent printing/shipment of OTR for POD TOs, the following requirements apply:

10.1.5.1 TO Proponent TO Managers or their designees (stock item manager, distribution clerk or editorial assistant) must establish a TODPS User Profile to use the TODPS. Once identified, the manager/designee will be trained and given TODPS username and password.

10.1.5.2 Initial TODPS training for users will be accomplished by contacting the Center TODPS POC located in the Home Office. Also, TODPS Functional User Guides are located on the Air Force Technical Order Managers web site: **https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=21298**; Under Document Management, select TOMA Functional User Guides and Checklists, Functional User Guides, Paper Technical Orders.

10.1.6 TODPS Help Desk Procedure. When a user experiences problems with the TODPS, printing or distribution requirements, etc., the user will notify the Center TODPS POC providing full details of the issue. The Center TODPS POC will generate an incident ticket in the TODPS system and will track and monitor until resolution has been reached.

10.2 TECHNICAL ORDER REPRODUCTION.

TO managers must arrange for the reproduction and distribution of any PTO or formal TO which is not serviced by the DLA Document Services TODPS.

NOTE

TO Warehouses are being phased out as the Storage and Distribute functions are transferred to the DLA Document Services TO Distribute and Print Services.

10.2.1 Reproduction Methods. Reproduction methods include numerous forms of printing (for “hard” copies) and electronic (digital) duplication/transmittal (for digital reproduction masters and electronic TOs).

10.2.2 Reproduction Quantities. Quantities of preliminary TOs are determined by the TO Manager based on program requirements. Quantities of formal TOs are based on justified orders placed by users IAW TO 00-5-1 (paragraph 10.7).

10.2.3 Reproduction Media. Reproduction media will consist of the digital files generated during TO development, in either IPDF, a similar printable page description language, or SGML-tagged format (paragraph 5.11). Commercial Off-The-Shelf (COTS) and other procured manuals will be acquired as digital files whenever possible, or will be scanned and converted to PDF for reproduction. Manual sizes, use of color and line versus half- tone art, type of paper used and similar details are specified in the applicable TMSS and MIL-HDBK-38790, *Printing Production of Technical Manuals*.

10.2.4 Printing and Reproduction. TOs may be printed on paper or reproduced on CD-ROM/DVD. DLA Document Services will manage all bulk TO printing and reproduction requirements for the Air Force IAW DODI 5330.03/AFI 33-395.

10.2.4.1 The TO Manager is responsible for budgeting for TO printing. TO Managers must include printing and distribution costs (e.g., uploading to TODPS, cost for proof copies, transportation costs, etc.) within budget cost estimates.

10.2.4.2 The new-program-start TO Manager must request DLA Document Services printing support at least 180 days prior to the desired initial TO publication date. See paragraph 10.1 for procedures used with the DLA Document Services TO Distribute and Print Services (TODPS). Contact the local DLA Document Services facility for additional assistance. DLA Document Services determines whether in-house resources or GPO printing support will be used. DLA Document Services will estimate program printing costs, and the TO Manager will provide funding IAW DoDI 5330.03/AFI 33-395. DLA Document Services will arrange printing programs (contracts) with the GPO if required for bulk printing.

10.2.4.3 The local DLA Document Services office and TO Manager will determine procedures for funding and submitting initial distribution (ID) TO printing orders. ID print packages will include digital reproduction masters, AFTO Forms 30, *Reproduction Assembly Sheet* (RAS) or other documentation specified by DLA Document Services, and decks of mailing labels or Comma Separated Variable (CSV) JCALS address files (as applicable). Once the TODPS process is fully implemented, follow-on printing for One-Time Requisitions (OTR) will be filled by the certified DLA Document Services facility nearest the requisitioning unit, using Print-On-Demand (POD) processing.

10.2.4.4 The TO Manager determines procedures for release of reproduction masters; preparation and shipment of the print package, and disposition of the reproduction masters and TO backup stock (if any).

10.2.4.5 DLA Document Services (or the GPO printer) completes the print order, prepares a firm cost estimate, and returns a copy of the print order to the activity responsible for monitoring obligated funds. The printer prints and ships the TOs as directed. Subsequent distribution (for replenishment, new requirements, etc.) is handled through the ETIMS System. The

print activity furnishes a Certificate of Conformance and bills the TO Manager printing account through DLA Document Services.

10.2.4.6 The TO Manager should report any printing/reproduction errors to the DLA Document Services within 30 days of TO receipt. HQ AFMC/A4N will provide needed support when errors cannot be resolved. Users shall use the ETIMS Data Discrepancy Report (DDR) to notify management of printing and distribution problems.

10.2.4.7 TO Reproduction Using the DLA Document Services TODPS Process. The TODPS is the AFMC directed system to be utilized for printing of AF TOs. All AF TO Programs with PDF TO file outputs are required to upload and utilize the TODPS for all printing production. See paragraph 10.1.2 for exceptions. The TO Manager or designee will submit TO print packages for ID and merged basic TOs to the TODPS in support of OTRs generated in ETIMS. TODPS process will improve print quality, save distribution time, reduce distribution costs, and leads to elimination of back-up stock and the warehouses to manage them. For step-by-step procedures for uploading PDF files, access the TODPS Functional User Guides located on the Air Force Technical Order Managers web site: **https://afkm/wpafb.af.mil/community/views/home.aspx?Filter=21298**. Once at the web site, under Document Management select: TOMA Functional User Guides and Checklists, Functional User Guides, Paper Technical Orders. There are numerous guides; choose the guide applicable for function required.

10.2.5 Weapon System Contractor Printing. This clause shall be added to all contracts and orders which require printing. However, performance of a requirement under the contract involving the duplication of less than 5,000 copies of a single page, or no more than 25,000 units in the aggregate of multiple pages, will not be deemed to be printing.

CLAUSE I-102 – PRINTING (August 2002)

a. To the extent that duplicating or printing services may be required in the performance of this subcontract, the Subcontractor shall provide or secure such services in accordance with U.S. Government Printing and Binding Regulations, Title 44 of the U.S. Code, and DOE Directives relative thereto.

b. The term “Printing” includes the following processes: composition, plate-making, presswork, binding, microform, publishing, or the end items produced by such processes. Provided, however, that performance of a requirement under this subcontract involving the duplication of less than 5,000 copies of a single page, or no more than 25,000 units in the aggregate of multiple pages, will not be deemed to be printing.

c. Printing services not obtained in compliance with this guidance shall result in the cost of such printing being disallowed.

In all subcontracts hereunder which require printing (as that term is defined in Title I of the U.S. Government Printing and Binding Regulations), the Subcontractor shall include a provision substantially the same as this clause.

10.2.6 Quality Assurance. Printing jobs are inspected by the printer prior to shipment. However, the TO Manager may request a sample of the print run for independent government verification of print quality. This sample will provide justification for recourse against the printer in case of errors. When using the new DLA Document Services POD process through TODPS, TO Managers must check the “Need for Copy Proof” box to ensure all printing quality requirements have been met. TO users will report print quality issues using the ETIMS Data Discrepancy Report (DDR).

10.2.7 GPO Printing Contract Maintenance. Approximately three months prior to expiration of a GPO printing contract, DLA Document Services requests the TO Manager to review and revalidate requirements. In most cases, the DLA Document Services TODPS process will allow DLA Document Services to handle Air Force TO printing “in house” allowing the GPO contract to lapse. If for any reason, the GPO contract must be canceled or changed (for example, if the program is canceled) the TO Manager must go through DLA Document Services to effect the change.

10.2.8 Electronic Media. Publishing may include reproduction of digital files on floppy disc, CD-ROM, DVD or other electronic media. Digital TO formats include Adobe® PDF™ or other page description languages, electronic publishing formats, and SGML or XML tagged files. Electronic media will be numbered, ordered and distributed like paper TOs. Electronic (on-line) distribution will be IAW paragraph 10.9 of this chapter.

10.2.9 TO Warehouse Requirements. New-start programs shall use the DLA Document Services TODPS POD process for all MIL-SPEC TO reproduction and distribution, eliminating or drastically reducing the need for TO warehousing. If there are requirements for backup stock (in cases where TOs have special reproduction requirements or replacement copies

must be instantly available), the TO Manager will provide estimates on storage requirements to the Army Storage Facility at St. Louis MO. All Air Force TO warehousing will be consolidated there.

10.3 TECHNICAL ORDER DISTRIBUTION PRACTICES.

10.3.1 Preliminary TOs. PTOs are distributed by a contractor or other developing activity to support IPRs, verification, and pre-publication reviews IAW the tables in Section 2 of the TMCR. Distribution is limited to the acquisition/review participants. Distribution of PTOs for Test and Evaluation (T&E) or operational use is controlled by the TO Manager IAW AFI 63-101. PTOs cannot be viewed through ETIMS Viewers.

10.3.2 Operational Use PTOs. The TO Manager will arrange for printing, storage and distribution of PTOs approved for use in the operational environment (AFI 63-101 and TO 00-5-1). For major acquisition or modification programs, the prime contract may cover PTO storage and issue.

10.3.3 Formal TOs. Formal paper and CD-ROM/DVD TOs are distributed IAW TO 00-5-1 and paragraph 10.10. Formal eTOs are distributed via ETIMS (paragraph 10.9.1) with some exceptions.

10.3.4 Restrictions. Distribution of both formal and preliminary TOs may be restricted to government agencies, government contractors, or as otherwise specified by the TO Manager and TCM (see paragraph 3.1.4).

10.3.5 TO Shipments. All package service or USPS shipments shall use tear-resistant, secure envelopes for TO packages weighing less than five pounds. TOs boxed for shipment will be secured using strapping tape or bands. Base Information Transfer System (BITS) deliveries may continue to use “holy joes.”

10.4 LEGACY TECHNICAL ORDER PRINTING/REPRINTING PROCESSES.

10.4.1 General. TO Managers arrange for reproduction and reprinting of TO stocks through DLA Document Services (DoDD 5330.03/AFI 33-395). DLA Document Services is the consolidated organization for printing and high-speed, high volume duplicating and is the preferred provider of document conversion and automation services within the Department of Defense. The TO Manager determines PTO bulk printing quantities, and the TO/Distribution Manager determines formal TO bulk printing quantities IAW this TO.

10.4.2 Notification and Confirmation. The TO Manager will reprint TOs when the stock balance goes below the “Reorder Pt. Qty.” (paragraph 3.4.6.1) previously established (does not apply when using POD). The JCALS System forwards a “Reorder Notification” message to the TO Manager JCALS In-Box as well as an e-mail notification to the TO Manager designated e-mail account.

10.4.2.1 The TO Manager will request the warehouse to accomplish a physical inventory and report the exact stock status. The TO Manager updates the JCALS TO stock balance if required, using the JCALS “Manage Inventory; Adjust TM Stock Item Quantity” function.

10.4.2.2 The TO Manager may use JCALS to place a TO in a “dormant” stock status (not requiring reprint) when a revision or rescission is pending. Reprinting may also be delayed due to lack of funds.

10.4.3 Create Print Orders. See paragraph 10.2.4.3. A print order consists of information describing printing and distribution services required and specifying the fund cite. Print quantities and handling will be specified. The local DLA Document Services office will specify which forms and procedures they require. Unless otherwise specified, use the AFTO Form 30 for TO printing.

10.4.3.1 When reprinting a TO or preparing a file for OTR through the DLA Document Services TODPS, merge reproduction masters for the basic TO and any active updates into a complete TO, with the following statement on the title page: “BASIC AND ALL UPDATES HAVE BEEN MERGED TO MAKE THIS A COMPLETE PUBLICATION.” Any unincorporated supplements will remain active.

10.4.3.2 With DLA Document Services Online now being used for digital file printing, all actions processing requests are accomplished on line (no forms required). To use the service, register online at URL http://www.daps.dla.mil/index.html.

10.4.3.3 The DLA Document Services TODPS provides “Job Completion” notification, which includes delivery to customers.

10.4.4 Printing Fold-out/Fold-up Pages. These pages will be printed at the end of the TO. When specified, they may fall at the end of chapters or interspersed within the TO text (MIL-STD-38784). When the pages fall within the text or at the end of chapters, they will be numbered consecutively with the other pages. When they fall at the end of the TO, they will be numbered "FP-1," "FP-2," etc. For paper TOs, all foldouts will be shipped at the end of the TO, and may require collating during TO posting. For digital TOs, the foldout pages will be collated before distribution.

10.4.5 Reprinting Department of the Army (DA) Publications. When the Army TM manager cannot provide additional backup stock of joint-use DA publications, the affected TO Manager may have to reprint copies for AF use. When DA publication masters are not available, a printed copy of the publication is sent to DLA Document Services for reproduction. Requests for printing and the reproduction assembly sheet will include the following instructions:

- The DA publication number is printed on the title page only. The Air Force TO number is printed on the title page (below the DA TM number) and all other pages of the reprint.
- Replace the heavy DA paper cover with a standard Air Force title and "A" page. Do not reflect changes separately on the "A" page since the reprint is considered a merged basic
- Enlarge text and illustrations, if possible, to fill the normal printing area of the standard Air Force page size.
- Use standard Air Force TO binding, drilling, stapling, etc.

10.5 REPRODUCIBLE MATERIAL PROCEDURES.

10.5.1 Reproducible Material Storage. The TO Manager stores, contracts for, or delegates storage of reproducible material (negatives, artwork, reproducible copy for TOs, tapes and disks) for assigned TOs, when they are not required by contractors for preparing TO updates. The TO Manager publishing a TCTO stores the reproducible material. Digital reproducible master files will be stored by prime contractors or in an approved Air Force repository. Digital Change files will be merged with the TO master file. For hardcopy reproducible masters:

10.5.1.1 The TO Manager maintains a locator file (JCALS or database) of reproducible masters.

10.5.1.2 Reproducible material will be checked for completeness when returned for storage, and the return date will be entered in the locator file.

10.5.1.3 Locator files are reviewed every 2 months and follow-up action taken on reproducible material on loan for more than 50 days.

10.5.2 Posting Changes. When TO change reproducible material is received, insert (post) the changed material into the basic TO reproducible master. The replaced material is removed from the file and archived IAW the Air Force Records Disposition Schedule (RDS) (https://www.my.af.mil/gcss-af61a/afrims/afrims/).

10.5.3 Requesting Reproducible Materiel. Administrative Contracting Officers (ACO), TO Managers, and other DoD departments may request reproducible copy IAW TO 00-5-1, AFJI 21-301, and interservice agreements. A letter of transmittal is filed as a shipment record. Classified material is handled IAW DoD 5200.1-R.

10.5.4 Reproducible Material for Rescinded TOs. The TO Manager, designated storage warehouse or contractor storing reproducible material takes the following actions when notified that a TO or TCTO is rescinded:

10.5.4.1 Retain reproducible material for completely rescinded TOs (not required by Air Force, FMS or other DoD departments) for a period of 2 years IAW the RDS. Retain TCTO reproducible materials for 6 months after rescission. Dispose of unclassified reproducible material IAW TO 00-5-1; dispose of classified reproducible material IAW DoD 5200.1-R/AFI 31-401.

10.5.4.2 If a TO is rescinded for Air Force but retained for FMS or other DoD departments, retain material required for FMS TOs or transfer the reproducible material to the other DoD department still using the TO. Other DoD departments may request rescinded TO reproducible material IAW AFJI 21-301. If available, the material will be transferred (not loaned) to them.

10.6 SCREENING TECHNICAL ORDER REQUISITIONS.

10.6.1 Requisitions Requiring Proponent ("Sponsor") Approval (paragraph 3.1.6.1). The responsible TO Manager (the TO "proponent" or "sponsor") will screen and approve new subscriptions and requisitions for TOs coded "Proponent Approval" in JCALS. The TO Manager will obtain concurrence of the TCM when necessary, before approving the subscription/requisition. Approval/disapproval shall be completed within 30 calendar days of submittal by TODO.

10.6.1.1 Manage TODPS Transactions. Proof and Funding approvals are required to be processed within 7 calendar days of assignment. Sponsor approvals will be screened and processed within 30 calendar days. Emergency Requisitions shall be screened and processed within 2 business days. Emergency Requisitions can be processed by the TO manager as an emergency or as a normal transaction based on adequacy of justification provided.

10.6.1.2 Manage TODPS Held Transactions. Held transactions are One Time Requisitions (OTRs) from ETIMS that cannot process due to a metadata mismatch or TO is not loaded to ETIMS. TOs on the held transaction report must be uploaded/corrected within 7 calendar days.

10.6.2 Review Label Decks. TO Managers must perform appropriate screening and management control of label decks for classified or restricted TOs, using the "ID Report by Publication," before the deck is generated and sent directly to the distribution source, government or contractor, authorizing shipment. Withdraw labels for TODO TM Accounts not authorized to receive the TO, or cancel any unauthorized requisitions using the "Manage Initial Distribution for a TM; Specify Initial Distribution by Account Profile" screen, or if only a few accounts need to be deleted use the "Manage Initial Distribution for a TM; Specify Account ID for a Publication." TO Managers will withdraw ID shipping labels for Security Assistance Program (SAP) and FMS requisitions (D*xxxx TM Account codes) from label decks when printing contractors will make ID but cannot provide shipment tracking information. The TO warehouse/distribution center will make SAP/FMS distribution in these cases to ensure shipments are properly tracked. See paragraph 10.1.1.2 for FMS/SAP procedures with TODPS.

10.6.3 Justification. Justification is **not** required for accounts already on subscription for the TO. Justification may be included in the remarks block or the comments section of requisitions submitted using the JCALS or ETIMS Order Publication screens. Justification from ETIMS users will be received via e- mail. The TODO places their justification in a remarks block. The system places that data into an e-mail and sends it using the TODO's e-mail account. When requests are disapproved, JCALS will provide a status report of the disapproval. JCALS Sponsor Approval workflow jobs are viewable by the submitting TODO if they are a JCALS user.

10.6.4 Manage Outside Agency Requests for Air Force TOs. Process requisitions from other U.S. government agencies, contractors and civilians IAW TO 00-5-1 and AFJI 21-301. Process Freedom of Information Act (FOIA) requests for TO data strictly IAW DoD 5400.7-R/AF Sup, and TO 00-5-1.

10.6.4.1 TOs with Distribution Limitation codes "B" through "X" may be exempt from release under FOIA, IAW DoDD 5230.25, DoD 5400.7-R/AF Sup, and AFI 61-204.

10.6.4.2 Requests for TOs from activities or individuals outside the limitations specified by the assigned Distribution Statement must be approved by the DoD Controlling Office (responsible TO Manager and TCM). If the responsible office cannot be identified, refer requests for TO release to HQ AFMC/A4UE, e-mail: AF.TOPP@wpafb.af.mil, to determine the proper release authority.

10.6.4.3 If the TO or other technical data is not marked, it will be handled as STINFO Distribution Statement "F," and will be referred to the responsible TCM for assignment of an appropriate Distribution Statement prior to being issued.

10.7 PRINTING QUANTITY DETERMINATION.

10.7.1 Determine Print Quantities. TO/Distribution Manager sets total printing quantity for TOs, except TCTOs, by adding the computed backup stock quantity to the ID quantity (backup stock is not applicable for JIT/POD printing).

10.7.1.1 The TO/Distribution Manager uses the "Manage Initial Distribution for a TM; Generate ID Report by Publication" function to determine ID requirements on record in JCALS. The manager then reviews the report, and adjusts the quantities to include organizations scheduled to be activated, but presently having no requirement set up.

10.7.1.2 When a TO or TCTO must be distributed before all subscription requirements can be submitted in response to a TO index listing, coordinate with using MAJCOMs to determine if additional distribution is required. Add additional

activities identified by the MAJCOM, using the JCALS "Specify ID by Like Item" function to develop the Initial Distribution list based upon ID requirements for a similar TO. TO Managers must include a cover memo with Like ID shipments telling TODOs why they are receiving the new TO or TCTO, and instructing them to add the subscription to their ETIMS Account and show receipt. Also, inform them that if they do NOT need the TO, immediately notify the TO Manager POC to remove them from the subscription list.

10.7.1.2.1 The TO or TCTO series whose ID requirements are being used must be the same classification as the TO or TCTO to be distributed. The ID label will include only the TO or TCTO number being distributed. Subsequent label requests must use the proper TO number or TCTO series from the TO index.

NOTE

ID by Like Item **cannot** be made to SAP/FMS customers (D*xxxx TM Account codes), even if the source TO included SAP/FMS distribution, because JCALS will bypass the FDO releasability review.

10.7.1.2.2 The TO/Distribution Manager must notify the FMS TO System Section (OC-ALC/ENGLC) that a new TO/TCTO with possible FMS requirements is being distributed.

10.7.1.3 The TO/Distribution Manager establishes backup stock printing requirements for use in filling anticipated requisitions (N/A for TODPS printing). In computing printing requirements, the manager considers the life expectancy of the TO based on type, programmed use, and any established change or revision cycle. The manager also evaluates consumption rates using similar TO histories or a previous issue of the same TO, and accounts for present and planned programming of the weapon or space system equipment, or material to which the TO applies.

10.7.2 TO Change Quantities. The total printing quantity for a TO change is computed by adding the number of copies needed to update TO stock on hand to the ID quantity, plus the number of copies needed to fill requisitions from TODOs who failed to receive supplements or changes distributed under normal system operation. When a TO change will be incorporated into a revision within 90 days, backup stock is reduced accordingly. Backup stock is not required with POD, unless there are special printing requirements which are most cost effective during initial print runs.

10.7.3 TCTO Quantities. Total printing quantity for TCTOs is computed by adding the computed backup stock quantity and any additional specific requirements for copies to the ID quantity. Enough TCTO stock should be printed to cover anticipated FMS TCTO distribution requirements.

10.8 PUBLISHING TECHNICAL ORDERS ON DIGITAL MEDIA.

The TO Manager for the CD-ROM/DVD is responsible for CD-ROM/DVD format, numbering, labeling, publication, packaging and distribution. The content of TOs on a CD-ROM/DVD must be identical to that of the individual (stand-alone) paper TOs.

10.8.1 CD/DVD Contents. The TCM for the CD/DVD, in coordination with the TO Manager and Using Command, is responsible for determining which TO files will be included on the CD/DVD, and for developing the standard files required by MIL-STD-38784, MIL-HDBK-9660, *DoD Produced CD-ROM Products*, and this TO (paragraph 12.8). Classified and unclassified TOs will not be mixed on a single CD.

10.8.2 Update Intervals. The TO Manager will determine routine update intervals, in conjunction with the Lead Command, and the TCMs of the TOs included on the CD/DVD.

10.9 ELECTRONIC DISTRIBUTION OF TECHNICAL ORDERS.

The below paragraphs outline the authorized methods and procedures for disseminating CUI, applicable for any technical data (including Technical Orders, Technical Reports, Test Data, etc.) with STINFO distribution statements B through F and X. Reference publications include DoDD 5230.24 and 5230.25; AFIs 63-101, 33- 119, 33-129, AFI 33-200, *Information Assurance Management*, Air Force Systems Security Instruction (AFSSI) 8520, *Identification and Authentication*, and 61-204. The Defense Messaging System is not authorized for the distribution of TOs or ITOs to Standard TODOs (i.e. JCALS TM Accounts with the F* prefix) as standard TODOs now establish, manage and monitor organizational e-mail accounts instead (TO 00-5-1). AF Knowledge Now (AFKN) Communities of Practice (CoP) are not authorized for the upload of TOs or TO-related products (e.g., AFTO Forms 22) containing weapons systems data. Additionally, any AFKN CoP or SharePoint site containing TO content or data must be certified as standards compliant.

10.9.1 Distribution Using ETIMS. ETIMS is the official method for distribution of Air Force eTOs; use of any other method on a program-wide basis will require a written waiver from AFMC/A4U, IAW paragraph 8.1.4.6. TO Managers access CGSS-AF eTO Services' eTO Repository to upload eTOs for electronic distribution. TO Managers and their support organizations will need DFOSIs, ArborText Editor and CPS software to transform SGML-tagged TO files to HTML eTOs for publishing on the ETIMS Repository. ETOs are loaded onto the ETIMS "on-ramp" for quality verification of the transformed HTML files. When determined to be accurate, the JCALS flags "Available for Distribution" and "Available for Published Index" are set to yes, and the files are loaded to the repository for distribution to accounts on subscription for the eTO. The transformed files can be viewed using the AF eTO Viewer. Adobe PDF files are not transformed, but are loaded to the ETIMS repository using the same process.

10.9.2 Distribution Using E-Mail. There are two levels of e-mail available to most TO System users:

- Medium Grade Service using Microsoft® Outlook® and a CAC on the NIPRNet to digitally sign and encrypt Controlled Unclassified, restricted distribution messages, and a SIPRNet Account for transmitting Classified messages.
- Unsigned, unencrypted Outlook (or other Simple Mail Transfer Protocol [SMTP] programs) for publicly releasable messages (distribution statement "A" -- AFIs 33-119, 33-202V6).

10.9.2.1 Simple Mail Transfer Protocol (SMTP) E-Mail (Microsoft® Office Outlook®) with CAC: This method can be used to send signed and encrypted Controlled Unclassified Information (CUI) on the NIPRNet. Classified information must be sent over the SIPRNet which requires username and password access. Both sender and recipients must have their CAC certificates properly registered in order to sign and encrypt/decrypt messages. Refer to the "Setting Up and Using PKI for End Users" training page on the Public Key Infrastructure (PKI) web site at https://afpki.lackland.af.mil/html/generalusers.asp. For Organizational Accounts, see paragraph 10.9.2.3.

NOTE

- There is an alternative practice for use by Certified U.S. contractors not authorized CACs. They can request a DoD-approved External Certificate Authorization (ECA) issued by either Verisign, Digital Signatures Trust (DST), or Operational Research Consultants (ORC). Refer to the ECA web site at http://iase.disa.mil/pki/eca/.

- Prime contractors and vendors may not have access to signed, encrypted e-mail if they do not have ".mil" access, nor will FMS customers have access. Messages to contractor customers will be sent using Plain-Language Addresses (PLA) by the TO Manager. The FMS TO System Section (OC-ALC/ENGLC) will be sent a copy of AF ITOs and redistribute them to authorized FMS Accounts using PLAs.

10.9.2.1.1 Ensure all recipients on address lists are authorized access to the data being transmitted. Do not send CUI to organization addresses which go to all or most of the organization. A TODO e-mail address is authorized for use. Reverify address lists as often as practical but at least annually.

10.9.2.1.2 Use the "Sign" and "Encrypt" icons in Outlook® (envelope with a red seal and envelope with a lock superimposed) to secure messages before they are sent. See the "Help" function in Outlook® for more information. To ensure receipt by the addressees, ask for an "S/MIME Receipt" (Outlook® Tools/Options/Security).

NOTE

Recipients must have current, valid, registered CAC certificates.

10.9.2.1.2.1 Each major AF installation has a service delivery point through which all e-mail traffic (both in- and out-going) is funneled. The link between SDPs (e.g., Wright-Patterson AFB to Hill AFB) is encrypted. Beyond the SDPs, there is no guarantee that data is encrypted. It is possible that data could be sent or received by a ".mil" user connecting downtown through an unprotected connection. Additionally, on base transmissions may not encrypt the data.

10.9.2.1.2.2 Verify receipt of controlled data by requesting a "delivery receipt" using the Outlook® Options icon found in the new or forwarded message window.

10.9.2.2 "Regular" SMTP Outlook® E-Mail: Use of regular, unencrypted e-mail messages is only authorized for distribution statement "A" (public release) data.

NOTE

Due to problems with distribution, especially to FMS/SAP customers, ITOs and other eTO updates may also be distributed physically on paper or CD-ROM using address labels like paper TO distribution, to ensure all accounts on subscription for the TO receive all authorized updates. This definitely adds to the cost of publication, and should be limited to only those addressees not adequately serviced by electronic distribution methods.

10.9.2.3 Sending and Receiving E-Mail from Organizational Accounts. The following procedures will allow the exchange of signed and encrypted e-mails to and between Organizational Mailboxes:

- The organizational mailbox owner submits a work request to the computer support office
- A Trusted Agent letter is created for each organizational mailbox user and submitted to the base network administration office, which in turn requests a PKI certificate for each user.
- The base network administration office provides the issued PKI certificates to the computer support office.
- The computer support office installs the PKI certificates on the appropriate user's computer.
- Authorized users can now send and receive digitally signed/encrypted mail directly from the organizational mailbox.

10.9.3 Distribution Using the Internet. Controlled-access servers and web sites may be used to host and deliver controlled, unclassified data (distribution statements B-F and X). Use of such non-ETIMS sites requires a "WA-2" waiver from AFMC/A4U IAW paragraph 8.1.4.6. TO listings on host servers will include the TO Number, Date, Title, and Change Number/Date to allow users to verify configuration of downloaded copies without opening or downloading the file. Additional information, such as TO Manager or TCM information, is optional. Ensure the host server has appropriate access controls to protect limited distribution TOs and data (AFIs 33-129, 33-200).

NOTE

Distribution of TO files to ".mil" customers shall be transitioned from program web sites to ETIMS as quickly as possible.

10.9.4 Other Distribution Methods. There are several other methods, both electronic and physical, for distributing controlled, unclassified data.

10.9.4.1 JCALS. TOs and data sent through JCALS are encrypted by an external Data Encryption Unit (DEU) located at each local server before being sent to another JCALS server via a VPN. Once the encrypted data reaches the other JCALS site, the DEU decrypts it before it is put on the local server and accessed by a PC. The same scenario applies when a JCALS workfolder or the TO Reference Library is accessed. It is the responsibility of the user to ensure that the data is not transmitted outside the base firewall without being encrypted. The level of security is for unclassified data only.

10.9.4.2 Secure facsimile machines (fax) which encrypt the data for transmission may be used.

10.9.4.3 Physical distribution on digital media via USPS mail or U.S. package delivery service company is authorized.

10.9.4.4 The data may be printed and mailed using the same delivery methods as digital media or paper TOs (references: AFI 31-401, TOs 00-5-1 & 00-5-19, and MIL-HDBK-9660).

10.9.4.5 In all cases, the sender must verify the address and that the recipient is authorized access to the data being sent. The authorizations must be reverified as often as practical but at least annually.

10.10 GENERATE JCALS SHIPPING LABELS.

Shipping labels are required for paper or CD-ROM/DVD distribution. JCALS currently requires a four-step process to successfully generate labels:

10.10.1 Receive Due-In Quantity. The TO/Distribution Manager will use the "Manage Inventory; Create Due-In Record" process to let JCALS know that stock is coming. Use the "Manage Inventory; Manage a Due-In Receipt" process to record in JCALS that stock has been received. Once stock has been entered into JCALS, shipping labels may be generated.

10.10.2 Request Shipping Labels. The TO/Distribution Manager requests shipping labels using the JCALS "Manage Warehouse; Manage Labels" TM Process. JCALS can then be prompted to produce labels for mailing the reproduced publications.

NOTE

The ID Ship Date entered into the Manage Labels screen will be copied to the Estimated Distribution Date (EDD) field of the TM Index record. Users will know the EDD through the ETIMS TO Catalog.

10.10.3 Control ID Label Decks. Establish controls to ensure decks of ID labels will arrive at the printers before completion of printing, when the contract printer will make distribution. An alternative process will have the printer return the entire print job to the TO warehouse for distribution. Routine label generation should be done within 10 days of submitting the TO print package to the printer. Labels will expire 60 days from the date the label was prepared. ID decks sent directly to a separate government or contractor activity are authorization for them to distribute the TOs.

10.10.4 Generate Labels for One Time Requisition. TO Managers will routinely check the JCALS "Manage Warehouse; One Time Labels Ready to be Printed Report" to determine how many requisitions are pending for available stock. Run "Back Order Reports" often on TO numbers ordered frequently to prevent large backlogs.

10.10.4.1 As with the ID process described previously, the manager must ensure adequate stock is available to prevent requisitions from being backordered. When reprint stock is received, the manager will use the JCALS "Manage Inventory; Adjust TM Stock Item Quantities" screen to record the quantity of TO stock received and available.

10.10.4.2 Managers will use the JCALS "Manage Warehouse; Manage Labels" process to generate One Time Requisition (OTR) labels/files IAW the JCALS DI. The file will include OTR shipping labels for requisition transactions listed for each of the JCALS Stock Point Organization Identifiers (Org ID).

10.10.4.3 If stock is not available in JCALS, requisitions will be backordered. Once Stock is received and entered into JCALS, backordered transactions will be released to the appropriate stock point.

10.10.5 Establishing Stock Levels for POD. Setting stock levels to fictitious levels in support of POD processing must be carefully managed. Requisitions will build in the stock point since the JCALS System has determined that stock is available. Transactions status of "BA – Shipped" is returned to the users when the Requisition transaction is listed in the Stock Point. For this reason, funding must be sufficient to support POD process to prevent requisitions from being in BA – Shipped status for extended periods of time. BA status only indicates that stock is available to ship.

10.11 ERRATA SHEETS.

TOs and TO increments distributed with missing or misprinted pages may be corrected by redistributing the missing/reprinted pages using an "Errata Cover Sheet" and the JCALS "Make ID Labels Available for Reprint" process to generate a distribution label deck. TO Managers may have to submit a JCALS HDRC ticket to the DBA to have the JCALS "ID Complete" flag reset in order to generate a new deck of labels or reset the "labels only" to generate the original label deck. If FMS countries are on distribution, TO Managers should only request reprint of the original label deck. Resetting the ID complete would cause a double FMS billing for the shipment. Labels for Errata sheets in TODPS can be reset using this same process or TO Managers have the option to reuse the original JCALS label file. The Errata Cover Sheet (see Glossary) will provide instructions to insert/replace the pages into the affected TOs and how to document receipt in ETIMS. The TO Manager will also add a Note on the Errata Cover Sheet explaining the purpose of the errata package.

10.11.1 Limitations. This method will not be used to replace pages when the content of the data must be changed. Print or overstamp the words "MISSING PAGES" in block 27 of the DD Form 1348-2, Issue Release/Receipt Document With Address Label. Because errata packages do not change TO data or change numbers, the packages are not numbered and indexed in JCALS. Send sufficient copies of the package to the TO warehouse to update any backup stock.

NOTE

The FMS TO System Section will submit print jobs to the TODPS for authorized FMS customers IAW paragraph 10.1.1.2, after the Air Force print jobs are migrated to and processed by the TODPS.

10.11.2 SAP/FMS Customers. Like Item Distribution cannot be used for errata packages sent to SAP/FMS customers, for releasability and billing reasons. Contact the FMS TO System Section (OC-ALC/ENGLC) for assistance in redistributing the missing/reprinted pages to FMS users. OC-ALC/ENGLC will work these requirements internally. The FMS TO System Section will submit print jobs to the TODPS for authorized FMS customers once the AF ID print job is processed by the TODPS.

10.11.3 Errata Sheet Procedures for POD (TODPS) and ETIMS Distribution. Errata sheets may be processed for AF POD (TODPS) TOs. If the problem requiring errata sheets is due to printing problems, DLA Document Services will reprint and distribute the corrected TO or increment at their cost. If the problem is due to administrative errors or incomplete reproducible PDF masters, the TO Manager will provide an errata package to the TODPS and fund for its reproduction and distribution. Prepare the errata package including cover sheet and pages for distribution as a PDF file. Upload to the TODPS as an increment and create a simulated Publication Stock Number for the errata package. Check distribution and generate a new deck of ID labels for the TO from JCALS if necessary or reuse previously obtained JCALS label file. When errata are applicable to eTOs (- WA-1 suffix) distributed via ETIMS, the merged TO will be corrected and reloaded to the ETIMS repository.

10.12 REQUISITIONS USING AFTO FORM 276, *SPECIAL REQUISITION FOR AIR FORCE TECHNICAL ORDER*.

Use of the AFTO Form 276 for "Walk Through" requisitions will be severely curtailed as TO Warehouses are phased out and TO SSI is consolidated at the Army Warehouse in St. Louis MO. Warehouse stock will no longer be maintained for Air Force TOs migrated to the DLA Document Services TO Distribute and Print Services (TODPS) for printing and distribution.

10.12.1 Warehouse "Walk-Through" Requisitions. ALC personnel may use the AFTO Form 276 to make walk-through requisitions of TOs from the warehouse. Complete the form as outlined in TO 00-5-1, except for block 1 which will contain only the TO number. Adjust stock inventory levels in JCALS using the "Adjust TM Stock Item Quantities" screen. OTR transactions for the TO may be submitted via ETIMS TODO Account or directly to the TODPS.

10.12.2 FMS Customer Use. For AF TOs migrated to use of TODPS, the FMS TO System Section directly manages all FMS customer OTR for AF TOs. OTR for AF TOs authorized to FMS customers are processed directly from SATODS to the TODPS. TOs are printed and shipped to the appropriate Freight Forwarder for distribution. Special information, available in the SATODS, is required when using the AFTO Form 276 to ship TOs for an FMS customer. TO 00-25-256, *User Manual -- Security Assistance Technical Order Data System (SATODS)* (ETIMS), provides step by step instructions for creating and printing an AFTO Form 276 for an FMS shipment. Contact the FMS TO System Section for assistance in preparing an AFTO Form 276 for FMS.

10.12.3 Foreign Disclosure Office (FDO) Review of FMS AFTO Form 276. AFMC personnel must ensure that all AFTO Form 276 requisitions for FMS are coordinated through the appropriate local FDO before the form is sent to the TO warehouse. Bypassing the releasability process could result in foreign customers receiving TOs which might not have been releasable to them.

10.13 SHIPPING/DISTRIBUTION RECORDS.

With the advent of print and distribution through DLA Document Services TODPS, confirmation of order completion (including distribution) is sent to the TO Manager or designee.

10.14 TECHNICAL ORDER WAREHOUSES AND REPOSITORIES.

TO warehouses are normally located at ALCs, but the functions may be carried out by contractors or individual PM organizations at other locations. Warehouses perform the stock, store and issue functions of the TO system for the local PMs. Repositories serve the same general functions for digital TO files as warehouses do for paper and other physical TO distribution media.

10.14.1 Manage Backorders. Requisitions are backordered when the stock balance reaches the Reorder Pt. Qty, unless the TO is being provided through POD. JCALS generates a "BB" status code (TO 00-5-1) when requisitions submitted from ETIMS or on line using JCALS order Publication screen are backordered. JCALS will send an internal "Reorder Notification" message to the TO/Distribution Manager when stock is depleted below the Reorder Pt. Qty. The manager must generate a "Backorder Report by Publication" to determine backorder levels. TO Managers will:

10.14.1.1 Clear the pipeline of requisitions and request the warehouse to perform a physical inventory of remaining stock. Coordinate with all affected agencies to determine future needs for the TO and if there are other special conditions (e.g., an in-work revision). Initiate reprint action as required.

10.14.1.2 Expedite stock replenishment actions to avoid accumulation of backorders. Follow-up on reprint action when backorders are 30-60 days old.

10.14.2 TCTOs. When TCTOs are within 150 days of rescission, fill existing backorders for these TCTOs using any Reserve Stock available. Do **not** reprint the TCTOs to fill backorders. After transfer of residual stocks, the Army warehouse will fill requisitions if there is any back-up stock. If the program has transitioned to the TODPS, requisitions will be filled through POD.

10.14.3 Repositories. TO Repositories may be established by AFMC Centers and TO Proponents to manage digital TO files for internal use only. See paragraph 10.15 for the official Air Force TO Archives.

10.14.3.1 Individual Center or weapon system repositories are used to provide controlled access to TOs for those requiring digital copies for management, publication and printing. Restricted TO files must have individual access controls such as user name/password or PKI certification and be encrypted IAW AFI 33-129.

10.14.3.2 Access to repositories must be limited to those personnel and organizations authorized access to the TOs contained therein. In some cases, this may require partitioning the repository to limit access to various different classes of users.

10.15 OFFICIAL AIR FORCE TECHNICAL ORDER ARCHIVES (REPOSITORY).

10.15.1 Business Practice. One copy of every published TO and TCTO basic, revision, change and supplement must be preserved in the official Air Force TO Archive to comply with record retention provisions of the Federal Records Act and to ensure preservation for Air Force needs. This includes COTS manuals which have been adopted into the TO System and given a TO number. See exceptions in paragraph 10.15.1.3. TOs are held for 6 years after they are rescinded, contracts are closed and the supported equipment is dropped from AF inventory (Air Force Records Disposition Schedule, https://www.my.af.mil/gcss-af61a/afrims/afrims/, Table 33-40, *Specialized Publications* ; Rule 3, *Technical Orders*). Due to Archive space limitations, all archival material will be submitted digitally on CD-ROM or DVD.

10.15.1.1 OC-ALC/ENGLA is the custodian of the official Air Force TO Archive Library. OC-ALC/ENGLA Archive personnel will compare issue data on the TOs and updates submitted for filing. A location number will be assigned to the correct and complete JCALS TM record. When index discrepancies are found, Archive personnel will notify the TO Manager to update JCALS TM index screens with necessary corrective action.

10.15.1.2 Reproduced copies of inactive TOs required to perform assigned duties are obtained from OC-ALC/ENGLA IAW TO 00-5-1 and procedures in paragraph 10.15.3 below.

10.15.1.3 EXCEPTIONS: JNWPS TOs managed by 708 NSUS AF NWC are archived by the Defense Threat Reduction Agency (DTRA). DTRA also archives nuclear EOD TOs. Air Force-only nuclear TOs indexed in TO 0-1-11N-1-CD-1 will continue to be archived at Tinker AFB. Nonnuclear EOD TOs are archived by NAVEODTECHDIV at Indian Head Md.

10.15.2 Transfer to the National Museum of the USAF. Semiannually, OC-ALC/ENGLA sends the list of TOs to be deleted from the Archives to National Museum of the USAF, Wright-Patterson AFB OH, to offer the TOs for possible inclusion in the museum historical collection. OC-ALC/ENGLA must obtain written permission from the data source to release TOs for museum use if proprietary data is involved, IAW Air Force Records Disposition Schedule (https://www.my.af.mil/gcss-af61a/afrims/afrims/). Any conditions imposed by the contractor will be stipulated in the transfer agreement. Upon receipt of the list of requested TOs, OC-ALC/ENGLA forwards them to the National Museum of the USAF and disposes the remaining TOs.

10.15.3 Servicing Requests for Inactive TOs. TCMs, in coordination with TO Managers, determine the releasability of inactive TOs IAW DoD 5200.1-R, DoDD 5230.24, DoDD 5230.25, DoD 5400.7-R/AF Sup, AFI 61-204, TO 00-5- 1, and other applicable directives. Requests for inactive TOs are sent to the responsible PM for review, and forwarded to OC-ALC/ENGLA after approval.

10.15.3.1 Approving Officials. Requests must be signed by the person(s) authorized to make emergency requests. Each PM furnishes a list of authorized approving officials to OC-ALC/ENGLA annually. OC-ALC/ENGLA cannot accept requests for inactive TOs directly from other requesters.

10.15.3.2 Screening Requests. The PM review includes screening requests for inactive TOs against the JCALS TM Index to ensure that a requested TO is in fact inactive (requests for active TOs must be filled from stock), and using the JCALS "Manage Repository; Repository Status Report" TM process to determine if the requested TO is available in the Archives or has been purged.

10.16 TECHNICAL ORDER STOCK DISPOSAL ACTIONS.

NOTE

Once an AF TO is migrated to TODPS, all TO warehouse stock will be destroyed and stock location removed from JCALS.

TO/Distribution Managers will:

10.16.1 Incomplete Sets. Request the warehouse to destroy incomplete sets of basic TOs, TO Page Supplements (TOPS), supplements and changes IAW TO 00-5-1 when complete reprints are received. When using the POD process through the DLA Document Services TODPS, destroy any incomplete sets after the first revision or update is published.

10.16.2 Procedures. Use the JCALS "Manage TM Index; Update an Index Entry" process to supersede a TO, TO supplement or TCTO for Air Force and FMS. Use JCALS "Manage TM Numbering; Rescind a TM" to rescind a TO, TO Supplement or TCTO. Notify the warehouse to dispose of existing stocks of the TO/TCTO and associated increments when a TO or TCTO is superseded or rescinded for Air Force and FMS. Direct the warehouse to dispose of supplements only when superseded by incorporation into a TO change. The deleted TO version/increment records will remain in JCALS until the TO Manager submits an IRTS or HDRC report requesting their removal.

10.16.3 Other Service Joint Users. Notify other service users IAW AFJI 21-301 when the Air Force decides to rescind a joint-use publication for which AF is the cognizant activity. Remaining stock will be disposed of according to the previous paragraph.

REPRODUCTION ASSEMBLY	DATE	SHEET OF
TITLE/NUMBER AND SECURITY CLASSIFICATION	WORK ORDER NUMBER	

TYPE OF JOB
☐ ORIGINAL ☐ CHANGE ☐ REVISION ☐ SUPPLEMENT ☐ REPRINT

*SYMBOL	PAGE NO.	FIGURE NO.	HALF-TONE	LINE	STRIP-IN	COLOR	FOLD-OUT			SPECIAL INSTRUCTIONS
							FOLDS	PAGES	BLANKS	
SUB TOTALS										

FINAL CHECK TOTALS ONLY

TOTAL PAGES	BLANK PAGES	COLOR PAGES	BLACK AND WHITE PAGES
STRIP-IN	NEGATIVE ART	HALFTONE	LINE
A FOLD	B FOLD	C FOLD	
2 COLORS	3 COLORS	4 COLORS	5 COLORS

TRIM
☐ 3 SIDES
FOURTH SIDE WILL BE PERFORATED
☐ 4 SIDES

* LETTER IN THIS COLUMN MEANS FOLLOWING
R - REPRODUCIBLE COPY F - FOLDOUT D - DIGITAL
N - NEGATIVE B - BACKUP
(If all material is same, R or N on top line only is adequate)

ASSEMBLER, + ADDRESS, + PHONE, + E-MAIL

+ PRINTER WILL USE IF NECESSARY TO CONTACT

AFTO IMT 30, 20050831, V1 **PREVIOUS EDITION IS OBSOLETE**

H0617153

Figure 10-1. AFTO Form 30 (Sheet 1 of 2)

AFTO IMT 30 COMPLETION INSTRUCTIONS

1. FILL OUT HEADING INFORMATION AS INDICATED, LEAVING "WORK ORDER NUMBER" BLANK. NUMBER THE SHEETS 1, 2, 3.....THRU N OF N SHEET.

NOTE

ENTER EACH PAGE SUBMITTED ON A SEPARATE LINE. IF TWO OR MORE NEGATIVES MUST BE COMBINED ("stripped in") TO MAKE A SINGLE PAGE, ENTER EACH NEGATIVE ON A SEPARATE LINE.

2. "SYMBOL" COLUMN: ENTER "R" FOR REPRODUCIBLE COPY, "N" FOR NEGATIVES, "F" FOR FOLDOUT PAGES, OR "B" FOR BACK UP PAGES. ENTER "D" FOR DIGITAL REPRODUCTION FILES.
3. "PAGE NO." AND "FIGURE NO." COLUMNS. ENTER INDICATED DATA.
4. "HALF-TONE," "LINE," AND "STRIP-IN" COLUMNS. ENTER THE NUMBER OF HALF TONE IMAGES LINE DRAWINGS, OR STRIP-INS REQUIRED TO FINISH EACH PAGE (TOs normally require strip-ins except for color).
5. "COLOR" COLUMN. LEAVE BLANK FOR BLACK PRINTING, THE NUMBER OF PAGES IN "BLACK AND WHITE" (under FINAL CHECK TOTALS) WILL SUFFICE. WHEN PRINTING IN TWO OR MORE COLORS, ENTER "2," "3", "4," OR "5". COLOR PRINTING FOR TOs IS STRONGLY DISCOURAGED.
6. "FOLDOUT" COLUMNS. ENTER THE NUMBER OF FOLDS, NUMBER OF INDIVIDUAL PRINTED PAGES AND NUMBER BLANK PAGES AS INDICATED.
7. "SPECIAL INSTRUCTIONS" COLUMN: ANY OTHER INFORMATION PERTAINING TO PRINTING THE PUBLICATION.
8. "SUBTOTALS" ROW: ENTER THE TOTAL NUMBER OF PAGES (number of lines used on this page) LISTED AND SUMS OF THE NUMBERS OF LINES WITH ENTRIES ON THIS PAGE IN THE OTHER OPEN COLUMNS.
9. "FINAL CHECK TOTALS ONLY" SECTION: ON THE FIRST PAGE ONLY, ENTER THE SUMS OF THE "SUBTOTALS" ROWS FOR ALL PAGES SUBMITTED.
10. "ASSEMBLER, ADDRESS, PHONE, E-MAIL" BLOCK. ENTER THE REQUIRED INFORMATION FOR THE POINT OF CONTACT IF QUESTIONS ARISE ABOUT THE PRINT ORDER.

AFTO IMT 30, 20050831

H0617154

Figure 10-1. AFTO Form 30 (Sheet 2)

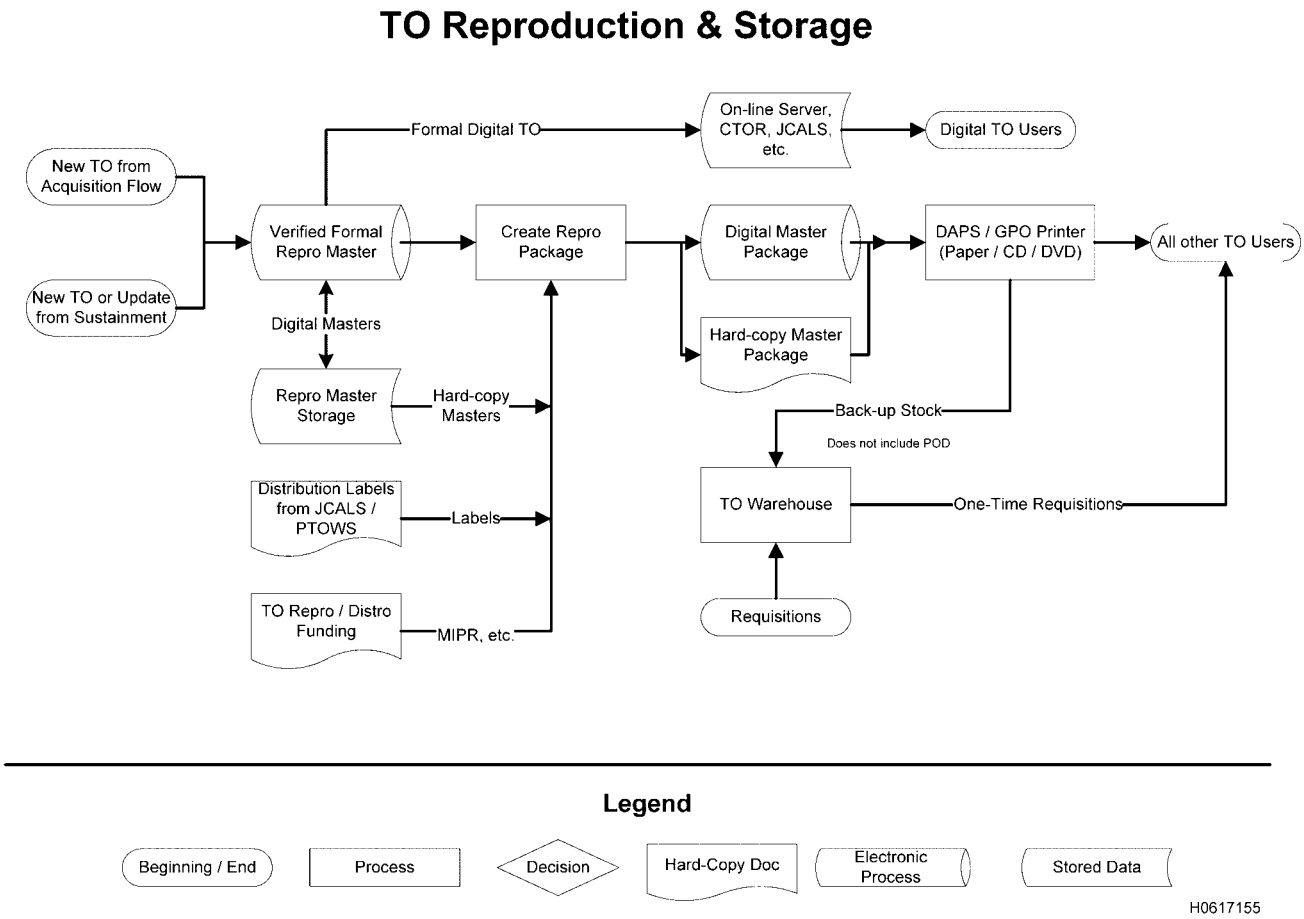

Figure 10-2. TO Reproduction and Storage Flow Chart

CHAPTER 11
TECHNICAL ORDER UPDATES DURING ACQUISITION

11.1 GENERAL.

This chapter describes acquisition-phase procedures for updating TOs and PTOs, as well as use of the formal TO Improvement System (JCALS RCs, AF Forms 847 and AFTO Forms 22) during acquisition. Sustainment-phase TO updating procedures are in Chapter 12. The ECSS Recommended Change process must be used when it becomes available and supports unique weapon system IETM change processes. Requirements for submitting updates to formal TOs are in TO 00-5-1. The TO Manager is responsible for ensuring that TOs remain current and accurate throughout the acquisition phase by contracting for TO updates.

11.1.1 RFPs and Contracts. The RFP ITO section must address TO maintenance as a requirement of the program. The contractor will propose coverage requirements and update cycles. Best practice is to contract for TO maintenance in renewable options once the initial TO development contract is completed, to allow the Air Force to select the most economical time to assume the TO maintenance role.

11.1.2 Engineering Change Proposals (ECP). Updates to TOs as a result of an ECP are normally considered to have the same contractual status as the ECP. In other words, if the ECP is in the scope of the contract, so is the TO update; if the ECP is out of scope, the cost for updates to the TOs must be included in the ECP costs.

11.1.3 Update Submittal. Updates are submitted on several different forms, known collectively as Recommended Changes (RC). RCs for PTOs are generally submitted on AFTO Forms 27 (Figure 11-1) or AFTO Form 158, *Technical Order Review Comment Sheet* (Figure 11-2) IAW procedures specified in the program TO Management Plan. The AFTO Form 27 may also be used in lieu of the AF Form 847 for preliminary Flight Manuals. The TO Manager or FMM may specify use of the AFTO Form 22 or AF Form 847 for reporting deficiencies on formal TOs and PTOs used by operational units during program acquisition. Route AFTO Forms 22 and AF Forms 847 as specified by the TO Manager/MC. Routing all recommended changes through a (Central) TO Control Unit (CTOCU/TOCU) will reduce the administrative burden on TO managers.

11.1.4 Update Approval and Incorporation. The TO Manager will document program procedures for evaluating and approving RCs in the TOMP. The TO Manager must ensure that all involved agencies are made aware of the routing and approval requirements. Because the Air Force may not have the capability to perform an engineering evaluation of suggested changes during acquisition, the contractor is often tasked to provide this support. Normally, a TO Review Board (TORB) and Flight TO Review Board (FTORB) are established to review, approve and determine verification requirements for all proposed PTO updates. After updates are approved by the TORB/FTORB, the TO Manager sends them to the contractor for incorporation in the affected TO.

11.1.5 Formal TOs. Unless otherwise specified by the TO Manager/FMM, RCs will be routed through JCALS after TOs are formalized.

11.1.6 Preparation. Prepare updates organically whenever possible, or acquire them from the original equipment manufacturer (OEM) or overflow contractors. TO updates will not include instructions for “write-in” changes, except IAW TO 00-5-1.

11.1.7 Verification. All changes to technical data procedures, no matter how they are published (TO Change or Supplement, AFMC Form 202, *Nonconforming Technical Assistance Request and Reply*, etc.), shall be verified by performance or as otherwise specified by this TO. Performance verification of TO updates related to a TCTO shall be accomplished concurrently with the TCTO verification.

11.2 TYPES OF PRELIMINARY TECHNICAL ORDER UPDATES.

The types of updates used with formal TOs (TO 00-5-1) will also be used with PTOs during acquisition. In addition, an approved AFTO Form 27 (Figure 11-1) may be inserted into the PTO as an interim update. This would normally be done only in cases of work stoppage or to eliminate safety hazards. The TO Manager must issue an index page with each RC/update to identify all current updates; the index page will be dated and identify the PTO, updates, and organizations affected.

11.3 PROCEDURES FOR AFTO FORM 27.

11.3.1 General. The AFTO Form 27 is the primary vehicle for submitting updates and improvements to PTOs. The AFTO Form 27 will be used by the TO verification team, and, when authorized by the TO Manager, other users of PTOs on all programs. The criteria for submitting and processing Emergency, Urgent and Routine AFTO Forms 27 are specified in paragraph 11.4 below. Completion instructions are in Figure 11-1.

11.3.2 Use Period. The TO Manager is responsible for determining when the AFTO Form 27 will no longer be used to recommend updates or improvements to PTOs. This is normally after verification has been completed. However, prior to issue of formal TOs, the TO Manager may continue to manage the TO update program outside JCALS, and may use any of the above forms until that time.

11.4 PROCESSING AFTO FORM 27.

RCs and updates are categorized as Emergency, Urgent or Routine (TO 00-5-1). Base the update category on its impact to the system or commodity mission effectiveness, safety or maintainability. Limit Emergency and Urgent submittals to technical and safety-related changes. Hold non-technical changes to paper TOs for implementation with routine technical updates on the affected or backing pages. All updates to TOs distributed and used only in digital format should be incorporated into the master TO file prior to distribution. AFTO Forms 27 containing data from or about restricted distribution TOs (preliminary or formal) must be distributed IAW paragraph 10.9. Updates must be published within the time limits specified in Table 12-1. Changes to report catagories will not be made without the express concurrence of the TO Manager and the submitting MAJCOM.

11.4.1 Emergency RCs. Recommendations for correcting a deficiency in a TO which, if not corrected, WOULD result in fatality or serious injury to personnel, destruction or extensive damage to equipment or property, or inability to achieve or maintain operational posture (MISSION ESSENTIAL), including field-level work stoppage.

11.4.1.1 Emergency RCs will be submitted IAW paragraph 10.9, Electronic Distribution of Technical Orders. When not an electronic transmission of the AFTO Form 27, the relevant data entries from the form must be included in the RC e-mail message.

11.4.1.2 The TO Manager or designated representative must acknowledge receipt of Emergency RCs within 24 hours of transmission. If acknowledgment is not received, the initiator must follow-up on the report.

11.4.1.3 The TO Manager or designated representative must provide written corrective action or downgrade the RC within 48 hours (72 hours for work stoppage) of receipt.

11.4.2 Urgent RCs. Recommendations for correcting a deficiency in a TO which, if not corrected, COULD result in personnel injury, damage to equipment or property, reduce operational efficiency or jeopardize the safety or success of mission accomplishment. All TCTO deficiencies and HAZMAT/ODS reports are submitted as urgent.

11.4.2.1 Urgent RCs will be transmitted by electronic means (see paragraph 10.9.2).

11.4.2.2 The TO Manager or designated representative must acknowledge receipt (and downgrade if applicable) of Urgent RCs within 48 hours of transmission. If acknowledgment is not received, the initiator must follow-up on the report.

11.4.2.3 The TO Manager or designated representative must provide written corrective action for approved Urgent RCs or downgrade the RC within 15 calendar days.

11.4.3 Routine RC. All other recommendations for update/improvement not requiring emergency or urgent action will be submitted electronically as routine RCs.

11.4.3.1 The TO Manager or designated representative must reply to routine reports within 30 calendar days of receipt, advising of action taken and the reason when disapproved.

11.4.3.2 Approved reports which could be eligible for submission of an after-the-fact idea (paragraph 11.9) will have block 18 annotated with the expected tangible or intangible benefits and justification (AFI 38-401, *The Air Force Innovative Development through Employee Awareness (IDEA) Program*).

11.4.4 Disposition. The TO Manager or designated representative will forward approved RCs to the contractor for incorporation in the next update to the PTO or TO.

11.4.5 Interim Update Procedures. If approved routine reports cannot be published within 210 days of receipt by the reviewing agency, an Interim Safety or Operational Supplement (ISS, IOS) (Chapter 13), or permission to use the approved AFTO Form 27 procedures will be generated by the TO Manager if requested by the users. These interim procedures do not have to be replaced until the next TO change/revision is published.

11.5 CONTROL AND TRACKING OF RECOMMENDED CHANGES.

The TO Manager must develop a system to track and control RCs from the time requests are received or generated until incorporation into the TOs. Specific items to be recorded include date received/initiated, action taken, date disapproved or forwarded to contractor, and date incorporated. The method for tracking will be specified in the TOMP. AFTO Forms 27 must be maintained on file for at least two years, IAW the Air Force Records Information Management System (AFRIMS) Records Disposition Schedule, https://www.my.af.mil/gcss-af61a/afrims/afrims/.

11.6 CLASSIFIED RECOMMENDED CHANGES.

RCs containing classified data will be marked with the proper classification and appropriate downgrading and declassification instructions IAW DoD 5200.1-R/AFI 31-401. The program Security Classification Guide (SCG) will be referred to when determining if classified data is included. Unclassified RCs on classified TOs will be marked “This is an unclassified AFTO Form ___ on a classified manual.” Security violations involving TOs will be reported IAW DoD 5200.1-R/AFI 31-401, not by use of a RC.

11.7 TECHNICAL ORDER UPDATES DUE TO EQUIPMENT MODIFICATION OR REPLENISHMENT SPARES PROCUREMENT.

New specification requirements, modifications and replenishment spares procurement can result in new inventory items for replacement or replenishment issue. New TOs may be required and/or existing TOs updated or rescinded.

11.7.1 Coordination and Advisement. The TCM will coordinate with the reparable assembly or system PM to determine if safety, life support or critical systems are involved. The TCM and TO Manager will identify and advise affected TO Managers, PMs, SAP users and other DoD agencies (Army, Navy, etc.) of the proposed new or modified equipment/end item and recommend updating of affected TOs. Advisement must include known systems or commodities TOs, when stocks of the original equipment/end item TOs will be exhausted, and specific TO updates required (if known). Coordination and advisement requirements are not required for common NSC items (e.g., nuts, bolts, resistors, etc.) unless safety, life support, or critical systems or material are involved.

11.7.2 Processes. In conjunction with the TO Manager, the TCM will initiate acquisition of new TOs or TO updates for commodities/equipment/end items under TCM control. Notify the TO Manager in writing to rescind obsolete TOs as required. Keep using commands informed of the TO status and anticipated publication date(s). Follow up with the Using Command to ensure TO updates are distributed and support requirements of users have been satisfied.

11.8 UPDATE DISTRIBUTION AND FILING.

The provisions of TO 00-5-1 do not apply to the distribution of PTO updates or RCs approved for use with PTOs during acquisition. The TO Manager must make arrangements to provide copies of approved updates to all affected users of the PTOs. RACs, ISSs and IOSs to PTOs will be posted the same as for formal TOs. RCs approved for operational use will be posted like the Interim TOs. Operational PTO files will contain only those RCs/updates which apply to that organization; reference files may contain all RCs/updates applicable to the command.

11.9 RECOMMENDED CHANGES AND THE INNOVATIVE DEVELOPMENT THROUGH EMPLOYEE AWARENESS (IDEA) PROGRAM.

11.9.1 Restrictions. After-the-fact IDEAs may only be submitted on approved routine RCs to PTOs in acquisition if they provide an improved work procedure or method, such as welding in lieu of fasteners, or local repair instead of discard.

11.9.2 Ineligible Updates. RCs identifying errors in TOs or procedures prior to verification, i.e., wrong screws, erroneous measurements, incorrect references, typographical errors, etc., are ineligible for the IDEA program. Corrections of this type are an integral part of the verification process.

11.9.3 Submission. Submit the improvement or enhancement from an approved RC through the IDEA Program Data System (IPDS), attaching a copy of the approved RC to the idea. The IDEA evaluator (normally the same individual who

approved the RC) will determine Job Responsibility, validate savings/benefits, and recommend approval of the idea. IDEA benefits must be documented in IPDS when the submittal is made. The IPDS will base the award on the validated RC data. If the RC is not eligible for an after-the-fact IDEA award, the IDEA evaluator will indicate the reason for disapproval in IPDS.

11.9.4 Stand-Alone Ideas. Stand-alone ideas that do not recommend specific TO updates will be evaluated and approved or disapproved IAW AFI 38-401.

PRELIMINARY TECHNICAL ORDER (PTO) PUBLICATION CHANGE REQUEST (PCR)/TO VERIFICATION RECORD/APPROVAL

AUTHORIZED USE: THIS FORM WILL BE USED ONLY AS DIRECTED BY THE ACQUISITION TECHNICAL ORDER MANAGER IAW TO 00-5-3

I. ROUTING AND IDENTIFICATION

1. TO *(TOMA/Designated Representative)*	2. FROM *(Organization reporting)*	3. CONTROL NUMBER

4. PUBLICATION NUMBER	5. DATE OF PUBLICATION	6. CHANGE NO./ DATE	7. PARAGRAPH/FUNCTION NO.(s)	8. FIGURE

9. PAGE(s)	10. NATURE OF FORM ☐ PCR *(Section II)* ☐ VERIFICATION *(Section III)*

11. ORIGINATOR'S/SYSTEM VERIFICATION MANAGER'S (SVM) SIGNATURE	DATE
12. ORIGINATOR'S SUPERVISOR/VERIFICATION TEAM MANAGER'S SIGNATURE	DATE

II. PUBLICATION CHANGE REQUEST

13. NATURE OF PCR	14. DATE PCR RECEIVED	15. ACTION TAKEN	16. DATE PCR ACTION CLOSED
☐ EMERGENCY ☐ URGENT ☐ ROUTINE		☐ APPROVED AS WRITTEN ☐ APPROVED WITH MODIFICATION ☐ DISAPPROVED *(See Block 17)*	

17. STATEMENT OF DEFICIENCY *(Attach additional sheets if required)*

18. RECOMMENDED CHANGE *(Attach additional sheets or mark up copy if required)*

VERIFICATION REQUIRED ☐ YES ☐ NO

AFTO FORM 27, 20071205 **PREVIOUS EDITION IS OBSOLETE**

H9601663

Figure 11-1. AFTO Form 27, Preliminary Technical Order (PTO) Publication Change Request (PCR)/TO Verification Record/Approval (Sheet 1 of 3)

III.	VERIFICATION RECORD
19. CONTRACT NUMBER	20. VERIFICATION DATES A. START _____ B. COMPLETE _____
21. VERIFICATION SITE	
22. TYPE VERIFICATION ☐ A. PERFORMANCE ☐ B. SIMULATION ☐ C. DESK-TOP ANALYSIS	
23. DEVIATIONS *(List any equipment or procedures not in accordance with the Technical Order)*	
24. PCR DISPOSITION/VERIFICATION RESULTS	
25. RECOMMEND FORMALIZATION ☐ YES ☐ NO	

IV.	DISPOSITION AND APPROVAL	
26. TECHNICAL ORDER REVIEW BOARD/FLIGHT TECHNICAL ORDER REVIEW BOARD (TORB/FTORB) AND TOMA USE ONLY		
REVIEW BOARD (a)	REVIEW BOARD DISPOSITION (b)	SIGNATURE AND DATE (c)
(1) USING COMMAND		CLICK HERE TO SIGN
(2) ILS MANAGER/EQUIPMENT SPECIALIST		CLICK HERE TO SIGN
(3) CONTRACTOR		CLICK HERE TO SIGN
(4) TOMA/DESIGNATED REPRESENTATIVE		CLICK HERE TO SIGN
(5) OTHER		CLICK HERE TO SIGN
(6) OTHER		CLICK HERE TO SIGN
(7) OTHER		CLICK HERE TO SIGN

AFTO FORM 27, 20071205

H0505714

Figure 11-1. AFTO Form 27, Preliminary Technical Order (PTO) Publication Change Request (PCR)/TO Verification Record/Approval (Sheet 2)

AFTO FORM 27 COMPLETION INSTRUCTIONS:

AFTO IMT 27 entries shall be typed, and the forms shall be routed electronically. The AFTO IMT 27 will be completed as follows:

SECTION I, ROUTING AND IDENTIFICATION:

BLOCK 1 - TO (TO Manager/Designated Representative): Enter the complete 3/4-line address from either the TO Verification Status Page (VSP) or as directed by TO Manager letter/message through the MAJCOM.

BLOCK 2 - FROM (Organization Reporting): Enter the complete 3/4-line address of the organization submitting the RC or conducting the verification.

BLOCK 3 - CONTROL NUMBER: Leave blank; the TO Manager will assign this number as specified in the program TOMP.

BLOCKS 4 thru 6: Self-explanatory.

BLOCKS 7 and 8: If more than one paragraph, function or figure is involved, enter "See Block 17" and enter the specific paragraph, function or figure numbers there.

BLOCK 10 - NATURE OF FORM: Enter an "x" in either "PCR" (Section II) or in "Verification" (Section III). This indicates which sections of the form to complete. If a verification record AFTO IMT 27 also contains recommended TO updates, put an "x" in both blocks.

BLOCK 11 - ORIGINATOR'S/SYSTEM VERIFICATION MANAGER'S (SVM) SIGNATURE and DATE: Enter the full name, grade, DSN number and signature of the originator or SVM, and the date signed. This block establishes ownership for any subsequent suggestions submitted.

BLOCK 12 - ORIGINATOR'S SUPERVISOR/VERIFICATION TEAM MANAGER'S SIGNATURE and DATE: The responsible individual will review the form for accuracy, duplication, etc., and will indicate AFTO IMT 27 approval by entering name, grade, DSN number, signature and the date. Disapproved forms will be returned to the originator with an explanation of the disapproval action. Approved forms will be forwarded as directed by the TO Manager.

SECTION II, PUBLICATION CHANGE REQUEST:

BLOCK 13 - NATURE OF PCR: Enter an "x" to indicate the category of the update request. An "x" in either "EMERGENCY" or "URGENT" requires immediate TO Manager action and preparation of an Interim Operations or Safety Supplement, or TO Page Supplement to preclude work stoppage or possible injury to personnel.

BLOCKS 14 thru 16: Leave blank; the TO Manager will complete.

BLOCK 17 - STATEMENT OF DEFICIENCY (Attach additional sheets if required): Enter a concise description of the deficiency or deficiencies discovered.

BLOCK 18 – RECOMMENDED CHANGE (Attach additional sheets or mark-up copy if required). When recommended changes are included, word them exactly as the change should appear in the TO. If the wording is not known, that is, the update will require engineering or research beyond the capability of the reporting unit, specify the type of change required (e.g., "Add more in-depth fault isolation procedures for the _____ subsystem.") and add the statement "Unable to develop at field level."

Minor corrections may be entered in this block and on continuation sheets. Larger corrections may be attached as mark-up copies of the procedures or paragraphs verified. If additional sheets or mark-up pages are required, indicate the number of pages in this block.

Attaching "mark-up" copies of TO pages or procedures is encouraged when this would clarify the changes requested.

At the bottom of Block 18, put an "x" in either VERIFICATION REQUIRED? "YES" or "NO" to indicate whether the recommended procedures OR the verification recorded on the reverse requires (re-) verification.

SECTION III, VERIFICATION RECORD: (AFTO IMT 27 Reverse)

BLOCKS 19 thru 22: Self-explanatory.

BLOCK 23 – DEVIATIONS: List any deviations to TO-specified procedures or support equipment which occurred during the verification. The deviations must have been approved by the TO Manager or Verification Team Manager. Document verification waivers in this block, including the justification and approving official name/office symbol. For verification of multiple tasks, or for complex tasks with numerous corrections, an AFTO IMT 158 may be used in conjunction with the AFTO IMT 27.

BLOCK 24 – RESULTS: Enter a narrative description of the verification results.

If verification of multiple procedures or sections is being reported, list them in this block. For verification of multiple tasks, or for complex tasks with numerous corrections, AFTO IMTs 158 may be used in conjunction with the AFTO IMT 27.

Enter either "Verified as written" or "Verified, corrections required (See Block 18)."

BLOCK 25 – RECOMMEND FORMALIZATION?: Enter an "x" in either "YES" or "NO."

SECTION IV, DISPOSITION AND APPROVAL:

BLOCKS 26a thru 26c: Leave blank; completed by the TORB/FTORB as directed by the TOMP. Block 26b must indicate whether formalization is or is not approved, and whether or not pre-publication review is waived.

BLOCK 26a(4) – TO MANAGER/DESIGNATED REPRESENTATIVE: For flight manuals, the Flight Manual Manager (FMM) or FMM representative will sign this block.

H0909998

Figure 11-1. AFTO Form 27, Preliminary Technical Order (PTO) Publication Change Request (PCR)/TO Verification Record/Approval (Sheet 3)

TECHNICAL ORDER REVIEW COMMENT SHEET *(RESTRICTED WHEN FILLED IN, BASED ON RESTRICTION OF T.O. BEING REVIEWED)*			PAGE 1 OF 1 PAGES
TECHNICAL ORDER NUMBER	TITLE		
NAME OF REVIEWER		ORGANIZATION	PHONE

PAGE NUMBER	PARAGRAPH OR FIGURE NUMBER	COMMENTS

AFTO FORM 158, 20080813 **PREVIOUS EDITION IS OBSOLETE**

H0617395

Figure 11-2. AFTO Form 158, Technical Order Review Comment Sheet

CHAPTER 12
TECHNICAL ORDER CHANGE PROCESSING DURING SUSTAINMENT

12.1 JCALS FUNCTIONS AND CORRESPONDING FORMS.

All TO change recommendations and submittal methods are known collectively as "Recommended Changes (RCs)."

12.1.1 JCALS "Recommend a TM Change" Function. This JCALS function provides system users the capability to document, submit, review, evaluate and track processing of recommended TO changes (discrepancies or improvements). The JCALS Desktop Instructions (DI) contains procedures for initiating and submitting RCs using JCALS. Non-JCALS users will continue to use the AF Form 847/AFTO Form 22/AFTO Form 27 processes for submittal and review.

12.1.2 JCALS Prepare TM Change Package Function. Approved RCs from all sources are aggregated by TO and used by the TCM to develop a TO update package that will document the exact wording of approved changes for publication in the TO update. The JCALS Prepare TM Change Package function or a digital AFTO Form 252, *TO Publication Change Request*, change package will be used until ECSS subsumes the JCALS function.

12.1.3 ECSS Recommended Change. When the ECSS becomes available, its RC function must be used to submit, review, evaluate and provide status of all proposed TO changes. The use of AF and AFTO forms will no longer be authorized. The ECSS will provide a single screen format for electronic submission of proposed corrections and enhancements to both flight and non-flight manual TOs. Workflows will route the formats for review and evaluation IAW AFI 11-215 and TO 00-5-1 procedures. Training on use of the new TO Management System will be provided via help screens.

12.1.4 AFTO Form 22. TO 00-5-1 contains practices and detailed instructions for initiating, reviewing and evaluating AFTO Forms 22. Completed forms are submitted via e-mail IAW paragraph 10.9.2 and, if approved, a JCALS "Recommend a TM Change" work folder is prepared by the TO Manager or TCM.

12.1.5 AF Form 847. AFI 11-215 contains policy and procedures for use of AF Forms 847 for submitting changes to Flight Manual Program (FMP) TOs.

12.1.6 AFTO Form 27. Chapter 11 contains policy and procedures for use of AFTO Forms 27 to report discrepancies or recommend improvements to Preliminary TOs. The forms are not entered or tracked in JCALS. The JCALS "Recommend a TM Change" process will only be used to submit proposed changes for preliminary TOs when directed by the TO Manager.

12.1.7 Source, Maintenance and Recoverability (SMR) Code Change Request. Submit an AFTO Form 22 IAW TO 00-5-1 and TO 00-20-3, *Maintenance Processing of Reparable Property and The Repair Cycle Asset Control System*, Table 6-1. Once a recommendation for SMR code change is approved, the TCM will enter the relevant data into a JCALS "Recommend a TM Change" screen for updating the TO.

12.1.8 AFMC Form 202. Depot maintenance activities will use the AFMC Form 202 to request and receive technical data for procedures and repairs beyond existing TO authority, IAW Chapter 5 of AFMCMAN 21-1. AFMC Forms 202 are not RCs, but when the new technical data will be permanent, the data will be included in TOs through use of the JCALS "Recommend a TM Change" process or a digital Special Handling AFTO Form 252 (SH252).

NOTE

When an AFMC Form 202 is written against processes used at more than one ALC or contract TRC, copies of the approved form will be sent to the other affected process users.

12.1.9 AFTO Form 252. The TO content manager (TCM, FMM, or TO Manager) may use a digital AFTO Form 252 as an alternative to aggregating approved RCs in JCALS and to document word-for-word changes for the specified TO update. A "Special Handling" AFTO Form 252 (SH252) may be issued to expedite a permanent change or RAC to a TO as a result of an AFMC Form 202 that was used to prevent a work stoppage at a depot repair facility. The SH252 will be used to update the TO within 120 days. If the time limits cannot be met, the IOS coversheet will be created by the TO Manager, the SH252 will be attached and the IOS will be published within 120 days.

12.1.10 IETM Change Process. In some cases, IETM RCs may be a built-in function of the IETM database, which will identify where the deficiency is in the database. Non-database RCs must identify the location of the data to be updated within the database. In most cases, this will be a step within a task, or an illustration/table. If necessary for clarity, a screen print of the deficient data will be submitted with the RC.

12.1.11 IUID-Related TO Updates.

12.1.11.1 Engineering Changes. If an IUID-related, engineering change is processed on a component, subcomponent, assembly, or sub-assembly (generically a "part") and a published TO specifies the overhaul, remanufacture, repair (or assembly) of that part, that TO shall be updated to specify the processes and location for marking the item by IUID.

- The IUID marking method shall (in detail or by reference to other TOs) include all inspection procedures, part surface preparation procedures, all mark application procedures, and (unless marked with direct part marking) the data label, data plate, or IUID label part number (e.g. 200945085-XX).
- The marking location specified in the TO shall be specific to the part and shall include sufficient detail to reflect the location and tolerances specified in the EO. In the case of multiple parts with the same configuration (e.g. multiple avionics boxes with the same top level assembly), a common figure with multiple references may be used.
- Program offices may delay IUID-related updates to TOs which are not intended for AFMC depot use.

12.1.11.2 Illustrated Parts Breakdown (IPB). If the IPB is contained in a separate -4 (i.e. not in the repair manual), then the IPB is not to be used to specify the location or the method for marking a part with IUID. If applying IUID to a part changes a part number in the IPB (e.g. if a new data plate is specified which differs from the existing data plate called out in the IPB), then the IPB shall be updated to show IUID; otherwise, the IPB need not be updated to show IUID label location or part number.

12.1.11.3 Implementation. TO updates associated with IUID instructions shall be implemented IAW standard procedures, except as noted below:

- For those IUID instructions which are required against TOs which are only distributed in paper distribution media format, the TO update shall be implemented as a Special Handling 252 (SH252). These IUID SH252s shall contain all of the TO-required information, and may be allowed to remain separate from the TO (i.e. not drive a TO change) for up to 26 months.
- For those IUID instructions which are required against TOs which are distributed in any other distribution media format or combination, the TO update shall be made TO implemented via standard methods except that implementation may be delayed by up to six months. This additional delay will allow the grouping of IUID-driven instructions and will minimize TO change costs.

12.1.12 Special Packaging Instruction (SPI) Related TO Updates. TO updates which may require changes in SPI must be coordinated with the center packaging specialists IAW AFI24-203, *Preparation and Movement of Air Force Cargo*.

12.2 PROCESSING TECHNICAL ORDER RECOMMENDED CHANGES.

RCs and updates are categorized as Emergency, Urgent or Routine (TO 00-5-1). Base the update category on its impact to the system or commodity mission effectiveness, safety or maintainability. Limit Emergency and Urgent submittals to technical and safety-related changes. Hold non-technical changes to paper TOs for implementation with routine technical updates on the affected or backing pages. All updates to TOs distributed and used only in digital format should be incorporated into the master TO file prior to distribution. Updates must be published within the time limits specified in Table 12-1. Changes to report categories will not be made without the express concurrence of the TO Manager and the submitting MAJCOM.

12.2.1 General. This chapter provides procedures for processing of RCs received on any of the above forms or JCALS functions. The AFTO Form 22 is used for illustration purposes, but similar procedures may be used with approved changes originally submitted on any of the above forms or management systems. Initiators will complete and submit digital forms via e-mail IAW paragraph 10.9.2 and TO 00-5-1, or enter recommended changes directly into a JCALS RC screen. System workflows route RCs entered directly into JCALS as required by TO policy.

NOTE

- Proposed changes to nuclear weapon TOs managed by 708 NSUS or EOD TOs managed by the Naval EOD Technology Division are only submitted on AFTO Forms 22 and not entered or tracked in JCALS. When the ECSS becomes capable of managing these TOs, RCs will be submitted on them like other TOs.
- Exceptions to processing times are specified in paragraph 12.2.6.1, paragraph 12.2.6.2, paragraph 12.2.8.1 and paragraph 12.2.8.2.

12.2.2 Emergency RCs. Recommendations for correcting a deficiency in a TO which, if not corrected, WOULD result in fatality or serious injury to personnel, destruction or extensive damage to equipment or property, or inability to achieve or maintain operational posture (MISSION ESSENTIAL), including field-level work stoppage. The TO Manager or designated representative must provide written corrective action or downgrade the RC within 48 hours (72 hours for work stoppage) of receipt.

12.2.3 Urgent RCs. Recommendations for correcting a deficiency in a TO which, if not corrected, COULD result in personnel injury, damage to equipment or property, reduce operational efficiency or jeopardize the safety or success of mission accomplishment. All TCTO deficiencies and HAZMAT/ODS reports are submitted as urgent. The TO Manager or designated representative must provide written corrective action for approved Urgent RCs or downgrade the RC within 40 calendar days.

12.2.4 Routine RC. All other recommendations for update/improvement not requiring emergency or urgent action will be submitted electronically as routine RCs. The TO Manager or designated representative must reply to routine reports within 45 calendar days of receipt, advising or action taken and the reason when disapproved.

12.2.5 TO Updates for Obsolete Systems and Commodities. Obsolete systems and commodities include those still in limited use or scheduled to leave the inventory within two years. Users will continue to submit routine recommended changes for TOs on “obsolete” systems and commodities. However, the TO Manager/TCM will hold routine TO updates in abeyance pending the decision to rescind or update the TO. The TO Manager will provide an adequate schedule for updating the affected TOs when no review is scheduled. In these cases, the updates will normally be published as ITOs or TOPS. The TO Manager will make Emergency and Urgent updates as usual.

12.2.6 TO Manager Procedures. Upon receipt, managers will process RCs within the time limits specified in Table 12-1. Managers will establish routine update schedules for all assigned TOs, depending upon data criticality and volatility, and which meet the Table 12-1 time limits. Aggregate all routine RCs received after the cut-off date (publication freeze date) of the previous update and prior to the cut-off for the next update into a single update package for each TO. The action or response time periods for each RC begin with receipt of the RC by the responsible TO Manager. The periods end when an update is distributed or the RC is disapproved or determined to be a duplicate submission.

12.2.6.1 Exceptions to Evaluation Time. Recommended Changes (RCs) placed in Abeyance, Advisement or Deferred status (TO 00-5-1) are exempt from the time limits specified in Table 12-1.

12.2.6.2 SAP/FMS Procedures. The above policy does not apply to AFTO Forms 22 against CSTOs, received from foreign countries under the Security Assistance Program (including FMS cases), when there are contractual arrangements to maintain the currency of the respective CSTOs (TO 00-5-19).

12.2.6.3 Enter the “Receipt Date: and digitally sign block 4. Ensure the form was routed IAW the standard AF and MAJCOM routing procedures posted on the Tech Order Recommended Change Processing CoP, accessible via the AF portal at https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=OO-TO-00-59. Return incomplete RCs to the PIM (or equivalent) in block 1.

NOTE

Organizational e-Mail accounts at MAJCOM and Lead Command CCPs should follow the procedures at paragraph 10.9.2.3 to exchange AFTO Forms 22 transmitted via signed and encrypted e-mail.

12.2.6.4 Evaluate RCs recommending publication style and format changes, minor typographical errors or new types of TOs, and forward RCs recommending TO technical content changes to the TCM for further evaluation IAW TO 00-5-1. Return an updated copy of all RCs to the PIM (or equivalent) in block 1 and reviewing agencies to provide status.

12.2.6.5 Disapprove RCs submitted on computer program or equipment deficiencies and refer the initiator to TO 00-35D-54, *USAF Deficiency Reporting and Investigating System*, for reporting non-TO deficiencies. Also, disapprove RCs determined to be ineligible IAW TO 00-5-1, Chapter 9, Technical Order Change Process, including multiple RCs submitted to correct a single deficiency.

12.2.6.6 TO Managers will transcribe mandatory information for approved RCs from the above forms into a JCALS "Recommend a TM Change" screen, and include digital copies of the saved forms and any attachments (if applicable) into the resulting JCALS RC work folder. **EXCEPTION** : TO Managers/TCMs may elect to bypass the JCALS System altogether, and record approved RCs on an AFTO Form 252, *Publication Change Request*. In this case, feedback to the submitters is provided by returning updated copies of the RC. Complete the following mandatory fields in the "Recommend A TM Change" screen:

- Local Control No. Field: Enter the Local Control Number from AFTO 22 block 5, or equivalent control numbers from other forms, or for internally prepared RCs, develop a project number IAW paragraph 12.2.7.3.

NOTE

When using an AFTO Form 252, enter the LCNs of all included AFTO Forms 22/AF Forms 847 in Block 5, "PROJECT NUMBER(S)."

- Select the correct priority level.
- Use the Publication No. chooser button to select the affected TO.

NOTE

The affected TO must have a corresponding JCALS TM Index record.

- Enter information into at least two of the following fields: Page No., Paragraph No., Figure No., Table No., Function No., and/or Line/Item/Step No. fields.
- Briefly describe the discrepancy in the Short Description of Deficiency field (200 characters or less). The information entered in this field will be used to assist with identifying the RC, so be as descriptive as possible.
- Either reference the source AFTO Form 22 files in the deficiency field, or enter a complete description of the discrepancy, and identify the military system or commodity when not included in the TO number. Identify commodities by MDS or Type/Model/Series (TMS) and NSN or part number. Omit for General and MPTOs. Include the RC Type ("Correction" or "Improvement" - AFTO Form 22 block 7).
- Either reference the source AFTO Form 22 files in the Recommended TM Change field, or complete IAW instructions for the AFTO Form 22. If verification will be required IAW this TO, indicate whether it is to be by performance/simulation or Desk-Top Analysis/pre-pub review. Include the estimated savings, and IDEA program benefits and amount. Include IDEA benefits justification in the RC work folder.
- Select the "Save" option to save the RC to the work folder (record the name and JCALS control number for future reference). Use the JCALS "Work Folder Manager" function to import the digital AFTO Form 22 (or other RC form) file and any attachment files into the RC.

12.2.6.7 Ensure the TCM has entered ITOs containing permanent TO changes into JCALS RC screens. Ensure **all** ITOs are entered into the JCALS index.

12.2.6.8 Determine the copy freeze date for each assigned TO. Aggregate applicable approved RCs into a JCALS TM Change Package, and submit the completed TO package in a work folder for publication IAW the DI. A local workflow will route packages to the appropriate in-house or contract editorial and publishing function. Use the AFTO Form 252 as an alternative to JCALS in the event that JCALS is not available to the TO Manager, TCM or editorial and publishing function.

12.2.6.9 Provide any special instructions in the change package work folder (e.g., the list of TO increments to be listed in the title page supersedure notice). AFMC Form 202 control numbers shall be incorporated into SH252, AFTO 252 and/or IOS supersedures notices when the SH252, AFTO 252 or IOS incorporate procedures of an approved 202.

12.2.7 TCM RC Procedures. Evaluate all RCs affecting the content of assigned TOs. Ensure RCs are appropriate and accurate in every respect. Ensure they comply (or modify the recommendation to comply) with the applicable specification for depth of coverage and Reading Grade Level (RGL).

12.2.7.1 All RCs which could affect the end item OSS&E must be coordinated with the program Chief Engineer or equivalent prior to approval (paragraph 1.4.3).

12.2.7.2 The TCM will initiate a JCALS “Recommend A TM Change” screen (paragraph 12.1.1 and the DI) for emergency RCs (ITO messages) and internally generated RCs. If the TCM is not a JCALS user, responses to an emergency RC will be made using an AFTO Form 22 (or AF Form 847 for FMP publications), and internally generated changes will be documented on an AFTO Form 252. All RCs will have a Local Control Number (LCN).

12.2.7.3 Create an LCN for internally-generated RCs as follows (without the spaces):

5	1M	OCENGLA	8	001	
5					Identifies the RC as FMM, TO Manager or TCM generated
	1M				Command Designator Code for AFMC
		OCENGLA			Preparing activity organization and office symbol (must total 7 characters; use preceding zeros if needed).
			8		Last digit of current calendar year.
				001	Control number; start with 001 each calendar year. If more than 999 internal RCs are generated by any one preparing activity in any calendar year, continue with “A01, A01,... B01, B02,... etc.”

12.2.7.4 When discrepancies are detected during the ECSS data vault construction effort (mining existing IPBs to build the Bill of Materials [BOM] for weapon systems, components and equipment), they will be documented on AFTO Forms 252 with LCNs beginning with four (4). This will allow tracking these discrepancies apart from other TO issues.

12.2.7.5 When implementing IUID instructions, the LCN will begin with three (3) on any associated AFTO 22, SH 252 or AFTO 252. This will allow tracking IUID-related updates apart from other TO issues.

12.2.8 RC Completion. Update the recommendation status (TO 00-5-1) on the screen. Complete the “Disposition” field of the RC screen. Use the exact wording which should be included in the TO for the approved recommendation. Other actions include inputting or changing the priority (default is “Routine”), changing the values of tangible benefits and/or changing benefits from tangible to intangible when appropriate.

12.2.8.1 Use the following guidance in conjunction with TO 00-5-1 when assigning Status Codes in JCALS:

- Abeyance: The maximum allowable time is one year after receipt of the RC for evaluation, plus 180 days for publishing and distribution.
- Advisement: The resolution date will be the maximum RC processing time, extended by any advisement periods.
- Duplicate: Enter the previous AFTO Form 22 or IDEA number, or other source for the original recommended change in the Remarks block. Duplicate status closes the RC.
- Approved: Improvements are considered approved if the intent of the recommendation is incorporated in the TO even if the wording is changed.
- Deferred: Minor changes approved but held for additional changes to the affected page or its backing page. Do not defer minor corrections to TOs distributed and used in digital formats only.

NOTE

“Deferred” is not a choice in JCALS. If a change managed in JCALS must be deferred, use “Abeyance.”

12.2.8.2 Additional JCALS codes are:

- Saved - Indicates the TO Manager has initiated work on the RC, but is awaiting further information before submitting it to the evaluator (TCM).
- Active - When the RC has been submitted to the TCM for evaluation.
- Interim Reply - Interim status has been provided to the initiator.
- Validated - Optional selection for the TO Manager or TCM, depending on the extent of the change and if a contractor

developed the procedures.

- Verified - Optional selection for the TO Manager or TCM depending on whether the change required verification (paragraph 12.2.6.6, 7th bullet).

12.2.8.3 For Emergency recommendations, include a copy of the IOS, ISS, RAC, or ITCTO, or priority downgrade e-mail message in the "Recommend a TM Change" work folder. Coordinate priority downgrades with the initiating MAJCOM CCP. The TO increment or notification e-mail message of downgrading, duplicate RC, or RC disapproval is the only reply to initiators required. Submit coordinated and approved priority ITOs and recommendations to the TO Manager for publication of a formal TO update if required.

12.2.8.4 Reply to PIM (or equivalent) in block 1 using the originally submitted RC form attached to an e-mail (paragraph 10.9.2), or through the JCALS WFM if originally submitted as a JCALS RC. (A copy of the JCALS RC printout with all relevant information shown may be sent instead of the input form.) Document approval/disapproval and processing status changes on the originally submitted RC (digital format, paragraphs 12.1.1 through 12.1.8).

- AF Form 847: complete IAW AFI 11-215.
- AFTO Form 22: complete IAW TO 00-5-1 and this TO. Use copies of the original RC to make "Interim Replies" as required, when downgrading, changing status to advisement or abeyance, or when limiting factors prevent publishing TM updates immediately.

12.2.8.4.1 Use AFTO Form 22 blocks 25 and 26 and the Continuation block to report other actions to the PIM (or equivalent) in block 1, whether the status is advisement, abeyance, approved, disapproved, or duplicate. Complete block 26, Remarks, explaining all actions taken to the initiator, except for abeyance which requires no comments. Enter justification for downgrading the urgency and/or changing the values entered in blocks 21 and 22. Mark either "PERFORMANCE" or "DESK-TOP ANALYSIS/PPR."

12.2.8.4.2 Do not change the AFTO 22 "type" (Improvement or Correction) without the concurrence of the Lead Command or MAJCOM CCP. Include reasons for any modifications to the recommended change and for considering the RC a"duplicate" (if applicable). Also, enter justification for awarding intangible versus tangible IDEA benefits (block 28), or for changing the calculation of tangible benefits for approved "improvement-type" RCs.

12.2.8.4.3 All approved RCs must be coordinated with affected functional OPRs (paragraph 12.5.2) prior to signature and final approval.

12.2.8.4.4 Enter the date the reply is dispatched from the PM/SCM in block 23. Digitally sign block 24 if a supervisor signature is required in block 25. When authorized to release the reply, the TCM may sign block 25 (TO 00-5-1). Do not enter any signatures until all entries on the form are complete. For older versions of the AFTO Form 22, the electronic copy returned to the submitter and reviewers may have "//SIGNED//" entered in AFTO Form 22 blocks 24 and 25.

12.2.8.4.5 A signed copy of all RCs is kept on file for two years or until incorporated (whichever is longer) by the TCM. Complete block 28 on all approved "Improvement-type" AFTO Forms 22.

12.2.8.5 When the TCM has made an interim reply, follow-on replies must be made on or before the specified resolution date. Complete follow-on replies as specified above.

12.2.8.6 Return the annotated copy of the AFTO Form 22 via e-mail (paragraph 10.9.2) to the addressees in blocks 1, 2, 3, 8 and 9 any time the status changes. A copy of the completed JCALS "Recommend a TM Change" screen may be attached or submitted instead of the original form.

12.2.9 Recommended Changes Applicable to Multiple TOs. Technical data are sometimes contained in or affect related data in multiple TOs, some of whose responsibility belongs to different PM/SCM organizations. The TCM responsible for preparing a change package to any TO must make every effort to identify all affected TOs, and coordinate with and submit corresponding changes to the other responsible TCMs.

12.2.10 Recommended Changes Applicable to Depot TOs. Provide an information copy of RCs affecting depot maintenance TOs to the maintenance directorate for planning purposes. This would include updates to TOs used by European/Asiatic depots, contractors, etc.

12.3 EVALUATING RECOMMENDED CHANGES ON JOINT SERVICE TECHNICAL MANUALS.

12.3.1 Air Force-Managed Technical Manuals. Handle proposed changes to Joint Service TMs managed by the Air Force (cognizant activity code F) IAW paragraph 12.2.

12.3.2 TO Manager Procedures for TMs Managed by Other DoD Components. The assigned Air Force TO Manager handles receipt and JCALS entry of proposed changes to Joint Service TMs managed by another DoD component the same as for an RC against an Air Force TO. After evaluation for possible AF adoption, the RC is forwarded to the primary TM Manager for evaluation and possible adoption for all TM users.

12.3.3 TCM Procedures for TMs Managed by Other DoD Components. The Air Force TCM evaluates the recommended TM improvement and determines required actions. If there is no assigned AF TCM, the TO manager will forward RCs to the managing component for evaluation.

NOTE

Downgrading RC priority is not appropriate when the TM is the responsibility of another DoD component.

12.3.3.1 For AF-approved RCs, the TO Manager or TCM issues an Air Force-only routine supplement IAW TO 00-5-1. The TCM then routes the JCALS“Recommend A TM Change”- or an information copy of the approved AFTO Form 22/AFTO Form 252 - to the responsible DoD component IAW AFJI 21-301.

12.3.3.2 The TCM furnishes an information copy of disapproved AFTO Forms 22 to OPR in the responsible DoD component for possible implementation.

12.3.3.3 When an RC is placed in Abeyance or Advisement status, notification of the responsible DoD component is not required. Process the RCs IAW paragraphs 12.3.3.1 or 12.3.3.2 after approval or disapproval. Do not refer duplicate RCs to the other service. Do not use “Deferred” status for RCs against other service TMs.

12.3.4 Change Incorporation. Rescind any AF-only supplement if the managing component incorporates the change in the TM.

12.4 PROCESSING IDEA PROGRAM PACKAGES.

TO 00-5-1 and AFI 38-401 specify the general policies and procedures for handling IDEA inputs (suggestions) affecting the TO System

12.4.1 Stand-Alone Ideas. Stand-alone Ideas which recommend a TO Change will be disapproved for re-submittal on an AFTO Form 22 (or AF Form 847). A stand-alone Idea which does not recommend a TO Change will be evaluated using the IDEA Program Data System (IPDS - https://ipds.randolph.af.mil/ipds/landing_page), even if implementation causes a TO change. Enter approved changes into JCALS IAW paragraph 12.2.6 and the DI. Retain the JCALS“Recommend a TM Change” work folder implementing approved changes, including any documentation used to calculate tangible or intangible savings, for two years IAW Air Force Records Disposition Schedule (https://www.my.af.mil/gcss-af61a/afrims/afrims/).

12.4.2 Confirmatory Ideas. The Idea Analyst will automatically approve a Confirmatory Idea based on an approved “Improvement-type” RC, and base the award on AFI 38-401 and the information provided in the RC. “Correction-type” RCs are not eligible to participate in the AF IDEA Program.

12.4.3 Disputing Findings. If the initiator disputes the IDEA program benefits approved by the TCM, the RC must be returned to the TCM with additional information justifying any requested increase in benefit levels, IAW TO 00-5-1.

12.5 JCALS “PREPARE TM CHANGE PACKAGE” PROCEDURES.

The “Prepare TM Change Package” function must be completed for all TO update actions, including issuance of RACs and to incorporate (replace) interim safety and operational supplements with a formal TO update. It is not required to issue an IOS or ISS.

NOTE

Recommended changes which have not been entered into the JCALS System will not be available to the "Prepare TM Change Package" function. RCs (and ITOs) to be included in a TO update must be entered in JCALS, or require using an off-line, work-around process (such as the digital AFTO Form 252 process, Figure 12-1) to prepare a TO change package.

12.5.1 Technical Content Manager Procedures. The responsible TCM will consolidate approved TO change packages from all sources affecting the same TO using the JCALS "Prepare TM Change Package" process. Include all approved technical RCs stored in JCALS prior to the time limit specified in Table 12-1. Routine editorial RCs (typos, non-technical changes, etc.) to paper TOs, not affecting TO understanding and compliance, may be held until the affected page or backing page is updated for technical changes. RCs include both TCM-generated changes (paragraph 12.2.6) and user-submitted changes. Complete the JCALS "Prepare TM Change Package" screens IAW procedures in the DI. The system will create a work folder and include the selected RCs and any applicable attachments.

12.5.1.1 In conjunction with the TO Manager, review and update the TO Classification and distribution limitation statements as required.

NOTE

The actual RGL can be computed automatically by many word processing and publishing software packages.

12.5.1.2 The TCM will prepare an AFTO Form 124, *Computation of Technical Order Reading Grade Level (RGL)* (AFTO Form 252, Block 15), based on criteria specified below:

- Compute RGL on the entire text when more than 25% of the original text is changed. Exclude original text if the change adds new sections and/or chapters. Example: TO 2J-F100-6, chapters 1 thru 9 (original text) – the addition of chapter 10 would not require recheck of chapters 1 through 9.
- Compute RGL on only the changed text when changing two or more consecutive pages of text.
- Do not compute RGL if changing two or less consecutive pages of text.
- Review existing commercial manuals for RGL. Do not reject or re-write the manuals solely for RGL.
- MIL-STD-38784 specifies an RGL of "9" for Air Force TOs.

NOTE

The MIL-STD-38784 required grade level can be tailored during the contracting process.

12.5.1.3 The TCM (or TO Manager) will obtain an Environmental Assessment if there are any environmental impacts (see AFI 32-7061, *The Environmental Impact Analysis Process*) (Block 16).

12.5.2 Routing and Coordination. Route the change package (work folder) as follows:

12.5.2.1 If the change contents might have changed the releasability of the TO, coordinate the changes with applicable STINFO, Security, Legal, FDO and PA offices, as required, to validate or change distribution limitations for both the change or revision and the basic TO (Block 11). Ensure Interim TOs (IOS or ISS) carry only the restrictions required by the contents (may not be the same as the basic TO).

12.5.2.2 The applicable Center/Base Safety Offices will coordinate on all change packages affecting personnel or equipment safety. Bioenvironmental Engineering will coordinate on procedures affecting personnel health (involving noise, heat, air contaminants, chemicals, radiation, lasers, thermal stresses, biological and ergonomic hazards, etc.) (Block 12 and paragraph 14.3).

12.5.2.3 Obtain a Nuclear Surety Technical Evaluation (paragraph 14.7) on change packages affecting Nuclear Surety Procedures (NSP) or Hardness Critical Items (HCI) (Block 13).

12.5.2.4 Obtain a releasability review from the FDO on all TO changes affecting restricted distribution TOs that are issued to foreign customers (Block 14). If an update does not contain any restricted data, and the TO itself was releasable, the FDO does not need to coordinate on the change package. However, if the update DOES contain restricted data (or the TCM thinks

it might be restricted data) then the coordination workflow must include the FDO. The FDO enters applicable country codes or "Not Authorized for Release" (Block 14a).

NOTE

The FDO may waive coordination on changes when the parent TO or series of TOs is for a non-releasable system or commodity (such as nuclear weapons), and the TO Manager will enter a non-release statement in the Remarks block.

12.5.2.5 Indicate whether the proposed updates will require verification, and the type of verification required (Block 17). The verification results may be recorded in either Block 18 or Block 21C (after the last data change entry).

12.5.2.6 The specialized functions listed in TO 00-5-1, Table 9-1 (e.g., Non-Destructive Inspection [NDI], Corrosion Control, Life Support, Civil Engineer Readiness, etc.), will coordinate on change packages affecting the assigned areas of responsibility (Block 18).

NOTE

ALC organizations designated to provide Level III NDI services may provide NDI coordination, but must provide a copy of the work folder to the AF NDI POC, AFRL/MLS-OL, 4750 Staff Dr, Tinker AFB OK 73145-3317.

12.5.2.7 Coordinate change package (work folders) applicable to military systems or commodities operated by foreign governments (e.g., FMS and European Participating Air Force) with the Air Force Security Assistance Center (AFSAC) (Block 18). AFSAC Country Managers initiate development of related updates to CSTOs.

12.5.2.8 Coordinate change packages impacting commodity items managed by other Product Groups with the responsible group (Block 18).

12.5.2.9 Coordinate RCs against end-item TOs managed by an SPD, which affect commodities assigned to a Product Group Manager (PGM), with the affected PGM (Block 18).

12.5.2.10 Coordinate changes to MPTOs affecting policy and procedures with the AF OPR for that policy or procedure (Block 18).

12.5.3 Originator's Data. The initiator (TCM or other function) will enter their data in Block 19, and sign the AFTO Form 252 using their Computer Access Card (CAC) certificate.

12.5.4 Approval Signature. The Chief Engineer or a designee will check technical and procedural changes to verify the system or equipment OSS&E certification (AFI 63-1201) has not been affected. (This step is required even if individual RCs had already been reviewed, because of possible interactions between different proposed changes.) The CE will sign Block 20 using his/her CAC certificate. For non-system and non-equipment TOs, the TCM's supervisor will sign Block 20 or delegate the responsibility to the TCM.

12.5.5 Early Implementation. TO users shall not implement approved RCs until the interim or formal TO update is available, except as follows:

12.5.5.1 All TO updates approved for early implementation must be routed through the TO Manager to the affected TODOs. AFTO Forms 22 will NOT be authorized for early implementation.

12.5.5.2 AFTO Forms 252 or JCALS RCs generated from AFTO Forms 22 initiated by the AF Primary Standards Laboratory (AFPSL), or issued against TMDE TOs or ICBM Depot Control Manuals (paragraph 12.11), may be implemented upon approval, when early implementation is requested and justified by the initiator. If early implementation is approved, the TCM will enter"Approved for Implementation" in the Disposition block of the RC.

12.5.5.3 Updates approved for early implementation in Interactive Electronic Technical Manuals (IETM) will be merged with the IETM database and published electronically by the TO Manager IAW procedures in paragraph 10.9.

12.6 TECHNICAL ORDER CHANGE AND REVISION PRACTICES.

All TO 00-5-1-authorized update methods, including interim supplements, may be used with printed (paper) copies; but these methods are not always suitable for use with the other media. A TO Change and TO Revision are the principal means for routinely updating TOs. TOs published in digital format only shall be updated using only Revisions.

EXCEPTIONS:

- An emergency recommended change to a "pdf only" TO may be implemented as a merged supplement instead of a revision.
- An emergency recommended change to a "html TOs with no paper versions" may be implemented as a RAC instead of a revision.
- Where an IOS is being published in support of the depot SH252 process (paragraph 12.1.9) for a "pdf only" TO, the IOS will be implemented as a merged supplement.
- Where an IOS is being published in support of the depot SH252 process (paragraph 12.1.9) for a database-structured IETM, the IOS will be implemented as a non-merged supplement. Upon receipt, the TODO files the IOS as a private increment on the local device.

12.6.1 Digital Updates. Routine changes and supplements to digital TO files must be published using the same software application as the TO, and must be merged with the baseline digital TO file prior to distribution to end users.

12.6.1.1 TOs on CDs, DVDs, floppy disks, and magnetic tape will normally require update by a replacement medium containing either merged TO/change files or revised TOs (no supplements).

12.6.1.2 TOs available through electronic access will be updated by merged changes or revisions.

12.6.2 Revisions. TO Managers will determine whether to issue a revision or a change to the TO.

12.6.2.1 When To Consider a Revision. A revision is a more practical means to update a TO when a large percentage of the TO pages are changed. Use the following criteria to determine when to issue a revision:

- When the TO will be accessed and used as a digital file (see EXCEPTION paragraph 12.6).
- When 70 percent or more of the basic TO (including the current update) has been changed.
- When there is a change to equipment configuration, compliance with new military specifications, etc.
- When updating brief TOs (eight or fewer pages), unless the change will be issued as difference data sheets.
- When a TO publication is being declassified by removing classified data, to prevent issuing warehouse stocks marked as classified. Exceptions are authorized. TOs may be declassified by issuing a TO change if cost effective and the change is merged with existing warehouse stocks before any subsequent issue.
- When the TO is a combined manual (e.g., Maintenance with Illustrated Parts Breakdown (IPB), etc.) and has an abbreviated title page and no"A" page.

12.6.2.2 When Not To Revise:

- The system or commodity will be removed from the inventory within two years (paragraph 12.2.5).
- The paper TO is usable as is (even if 100% of the pages have changed).
- A revision is not cost-effective (very large TOs or TOs with extensive distribution, IF usability has not been seriously impaired); or
- An extensive delay in publication will result, unless the other factors show that a revision is necessary

12.6.2.3 Change markings shall be applied to new material in revisions, and previous change markings shall be removed. eTOs published as merged revisions shall retain change markings for each active change incorporated.

NOTE

Change markings need not be used if the number of change marks degrades usability.

12.6.3 New or Revised Technical Manual Specifications and Standards (TMSS). The TO Manager determines whether or not to issue a TO revision when the governing MILSPEC or MIL-STD used to prepare the TO is revised. The TO Manager may direct contractors who will revise the TO to use a later version of the governing specifications when there will be no change in contract costs. Any such direction affecting contract cost must be coordinated with the PCO before going to the contractor.

12.6.4 Numbering Changes and Revisions. The TO Manager assigns an identifying number to each TO change and revision being published, using the JCALS "Manage TM Index; Update an Index Entry" function. The numbers in JCALS for changes must be three digits long, prefixed by zeros if necessary. The numbers for revisions must be four digits long, prefixed by zeros if necessary. The TO Change number (minus the zeroes) will appear on the title page and each page containing changed data. The revision number identifies the version or edition of the TO and will not be printed on the TO Title page except when indicated in the Supersedure Notice.

12.6.4.1 The TO Manager should initially set the JCALS TM Index "Available for Distribution" and "Available for Published Index" flags to "No."

12.6.4.2 Do not supersede the previous revision until the Revision or TO Change is approved and ready for printing and distribution. Then the TO Manager must review and complete the update of TM Index information and set the "Available for Published Index" flags to "Yes."

12.6.4.3 Once stock is received to make ID (JCALS "Due In Receipt"), the "Available for Distribution" flag is automatically set to"Yes." ID labels are then generated. The date entered as the"ID Ship Date" will automatically be copied to the TM Index record "Estimated Distribution Date."

12.6.5 Pre-Publication Reviews. The final draft (reproduction copy or digital file) of TO updates and TCTOs must receive a pre-publication review for technical accuracy, currency and adequacy (depth of coverage); as well as conformance to MILSPEC requirements. The review shall be jointly conducted by the TO Manager and the TCM, with the assistance of other Subject Matter Experts (SME) as required. This pre-pub review replaces verification by Desk-Top Analysis. Use the following checklist:

- Procedures and illustrations for technical accuracy, completeness and readability. (TCM)
- Coordination with affected functional areas - Engineering, Safety, Nuclear Surety, Bio-Environmental Engineering, Foreign Disclosure Office, etc. (TCM)
- Update compliance to MILSPEC format. (TO Mgr)
- Accuracy of Title Page information - dates, supersedure notice, distribution limitations, etc. against information about the TO Update in the TM Index record. (TO Mgr). Publication Date shall be adjusted due to publication delays, issuance of supplements or receipt of urgent changes, and should be within 30 days of actual TO publication/distribution. In all cases this date shall be later than all previously released increments (Basic, Revisions, Changes, and Supplements).

NOTE

The TO Manager must ensure that the Issue Date in the JCALS TM Index record is the same as the TO or Change Date on the TO title page.

- Accuracy of the List of Effective Pages (LEP). (TO Mgr)
- Changed page numbering and marking. (TO Mgr)

12.6.5.1 TO development or support contracts should allow for TO Manager review and approval of draft TOs before delivery of reproducible masters to the government. If the information in the draft must be published immediately, any serious technical errors in the review copy may be corrected with a RAC or an interim safety or operational supplement that is distributed concurrently with the TO. Concurrently released RACS or supplements must be dated at least one day apart. Correct less critical errors through the routine update process.

12.6.5.2 For updates published in-house (organically), errors should be corrected prior to submitting the reproduction copy to DLA Document Services.

12.6.6 Periodic Pre-Publication Review. If publication of routine changes or revisions must be deferred for any reason, the TCM, in coordination with the TO Manager, must review the publication package every 90 days from the date of the deferral decision for possible priority upgrading.

12.6.6.1 Base the upgrade decision on the potential to negatively affect OSS&E of the military system or commodity resulting from continued publication delays. The TCM/TO Manager should consider such things as negative maintenance trends, increased occurrence of safety incidents and the cumulative effects of aggregated changes which, if not addressed, are made worse by unpublished TO updates.

12.6.6.2 Only those portions of the change package actually requiring upgrade will be extracted from the package and published as an IOS or ISS, pending routine publication of the formal change or revision. If the entire package must be upgraded, publish the formal update within the upgraded priority category timelines. The TO Manager shall coordinate Interim TOs with the TCM and Lead Command prior to issue.

12.6.7 Formal Supplements. Develop formal Safety and Operational Supplements (SS & OS) IAW MIL-STD-38784. EXCEPTION: The text of formal Safety Supplements shall be black, NOT red, for readability reasons. Before issuing formal Emergency or Urgent TO supplements which will restrict any Air Force system from full capability or operational readiness, the Interim TO Advance Notification requirements of Chapter 13 must be implemented.

12.6.8 TO Updates Related to TCTOs. The TCM/FMM will update TOs and FMP publications affected by TCTOs, and the TO Manager will release the updates concurrently with the driving TCTO (IAW TO 00-5-15). TCTO-related TO updates containing both Before and After data may be published up to 180 days prior to the TCTO itself.

12.6.9 Joint Service TMs. The Air Force OPR of a Joint Service TM managed by another service (Army, Navy, etc.) will issue an Air Force-only supplement to change Air Force compliance with procedures in a TM managed by another service. Coordination with the other service is not required when the changes affect only the Air Force, but a copy of the supplement will be provided to the lead service TM Manager for information. If the change is subsequently incorporated into the TM, the AF supplement will be rescinded. When the Air Force is the lead service, the TO Manager must fully coordinate proposed updates with all affected services prior to publication.

12.6.10 Country Standard TO (CSTO) Updates. The equipment contractor normally produces CSTO updates under an FMS contract (TO 00-5-19).

12.6.11 Federal Aviation Agency (FAA) Manuals. When AF personnel are authorized to access and use manuals from FAA online, the AF technical content manager will author an Identifying Technical Publication Sheet (ITPS) to 1) authorize the use of the specific FAA manual 2) provide FAA online accessing instructions for the specific manual 3) direct AF personnel to monitor FAA online for currency as the ETIMS subscription to the ITPS will only alert them to changes in the ITPS. The TO manager will number and index the ITPS in JCALS as a ‘sponsor approval‘, WA-1 eTO, upload the optimized PDF file into ETIMS and manage subscription requests.

12.7 DIGITAL TECHNICAL ORDER SUPPLEMENT PROCEDURES.

TO Managers and/or TCMs will use the supplement merging procedures on the TO Managers CoP (https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=21298) to supplement TOs distributed in Adobe® Indexed Portable Document (IPDF) (see EXCEPTION paragraph 12.6).

12.7.1 Development. Develop the supplement using a word-processing or publishing software program (formatted and numbered IAW TO 00-5-1). Convert it to PDF using Acrobat Distiller™ or PDFWriter™ (part of Adobe® Acrobat).

12.7.2 Posting Supplements to Basic TO File. The TO Manager or TCM will download the TO file from its distribution medium (Internet or CD-ROM/DVD), open the file using Adobe® Acrobat™ and attach the supplement file IAW the functional users guide on the Air Force Technical Order Managers CoP.

12.7.3 Annotations. The TO.MART program (paragraph 1.3.4) will look for a title page note titled “Supplements” and listing the current supplement numbers using the format “S-1, S-2, SS-3,….” In the odd case where the last supplement issued is rescinded without being replaced by a newer supplement, the rescinded supplement must be kept in the list and the

word ‘rescinded‘ added after it (e.g. “S-10, S-11, SS-12 rescinded”). The highest numbered supplement ever issued must always be mentioned in the note, so that the TO.MART program (and users) can determine which copy of a file was newer.

12.7.4 Indexing and Distribution. Index the supplement as a paper copy in JCALS (no suffix), and index the merged digital TO as a revision with the same publish date as the supplement. Upload the TO file with notes and attached supplement to the distribution medium. Interim changes to a TO distributed on CD-ROM might be uploaded on a web site for immediate access, with notification provided to users IAW Chapter 13. See paragraph 13.2.5.1.3 for a listing of special distribution addresses for ITO messages.

NOTE

See Scenario 3 in the “01 TOMA WA-1 Processing Checklist for JCALS Indexing and ETIMS eTO Uploading.pdf” file on the Air Force Technical Order Managers CoP at https://afkm.wpafb.af.mil/ASPs/docman/DOCMain.asp?Tab=0&FolderID=21298-13&Filter=21298 for detailed procedures. In particular, take care to ensure the merged eTO deploys on the next incremental AFTOX rather than on the next weekly AFTOX.

12.7.5 Supplementing IETMs. IETMs shall not be supplemented (see EXCEPTION paragraph 12.6).

12.7.6 MAJCOM and Base Supplements. For other than MAJCOM supplements to MPTOs (paragraph 12.7.7), MAJCOM and base supplements must be merged with the Air Force baseline TO file and hosted on a secure internet site (paragraph 10.9.3) or base LAN. MAJCOM supplement OPRs must provide General TO and MPTO merged file URLs to the Air Force Technical Order Policy and Procedures (TOPP) team at AF.TOPP@wpafb.af.mil.

12.7.7 MAJCOM Supplements to MPTOs. Once approved for publication, MAJCOM OPRs append supplement to published MPTO and annotate/link to create a single merged file with supplement posted. MAJCOM OPRs then upload merged file to MAJCOM folder at https://afkm.wpafb.af.mil/ASPs/docman/DOCMain.asp?Tab=0&FolderID=21298-15&Filter=21298. The AF TOFST will assign number (on initial creation, e.g., 00-5-1-AFMC-WA-1), upload the file into the ETIMS repository and complete indexing in JCALS required for deployment. When viewing the merged TO title page in ETIMS, a link to the supplement will be displayed, along with the publication date (see TO 00-5-1). TODOs will be responsible for establishing subscription for this merged MPTO with the baseline MPTO TO manager.

12.8 CD-ROM/DVD PROCEDURES.

12.8.1 Responsibilities. The TO manager for a CD-ROM/DVD, with coordination from the PM and Lead Command, is responsible for CD-ROM/DVD content, numbering, indexing, updating, publication, packaging, labeling, and distribution. Classified and unclassified TOs will not be mixed on a single disk. The TO manager is responsible for developing the standard files required by MIL-HDBK-9660, *DoD Produced CD-ROM Products*, and this TO. The TO manager will determine routine CD/DVD update intervals, in conjunction with the Lead Command and the TO managers of the individual TOs included on the disk. If a separate content manager is assigned for the disc, some of these duties may be delegated to that function.

NOTE

- The use of CD-ROMs/DVDs for unclassified digital TO distribution and use is being phased out as ETIMS distribution and use is implemented. Classified digital TOs will continue to use CDs/DVDs.
- The same general rules applicable to CD-ROMs used to publish and distribute digital TO files will apply to DVDs, pending development of a DVD specific publication.
- Det 63, HQ ACC is authorized to develop and implement separate procedures for joint service management and use of EOD TOs on CD-ROM/DVDs.

12.8.2 CD-ROM/DVD Format. CD-ROMs and DVDs containing digital TO files will be formatted and labeled IAW MIL-HDBK-9660 and MIL-STD-38784. The CD/DVD must contain a “content.txt” file containing the information required by MIL-HDBK-9660, and may contain a “readme.txt” file (how to use the CD/DVD), an “Index” file (to automatically direct users to the correct TO files), and if necessary, a copy of the viewing software.

12.8.2.1 Content.txt File. The following information will be included in the required content.txt file included on all TO CD-ROM/DVD publications. Other information is also required in the content.txt file. See MIL-HDBK-9660 for further information:

- DOCUMENT IDENTIFICATION: (TO number)
- TITLE: TECHNICAL MANUAL SET; (name)
- EDITION: (First, Second, etc.)
- VOLUME IDENTIFIER: (DoD Activity Address Code (DODAAC) [6 characters] + TO Category [2 characters] + Index Number [3 characters] (11 digits total)
- MAINTENANCE AND UPDATE FREQUENCY: (update period)
- ORIGINATOR COMMENTS: (information on formats, etc.)
- DOCUMENT ABSTRACT: (purpose of CD/DVD)
- POINT OF CONTACT: (CD/DVD TO Manager, address, e-mail, and phone)
- ORIGINATOR: (CD/DVD TCM, address, e-mail, and phone)
- TO POCs: (For each TO file included on the CD/DVD, list the TO Manager and TCM names, organizations, e-mail addresses, and DSN phone numbers)

12.8.2.2 Readme.txt file (Optional). Use the same format criteria established by MIL-HDBK-9660 for the content.txt file. The file may be included if required to describe access to and use of viewer software, access to and use of any other programs on the disk (such as ATOMS), and/or other helpful information not included in the content.txt file. If used, the readme.txt file should have a table of contents to help the user identify and navigate to needed information.

12.8.2.3 Index File (Optional). When more than one TO is contained on a disk, use TO.MART (paragraph 1.3.5) as the indexing and retrieval software program for cataloging and accessing digital TO files. The program is available at https://techdata.wpafb.af.mil/field/ToolsMenu.htm. No index is required when the disk contains only one TO.

12.8.2.4 CD-ROM/DVD and Case Labels. Labels (Figure 12-2) are formatted IAW MIL-STD-38784.

12.8.3 Digitally-Distributed TO File Sustainment. Only Changes and Revisions will be used to update digitally distributed baseline TO files (see EXCEPTION paragraph 12.6). “Baseline TO files” are the official, published (accessible tousers) TO files consisting of the basic digital TO file with any published change files merged (posted) into the baseline TO file. The use of formal supplements, including TOPS, for updating digital baseline TOs is discouraged and will be severely limited (see TO 00-5-1).

12.8.3.1 The TO change or revision will be merged with or replace the baseline TO file for digital distribution. The standalone digital change or revised TO file will be used to produce a master for printing and distribution of paper copies.

12.8.3.2 For emergency and urgent updates, the TO Manager or TCM will develop digital RACs whenever possible, instead of an IOS or ISS (see TO 00-5-1 and Chapter 13). The digital RAC file will normally be merged with the baseline TO file, and the merged TO and standalone RAC files will be accessed from ETIMS or program web site for distribution. ETIMS users will receive automatic distribution of the merged file. The standalone RAC is distributed to allow local printing of the change for updating paper copies of the TO.

12.9 TECHNICAL ORDER UPDATE PACKAGE PROCESSING.

The responsible TO Manager will:

12.9.1 Screen and Submit Update Packages. Screen all TM Update Packages to ensure required data is current and complete, properly coordinated and includes all RCs specified for the next TO update. Submit approved packages to the editorial function for publication of the TO update (specifying the update type), and distribute in the next routine update cycle for the TO. A first-level or higher-level supervisor must approve urgent or priority publication of TO update packages.

12.9.2 Record Copy. Archive a copy of the package in the JCALS workfolder for the TO, and ensure a copy of the published update is sent to the Air Force Official TO Archives (OC-ALC/ENGLA).

12.9.3 TO 00-5-Series Training Updates. Provide copies of coordinated and approved TM Update Package work folders on the 00-5-series TOs to AF TOFST, ACC/AQY, 102 West D Ave, Ste 160, Eglin AFB FL 32542-5415, DSN 872-9300, to facilitate update of TO System training courses.

12.10 TECHNICAL ORDER UPDATE PUBLICATION.

Updates to individual TOs from all sources (AFTO Forms 22, AF Forms 847, Mishap Investigations, Materiel Improvement Projects, etc.) will be consolidated for publication in periodic TO updates (revisions, changes, or supplements). Periodic updates will not include modification-related changes if this would delay concurrent release with the prescribing TCTO. When faced with this situation, out of cycle updates may be necessary to support the TCTO. Periodic intervals will be determined by the lead command, in conjunction with the PM, but should not exceed 365 days. Periodic updates may be delayed beyond the normal update interval if no significant inputs are received. When TOs are grouped for publication, for example, a "set" of digital TO files published on a Compact Disk-Read Only Memory (CD-ROM), it may be necessary to publish updates to the distribution media as frequently as monthly to accommodate varying TO publication release dates and cycles. Thought should be given to synchronizing the publication cycle of the TOs included in the set and the distribution media as much as possible to limit the number of media releases due to out-of-sync TO updates.

NOTE

- Perform periodic reviews of change packages IAW paragraph 12.6.6 if publication must be deferred.
- The electronic AFTO Form 252 process may be used when some or all RCs have been submitted outside of JCALS.

12.10.1 General. The TO Manager or TCM will use the JCALS "Prepare TM Change Package" process to aggregate all approved RCs submitted since the last TO update. For each JCALS "Prepare TM Change Package," the TO Manager determines if the updates will be developed organically or through contractor support.

12.10.2 Existing Contracts. If a production contract is available for contractor preparation of TO updates, the TO Manager forwards a copy of the JCALS "Prepare TM Change Package" work folder to the responsible procuring agency by JCALS WFM or by using AFTO Form 252, with a letter of transmittal included in the work folder.

12.10.3 New Contract. If a production contract is NOT available and organic development is not practical, the TO Manager forwards a copy of the JCALS work folder to the responsible contracting office using JCALS WFM or by using AFTO Form 252, with an included letter of transmittal requesting preparation by overflow contractors or Government Printing Office (GPO)/DLA Document Services assets, as appropriate.

12.10.4 Organic Preparation. For organic update preparation, the TO Manager forwards a copy of the JCALS work folder to the editorial function for formatting as a change or revision.

12.10.5 Distribution Controls. AFI 61-204 Distribution Statements and Export Control Warnings (when applicable) will be placed on the title pages of all TOs. MIL-STD-38784 Disposition Notices and Handling and Destruction Notices will be placed on the title or T-2 pages of all unclassified TOs.

12.11 DEPOT LEVEL ICBM OPERATION AND MAINTENANCE CONTROL MANUALS.

The following applies to ICBM Control Manuals and associated Contractor Data Manuals (CDM), which consist of Utility Technical Manuals, D2s, Performance Criteria Documents, test equipment instruction manuals, etc.

12.11.1 Description. Control manuals and associated CDMs are acquired to support Minuteman II and III missiles using Boeing Space Division (BSD) Exhibit 64-29. Control manuals are numbered as USAF TOs and list applicable CDMs under the contractor-assigned numbers. Specific operation and maintenance procedures are included in the CDMs.

12.11.2 Deficiency Reporting. Deficiencies in CDMs are reported by AFTO Form 22 or JCALS "Recommend a TM Change" screen against the control manual TO number. Block 19 of the AFTO Form 22 or the "Deficiency" field of the RC will list the CDM number as well as the deficiency noted and recommended corrective action.

12.11.3 Processing. JCALS RC and "Prepare TM Change Package" procedures and workaround described in paragraph 12.5 apply to control manuals and CDMs.

12.11.3.1 Control manual or CDM RCs are issued against the control manual TO number. When applicable, the CDM number is shown in the"Deficiency" field of the RC, and the other entries relate to the control manual. CDM change pages are provided with the control manual change

12.11.3.2 The JCALS RC "Local Control Number" will be listed in the rescission notice of the control manual and CDM changes incorporating it.

12.11.4 Implementation. The depot level maintenance activity posts a printout of an SH252 with the control manual and CDM to which it applies. The printout will be retained until the TO RC is listed in the rescission notice of a permanent change to the control manual.

Table 12-1. Recommended Change Processing Time Limits

Report Category	Function	Time Allotted	Condition and Action
USAF TOs AND JOINT SERVICE TECHNICAL MANUALS MANAGED BY AIR FORCE (Cognizant Activity Code "F")			
Emergency	TO Manager	1 hours	Record receipt and deliver/forward to evaluator.
(Issue RAC or ITO within 48 hours)	TCM	47 hours	APPROVED: Prepare and provide electronic Rapid Action Change (RAC) package via e- mail and transmit RAC Notification message via e-mail, or transmit electronic Interim TCTO IAW paragraph 10.9. Complete the reply portion of an AFTO Form 22 or JCALS RC and deliver to the TO Manager with a copy of the RAC/ITCTO issued (see EXCEPTION 12.6).
			DISAPPROVED/DOWNGRADE: Transmit an e-mail message citing reasons for action to the responsible organization, including as information addresses on the message all information addresses from the original RC. Complete the reply portion of an AFTO Form 22 and deliver to the TO Manager with a copy of the message form. Continue processing of the downgraded RC IAW instructions for the new category.
Sub-Total for ITO/RAC		48 hours	
(Follow-on formal TO update - 40 days total)	TO Manager	8 days	Return relaxed RAC format to basic TO format (if necessary) for next routine update, or draft a formal TO update to incorporate an ITO.
	Admin	30 days	Print and distribute the update incorporating an ITO.
Total		40 days	
Urgent	TO Manager	2 hours	Record receipt and forward to evaluator.
(formal update - 40 days)	TCM	10 days	APPROVED: Complete evaluation using reply portion of the AFTO Form 22 and enter into JCALS "Recommend a TM Change," or complete evaluation of RC submitted in JCALS; and forward to the TO Manager. Forward one copy of the AFTO Form 22 to each activity shown in Blocks 1, 2 and 3.
			DISAPPROVED/DUPLICATE /ADVISEMENT/DOWNGRADE Complete the reply portion of the AFTO Form 22 or RC; enter reasons for action in Block 27; forward one copy each to activities shown in Blocks 1, 2 and 3, and to the TO Manager. Continue processing of downgraded RCs IAW instructions for Routine RCs.

Table 12-1. Recommended Change Processing Time Limits - Continued

Report Category	Function	Time Allotted	Condition and Action
	TO Manager	8 days	Compile approved RCs into draft TO update.
	Admin	22 days	Print and distribute.
Total		40 days	
Routine	TO Manager	1 day	Record receipt and forward to evaluator.
(365 days - includes Advise-ment/Abeyance time)	Evaluator	45 days	APPROVED: Complete evaluation using reply portion of the AFTO Form 22 and enter into JCALS "Recommend a TM Change," or complete evaluation of RC submitted in JCALS; and forward to the TO Manager. Forward one copy of the AFTO Form 22 to each activity shown in Blocks 1, 2 and 3.
			DISAPPROVED/DUPLICATE/ADVISEMENT: Complete reply portion of the AFTO Form 22; enter reasons for action in Block 27; forward one copy each to activities shown in Blocks 1, 2 and 3 and to the TO Manager.
			ABEYANCE: Complete reply portion of the AFTO Form 22 and forward one copy each to activities shown in Blocks 1, 2 and 3 and to the TO Manager.
	TO Manager	274 days	Combine all approved routine RCs received during the period between the last update and current copy freeze date. Prepare or procure reproducible master for TO update. (NOTE: When an Approved RC is later Deferred, furnish copy of the AFTO Form 22 with reasons for the action to activities shown in Blocks 1, 2 and 3.)
	Admin	45 days	Print and distribute TO update.
Total		365 days	
JOINT SERVICE TECHNICAL MANUALS MANAGED BY ANOTHER DoD COMPONENT (Cognizant Activity Code: A - Army; C - Coast Guard; D - Defense Logistics Agency; M - Marine Corps; N - Navy). Processing will be accomplished as indicated for USAF TOs, with the following additions/exceptions:			
	Evaluator		APPROVED: The incorporating issue will be an AF supplement to the Joint Service Technical Manual; a copy of the Approved AFTO Form 22 will be furnished to the responsible DoD component.
			DISAPPROVED: A copy of the disapproved AFTO Form 22 will be furnished to the responsible DoD component.
			DUPLICATE/ADVISEMENT: A copy of the AFTO Form 22 to the DoD component is not required. However, when a RC placed in Advisement is later Approved or Disapproved, the requirements stated immediately above will apply.
			DOWNGRADE: Downgrade action of an AFTO Form 22 is not appropriate when the publication is managed by another DoD component.

Table 12-1. Recommended Change Processing Time Limits - Continued

Report Category	Function	Time Allotted	Condition and Action
	TO Manager		Upon publication by the responsible DoD Component of an increment which incorporates an RC approved by the PM, initiate action to rescind the AF supplement which was issued when the RC was approved.

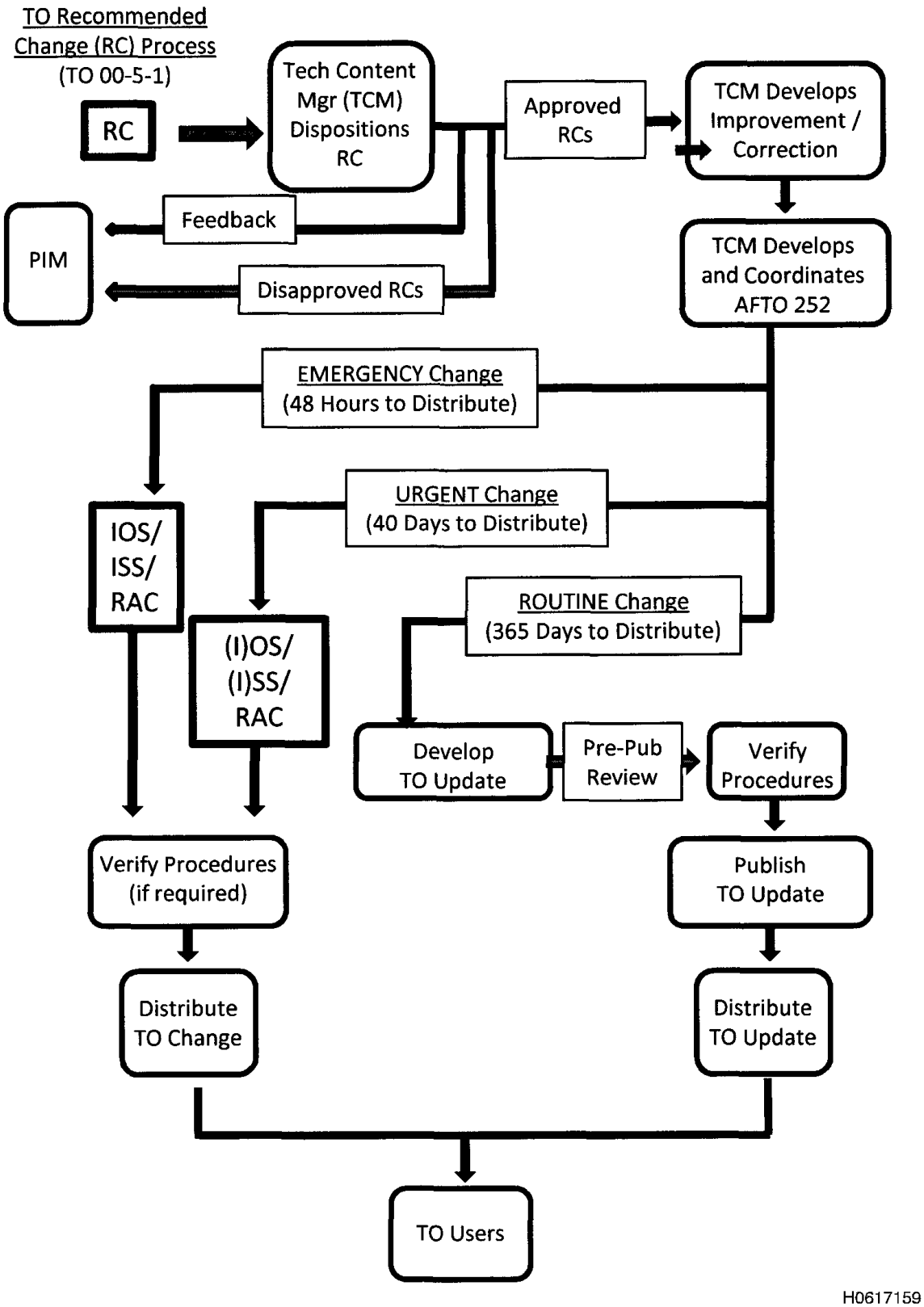

Figure 12-1. TO Improvement Process Flow Chart

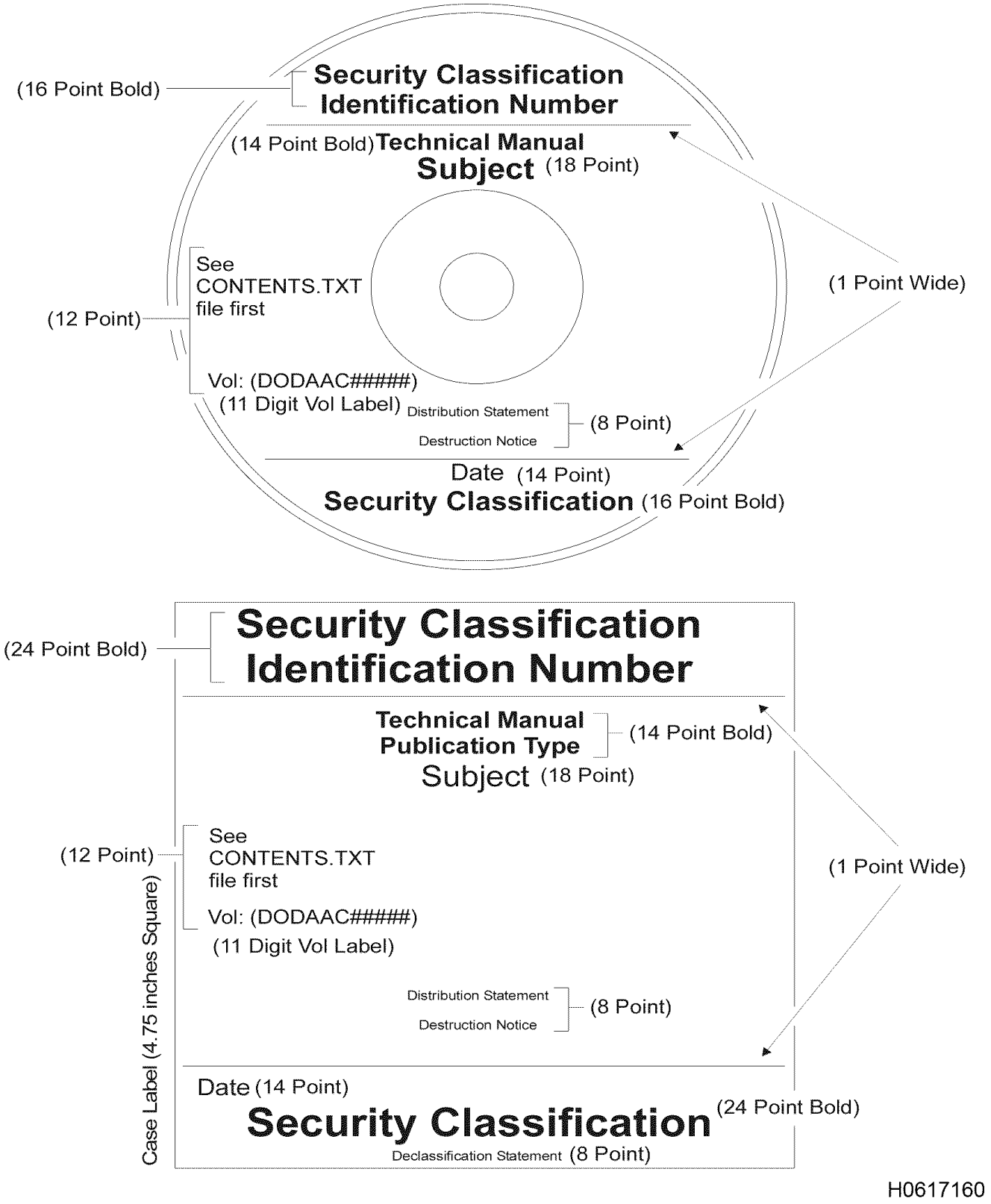

Figure 12-2. CD-ROM/DVD Disk and Case Label Formats

PAGE 1 OF 1 PAGES

TECHNICAL ORDER PUBLICATION CHANGE REQUEST	DATE PREPARED	DATE RECEIVED

1. TO	2. FROM

3. PUBLICATION NUMBER	4 PUBLICATION DATE *(Basic)*	5. PROJECT NUMBER(S)
	LATEST CHANGE NUMBER AND DATE	

6 PUBLICATION TITLE

7 TYPE	8. NEED DATE	9. HARDNESS CRITICAL ITEM	11 CODES
☐ RAC ☐ TCTO SUP ☐ TCTO ☐ CHANGE ☐ REFERENCE	10. TCTO NUMBER	☐ YES ☐ NO ☐ N/A	A. DISTRIBUTION CODE B. REASON EXPORT CONTROL ☐ YES ☐ NO

12 SAFETY REVIEW (OSHA) *(Signature)*	13. WPNS SAFETY NUCLEAR SURETY TECHNICAL EVAL *(Signature)*
☐ N/A Click to sign	☐ N/A Click to sign

14a. FOREIGN DISCLOSURE (FDO) *(Signature)*	14b. AUTHORIZED TO *(Country Codes as Applicable)*
☐ N/A Click to sign	

15. RGL CERTIFICATION	16a. ENVIRONMENTAL IMPACT	16b. SPECIAL PACKAGING INSTRUCTIONS (SPI)	17. VERIFICATION
☐ N/A ☐ AFTO FORM 124 PREPARED	☐ N/A ☐ ENVIRONMENTAL ASSESSMENT PREPARED	☐ N/A ☐ REVIEWED BY PACKAGING SPECIALIST	☐ N/A ☐ BY PERFORMANCE ☐ BY SIMULATION/DESKTOP

18. REMARKS/COORDINATION

19. ORIGINATOR	20 APPROVAL SIGNATURE
NAME OFFICE SYMBOL PHONE SIGNATURE Click to sign	Click to sign

21A. PAGE NUMBER	21B. PARAGRAPH NUMBER	21B. INSTRUCTIONS *(Include below specific paragraph rewording, instructions for changing illustrations, new or changed listings in Parts Breakdown, etc.)*

AFTO FORM 252, 20111109 **PREVIOUS EDITION IS OBSOLETE**

H0617161

Figure 12-3. AFTO Form 252, Technical Order Publication Change Request (Sheet 1 of 3)

	DATE PREPARED/DATE RECEIVED -	Enter the date block 19 is signed in "Date Prepared." Enter the date the publishing activity receives the form in"Date Received."
Blocks 1-4, 6 -Self-Explanatory.		
Block 5	**PROJECT NUMBER(S) -**	Develop a project number IAW paragraph 12.2.7.3, and add the local control numbers (LCN) of any Recommended Changes (RC) or SH252 Project Numbers included in the AFTO Form 252. Continue in Block 18, **REMARKS**.
Block 7	**TYPE -**	Check the appropriate box.
Block 8	**NEED DATE -**	If the update requires expedited processing (i.e., for an Emergency or Urgent update), enter the need date here.
Block 9	**HARDNESS CRITICAL ITEM -**	Check the applicable box. Use "NO" if the TO contains hardness critical items but this update does not affect them. Use"N/A" if nothing in the TO is hardness critical.
Block 10	**TCTO NUMBER -**	If the update is related to a TCTO, enter the TCTO number here.
Block 11	**CODES -**	Enter the update's STINFO distribution code and reason in"A" and "B." Check the appropriate "C" box to indicate whether the update is Export Controlled or not.
Block 12	**SAFETY REVIEW (OSHA) -**	If the update affects Warnings or Cautions, or personal protective gear or other safety related issues, obtain local Safety Office coordination. (Paragraph 14.3) Otherwise check "N/A."
Block 13	**WPNS SAFETY/NUCLEAR SURETY TECHNICAL EVAL -**	If the update affects nuclear weapon data or other weapon arming/release/handling/etc. data, obtain the appropriate Safety Office coordination. (Paragraph 14.6 and 14.7) Otherwise check "N/A."
Block 14	**FOREIGN DISCLOSURE (FDO) -**	If the update affects data to be released, or which could be released, to FMS/SAP countries, obtain a releasability review and signature from the FDO. Otherwise, if an update does not contain any restricted data, and the TO itself was releasable, the FDO does not need to coordinate on the change package - check "N/A."
		NOTE The FDO may waive coordination on changes when the parent TO or series of TOs is for a non-releasable system or commodity (such as nuclear weapons), and the TO Manager will enter a non-release statement in the Remarks block.
Block 14a	**AUTHORIZED TO -**	List country codes the date is releasable to, or if there are no restrictions, enter "All."

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Figure 12-3. AFTO Form 252, Technical Order Publication Change Request (Sheet 2)

Block 15	**RGL CERTIFICATION-**	When required IAW TO 00-5-3, paragraph 12.5.1.2, parepare an AFTO Form 124, *Computation of Technical Order Reading Grade Level (RGL)*, and check the "AFTO FORM 124 PREPARED" box. Otherwise, check"N/A."
Block 16a	**ENVIRONMENTIAL IMPACT-**	Obtain an Environmental Assessment if there are any environmental impacts (see AFI 32-7061, *The Environmental Impact Analysis Process*) and check the "ENVIRONMENTAL ASSESSMENT PREPARED" box. Otherwise. check "N/A."
Block 16b	**SPECIAL PACKAGING INSTRUCTIONS (SPI)**	If the TO update may affect special packaging instructions, coordinate with the center packaging specialist and check "REVIEWED BY PACKAGING SPECIALIST". Otherwise, check "N/A".
Block 17	**REMARKS/COORDINATION-**	Enter the following types if information here: Recommended Change (RC) LCNs which would not fit in Block 5; additional coordination required (e.g., Chief Engineer, Non-Destructive Inspection [NDI], corrosion control, calibration. Support Equipment Work Group, etc.); Verification results; etc.
Block 18	**ORIGINATOR'S INFORMATION-**	The TCM (or other originator) will enter their name, office symbol and DSN phone number. They will sign using their CAC certificate.
Block 19	**APPROVAL SIGNATURE-**	If required. the program's Chief Engineer will certify the recommended update by signing Block 20, using their CAC certificate.
Blocks 20A thru C-		Enter the affected page and paragraph numbers, and the exact wording of the proposed TO changes. If there are too many changes to easily transcribe on the form, enter "See attached mark-ups" or similar wording, and attach marked-up TO pages, word files, etc. Other back-up documentation which clarifies the requested updates may also be attached.

H0915975

Figure 12-3. AFTO Form 252, Technical Order Publication Change Request (Sheet 3)

CHAPTER 13
INTERIM TECHNICAL ORDERS AND RAPID ACTION CHANGE PROCEDURES

13.1 GENERAL.

NOTE

Programs issuing interim or formal Emergency and Urgent Operational and Safety Supplements or RACs which could restrict any Air Force combat weapon system from full capability or operational readiness will provide advance notifications IAW paragraph 13.1.7.

13.1.1 Description. Interim Technical Orders (ITO) are priority, electronically-distributed changes to TOs. Rapid Action Changes (RAC) are priority, electronically-distributed changes used in place of ITOs to update TOs. ITOs and RACs are issued to resolve deficiencies of an Emergency or Urgent nature (see TO 00-5-1). They may revise procedures, deactivate defective subsystems or components, replace hazardous materials, restrict item use to known-safe areas of operation/flight envelopes, or remove systems/end items from service, depending on the nature and severity of the hazard. EXCEPTION: See paragraph 12.6.

13.1.2 Interim Safety Supplements (ISS). Issue ISSs when circumstances preclude timely publication of a formal TO update. Issue Emergency ISSs when safety conditions would result in a fatality or serious injury to personnel, or when extensive damage or destruction of equipment or property is involved. Issue Urgent ISSs when safety conditions could cause the same results.

13.1.3 Interim Operational Supplements (IOS). Issue IOSs when circumstances preclude timely publication of a formal TO update. Emergency IOSs are issued when the using command is unable to achieve or maintain operational posture (MISSION ESSENTIAL) or there is a field-level work stoppage. Urgent IOSs are issued for situations that reduce operational efficiency or probability of mission accomplishment, provide replacements for Environmental Protection Agency (EPA) Hazardous Materials (HAZMAT) and Ozone Depleting Substances (ODS), or could result in over $25,000 or 1,000 man-hours annual savings to the Air Force. Expedited IOSs may be issued when there is a work stoppage at a Depot and a formal TO update cannot be completed in 120 days.

13.1.4 Rapid Action Changes (RAC). RACs are fully-formatted TO Changes distributed electronically, used instead of interim supplements as priority TO updates. See TO 00-5-1 for additional RAC procedures. RACs require the same coordination, advance notification and approval as the equivalent interim supplement.

13.1.5 Timelines. An IOS, ISS, or RAC must be issued within 48 hours after receipt of an emergency report (within 72 hours if report concerns work stoppage), or within 40 calendar days after receipt of an urgent report (see chapters 5 and 9 of TO 00-5-1). See paragraph 12.1.9 for IOS publication timelines associated with the depot SH252 process.

13.1.5.1 Emergency IOSs, ISSs and RAC notifications shall be sent to TODOs via Outlook e-mail with “read receipts” or through controlled-access servers and web sites (paragraph 10.9.3) and receipt acknowledged within two hours. Emergency RACs are made available through program web sites or delivered via e-mail, and must be delivered to sub accounts and libraries within five hours of receipt by the TODO.

13.1.5.2 Urgent IOS/ISS and RAC notifications shall be sent to TODOs via Outlook e-mail with “read receipts” or through controlled-access servers and web sites (paragraph 10.9.3) and receipt acknowledged as soon as possible during duty hours. Urgent RACs are made available through controlled-access servers and web sites (paragraph 10.9.3) or delivered via e-mail, and must be delivered to subaccounts and libraries within one duty day of receipt by the TODO.

13.1.6 Security Assistance Program (SAP)/Foreign Military Sales (FMS) Support. IOSs, ISSs, and RACs are issued to all FMS customer accounts on subscription for the basic TO by the FMS TO System Section. If CSTOs have been developed, a separate IOS/ISS/RAC must be developed for each and issued to the FMS customer by the FMS TO System Section. When distributing the ITO by e-mail, include the FMS TO System section e-mail address so the ITO can be reviewed for release by the FDO (if applicable) prior to issue to the FMS customers.

13.1.7 Advance Notification (See Table 13-2). The program office issuing formal or interim operational or safety supplement or RAC shall provide advance notification to the following agencies when the supplement or RAC would restrict any Air Force combat weapon system from full capability or operational readiness:

- Senior AFMC and USAF leaders via the Advance Notice of Emergency/Urgent Interim Safety Supplement (ISS) or Interim Ops Supplement (IOS) or Rapid Action Change (RAC) Release Form at the ITCTO Submission CoP (https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=W) (be sure to select the "IOS/ISS/RAC Submission Page").
- HQ AFMC Command Center, HQ AFMC/OPSO/A3XC, DSN 787-6314, Comm (937) 257-6314 via telecon. HQ AFMC/OPSO/A3XC notifies:
  -HQ AFMC/CC/CV/CA/A4 via telecon upon receipt of advance notification.
  -Air Force Operations Center (AFOC), HQ USAF/A3OOA, DSN 227-6103/2270, Comm (703) 697-6103/2270 via telecon.
- Affected MAJCOM/CC/A4/A3/SE offices.
- During acquisition, the Program Executive Officer (PEO), applicable Defense Contract Management Agency (DCMA) Office, and SSM at the affected ALC if applicable.
- During sustainment, the responsible Center Commander, and DSM at the affected PC if applicable.

13.2 PROCEDURES.

Refer to the Flowchart, Figure 13-1. ITOs and RACs are usually prepared by the TCM for the basic TO. ITO preparation may be delegated to an overflow contractor or the Original Equipment Manufacturer (OEM). Once an emergency or urgent situation is identified, the responsible activity evaluates it for alternative courses of action. If the hazards or mission limitations can be resolved by a TO change, issue an IOS, ISS, or RAC as appropriate. If there must be an inspection or a configuration change to the system or equipment, issue an ITCTO (TO 00-5-15). ITOs and RACs applicable to TOs distributed digitally must be in the same digital format as the TO itself. RACs must be merged with the TO file, and ITOs must be attached to the file and digitally linked to the affected TO paragraphs. EXCEPTION: See paragraph 12.6.

13.2.1 Developing Interim Supplements.

13.2.1.1 Obtain the appropriate TO numbers from the TO Manager. Research and develop the revised TO instructions, verify and coordinate them IAW this TO. Prepare a replacement interim or formal update if a previously published ITO must be changed before it is incorporated (RACs are incorporated upon issue). Enter all TO updates into JCALS using the "Recommend a TM Change" process.

13.2.1.2 Replace an ISS with a TO change or revision within 40 days of ISS release. Include IOSs/RACs in the next routine update (TO 00-5-1). **EXCEPTION**: ISSs and IOSs issued to provide temporary instructions (for example, restrictions to operating parameters pending completion of a TCTO, use of prototype equipment for flight test, etc.) may remain active until completion of the task or project or for 30 months, whichever is shorter. Timelines for Interim Safety Supplements pertaining to flight manuals can be found in AFI 11-215.

13.2.2 Creating Rapid Action Changes (RAC). A RAC is a TO update loosely formatted as a TO Change and distributed electronically like an ITO/ITCTO. RACs will be formatted as closely as possible to the manuals they update, and will include a new title page and List of Effective Pages (LEP), as well as unchanged backing pages for each change page included. It is prepared using desktop publishing or word processing software and saved in a format compatible with the baseline TO file. RACs will be identified using the next sequential TO change number. If the next change number has already been assigned to a routine change currently in the publishing cycle "no-change window" (paragraph 13.2.2.8), then the RAC number will be the next in sequence, and a supersedure notice will be added to the Title page to specify RAC effectivity.

13.2.2.1 The TCM will develop the RAC content; the TCM, TO Manager or editor will prepare (format) the RAC and create a merged RAC/basic digital baseline TO file for distribution to TODOs. The following steps are involved in creating a RAC:

13.2.2.2 The TCM, TO Manager or editorial/production activity responsible for formatting the change obtains the digital baseline TO pages affected by the RAC (including title, LEP, data pages and corresponding backing pages), and converts them (if required) into a changeable digital format:

13.2.2.3 Make necessary changes to affected pages IAW the approved RC. Title page and LEP format may vary slightly from the current specification or parent TO file format (e.g., column alignment, font size, dot leaders, graphic lines, etc.). The

title page supersedure notice must identify the change as an EMERGENCY or URGENT RAC and, when necessary, indicate which basic date is affected and which change(s) (if any) is superseded.

13.2.2.4 Smaller font (9-point minimum) may be used on RAC data pages to accommodate added information on the affected and/or backing pages without impacting subsequent pages. If page integrity cannot be maintained (e.g., if the new information cannot feasibly be incorporated on the affected pages), then additional pages should be added as required IAW current procedure. Color pages may be rendered in "gray scale" (black and white). Foldouts to update paper TO copies will be managed on the receiving end by either shrinking them to fit an 11 x 17 page (maximum size most printers and copiers will handle), or printing and copying the affected section of the foldout and overlaying the section on the original. Deviations will be returned to the parent TO format at the next routine update.

13.2.2.5 The TCM and TO Manager review and approve the RAC.

13.2.2.6 Convert the RAC file to PDF or other Page Description Language (PDL) software to convert RAC files to an insert file compatible with baseline TO files.

13.2.2.7 Publishing RACs. The TCM, TO manager, or editor electronically merges the PDF RAC file with the IPDF baseline TO file to create a new baseline TO, and re-links (indexes) the new file using Adobe® Acrobat™ and Info-Linker software. The merged and re-indexed IPDF TO is returned to digital storage as the new baseline digital TO file, along with the stand-alone PDF RAC file. If applicable, both files are uploaded on ETIMS or a program web site (see paragraph 10.9.1, paragraph 10.9.2 or paragraph 10.9.3) to replace the previous version TO file provided via WWW, thereby providing access to the digital baseline TO file and RAC. Merge and upload non-IPDF TO files in whatever file format was used to distribute the baseline TO file.

13.2.2.8 "No-Change Window" Procedures. The "no-change window" is the period after preparation of a reproduction package and before publication and distribution when further changes to the package are no longer cost effective. Emergency RACs will be provided within 48 hours of TO Manager/TCM notification of the problem. The Title page supersedure notice will specify that the RAC applies to both the current and immediately subsequent TO Changes. If an in-work Change modifies affected pages or paragraphs, a second RAC may have to be issued concurrently with the in-work update. Urgent RACs will be formatted for and issued concurrently with the in-work Change.

13.2.3 Approval and Release. Approval and release levels are listed in Table 13-1. The TO Management or FMM divisions shall be the **only** PM functions allowed to release approved ITOs. Each ITO message shall be signed and encrypted, and sent out by the Manager/FMM division chief. This responsibility may be delegated to either the senior TO manager or the senior FMM but no lower within the organization. The TCM/ES may develop and transmit an ITO or RAC under TO Manager direction, but must include the TO Manager in the distribution. The PM may delegate ITO/RAC development and release authority to the contractor TO division when operating under new acquisition reform processes such as Total System Performance and Support Responsibility (TSPSR). Other PM personnel shall not issue ITOs or RACs affecting maintenance or flight manual TO content. Emergency suspension or rescission of an ITO or RAC without compliance (TO 00-5-15) will be approved at the same level as the original ITO or RAC.

13.2.4 Indexing. The TO Manager will index ITOs and RACs in JCALS as quickly as possible after the message is transmitted. ITOs will be listed in the next update of the ETIMS TO Catalog, with a "Y" in the "INT IND" (Interim Indicator) column. RACs will be listed as regular changes. Ensure ITOs/RACs are indexed in JCALS, marked as "Available for Published Catalog" and copies are sent to the TO Archives.

NOTE

There are some types of TOs not indexed or managed in JCALS, e.g., EOD.

13.2.5 Distribution. The TO Manager distributes ITOs and RACs approved for release using one of the methods listed in paragraph 10.9 which will meet the required timelines and security protection. IOSs, ISSs and RAC Notifications are normally sent as multiple addressee, signed and encrypted Outlook messages with receipt confirmation. RACs may be distributed by any of the methods in paragraph 10.9. (Unsigned, unencrypted SMTP e-mail cannot be used for restricted distribution/classified data.) The FMS TO System Section (OC-ALC/ENGLC) will distribute releasable ITOs and RACs to FMS customers after FDO review. Retain a digital copy of every ITO and RAC issued for the weapon system/commodity, to facilitate follow-on distribution for TO users not receiving the Initial Distribution (ID) (these copies may be disposed of two years after they have been superseded or rescinded).

13.2.5.1 Establish and maintain Outlook e-mail distribution lists for ITO and RAC notification distribution, unless distribution is through a TO program web site. The TO Manager developing them is the Outlook e-mail distribution list owner and is responsible for determining all TO-using activities for a specific MDS or type of equipment. Other PM personnel may use Outlook e-mail distribution lists for dissemination of other administrative and technical information about the weapon system or commodity program.

13.2.5.1.1 A separate Outlook e-mail distribution list shall be used for each separate weapon system MDS or major commodity series. This will preclude units having one MDS/type of equipment from receiving unneeded ITOs or RAC notifications on an MDS/type of equipment they do not possess. ITOs and RAC notifications that pertain to more than one MDS (e.g., ITCTOs numbered with a"base" header such as "1F-16-XXX") will be addressed to multiple lists.

13.2.5.1.2 Commodity TO Managers in "basket" program offices may either establish their own lists, use lists established for other logistics purposes (e.g., a TODO listing), or use lists of the weapon systems employing their equipment. The TO Manager must obtain permission from the owner to use an Outlook e-mail distribution list belonging to another activity, and is responsible for coordinating with the owner to ensure that all applicable TO users are included in the list.

13.2.5.1.3 The TO Manager will include other services, OC-ALC/ENGLC (for FMS), and affected defense contractors in the Outlook e-mail distribution list as applicable. Include special distribution addressees (Table 13-3). OC-ALC/ENGLC will distribute ITOs to SAP/FMS customers as required. Process requested additions, changes and deletions to the Outlook e-mail distribution list when received.

13.2.5.1.4 Outlook e-mail messages on NIPRNet transmitting restricted distribution unclassified data must be signed and encrypted using a registered CAC or External Certification Authority (ECA) certificate (paragraph 10.9.2). Classified messages must be transmitted on SIPRNet. Recipients must also have registered certificates to receive and decrypt messages.

13.2.5.2 In order for the ITO distribution and RAC notification processes detailed in this instruction to work effectively, it is crucial that TO Managers or their designees and MAJCOM managers aggressively manage the currency of their Outlook e-mail distribution lists. TO Managers must periodically review the JCALS "Generate ID Report by Publication" function on assigned TOs, and by consultation with using command action officers or other PM personnel to confirm that all users are in fact included on the list being utilized. OC-ALC/ENGLA (the Air Force TO Archive) must be an addressee on all Outlook e-mail distribution lists for distribution of ITOs and RACs (Outlook address: ocalc/engla.Archive.Repository@tinker.af.mil).

NOTE

Some AFMC Centers are compiling TOs and updates monthly on a CD-ROM/DVD for submittal to the Tinker Archives.

13.2.6 Merging RACs with Basic TO Files. The TCM, TO Manager or editor electronically merges the RAC file with the baseline TO file to create a new baseline TO, and for PDF files, relinks (indexes) the new file using Adobe® Acrobat® and linking software. The merged and re-indexed TO is returned to digital storage as the new baseline digital TO file, along with the standalone RAC file.

13.3 RAPID ACTION CHANGE NOTIFICATION AND DISTRIBUTION.

13.3.1 RAC Notification Messages. When a RAC is issued, the TO Manager or FMM responsible for the TO will notify affected TODO accounts that the RAC is available and how to obtain it. The notification message will be sent using any method which will meet the timelines for Emergency or Urgent changes (TO 00-5-1). RAC Notification messages are not the same as the ITO "Advance Notification of Release" message. RAC notification messages will contain:

- Affected TO number and title,
- RAC number and date,
- File names and sizes of the merged TO (if applicable) and RAC files (sizes are required to ensure users have enough hard drive space to accomplish the download), and either
  - E-mail transmission date and time (when distributing via e-mail).
- Messages must include a point of contact and phone number to call in case of any technical problems.

13.3.1.1 Note that if user names and passwords must be included in notification messages for restricted distribution data, messages must be signed and encrypted using the CAC or Fortezza cards. Non-secure Outlook e-mail can only be used for notifications about unclassified, public release TOs and RACs.

13.3.1.2 When individual TO files are password protected, file passwords will be included in the message.

13.3.2 Distribution. Any method of electronic RAC distribution described in paragraph 10.9 may be used. Signed and encrypted Outlook e-mail is preferred.

NOTE

- Restricted TO files must be password protected and encrypted (AFI 33-129), and loaded on an access-controlled (domain or user name and password) https site.
- RACs for distribution statement “A” TOs may be hosted on public web sites.

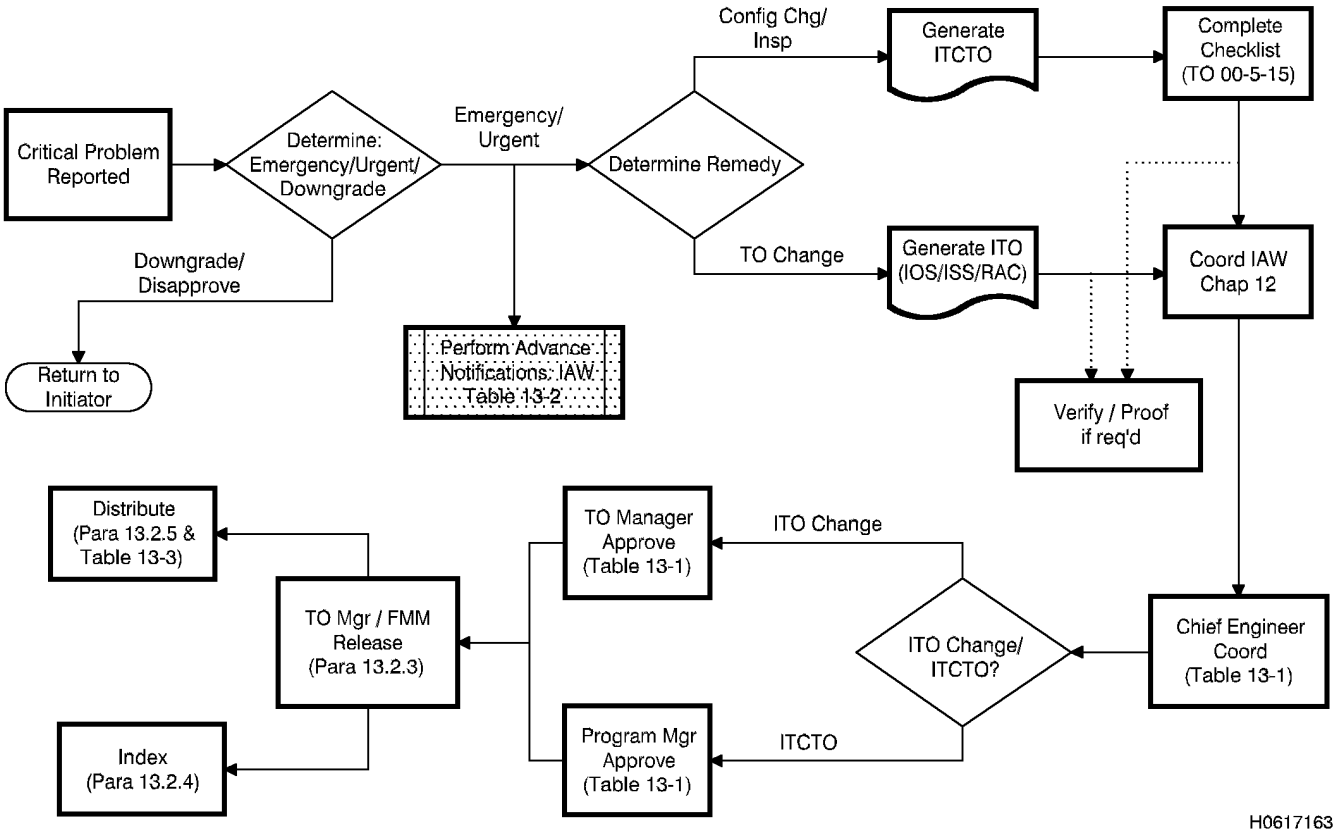

Figure 13-1. IOS/ISS/RAC Flow Chart

Table 13-1. ITO/RAC Approval Signature Levels

ITO/RAC is:	Action	Official
1. All ITOs	Coordinate/Approve Contents: Release after approval:	Chief Engineer TO Manager/FMM
2. ISS/IOS/RAC	Approval/Signature:	TO Mgr/FMM
3. Emergency ITO/RAC affecting SIOP-tasked systems/equipment	Approval: Through: Signature:	Chief of Staff, USAF PM, ALC/CC, AFMC/CC PM
4. Emergency ITO/RAC other than 3 above	Approval/Signature:	PM
5. Urgent ITO/RAC	Approval/Signature:	PM
6. ITO Supplement	Approval/Signature:	Same as the basic ITO

Table 13-2. Advance Notification Requirements for IOSs/ISSs/RACs

When _____	_____ will	Notify _____, Via Telecon/E-Mail, [1,2]
an IOS, ISS or RAC which could restrict any Air Force operational weapon system from full capability or operational readiness will be issued	the responsible PM	senior AFMC and USAF leaders via the Advance Notice of Emergency or Urgent ISS, IOS, or RAC Release Form Select IOS/ISS/RAC Submission Page. If problems are incurred contact AFKN: (937) 656-2356// DSN: 986-2356; FAX: (937) 656-0166// DSN: 986-2356; URL: https://afkm/wpafb.af.mil the Program Executive Officer (PEO) for systems/items in acquisition [3,6] the responsible Center Commander for fielded weapon systems [3] the PM responsible for management of any impacted end-item systems or commodities [3] any affected MAJCOM/CC/A4/A3 offices [3] Local Safety (SE) and Public Affairs (PA) offices [3] Development System Manager (DSM) or Support System Manager (SSM) and respective ALC or PC/PA, as appropriate [3] the applicable Defense Contract Management Agency (DCMA) Office the HQ AFMC Command Center, HQ AFMC/OPSO/A3XC, DSN 787-6314// Comm (937) 257-6314 via telecon and Advance Notificaiton e-mail (ITCTO Submission web page) [5]
	AFMC Command Center, HQ AFMC/OPSO/A3XC	HQ AFMC/CC/CV/CA/A4 by telecon to confirm receipt of Advance Notice of Immediate or Urgent Time Compliance Technical Order (TCTO) Release Form e-mail
		AFOC via Operations Report-3B (OPREP) BEELINE requirement in accordance with AFI 10-206, Operational Reporting, Table 3.4, Rule 1E if applicable
	DSM or SSM	their Center Commander [3]
	HQ AFMC/SEF	HQ USAF/SE/SEP/SEF/SEG [4]

NOTES:

1. If Internet connectivity is lost, make telecon notification to the HQ AFMC Command Center, HQ AFMC/OPSO/A3XC at DSN 787-6314//Comm (937) 257-6314.

2. For IOSs, ISSs, and RACs the Advance Notice of Emergency or Urgent ISS/IOS/RAC Release Form at the AFKN Submission web page (https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=W) may be used for to satisfy e-mail notification requirement by adding applicable addressees to Block 9 of the form.

3. After duty hours, contact the appropriate MAJCOM/ALC/PC Command Centers/Posts. See AFI 10-206, Operational Reporting, for MAJCOM phone contacts. If the number for MAJCOM/ALC/PC Command Center/Posts is unknown contact HQ AFMC Command Center for assistance, HQ AFMC/OPSO/A3XC, DSN 787-6314, Comm (937) 257- 6314, by telecon.

4. After duty hours notification of HQ USAF offices will be via the AF Operations Center (AFOC), at DSN 227-6103/2270, Comm (703) 697-6103/2270.

5. PM confirms AFMC Command Center has received the Advance Notification e-mail and notifies the command center of any Operations Report-3B (OPREP) BEELINE requirements in accordance with AFI 10-206, Operational Reporting, Table 3.4, Rule 1E.

6. PMs of PEO programs will contact the applicable PEO prior to HQ AFMC Command Center notification as required.

Table 13-3. Additional ITO/RAC Distribution Addresses

ADDITIONAL ITO/RAC DISTRIBUTION ADDRESSES	
ITO/RAC Type/Applicability	**Include Following Addresses**
All ITOs/RACs	OC-ALC/ENGLA, Tinker AFB, OK (Archives) OC-ALC/ENGLC (FMS TO System Section) Aerospace Maintenance and Regeneration Center (AMARC)/MAWL, Davis-Monthan AFB, AZ
ITOs/RACs that affected assigned systems and equipment	Responsible TO Management Organization (See AF TO Catalog Application)
ITOs/RACs which restrict any Air Force Combat Weapon System from full capability or operational readiness	Air Force Combat Operations Staff, HQ USAF/A300A, Pentagon, Washington, DC
All Immediate and Urgent Action ITCTOs and ISSs/Safety-Related RACs	Prime Center/CC/CV/PA Prime Center Materiel Safety Program Manager HQ USAF/A4M/SEP/SEF HQ AFMC/CC/CV/CA/A2/5/A3/A4/A4U/EN/PA/SE/SEF Lead Command/CC/A3/A4/SE Other Affected MAJCOM/CC/A3/A4/SE
All RACs, IOSs, ISSs and ITCTOs affecting Weapons Delivery TOs	5 AF/A4 v3, Yokota AB, JA 607 ASG/CC v3, Osan AB, KOR
ITCTOs related to nuclear safety	896 MUNS/CC, Nellis AFB, NV 898 MUNS/CC, Kirtland AFB, NM
ITOs/RACs for systems, equipment and munitions assigned to the US Army	Commander, US Army Armament, Munitions and Chemical Command (CDRAMCCOM), Rock Island, IL
ITOs/RACs for systems and equipment assigned to the US Navy	Commanding Officer Naval Air Technical Data and Engineering Service Command San Diego, CA, 92135
ITOs/RACs for systems and equipment assigned to the US Coast Guard	Commandant, US Coast Guard/G-EAE, Washington, DC US Coast Guard Aircraft Repair and Supply Center, Elizabeth City, NC
ITOs/RACs affecting operational munitions, aircraft and missiles	HQ USAF/A4E, Washington, DC DET 63/CC, HQ ACC Indian Head MD 20640-5099
ITOs/RACs affecting systems and equipment when contract is administered by Defense Contract Management Agency (DCMA)	Applicable Defense Logistics Agency
ITOs/RACs affecting USAF rotation squadrons in this command and ITOs affecting SAP systems and equipment assigned to Italy, Greece and Turkey	Commander Allied Air Forces Southern Europe (COMAIRSOUTH)
ITOs/RACs for systems and equipment in production	Applicable DCMA Office

Table 13-3. Additional ITO/RAC Distribution Addresses - Continued

ADDITIONAL ITO/RAC DISTRIBUTION ADDRESSES	
ITO/RAC Type/Applicability	**Include Following Addresses**
ITOs/RACs affecting FAA certified aircraft or similar FAA certified systems	Federal Aviation Administration (FAA)/FS-700 Washington, DC FAA Technical Center/ACT-300/AC-800, Atlantic City, NJ
ITOs/RACs affecting systems and equipment authorized to SAP/FMS Countries until the Air Force TO migrates to TODPS (See Chapter 10)	OC-ALC/ENGLC, Tinker AFB OK (FMS TO System Section) (OCALC. ENGLC.Work@tinker.af.mil) 555 IGP/CC, Wright-Patterson AFB, OH (555.IGP.workflow@wpafb.af.mil)
ITOs/RACs for C-130 and E-4	MODUK/PE, London, England
ITOs/RACs for German Air Force (GAF) RF-4E and USAF F-4 series that may apply to GAF RF-4E due to similar equipment	GAF Materiel Office, AMO ROMAL 3A1, Posz Wahn, Germany GAF Liaison Office/MM (L-22), Hill AFB, UT AMEMB, Bonn, Germany (ODC/AF)
ITOs/RACs affecting Israel	RUFA USAI, Israeli Defense Attaché, Washington, DC

CHAPTER 14
ENVIRONMENTAL, SAFETY AND OCCUPATIONAL HEALTH

14.1 GENERAL.

Safety and environmental hazard information and precautions must be included in TOs and technical data for operation, maintenance, modification and disposal of systems and commodities, IAW MIL-STD-38784. This includes MILSPEC TOs, commercial manuals, AFMC Forms 202 and AFTO Forms 252, etc. TOs must identify any hazards that exist and must not create hazardous situations. Everyone involved with the TO System must assist in evaluating, identifying, and correcting safety and health hazards.

14.1.1 Safety Offices. MAJCOMs, PCs and ALCs possess safety offices chartered to review TOs for ground, weapon, nuclear, and flight safety. The appropriate office should be involved from the start of TO development, beginning with the TOP/RC. Safety will provide guidance on the placement, wording and application of warnings, IAW MIL-STD-38784.

14.1.2 Commercial Manuals. Commercial manuals may require supplementing to add warnings and cautions due to the Air Force environment or application. Any conflict in the use or wording of warnings shall be resolved by HQ AFMC/SE.

14.2 TECHNICAL ORDER MANAGER RESPONSIBILITIES.

The TO Manager should establish points of contact with engineering and safety offices to resolve safety issues. Questions related to design or materials which increase the risk to personnel or equipment shall be reported to the Safety Office for resolution.

14.3 ENVIRONMENTAL, SAFETY AND OCCUPATIONAL HEALTH (ESOH) REQUIREMENTS.

Engineers or ESs responsible for TO content will coordinate any new or revised procedures in non-exempt TOs (see Tables 14-1 and 14-2 below) that might affect the environment and/or safety and health of personnel, cause damage or destruction of equipment, or affect TO warnings or cautions, with the appropriate ESOH activities (e.g., Center Safety, Bioenvironmental Engineering, Environmental Management).

14.3.1 Safety Review. Center Safety offices must approve new or revised technical procedures affecting the safe operation and maintenance of systems and equipment (AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program*). This requirement applies to Ground, Flight, Missile and Explosives safety - for Nuclear Surety, see paragraph 14.7.

14.3.2 Health Review. Center Bio-Environmental Engineering (BEE) offices must approve new and changed technical procedures affecting personnel health (involving noise, heat, air contaminants, chemicals, radiation, lasers, thermal stresses, biological and ergonomic hazards, etc.). The Center BEE offices may request consultative assistance from: (1) the AF Institute of Operational Health (AFIOH), Brooks City-Base, (DSN 240-8171), (2) the 311th HSW/XPRA - Human Systems Integration office, Brooks City- Base, (DSN 240-4428), and/or (3) HQ AFMC/SGPE - Command Bioenvironmental Engineer (DSN: 986-3634).

14.3.3 Exemptions. The following types of TO/TO updates are exempt from ESOH review:

Table 14-1. Exempted TO Types

Series or Category	Type
-01 Series	List of Applicable Publications
-06 Series	Work Unit Code Manuals
-8 Series	Tape and Tape Manuals
-4 Series	Illustrated Parts Breakdown
Category 1, -1 Series	Flight Manuals
1-1C-1 Series	Air Refueling Procedures Manuals

Table 14-1. Exempted TO Types - Continued

Series or Category	Type
Category 1, -5 Series	Basic Weight Checklist and Loading Data Manuals
Category 1, -6CF-1 Series	Acceptance and Functional Check Flight Manuals
Category 1, -34 Series	Conventional Munitions Delivery Manuals
(Various)	In-Flight Maintenance Manuals
Category 60	Explosive Ordnance Disposal (EOD)

Table 14-2. Exempted Update Types

Series or Category	Update Types
All	Extension of TCTO Rescission Dates
	Part Number Changes
	Source Maintenance and Recoverability (SMR) Coding Changes
	Editorial Changes
	Numerical Changes
	Art/Illustration Changes not involving personnel protective devices or equipment

14.3.4 Special Review Lists. The Center Safety Office will coordinate with local program TCMs to identify additional TOs (over and above the ones listed below) requiring special safety or health reviews before printing and distribution, IAW AFMCI 21-301. Additionally, changes to the following TOs will be sent to the indicated office within the Air Force Institute of Operational Health, (AFIOH), Bldg 180, Brooks City-Base TX 78235, for review and coordination:

Table 14-3. Special Review Lists

TO Nbr	Title	Office
1-1-3	Inspection and Repair of Aircraft Integral Tanks and Fuel Cells	AFIOH/RS
1-1-4	Exterior Finishes, Insignia and Markings Applicable to USAF Aircraft	AFIOH/RS
1-1-8	Application and Removal of Organic Coatings, Aerospace and Non-Aerospace Equipment	AFIOH/RS
1-1-17	Storage of Aircraft and Missile Systems	AFIOH/RS
1-1-686	Desert Storage, Preservation and Process Manual for Aircraft, Aircraft Engines, and Aircraft Auxiliary Power Unit Engines	AFIOH/RS
1-1-689	Avionic Cleaning and Corrosion Prevention/Control	AFIOH/RS
1-1-691	Aircraft Weapons Systems -- Cleaning and Corrosion Control	AFIOH/RS
33B-1-1, Section 9	Non-Destructive Inspection Methods, Radiation Protection	AFIOH/SDR

14.4 GROUND SAFETY.

Safety Offices, in conjunction with Bio-Environmental Engineering (BEE), Fire Department and Environmental Management (EM) Offices, are tasked to periodically review design handbooks, TOs, MIL-PRFs, MIL-DTLs, MIL-STDs, and Table of Allowances to ensure safety and health criteria and procedures (to include fire safety and environmental concerns) in those documents comply with Occupational Safety and Health guidance (AFI 91-301).

14.4.1 TO Safety Reviews. The acquisition agency Ground Safety (SEG), BEE, Fire Safety and EM Offices are responsible for supporting TO reviews during the acquisition process. When the acquisition agency is at a Product Center, coordination with the Air Logistics Center counterparts is essential. SEG personnel are the SMEs for electrical, mechanical, chemical, radiation, and laser hazards. BEE and EM personnel review TOs for personnel hazards and HAZMAT/ODS usage. The Fire Safety Office will review any procedures involving exposure to heat and fire.

14.4.2 TO Procedures. TO procedures shall be developed to protect equipment from abuse, inadvertent operation, or any condition which could cause damage or degradation. However, the TO must not become a work-around for hazardous equipment design.

14.4.3 Electrostatic Discharge Sensitive (ESDS) Devices. ESDS devices within most modern electronic equipment require special protection and handling procedures. The guidance contained in TO 00-25-234, *General Shop Practice Requirements for the Repair, Maintenance and Test of Electrical Equipment*, and MIL-STD-1686, *Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices)*, may be provided to the contractor as source data and references.

14.5 POLLUTION PREVENTION.

Preventing pollution requires a proactive and dynamic management approach, because prevention achieves environmental standards through source reduction rather than after-the-fact correction.

14.5.1 Reduced Use of HAZMAT and ODS. TO procedures shall be developed to reduce the use of hazardous materials in all phases of weapon system development from concept through production, deployment and ultimate disposal. The TO Manager must ensure compliance with Air Force 32-70 *(Environmental Quality)* series instructions.

14.5.2 Establishing POCs. Points of contact should be established with engineering, safety, environmental management, Center BEE, and Research and Development (R&D) offices to resolve pollution prevention issues.

14.5.3 Waivers to Use Ozone Depleting Substances (ODS). If Class I ODS must be used, the PM must obtain a waiver from HQ USAF for ODS use.

14.6 WEAPON AND FLIGHT SAFETY.

Weapon and flight safety programs are managed at several levels (AFI 91-202). Chapter 4 and Chapter 16 of this TO list OPRs and procedures for specific types of TOs. These OPRs will identify the appropriate safety offices. Flight Safety and three major areas of weapon safety (explosive, nuclear and missile) must be addressed for any military system.

14.6.1 Flight Safety. Flight safety reviews for FMP TOs are the responsibility of the FMM. The TO Manager is responsible for ensuring contractor compliance with direction. Cargo aircraft loading manuals which deal with explosives or nuclear weapons and weapon loading and delivery manuals must receive required explosive and/or nuclear safety reviews as well as flight safety reviews.

14.6.2 Explosive Safety Requirements. Basic TOs and all updates containing procedures on the operation, maintenance, inspection, modification, disposal, etc. of aircraft systems, ammunition, missiles (strategic or tactical), missile motors, explosives, egress systems, armament items (such as guns, launchers, dispensers, pods, etc.), and handling, support or test equipment peculiar to these items must receive a weapons safety review by the Center Weapons Safety Office. All TO procedures involving explosives must comply with AFMAN 91-201, *Explosives Safety Standards*. **EXCEPTIONS**: The GACP, OC-ALC/GHGMA, has safety review responsibility for TOs prime at Hill AFB. The Naval EOD Technology Division (NAVEODTECHDIV) performs an internal explosives safety review on all Category 60 EOD TOs.

14.6.3 Nuclear Surety. See paragraph 14.7.

14.6.4 Missile Safety. Missile safety reviews will be conducted on the operation and maintenance procedures used with missile weapon systems, in addition to any explosive and/or nuclear safety reviews required.

14.7 NUCLEAR SURETY REQUIREMENTS.

14.7.1 Technical Evaluation. TO procedures involving nuclear weapons, nuclear combat or non-combat delivery systems, or support equipment certified and approved for use with nuclear weapons (see Master Nuclear Certification List, https://wwwmil.nwc.kirtland.af.mil/mncl/index.cfm) must receive a technical evaluation for nuclear surety (AFI 63-125,

Nuclear Certification Program, and AFI 91-103, *Air Force Nuclear Safety Certification Program*). AFI 63-125 requires nuclear certification of TO procedures involved in a weapon system's nuclear mission operations, maintenance, troubleshooting, OPCERT, DECERT, nuclear compatibility, handling, movement, restraint configuration, loading, unloading, delivery, and testing. Nuclear Safety Certification is to ensure compliance with nuclear Weapon System Safety Rules (WSSR); requirements in 91-100 series Safety AFIs, nuclear safety, and design safety features. The technical evaluation for nuclear surety is a continuing process applicable to system or commodity operational usage changes, modification procedural changes, and changes to individual nuclear WSSRs.

14.7.2 Documentation and Marking. The TCMs and responsible engineers for nuclear weapon TOs will accomplish and document technical evaluations on all change packages against assigned TOs. Mark applicable procedures in the TOs with "HCP" or "NSP" (Hardness Critical Procedure or Nuclear Surety Procedure) as appropriate. Review safety rules and record review accomplishment as required by AFI 91-102 AFMC Sup, *Nuclear Weapon System Safety Studies, Operational Safety Reviews, and Safety Rules*. Ensure TOs used with or in support of nuclear weapons specify use of nuclear surety certified equipment only (AFI 91-103).

14.7.3 Procedures for Non-Weapon Nuclear Materials. Coordinate any procedural changes involving other radioactive materials (e.g., depleted uranium counterweights, luminous exit markers, optical lens coatings containing thorium, or nucleonic fuel indicators), with the USAF Radioisotope Committee Secretariat, HQ AFMOA/SGPR, 8901 18th St, Brooks AFB TX 78235-5217 (through HQ AFMC/SGBR), IAW AFI 40-201, *Managing Radioactive Materials in the US Air Force*.

CHAPTER 15
SECURITY ASSISTANCE TECHNICAL ORDER PROGRAM

15.1 GENERAL.

This chapter contains information pertaining to the acquisition and sustainment of TOs required to support USAF military systems and commodities provided to Security Assistance Program (SAP) customers. Support includes TOs for military systems and commodities sold to foreign governments and international organizations under the SAP. Foreign Military Sales (FMS), consortium agreements, co-production agreements and direct sales programs are all included under the SAP. Policies and procedures for the Security Assistance TO Program (SATOP) are specified in TO 00-5-19. This TO provides acquisition guidance to the TO Manager.

15.2 RESPONSIBILITIES.

SATOP responsibilities are as follows:

15.2.1 HQ USAF/A4M and Secretary of the Air Force (SAF)/AQIK. Responsible for determining FMS TO policy and approving policy changes.

15.2.2 Air Force Flight Standards Agency (AFFSA). Has delegated responsibility for management of the Flight Manuals Program (AFI 11-215), including sales of FMP publications to foreign countries, to HQ AFMC/A3.

15.2.3 SAF/IAPD. Responsible for disclosure policy.

15.2.4 Air Force Security Assistance Center (AFSAC)/XP. Manage the SATOP.

15.2.5 TO Manager Responsibilities. The TO Manager for a military system or commodity program manages Country Standard TOs (CSTOs) for that program.

15.2.5.1 The TO Manager is responsible for determining the types of TOs and CSTOs required to support hardware and software for a particular country and, prior to signature of the Letter of Agreement (LOA) between the U.S. and the foreign country, to provide Pricing and Availability (P&A) data. Information related to the P&A process is contained in AFI 16-101, *International Affairs and Security Assistance Management*. The TO Manager responsibility for CSTO management after the LOA is signed is the same as for other TOs.

15.2.5.2 The TO Manager must not include modifications affecting only SAP customers in USAF TOs (paragraph 15.3.1). Instead, a supplemental CSTO manual (paragraph 15.3.2.3 or paragraph 15.3.2.4) must be developed.

15.2.6 Releasability Reviews. All TOs to be released to a foreign country, whether USAF, M-Symbol or CSTO, must be reviewed for releasability by the local Foreign Disclosure Office (FDO). When releasable, the FDO will code the SATODS "W00" field for the TO/CSTO with only the country codes of those countries authorized to receive the documents. Do NOT use the "XX" country code on the W99 line unless the document is truly releasable to **all** foreign countries.

15.2.7 Translations. IAW DoD 5105.38-M, *Security Assistance Management Manual*, Chapter 2, *Translation Services*, the host country is responsible for translating documents. Security Assistance Offices (SAO) should convey this point to host country counterparts. For purposes of communicating between the U.S. Government and purchaser representatives only, SAOs may provide "informal translations" using the same practices as the U.S. Diplomatic Mission when the SAO Chief determines an informal translation of an English text is in the U.S. interest. Translators must clearly mark the translated document "Informal and unofficial translation -- English text governs." The SAO Chief must ensure that a forwarding letter accompanies each contractual document (e.g., LOA) emphasizing that the English text is the official binding document. Translation assistance is limited to U.S. and host country officials. Other requestors are advised to seek assistance from local translators.

15.3 TYPES OF SATOP MANUALS.

15.3.1 USAF TO. A manual developed for use by USAF activities in the operation and maintenance of USAF military systems and commodities. A USAF TO may be provided to SATOP countries on a reimbursable basis when USAF policy and disclosure criteria permit.

15.3.2 Country Standard TO (CSTO). A TO developed to support a SATOP country military system or commodities that cannot be supported by direct use of a USAF TO. An IETM database must be sanitized to remove non-releasable data and reissued as a completely separate database for SAP/FMS use, and in some cases, for each country's program. The USAF database cannot merely be selectively programmed or "partitioned" to isolate non-releasable data. CSTOs are assigned TO Numbers (similar to USAF TOs) which are prefixed with "CSTO" and a country designator code, and are indexed in separate CSTO Indexes. CSTO numbers are assigned by OC-ALC/ENGLC in the FMS TO System Section. This office also produces and distributes TO 0-1-71, *Consolidated Security Assistance TO Index*, which lists M-Symbol TOs (paragraph 15.3.5), and country-specific CSTO indexes (also numbered 0-1-71, but with a Country Prefix). The following are four types of CSTOs that can be procured:

15.3.2.1 An individual country CSTO that is procured for, and can only be used by, one particular country. EXAMPLES: CSTO BN1-1H-39-1; CSTO BN1-1H-39WC-1; CSTO BN1-1H-39-1SS-1 (for the fictional country of "Banderia")

15.3.2.2 An "XX" CSTO that is procured for, and will be used by, multiple countries (but not necessarily to ALL countries). EXAMPLES: CSTO XX1-1H-39-4; CSTO XX1-1H-39-530; CSTO XX1-1H-39-1SS-1.

NOTE

An "XX" CSTO is releasable only to the countries which shared in the development costs. The FDO annotates the participating countries in SATODS. Requests for an "XX" CSTO from non-participating countries will be denied.

15.3.2.3 An individual supplemental CSTO to a USAF TO (or "XX" CSTO) that is procured for, and can be used by, one particular country. EXAMPLE: CSTO BN1-1H-39-1-1.

15.3.2.4 An "XX" supplemental CSTO to a USAF TO that is procured for, and can be used, by several countries. EXAMPLE: CSTO XX1-1H-39-1-1.

15.3.3 Consortium TO. A TO developed to support a military system or commodity on which the USAF has an agreement to share development costs with one or more countries or international organizations.

15.3.4 Baseline TO. A USAF TO used as the database for development and follow-on maintenance of a CSTO.

15.3.5 M-Symbol TO. A USAF TO that has been rescinded for USAF use but is retained to support SATOP military systems or commodities. When a TO becomes an M-symbol book, the lead command responsibility transfers to AFMC. Reprinting of M-Symbol TOs must be funded in PE 78070 and the costs to provide this support must be captured and reported as part of the quarterly FMS TO billing process. If there are any changes required to an M-symbol TO, then the manual must be converted to a CSTO and the security assistance customer must establish an FMS case to fund the development, printing and distribution of the changes.

15.4 OVERSEAS WORKLOAD PROGRAM (OWLP).

The OWLP, AFMCI 21-201, *The Overseas Workload Program*, specifies the procedures to release TOs and other technical data to foreign nationals contracted to perform work on U.S. assets. This is not considered an FMS or SAP issue, but does require an AFSAC/XPJ (Command FDO) or ALC FDO releasability review for both tech data and equipment prior to issuing the OWLP contract. The ALC having management responsibility for the system/equipment will develop and issue the contract for an OWLP. The program office is also responsible for establishing and managing a TO Account for the foreign contractor.

CHAPTER 16
SOURCE DATA

16.1 GENERAL.

Source data, as used in this TO, is information of any sort used to develop or update TOs. The contractor uses source data from program development and test for program TOs. The TO Manager must acquire any source data required to develop or update non-program TOs (e.g., weapon data to update aircraft loading TOs) or to assist associated contractors with TO development or update (e.g., a support equipment vendor). The TO Manager must follow up on source data delivery to ensure that TOs to be developed or updated will be published in time to meet program milestones.

NOTE

Source data developed organically by the Air Force does not require certification, but must be verified prior to delivery or incorporation into a TO.

16.1.1 Types of TOs Requiring Source Data. Types of TOs where source data would be required include, but are not limited to, Aircraft Emergency Rescue, EOD/RSP, Munitions Loading, Munitions Positioning and Tiedown, Weapons Delivery, and Explosive Storage and Maintenance manuals. Source data on support equipment provided by other contractors is required for prime contractor developed TOs.

16.1.2 Procedural Source Data. Procedural data is a special category of source data required during most TO development and acquisition programs. This data is a homogenous and organized grouping of the data required to perform operations and maintenance tasks on a military system or commodity item. The data is acquired when development of a stand-alone TO is inappropriate, or when TOs managed by other agencies must be updated. The content of procedural data is determined by the appropriate contract requirements, and includes text, diagrams, illustrations, charts, schematics and other data required to describe the procedures and support equipment.

16.1.3 Source Data OPRs. OPRs requiring source data must be included in program TO Planning/Requirements Conferences (Chapter 7), to ensure data requirements are specified accurately in RFPs and contracts. Some of the OPRs are listed in Chapter 4, and additional munitions-unique OPRs and requirements will be covered in this chapter.

16.1.4 Delivery. The contractor provides certified, adequate, safe and accurate source data as required by the contract. The TO Manager must work with the source data recipient to ensure that data provided is adequate. Delivery requirements may differ between OPRs and users as well. In some cases a single delivery may be sufficient, while other cases require deliveries or updates throughout the period of the contract.

16.2 ACQUISITION OF SOURCE DATA.

16.2.1 Development. Many different MIL-SPECs and DIDs may be used to procure source and procedural data, including those for Standard Data Packages (SDPs), engineering drawings, test and inspection reports, interface control documentation, and supportability analysis tasks. EOD source data is acquired using DI-SAFT-80931, *Explosive Ordnance Disposal Data*. Aircraft Emergency Rescue Information (Fire Protection) source data is acquired using DI-TMSS-81532, *Aerospace Emergency Rescue and Mishap Response Information (Emergency Services) Source Data*. Existing contractor data may be acquired through the contract Data Accession List. If existing TOs managed by the TO Manager or temporarily placed under TO Manager control require updating, Table 2 of the Technical Manual Contract Requirements (TMCR), TM-86-01 may be used to obtain updates, supplements or source data.

16.2.2 Acquisition Procedures. Procedures for source data acquisition are the same as for TOs. Source data requirements are determined during the TO Guidance Conference. In-Process Reviews are held as required. The contractor applies internal certification management processes and delivers an adequate, accurate data package for Air Force verification. After verification is complete, the contractor makes corrections as required, the package receives a final review if necessary and is delivered to the appropriate agency.

16.3 NONNUCLEAR WEAPONS DELIVERY SOURCE DATA - WEAPONS SOURCE DATA PACKAGE (AIRCRAFT -34 SERIES TECHNICAL ORDERS AND TO 1-1M-34).

The Weapons Source Data Package (WSDP) provides aircrew weapons delivery information for newly developed or modified nonnuclear munitions.

16.3.1 Requirements. The WSDP is developed to support four main requirements: (1) AFMC Development Test and Evaluation (DT&E); (2) Initial Operational Test and Evaluation (IOT&E); (3) revisions to both aircraft-specific weapons delivery manuals (-34 series) and the TO 1-1M-34 series Standard Volumes; and (4) user-unique Flight and/or Weapons Delivery Planning Programs. (Planning Programs provide the user with automated ballistic solutions for mission planning.)

NOTE

For weapon systems with authorized release to FMS countries, a separate WSDP is developed for each country with approved FDO release.

16.3.2 Contents. WSDP data consists of a section for generic munitions data and sections of aircraft-specific data for each aircraft which will employ the munitions item. WSDP content is described in MIL-PRF-38384, *Technical Manuals - Checklists and Source Data Packages, Aircraft Weapon Delivery*.

16.3.3 Development. Delivery envelopes for unguided and laser guided GBU-10/12/16/27/28/54 series munitions are normally developed by the Air Force SEEK EAGLE Office (AFSEO), 46 SK/SKA, from computer simulation programs. Envelopes for precision guided munitions (six degree of freedom or “6DOF” weapons) are normally provided by the weapon contractor as a part of the WSDP.

16.3.4 Procedures and Responsibilities.

16.3.4.1 WSDP acquisition participants are the munitions TO Manager, using command(s), aircraft PMs, AAC/AQY (for TO 1-1M-34), the Responsible Test Organization (RTO) and AFSEO.

16.3.4.2 The contractor develops the WSDP to meet established program schedules; the package should be delivered at least 30 calendar days prior to the start of DT&E. During IPRs, the WSDP is reviewed for use of common and standard terms for munitions items. Contractor QA is limited to Desk-Top Analysis (Chapter 9).

16.3.4.3 RTOs and AFSEO use the WSDP during aircraft/munitions testing to verify procedures. AFSEO initiates action, if required, to incorporate the weapons data into the Combat Weapon Delivery Software (CWDS) mission planning program. The testing agencies document any discrepancies and forward them to the munitions TO Manager for action. An updated WSDP must be available 30 days prior to the start of IOT&E.

16.3.4.4 Using commands and support agencies use the WSDP during IOT&E and forward any additional discrepancies to the munitions TO Manager.

16.3.4.5 The munitions TO Manager distributes the final WSDP to the appropriate aircraft PMs, AAC/AQY, 102 West D Ave Ste 160, Eglin AFB FL 32542-5415, DSN 875-3282 (for TO 1-1M-34), and AFSEO, 46 SK/SKA, 205 West D Ave Ste 348, Eglin AFB FL 32542-6865, DSN 872-0450. The TO Manager will also provide initial hardware delivery and user need dates (SEEK EAGLE PMD 5077) for informational and work effort planning purposes.

16.3.4.6 AFSEO issues the Certification Recommendation (CR) upon completion of SEEK EAGLE testing. The CR is required by the aircraft PMs prior to formalization of the weapons delivery TOs.

16.3.4.7 The aircraft PMs update each applicable aircraft weapons delivery TO, make formal distribution, and issue the Certification Completion Notification.

16.3.4.8 AFSEO develops and maintains CWDS through a Mission Planning Enterprise Contract (MPEC) at Hanscom AFB, MA. At the completion of Functional Qualification Test (FQT) by the developer, a copy of the CWDS is sent to 84 SCSG/GBSVM either by AFSEO (Joint Mission Planning System versions) or the developer (Portable Flight Planning Software versions) for distribution to the Developmental Test/Operational Test (DT/OT) organizations. When OT certifies the CWDS version, 84 SCSG/GBSVM makes formal distribution to the field. Weapon source data packages are used to correctly add new weapons to CWDS.

16.3.4.9 AAC/AQY completes the update of TO 1-1M-34.

16.4 NONNUCLEAR MUNITIONS LOADING SOURCE DATA - STANDARD SOURCE DATA PACKAGE (AIRCRAFT -33 SERIES TECHNICAL ORDERS AND TO 1-1M-33).

16.4.1 Requirements. A Standard Source Data Package (SSDP) containing nonnuclear munitions loading source data is required during the development and testing of new munitions items or systems, for integration of existing munitions with new aircraft, for integration of new munitions with new aircraft, and for major modifications to existing aircraft/munitions configurations.

16.4.2 Contents. SSDP contents are specified in MIL-PRF-9977, *Manuals, Technical and Checklists: Munitions/Weapons Loading Procedures, Nonnuclear and Nuclear and Packages, Standard Data: Munitions Loading Procedures, Nonnuclear*. The SSDP contains munitions descriptive data, munitions preparation data, and loading procedures, but NO aircraft-specific procedures or data. The SSDP becomes a Standard Data Package (SDP) once the data are verified and approved.

16.4.3 Development. The SSDP is maintained by the munitions acquisition TO Manager and is used to update the "approved" SDP. The SDP is maintained and published by OO-ALC/GHGMA, Hill AFB UT, and is provided to aircraft PMs for development of aircraft -33 series TOs and checklists, and to AAC/AQY for TO 1-1M-33, *Nonnuclear Munitions Information Manual -- Standard Volume*.

16.4.4 Nonnuclear Munitions Loading TOs. The -33 series TOs and checklists contain descriptive data and procedures for loading nonnuclear munitions on or into Air Force aircraft. TO 1-1M-33 contains descriptive data for munitions, suspension equipment, guns and gun pods, support equipment, and supplementary information.

16.4.5 Participants. SSDP acquisition participants include the TO Manager, using command(s), aircraft PMs, OO-ALC/GHGMA (for the SDP), AAC/AQY (for TO 1-1M-33), the RTO and AFSEO.

16.4.6 Procedures for New Munitions. The following steps outline the sequence of events for incorporation of new munitions items on new or existing aircraft. Paragraph 16.4.7 provides abbreviated procedures for incorporating existing munitions into additional military systems.

16.4.6.1 The contractor develops the SSDP to meet established program schedules; delivery should be at least 30 calendar days prior to the start of DT&E. During IPRs, the SSDP is reviewed for use of common and standard terms for munitions items. Contractor certification is limited to Desk-Top Analysis (Chapter 9).

16.4.6.2 AFSEO reviews and approves the SSDP for RTO use during DT&E. AAC and/or RTO procedures and checklists used by AFMC load crews during DT&E of using command aircraft must be reviewed and approved by the appropriate aircraft PMs prior to use. In addition, procedures and checklists used by using command load crews require using command approval.

16.4.6.3 The 46 OG/A3O or equivalent office at other RTOs prepares an AAC or local RTO -33 checklist from the SSDP. The checklist will be written and verified IAW ACCI 21-101 or RTO directives, and will be used to support DT&E and SEEK EAGLE testing.

16.4.6.4 After completion of DT&E and SEEK EAGLE testing, comments or corrections to the SSDP are coordinated with AFSEO and sent to the TO Manager.

16.4.6.5 The TO Manager will initiate verification scheduling in coordination with the munitions OT&E manager and the lead MAJCOM. Verification should be scheduled within 120 days after the estimated receipt of the revised SSDP. The lead MAJCOM will develop and publish a coordinated verification schedule based on the availability of aircraft, personnel and equipment required for verification.

16.4.6.6 The AFSEO reviews and approves the revised SSDP, and forwards the package through the TO Manager to affected agencies (including AAC/AQY) at least 90 days prior to the scheduled start of verification. The affected aircraft PMs develop (or contract for development of) preliminary -33 loading procedures for each aircraft involved, and provide them to the affected using commands, OO-ALC/GHGMA, and the OT&E manager at least 30 days prior to verification.

16.4.6.7 Verification participants will include representatives from each aircraft PM involved, affected using commands, the OT&E manager, 84 MUSG/GBAA, the munitions TO Manager, and the AFSEO, if required. The lead MAJCOM will provide the verification team manager (VTM) for multi-aircraft verifications, while the aircraft PM provides the VTM for

single aircraft verifications. The load crew is provided by the using command. Both the SSDP and the preliminary -33 procedures are verified.

16.4.6.8 After completion of verification, OO-ALC/GHGMA converts the SSDP to an "approved" SDP. Required verification changes to the SSDP are sent through the munitions TO Manager to the contractor for update. Changes to preliminary -33 procedures are routed to the aircraft TO Managers for similar update.

16.4.6.9 The verified SDP and preliminary -33 procedures, marked "For OT&E Use Only," are used for the duration of OT&E. The test team continues to evaluate the SSDP, SDP, and preliminary aircraft -33 procedures during OT&E and submits comments and recommended corrections to the respective OPRs.

16.4.6.10 Proposed updates and corrections are approved by a TORB consisting of the TO Manager(s), AFSEO, the using commands and OO-ALC/GHGMA. OO-ALC/GHGMA updates and distributes the approved SDP to aircraft PMs and AAC/ENL. The PM TO Managers will use the SDP and -33 procedures to develop formal aircraft -33 TOs. The munitions TO Manager will maintain the currency of the SSDP.

16.4.6.11 Aircraft PMs are responsible for providing OO-ALC/GHGMA and AAC/AQY with updated descriptive data (including illustrations) for new or modified aircraft-peculiar test equipment, Munitions Material Handling Equipment, special tools, etc., required for inclusion in TO 1-1M-33 and 11A-1-63, *Munitions Assembly Procedures*. 784 CBSG and AAC/AQY will use the SDP and PM inputs to update the TOs.

16.4.6.12 AFSEO flight certification is dependent upon publication of formal -1, -33, and -34 TOs and update of TOs 1-1M-33, 1-1M-34 and 11A-1-63. This must be accomplished in time to meet the need date specified in the SEEK EAGLE PMD.

16.4.7 Procedures For Existing Munitions. The following abbreviated steps are for incorporation of existing munitions on additional or new aircraft.

16.4.7.1 The using command requests AFSEO certification for additional aircraft which require certification with an existing munitions or stores item.

16.4.7.2 The aircraft TO Manager (or munitions TO Manager during munitions acquisition) will request the using command to coordinate with the affected agencies and schedule verification of the loading procedures.

16.4.7.3 The aircraft TO Manager requests the applicable SDP(s) from 505 CBSS/GBLA and develops (or contracts for the development of) preliminary -33 loading procedures. The procedures must be available for review at least 30 days prior to the start of verification.

16.4.7.4 Verification and update of procedures are the same as for new munitions.

16.4.7.5 Upon completion of AFSEO testing and receipt of the CR, the aircraft PM will provide any changed or modified data to AAC/ENL for inclusion in TO 1-1M-33 and to OO-ALC/GHGMA for inclusion in TO 11A-1-63, incorporate necessary changes into the aircraft -33 TO and issue the certification completion notice.

16.5 NONNUCLEAR EXPLOSIVE ORDNANCE DISPOSAL (EOD)/RENDER SAFE PROCEDURES (RSP) SOURCE DATA.

EOD/RSP source data, developed IAW DID DI-SAFT-80931, provides information and procedures for the development and/or update of joint service Category 60 TOs on newly developed or modified bombs and warheads; fuzes and fuzing systems; guided and ballistic missiles, grenades, artillery, mortar, rocket, and small arms ammunition; mines and torpedoes; depth charges, demolition charges, and pyrotechnics; clusters and dispensers; cartridge- and propellant-actuated devices (such as aircraft egress systems); and all similar or related items or components which may cause injury to personnel or damage to material. This includes ALL new or modified aircraft, munitions, delivery systems such as Unmanned Aerial Vehicles (UAV) and Unmanned Ground Vehicles (UGV), and ordnance items that contain explosives, propellants, and/or hazardous chemicals.

16.5.1 EOD TOs. Category 60 TOs (and source data) differ from maintenance TOs in that EOD TOs provide information and guidance rather than detailed step-by-step procedures. These TOs are typically used in accident, incident, mishap, dud-dropped and dud-fired situations where the systems or items have been damaged or failed to function as designed and standard TO maintenance procedures cannot be used.

16.5.2 Air Force Liaison. Det 63, HQ ACC is the Air Force centralized agency for EOD data acquisition and liaison with the NAVEODTECHDIV.

16.5.3 Requirements. The EOD source data package (which includes RSP) is developed to support three main requirements: (1) RTO need for emergency EOD, RSP and (if required) recovery procedures during DT&E operations, product improvement testing, failure analysis, and initial space vehicle deployment; (2) Using Command need for emergency EOD and RSP during OT&E operations; and (3) Development of the Joint Service Category 60 TOs by NAVEODTECHDIV.

16.5.4 Participants. The TO Manager will invite EOD representatives from Det 63, the RTO and using commands to the TO Planning/Requirements Conference (Chapter 7). Det 63 will normally be delegated as the representative for other EOD activities. At the conference, the representatives will identify and justify requirements for data for EOD operations, and commodities and recovery equipment to support EOD TO validation and verification, and determine delivery schedules. EOD SDP is developed IAW DID DI-SAFT-80931.

16.5.5 Delivery. Critical delivery dates are initial delivery for DT&E, delivery for OT&E, and delivery for TO development. TO development may take up to 12 months, depending on availability of hardware for validation and verification. DoD requires delivery of verified TOs 30 days prior to “fielding/stockpile” (DoDD 5160.62 and AFI 32-3001).

16.5.6 EOD SDP Procedures.

16.5.6.1 The contractor develops the SDP IAW DI-SAFT-80931. The package should be delivered at least 60 calendar days prior to the scheduled delivery of assets for Air Force testing. During IPRs, the SDP is reviewed for conformance to item and system configuration, and identification of Hazardous Item Recovery Candidates required for recovery and test failure analysis. Det 63 or a designated representative will participate in the Contractor certification process.

16.5.6.2 The AFMC EOD RTO supporting system or commodity testing will integrate the SDP data into the Test Support Project for the system or commodity and submit the project to a Safety/Hazard Review Board for approval before use. During DT&E, the RTO will document any comments or discrepancies with the SDP on an AFTO Form 27, and forward the form to the TO Manager and Det 63. If at any time the data is determined to be “no longer safe for use” (due to errors in the data, modifications to the hardware, or other reasons), the RTO will stop testing, notify the TO Manager of actions required to resolve the problem(s), and obtain corrections prior to continuing testing. Det 63 and the using command EOD representative must review and approve the DT&E-revised SDP prior to further use.

16.5.6.3 Procedures for OT&E are the same as for DT&E, except that the EOD RTO is usually a using command agency and must ensure the using command has approved the data for use. The OT&E-revised SDP is used to support development of the joint service Category 60 TO. The TO Manager will reverify the user TO need date and ensure the Det 63 schedules have incorporated the date.

NOTE

NAVEODTECHDIV no longer develops EOD TOs at no cost to the Air Force. They now charge a fee based on EOD TO SOW complexity.

16.5.6.4 Once the source data package is received by Det 63, the SDP is forwarded to NAVEODTECHDIV. NAVEODTECHDIV formulates a SOW and cost estimate to create and/or revise an EOD technical order. NAVEODTECHDIV provides a copy of the SOW to Det 63 and they forward it to the responsible program office for funding. Once the final SDP and funding is received, the TO should be completed in 90-days. Det 63 initiates the joint service development project at NAVEODTECHDIV, and establishes a distribution need date, based on the required assets available (RAA) and/or the initial operational capability (IOC) date of the weapon system on the Project Work Request. The NAVEODTECHDIV will develop, validate, verify and publish the EOD TO for DoD use. Distribution will be on the Automated EOD Publications System (AEODPS) DVD, which is distributed quarterly (Mar, Jun, Sep, Dec). Some foreign customers may receive EOD TOs in Adobe® PDF format when the NAVEODTECHDIV International Programs Office (IPO) determines them releasable.

16.5.6.5 The TO Manager monitors the development process to ensure required support equipment is available, any hardware configuration changes are forwarded, and delivery schedules will be met. If verified TOs will not be available in time to meet DoD and user requirements, the TO Manager must work with Det 63 to develop interim support procedures.

APPENDIX A
GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

A.1 LIST OF REFERENCED AND RELATED PUBLICATIONS.

Number	Title
ASSIST	Acquisition Streamlining and Standardization Information System databases (Quick Search, https://assist.daps.dla.mil/quicksearch/)
DAG	Defense Acquisition Guidebook (https://dag.dau.mil/Pages/Default.aspx)
DoD 4120.15-L	Model Designation of Military Aerospace Vehicles
DoD 4120.24-M	Defense Standardization Program Policies and Procedures
DoDD 5000.1	The Defense Acquisition System
DoD 5000.02	Operation of the Defense Acquisition System
DoD 5010.12-M	Procedures for the Acquisition and Management of Technical Data
DoD 5105.38-M	Security Assistance Management Manual
DoDD 5160.62	Single Manager Responsibility for Military Explosive Ordnance Disposal Technology and Training
DoD 5200.1-R	Information Security Program Regulation
DoD 5220.22-R	Industrial Security Regulation
DoDD 5230.24	Distribution Statements on Technical Documents
DoDD 5230.25	Withholding of Unclassified Technical Data From Public Disclosure
DoDI 5330.03	Document Automation and Production Service (DAPS)
DoD 5400.7-R/AF Sup	DoD Freedom of Information Act Program
DoDISS	DoD Index of Specifications and Standards (see ASSIST database)
FAR/DFARS	Federal Acquisition Regulation/Defense Federal Acquisition Regulation Supplement
AFPD 10-9	Lead Operating Command Weapon Systems Management
AFI 10-901	Lead Operating Command-Communications and Information Systems Management
AFI 11-215	USAF Flight Manuals Program (FMP)
AFMAN 16-101	International Affairs and Security Assistance Management
AFI 21-105	Aerospace Equipment Structural Maintenance
AFI 21-113	Air Force Metrology And Calibration (AFMETCAL) Program
AFJI 21-301	Interservicing of Technical Manuals and Related Technology
AFMCI 21-301	AFMC TO System Implementing Policies
AFMAN 23-110V3Pt1	Miscellaneous Materiel Management Procedures
AFI 24-203	Preparation and Movement of Air Force Cargo
AFI 31-401	Managing the Information Security Program
AFI 31-601	Industrial Security Program Management
AFI 32-3001	Explosive Ordnance Disposal Program
AFPD 32-70	Environmental Quality
AFI 32-7061	The Environmental Impact Analysis Process
AFI 33-119	Air Force Messaging
AFI 33-129	Web Management and Internet Use
AFI 33-150	Management of Communications Activities
AFI 33-200	Information Assurance Management
AFMAN 33-326/AFMC Sup	Preparing Official Communications

AFI 33-360	Publications and Forms Management
AFI 35-205	Air Force Security and Policy Review Program
AFI 38-401	The Air Force Innovative Development through Employee Awareness (IDEA) Program
AFI 40-201	Managing Radioactive Materials in the USAF
AFI 61-204	Disseminating Scientific and Technical Information
AFI 61-204 AFGM1	AF Guidance Memorandum to AFI 61-204 for Marking and Dissemination of Operations and Support Technical Data
AFPD 63-1/AFPD 20-1	Acquisition and Sustainment Lifecycle Management
AFI 63-101	Acquisition and Sustainment Lifecycle Management
AFI 63-104	The Seek Eagle Program
AFI 63-111	Contract Support for Systems, Equipment and End Items
AFI 63-124	Performance Based Services Acquisition
AFI 63-125	Nuclear Certification Program
AFI 63-1201	Life Cycle Systems Engineering
AFMCI 63-1201	Implementing Operational Safety, Suitability, and Effectiveness (OSS&E) and Life Cycle Systems Engineering
AFI 65-601V1	Budget Guidance and Procedures
AFI 91-102	Nuclear Weapon System Safety Studies, Operational Safety Review and Safety Rules
AFI 91-103	Air Force Nuclear Safety Certification Program
AFMAN 91-201	Explosives Safety Standards
AFI 91-202	The US Air Force Mishap Prevention Program
AFI 91-301	Air Force Occupational and Environmental Safety, Fire Prevention and Health (AFOSH) Program
AIA S1000D	International Specification for Technical Publications Utilizing a Common Source Database
AFSSI 8502	Organizational Computer Security
AFSSI 8520	Identification and Authentication
TM-86-01	Technical Manual Contract Requirements (TMCR) document
TO 0-1-11N	Numerical Index to Joint Nuclear Weapons Publications (Including Related Publications)
TO 0-1-11N-1-CD-1	Numerical Index to Joint Nuclear Weapons Publications (Including Related Publications) (Air Force Supplement)
TO 0-1-71	Consolidated Security Assistance TO Index
TO 00-5-1	AF Technical Order System
TO 00-5-15	AF Time Compliance Technical Order System
TO 00-5-18	USAF Technical Order Numbering System
TO 00-5-19	Security Assistance Technical Order Program
TO 00-20-2	Maintenance Data Documentation
TO 00-20-3	Maintenance Processing of Reparable Property and the Repair Cycle Asset Control System
TO 00-25-113	Conservation and Segregation of Critical Alloy and Precious Metal Bearing Parts and Scrap
TO 00-25-234	General Shop Practice Requirements for the Repair, Maintenance and Test of Electrical Equipment
TO 00-25-255	General Reference Manual -- Electronic Cable Assembly Components, Volumes 1 & 2
TO 00-25-256	User Manual -- Security Assistance Technical Order Data System (SATODS)
TO 00-35D-54	USAF Deficiency Reporting and Investigating System

TO 00-80G-1	Make Safe Procedures for Public Static Display
TO 00-105E-9	Aerospace Emergency Rescue and Mishap Response Information (Emergency Services)
TO 1-1-3	Inspection and Repair of Aircraft Integral Tanks and Fuel Cells
TO 1-1-4	Exterior Finishes, Insignia and Markings Applicable to USAF Aircraft
TO 1-1-8	Application and Removal of Organic Coatings, Aerospace and Non-Aerospace Equipment
TO 1-1-17	Storage of Aircraft and Missile Systems
TO 1-1-686	Desert Storage, Preservation and Process Manual for Aircraft, Aircraft Engines, and Aircraft Auxiliary Power Unit Engines
TO 1-1-689	Avionic Cleaning and Corrosion Prevention/Control
TO 1-1-691	Aircraft Weapons Systems -- Cleaning and Corrosion Control
TO 1-1M-33	Nonnuclear Munitions Information Manual -- Standard Volume
TO 1-1M-34	Aircrew Weapons Delivery Manual -- (Nonnuclear) Standard Volumes
TO 11A-1-10	Munitions Serviceability
TO 11A-1-42	General Disposal of Conventional Munitions
TO 11A-1-46	Hazard Classification and Fire-Fighting
TO 11A-1-61 series	Storage & Outloading Drawings
TO 11A-1-63	Inspection & Assembly of Nonnuclear Munitions
TO 11N-1-1	Joint Nuclear Weapons Publication System (JNWPS) Operating Procedures, Specifications and Standards
TO 33B-1-1, Section 9	Non-Destructive Inspection Methods, Radiation Protection
TO 35-1-256WC-1	Service Inspection Workcards -- Powered Aerospace Ground Equipment
D086	Mission Workload Assignments System
MIL-HDBK-245	Preparation of Statements of Work (SOW)
MIL-STD-810	Department of Defense Test Method Standard
MIL-HDBK-863	Wiring Data and System Schematic Diagrams, Preparation of
MIL-STD-882	System Safety Program Requirements
MIL-STD-1686	Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices)
MIL-STD-1840	Automated Interchange of Technical Information
MIL-DTL-7700	Detail Specification Flight Manuals, Air Refueling Procedures, and Abbreviated Checklists
MIL-HDBK-9660	DoD Produced CD-ROM Products NOTE: Also used for DVDs.
MIL-PRF-9977	Manuals, Technical and Checklists: Munitions/Weapons Loading Procedures, Nuclear and Nonnuclear//Packages, Standard Data: Munitions Loading Procedures, Nonnuclear
MIL-DTL-22202	Detail Specification: Aircraft Cross-Servicing Manuals, Technical, Preparation of
MIL-PRF-32216	Evaluation of Commercial Off-the-Shelf (COTS) Manuals and Preparation of Supplemental Data
MIL-PRF-38384	Manuals, Technical: Weapon Delivery and Aircrew Procedures, Nuclear and Nonnuclear
MIL-PRF-38769	Manuals, Technical: Work Unit Code
MIL-STD-38784	Standard Practice for Manuals, Technical: General Style and Format Requirements
MIL-HDBK-38790	Printing Production of Technical Manuals
MIL-PRF-49506	Logistics Management Information
MIL-PRF-83495	Performance Specification: Technical Manuals—On-Equipment Maintenance Manual Set
MIL-PRF-87158	Manuals, Technical: Aircraft Battle Damage Assessment & Repair

MIL-DTL-87929	Manuals, Technical: Operation and Maintenance Manuals in Work Package Format
DI-TMSS-80067	Technical Manual (TM) Contractor Furnished Aeronautical Equipment or Contractor Furnished Equipment (CFAE/CFE) Notices
DI-TMSS-80229	Technical Order Improvement Report and Reply
DI-TMSS-80527	Commercial Off-the-Shelf (COTS) Manual and Associated Supplemental Data
DI-SAFT-80931	Explosive Ordnance Disposal Data
DI-ALSS-81529	Logistics Management Information Data Products
DI-ALSS-81531	Time Compliance Technical Order (TCTO) Supply Data
DI-TMSS-81532	Aerospace Emergency Rescue and Mishap Response Information (Emergency Services) Source Data

A.2 LIST OF REFERENCED AND RELATED FORMS.

Number	Title
AFTO 22	Technical Manual (TM) Change Recommendation and Reply
AFTO 27	Preliminary Technical Order (PTO) Publication Change Request (PCR)/TO Verification Record/Approval
AFTO 30	Reproduction Assembly Sheets
AFTO 82	TCTO Verification Certificate
AFTO 124	Computation of Technical Order Reading Grade Level
AFTO 158	Technical Order Review Comment Sheet
AFMC 202	Nonconforming Technical Assistance Request and Reply
AFTO 203	Technical Order Numbering, Indexing and Control Record
AFTO 204	Technical Order Numbering, Indexing and Control Record (Continuation Sheet)
AFTO 205	Technical Order Receiving/Processing Record
DD 250	Material Inspection and Receiving Report
AFTO 252	Technical Order Publication Change Request
DD 254	Contract Security Classification Specification, Department of Defense
AFTO 276	Special Requisition for Air Force Technical Order
AFTO 585	Contract Data Requirements Substantiation
AF 847	Recommendation for Change of Publication
DD 1348-2	Issue Release/Receipt Document With Address Label
DD 1423	Contract Data Requirements List (CDRL) (CG)
DD 2875	System Authorization Access Request (SAAR)
DD 2345	Militarily Critical Technical Data Agreement
AF 3215	IT/NSS Requirements Document

A.3 LIST OF ACRONYMS.

A&S	Acquisition & Sustainment
AAC	Air Armament Center (AFMC)
ABDR	Aircraft Battle Damage Repair
ACC	Air Combat Command
ACO	Administrative Contracting Officer
ACPINS	Automated Computer Program Identification Number System
AEODPS	Automated EOD Publication System

AETC	Air Education and Training Command
AF	Air Force
AFCESA	Air Force Civil Engineering Support Agency
AFFSA	Air Force Flight Standards Agency
AFIOH	AF Institute of Operational Health
AFIT	Air Force Institute of Technology
AFJI	Air Force Joint Instruction
AFKM	Air Force Knowledge Management
AFKN	Air Force Knowledge Now
AFMC	Air Force Materiel Command
AFMCI	AFMC Instruction
AFMCMAN	AFMC Manual
AFMETCAL	Air Force Metrology and Calibration (AFMC)
AFMOA	Air Force Medical Operations Agency
AFNIC	Air Force Network Integration Center (formerly Air Force Communications Agency)
AFNWC	AF Nuclear Weapons Center
AFOC	Air Force Operations Center
AFOSH	Air Force Occupational Safety and Health
AFPD / I / MAN	Air Force Policy Directive / Instruction / Manual
AFPDC	Air Force Publications Distribution Center
AFPSL	Air Force Primary Standards Laboratory
AFRC	Air Force Reserve Command
AFRIMS	Air Force Records Information Management System
AFRL	Air Force Research Laboratories (AFMC)
AFSAC	Air Force Security Assistance Center (AFMC)
AFSEO	Air Force SEEK EAGLE Office
AFSPC	Air Force Space Command
AFSSI	Air Force Systems Security Instruction
AFTO	Air Force Technical Order
AF TOFST	Air Force Technical Order Functional Support Team (AAC/AQY)
AFTOX	Air Force TO Exchange Interface Specification (TO Catalog)
AGE	Air Ground Equipment
AKA	Also Known As
ALC	Air Logistics Center (AFMC): OC - Oklahoma City; OO - Ogden; WR - Warner Robins
AMARG	Aerospace Maintenance and Regeneration Group
AMC	Air Mobility Command
ANSI	American National Standards Institute
APO	Army/AF Post Office
APU	Auxiliary Power Unit
ARSS	Armament Systems Squadron
ASC	Aerospace Systems Center (AFMC) OR Air Superiority Cell (GACP, OO-ALC/GHGAMA [WR-ALC])
ASCC	Air Standardization Coordinating Committee
ASL	Account/Subaccount/Library (ETIMS)
ASSIST	Acquisition Streamlining and Standardization Information System
ASUG	Armament Sustainment Group

ATOS	Automated Technical Order System
BEE	Bio-Environmental Engineering
BITS	Base Information Transfer System
BR	Business Rules
BRAC	Base Realignment and Closure (Act)
BSD	Boeing Space Division
C-E	Communications-Electronics
CAC	Common Access Card
CAFTOP	Comprehensive Air Force TO Plan
CAGE	Commercial and Government Entity (Code)
CALS	Continuous Acquisition and Lifecycle Support
CAM	Centralized Asset Management
CBA	Cost Benefit Analysis
CBSG	Combat Sustainment Group
CBSS	Combat Sustainment Squadron
CBT	Computer Based Training
CCB	Configuration Control Board
CCL	Commerce Control List
CCP	Contract Change Proposal OR Command Control Point
CDD	Capability Development Document
CDM	Contractor Data Manuals (ICBMs)
CDO	Controlling DoD Offices
CD-ROM	Compact Disk - Read-Only Memory
CDR	Critical Design Review
CDRL	Contract Data Requirements List
CFAE/CFE/CFEN	Contractor Furnished (Aeronautical) Equipment (Notice)
CG	Computer Generated (forms) or Combat (Support) Group
CITOMS	Comprehensive Integrated TO Management System
CITS	Combat Information Transport System
CLIN	Contract Line Item Number
CLS	Contractor Logistics Support
CMS	Calibration and Measurement Summary
CONOPS	Concept of Operations
CoP	Community of Practice
COTR	Contracting Officer Technical Representative
COTS	Commercial Off-the-Shelf (Hardware, Software or Manuals)
CPAB	Corrosion Prevention Advisory Board
CPAR	Contractor Performance Assessment Report
CPIN	Computer Program Identification Number
CPS	Command Publishing Suite (ETIMS)
CR	Certification Recommendation (SEEK EAGLE program)
CSG	Combat Sortie Generation
CSTO	Country Standard TO
CSV	Comma Separated Variables (database extract format)
CTOCU	Central Technical Order Control Unit

CTOM	Centralized Technical Order Management (Committee or Group)
CTOR	Centralized TO Repository (WR-ALC)
CUI	Controlled Unclassified Information
CWDS	Combat Weapon Delivery Software
DA	Department of the Army
DAG	Defense Acquisition Guide
DaR	Data at Rest
DAU	Defense Acquisition University
DCMA	Defense Contract Management Agency
DD	Department of Defense (Forms)
DDR	Data Discrepancy Report
DECERT	De-Certification
Det	Detachment
DEU	Data Encryption Unit (JCALS)
DFARS	Defense Federal Acquisition Regulations Supplement
DFOSI	Display Formatting Output Specification Instance
DI	Desktop Instructions (JCALS)
DIAMONDS	Defense Integrated and Management of Nuclear Data Services
DID	Data Item Description
DiTO	Digital Technical Order (Change Management Software)
DLA	Defense Logistics Agency
DLDSS	Digital Legacy Data Storage System
DLIS	Defense Logistics Information Service
DoD	Department of Defense
DoDAAC	Department of Defense Activity Address Code
DoDD	Department of Defense Directive
DoDISS	DoD Index of Specifications and Standards
DoE	Department of Energy
DPEM	Depot Programmed Equipment Maintenance
DQT	Data Quality Team
DREAMS	Document Routing Entry And Mail Submitter
DRRB	Data Requirements Review Board
DSM	Development System Manager
DSN	Defense Switched Network
DSP	DoD Standardization Program
DSS	Digital Support Suite
DST	Digital Signatures Trust
DT&E	Development Test and Evaluation
DT/OT	Developmental Test/Operational Test
DTD	Document Type Definition
DTG	Date-Time Group
DTRA	Defense Threat Reduction Agency
DVD	Digital Versatile Disc
E3IDM	E-3 Integrated Data for Maintenance
ECA	External Certificate Authorization

ECP	Engineering Change Proposal
ECSS	Expeditionary Combat Support System
EDD	Estimated Distribution Date
EED	Electro-Explosive Devices
ELSG	Electronic Systems Group (AFMC)
EM	Environmental Management
EN	Evaluation Notice
EOD	Explosive Ordnance Disposal
EPA	Environmental Protection Agency
EPAF	European Participating Air Force
ES	Equipment Specialist
ESC	Electronic Systems Center (AFMC)
ESDS	Electrostatic Discharge Sensitive
eSERD	Electronic SERD
ESOH	Environmental, Safety and Occupational Health
ETIMS	Enhanced Technical Information Management System
ETM	Electronic Technical Manual
eTO	Electronic TO
eTool	Electronic Tool (PC, Laptop, Tablet Computer, etc.)
FAA	Federal Aviation Administration
FAR	Federal Acquisition Regulations
FDO	Foreign Disclosure Office
FIPS	Federal Information Processing Standards
FMM	Flight Manual Manager
FMP	Flight Manuals (Program or Publications) (AFI 11-215)
FMRS	Financial Management Reference System
FMS	Foreign Military Sales
FOIA	Freedom of Information Act
FOSI	Formatted Output Specification Instance
FOT&E	Follow-on Test and Evaluation
FOUO	For Official Use Only
FPO	Fleet Post Office
FQT	Functional Qualification Test
FSC	Federal Stock Class
FTE	Factory Test Equipment
FTORB	Flight Technical Order Review Board
FTP	File Transfer Protocol
FUG	Functional Users Guide
FYDP	Future Years Defense Plan
G&A	General and Administrative (costs)
GACP	Global Ammunition Control Point (OO-ALC/GHGMA)
GAL	Global Address List
GB	Gigabyte
GCSS-AF	Global Combat Support System-Air Force
GDMS	Global Data Management System

GDS	Global Directory Services
GEIA	Government Electronics and Information Association
GFE/GFAE	Government Furnished (Aeronautical) Equipment
GFI	Government Furnished Information
GIG	Global Information Grid
GLR	Government License Rights
GOCO	Government-Owned, Contractor-Operated
GPO	Government Printing Office
HAZMAT	Hazardous Materials
HCP / HCI	Hardness Critical Procedure / Item
HDBK	Handbook
HDRC	Help Desk Resolution Center
HQ	Headquarters
HTML	Hypertext Markup Language
http(s)	Hypertext Transfer Protocol (Secure)
IA	Information Assurance
IAW	In Accordance With
ICBM	Inter-Continental Ballistic Missile
ICD	Initial Capabilities Document
ICP	Inventory Control Point
ICS	Interim Contractor Support
ID	Initial Distribution or Identification
IDE	Integrated Data Environment
IDEA	Innovative Development through Employee Awareness (Program)
IDS	Integrated Data System
IETM	Interactive Electronic Technical Manual
ILS	Integrated Logistics Support
IMP	Integrated Master Plan
IMS	Integrated Master Schedule
IMT	Information Management Tool
IOC	Initial Operational Capability
IOS	Interim Operational Supplement
IOT&E	Initial Operational Test and Evaluation
IP	Internet Protocol
IPB	Illustrated Parts Breakdown
IPDF	Indexed Portable Document Format™ (Adobe®)
IPDS	IDEA Program Data System
IPR	In-Process Review
IPT	Integrated Product (Process) Team
IRTS	Incident Reporting and Tracking System (JCALS)
ISO	International Standards Organization
ISPM	Information Security Program Manager
ISS	Interim Safety Supplement
ISSO	Information Systems Security Officer
IT	Information Technology

ITCTO	Interim Time Compliance TO
ITIES	Interservice Technical Information Exchange System
ITO	Instructions To Offerors (contracting) OR Interim Technical Order
ITPS	Identifying Technical Publication Sheet (MIL-PRF-32216)
IUID	Item Unique Identification
JCALS	Joint Computer-Aided Acquisition and Logistics Support
JCO	Joint U.S./Canada Certification Office
JEDMICS	Joint Engineering Drawings Management Information and Control System
JG	Job Guide (MIL-PRF-83495 Manual)
JIT	Just In Time (printing)
JMPS	Joint Mission Planning Software
JNWPS	Joint Nuclear Weapons Publication System
JTCG-CMT	Joint Technical Coordinating Group - Calibration & Measurement Technology
KSSC	Knowledge Solution Support Center (AF Portal)
LAN	Local Area Network
LCMP	Life Cycle Management Plan
LCN	Local Control Number
LDAP ID	Lightweight Directory Access Protocol Identification
LEP	List of Effective Pages
LMI	Logistics Management Information
LOA	Letter of Agreement
LOAP	List of Applicable Publications
MAG	Military Assistance Group
MAJCOM	Major Command
MB	Megabytes
MCTL	Militarily Critical Technology List
MDS	Mission/Design/Series
MIL-DTL	Military Detail Specification
MIL-HDBK	Military Handbook
MIL-PRF	Military Performance Specification
MIL-STD	Military Standard
MILSPEC	Military Specification
MIQ	Maximum Issue Quantity (JCALS)
MMAC	Materiel Management Aggregation Code
MNCL	Master Nuclear Certification List (formerly TO 00-110N-16)
MOA	Memorandum of Agreement
MPEC	Mission Planning Enterprise Software
MPTO	Methods & Procedures TO
MS	Microsoft®
MSUG	Materiel Sustainment Group
N/A	Not Applicable
NAC	National Agency Check

NATO	North Atlantic Treaty Organization
NAVEODTECHDIV	Naval EOD Technology Division
NCOW RM	Net-Centric Operations and Warfare Reference Model
NDI	Non-Destructive Inspection
NGS	Non-Government Specification
NHA	Next Higher Assembly
NIPRNET	Non-Classified (or Non-Secure) Internet Protocol Router Network
NIST	National Institute of Standards and Technology
NOFORN	Not For Foreign Release
NSA	National Security Agency
NSD	Nuclear Systems Division
NSN	National Stock Number
NSP	Nuclear Surety Procedure
NSUS	Nuclear Sustainment Squadron
NW	Nuclear Weapon(s)
O&M	Operation(s) and Maintenance
OBAC	Organization-Based Access Control (JCALS)
ODS	Ozone Depleting Substance
OEM	Original Equipment Manufacturer
OI	Operational Instruction
OJT	On-the-Job Training
OPCERT	Operational Certification
OPR	Office of Primary Responsibility
ORC	Operational Research Consultants
OS	Operational Supplement
OSS&E	Operational Safety, Suitability and Effectiveness
OT&E	Operational Test and Evaluation
OTR	One Time Requisition
OWLP	Overseas Workload Program
PA	Public Affairs Office (STINFO Requirement)
P&A	Pricing and Availability
PC	Product Center (AFMC): AAC - Air Armament Center, ASC - Aerospace Systems Center; ESC - Electronic Systems Center; AFNWC - AF Nuclear Weapons Center and (AFSPC) SMC - Space & Missile Systems Center
PC	Personal Computer
PCO	Procuring Contracting Officer
PCR	Publication Change Request
PDA	Personal Digital Assistant
PDF	Portable Document Format™ (Adobe®)
PDL	Page Description Language or Personal Distribution List
PDM/PDEM	Programmed Depot (Equipment) Maintenance
PDR	Preliminary Design Review
PEO	Program Executive Officer
PFPS	Portable Flight Planning Software
PGM	Product Group Manager

PID	Program Introduction Document
PII	Personally Identifiable Information
PIN	Personal Identification Number
PKI	Public Key Infrastructure
PLA	Plain Language Address
PM	Program Manager (SPD or PGM)
PMA	Production Management Activity
PMD	Program Management Directive
PME/PMEL	Precision Measurement Equipment (Laboratory)
POC	Point of Contact
POD	Print On Demand
POMx	Point Of Maintenance
PPR	Pre- or Post-Publication Review
PSN	Pub(lication) Stock Number
PTO	Preliminary Technical Order
PTOWS	Prime TO Warehouse System
PWS	Performance-based Work Statement
QA	Quality Assurance
R&D	Research and Development
RAC	Rapid Action Change
RAS	Reproduction Assembly Sheet
RC	Recommended Change
RDS	Records Disposition Schedule
REMIS	Reliability and Maintainability Information System
RFP	Request For Proposal
RGL	Reading Grade Level
RPC	Remote Procedures Call
RQN	Requisition
RSP	Render Safe Procedures
RTO	Responsible Test Organization
SA	Systems Administrator
SAAR	System Authorization Access Request
SAF	Secretary of the Air Force
SAO	Security Assistance Offices
SAP	Security Assistance Program
SAR	Special Access Required
SATODS	Security Assistance TO Data System
SATOP	Security Assistance TO Program
SCG	Security Classification Guide
SCM	Supply Chain Manager
SD	Schematic Diagram (MIL-PRF-83495 Manual)
SDC	Standard Desktop Configuration
SDP	Standard Data Package (munitions) OR Source Data Package (EOD)
SE	Support Equipment
SERD	Support Equipment Recommendation Data

SGML	Standard Generalized Markup Language
SEP	Systems Engineering Plan
SID	Specification Interpretation Document
SIOP	Single Integrated Operational Plan
SIPRNet	Secure Internet Protocol Router Network
SIR	Specification/Standard Interface Record
SME	Subject Matter Expert
SMR	Source Maintenance and Recoverability (Code)
SMTP	Simple Mail Transfer Protocol
SOO	Statement of Objectives
SOW	Statement Of Work
SPD	System Program Director
SPM	System Program Manager
SRD	System Requirements Document or Standard Reporting Designator
SS	Safety Supplement
SSDP	Standard Source Data Package
SSEA	Systems Safety Engineering Analysis
SSI	Stock, Store and Issue
SSL	Secure Socket Layer (Internet)
SSM	Support System Manager
STE	Special Test Equipment
STINFO	Scientific and Technical Information
SVM	System Verification Manager
T&E	Test and Evaluation
TA	Table of Allowances
TAM	Tivoli Access Manager (GCSS-AF)
TCM	Technical Content Manager
TCTO	Time Compliance Technical Order
TDP	Technical Data Package
TDY	Temporary Duty
TIM	Technical Interchange Meeting
TLCSM	Total Life Cycle System Management
TM	Technical Manual
TMCR	Technical Manual Contract Requirements (document)
TMDE	Test, Measurement and Diagnostic Equipment
TMS	Type, Model, Series
TMSS	Technical Manual Specifications and Standards
TO	Technical Order
TOCR	Technical Order Conversion Requirements
TOCU	TO Control Unit
TODA	TO Distribution Account
TODO	TO Distribution Office
TODPS	TO Distribute and Print Services (DLA Document Services)
TOFB	TO Financial Brochure
TOIS	TO Improvement System
TO.MART	TO Management and Retrieval Tool

TOMA	TO Management Activity (ETIMS)
TOMP	TO Management Plan
TOP/RC	TO Planning/Requirements Conference
TOPS	TO Page Supplement
TOPR	TO Publication Request
TORB	TO Review Board
TOVL	TO Virtual Library (OC-ALC)
TOVP	TO Verification Plan
TRD	Technical Requirements Document
TSPSR	Total System Performance and Support Responsibility
TW	Test Wing
UAV	Unmanned Aerial Vehicle
UGV	Unmanned Ground Vehicle
URL	Uniform Resource Locator (Internet address)
U.S.	United States
USB	Universal Serial Bus (port)
U.S.C.	United States Code
USPS	U.S. Postal Service
USAF	United States Air Force
USML	United States Munitions List
VIN	Vehicle Identification Number
VPN	Virtual Private Network
VSP	Verification Status Page
VTM	Verification Team Manager
WAN	Wide Area Network
WBS	Work Breakdown Structure
WD	Wiring Diagram (MIL-PRF-83495 Manual)
WFM	Work Flow Manager (JCALS)
WIP	Work In Progress
WPAFB	Wright-Patterson AFB
WSDP	Weapons Source Data Package
WSSR	Weapon System Safety Rules
WUC	Work Unit Code
WWW	World Wide Web
XML	eXtensible Markup Language
6DOF	Six Degree of Freedom

A.4 DEFINITIONS.

Administrative Unit: Administrative personnel assigned to the TOCU to perform clerical duties assigned by the TO Manager or designated representative.

Abeyance: **1**. Suspension of compliance with TCTOs and ITCTOs when safety hazards or possible equipment-damaging processes are discovered with the TCTO procedures. **2**. Deferring action on AFTO Forms 22 or other TO change requests when they must be held for evaluation by a regularly constituted work group or committee.

AF HTML: AF HTML files are published (transformed) from TMSS-compliant SGML files using the COTS products CPS Transformer and Arbortext Editor publishing software in conjunction with AF TMSS Display Formatting Output Specification Instances (DFOSI) and Document Type Defintions (DTD).

AF HTML eTO: An HTML format TO file (updated using only TO Changes or RACs), merged and indexed as a revision, uploaded to ETIMS for distribution and viewing.

AF Technical Order Catalog : The ETIMS function which provides information and current status of TOs currently active in the TO system. The catalog is used for management of TO libraries, developing requirements and preparing orders.

Air Force TO Exchange Interface Specification (AFTOX) : TO index data for active TOs in JCALS which is extracted weekly and posted to the TO Catalog in ETIMS.

Air Logistics Center (ALC): The AFMC component having responsibility for the sustainment phase of a system or commodity life cycle, including the related TOs. ALCs perform depot-level maintenance on assigned systems and commodities during sustainment. (Some Product Centers have assumed cradle-to-grave life-cycle management of specific weapon systems.)

Auxiliary Tag Description (ATD) Table : The ATD Table is built in conjunction with the screen FOSI (see) to establish special processing features for particular elements.

Baseline: A configuration identification document or set of documents formally designated and fixed at a specific time during a configuration item life cycle. Baselines, plus approved changes from baselines, constitute the current configuration identification.

Bidder's Library: TOs that are not releasable but are available for review by bidders at the buying location.

Certification: Contractor written assurance that manuals and source data are current, adequate, accurate, and conform to contract requirements.

Commerce Control List: The list of items in the Export Administration Regulations at 15 CFR 399. Licenses from the Department of Commerce are required to export such items and the technical data relating to them.

Commodity: A designated item, subsystem, or system which is not identified as a weapon or military system. Commodities which possess similar characteristics and applications benefiting from similar developmental, acquisition, and logistics support management processes are aggregated into Product Groups.

Computer Program: The software (code) containing a sequence of operating instructions or data in a format suitable for use with a particular computer system, provided on CD-ROM, DVD, or other physical or electronic media.

Configuration: The functional and/or physical characteristics of hardware and software as set forth in technical documentation and achieved in a product.

Configuration Changes: Alteration of the form, fit or function of a configuration item.

Configuration Control: The systematic evaluation, coordination, and approval or disapproval of all proposed changes in the configuration of a baseline CI, and implementation of approved changes.

Configuration Control Board (CCB) : A board composed of representatives from program or project functional areas such as engineering, configuration management, procurement, production, test, logistic support, training activities and using and supporting organizations. The board approves or disapproves engineering change proposals (ECPs), approves conversion of ECPs to TCTOs if applicable, and issues implementation instructions.

Configuration Item (CI): An aggregation of hardware and/or software, or any portion thereof that satisfies a function and is designated for configuration control. Items that reflect the current approved configuration of military systems and/or commodities currently in the Air Force operational inventory. CIs require the use of the latest TO information listed in the appropriate TO Index.

Contract Maintenance: The maintenance of systems or commodities performed by commercial organizations (including prime contractors) under contract on a one-time or continuing basis without distinction as to level of maintenance accomplished.

Contractor Personnel: Technical writers and/or engineering personnel assigned from the applicable contractor to provide on-site assistance to the TOCU and to function as members of the TORB.

Controlled Unclassified Information (CUI) : Unclassified information, including technical data to which access or distribution limitations have been applied in accordance with US laws, policies, and regulations. (AFI 16-201) Examples include:

- Unclassified STINFO
- Unclassified export controlled information
- Unclassified proprietary data (intellectual property)
- Information exempted from public release by the Freedom of Information Act
- Competition Sensitive, Source Selection Information
- Controlled Unclassified Military Information (CUMI)

Controlling DoD Office : DoD activity that sponsored the work that generated the technical data or the office that receives the data on behalf of a Government agency and has the responsibility for distributing the data to eligible recipients.

Copyright: A copyright is a form of intellectual property that grants its holder the sole legal right to copy their works of original expression, such as a literary work, movie, musical work or sound recording, painting, computer program, or industrial design, for a defined period of time.

Critical Program Information (CPI) : CPI is program information, technologies, or systems that, if compromised, degrade combat effectiveness, shorten the expected combat effective life of the system, or significantly alter program direction. This includes classified military information or unclassified sensitive information about such critical programs, technologies, or systems. (AFPD 63-17)

Data at Rest (DaR): DaR refers to all data in computer storage (e.g., on hard disk drives, CDs/DVDs, floppy disks, thumb drives, PDAs, cell phones, other removable storage media, etc.) while excluding data that is traversing a network (data in transit) or temporarily residing in computer memory to be read or updated (data in use).

Data Discrepancy Report (DDR) : ETIMS function which allows users to report TO Catalog data errors and printing/reproduction/distribution errors with received TOs.

Depot-Level Maintenance: The level of maintenance consisting of those on- and off-equipment tasks performed using highly specialized skills, sophisticated shop equipment, or special facilities of an ALC, centralized repair activity, contractor facility, or, in some cases, by field teams at an operating location. Maintenance performed at a depot also includes those organizational and intermediate-level tasks required to prepare for depot maintenance, and, if negotiated between the depot and the operating command, scheduled field-level inspections, preventative maintenance or TCTOs which come due while equipment is at the ALC for Programmed Depot Maintenance (PDM).

Derived Documents: Documents such as checklists, work cards, and local tech data extracted from a, or compiled from several formal TOs.

Development System Manager (DSM) : The lead individual at a Product Center (PC) when a PM located at an ALC delegates a specific development task to the Product Center. The DSM reports directly to the PM.

Digital Format : The software program and/or coding used to present technical data in a standardized electronic format that is cost-effective to acquire, author, distribute, use and sustain IAW Air Force Tech Manual Specs & Standards (TMSS). These formats must be accessed through common viewing applications such as web browsers and low cost vendor readers.

Digital FOSI (DFOSI): The Formatting Output Specification Instance used with SGML/HTML files based on TMSS DTDs to produce an eTool screen output.

Digital Support Suite (DSS) : The set of files used to develop, deliver, reproduce and display SGML-tagged instances. A DSS includes the DTD, FOSI, Screen FOSI, ATD Table, and TDT (see definitions).

Digital TO: A digital TO file distributed either on physical media (e.g., CD-ROM/DVD) or via electronic means (i.e., eTO).

Distribution Statement: A statement used in marking a technical document, regardless of publication media or form, to denote the extent of its availability for distribution, release, and disclosure without additional approvals and authorizations from the controlling DoD office. See DODD 5230.24 and AFI 61-204.

Document Type Definition (DTD) : A DTD clearly defines the structural components (SGML tags) of a TO in terms of elements, attributes and entities; for titles, paragraphs, tables, graphics, footnotes, etc. A specific DTD defines the structure of a TO type based on the governing specification. An SGML TO document (instance) is produced by inserting SGML tags into the document unformatted text, following the constructs (rules) of the specific TMSS DTD.

Dynamic IP Address: An IP address that changes each time you connect to the Internet.

Electronic Technical Manual (ETM) : Technical Manual authored in a linear fashion for the purpose of page or in-line presentation (Type 1). ETMs may have a wide range of functionality ranging from indexed raster, hypertext linking, multimedia, interactivity between the data and the user, procedural guidance, navigational directions, and supplemental information. ETMs may also contain logistic-support functions supplemental to maintenance actions and are displayed IAW TMSS specifications.

Electronic (e)TO: A digital TO file available for viewing and distribution via electronic means. eTO files are identified by a media distribution code suffix of "-WA-n," where "-1" indicates ETIMS distribution, and "-2" indicates distribution through other electronic means.

Electronic (e)Tool: The hardware and associated software required to view eTOs at the point of maintenance. ETools include PCs, laptops, tablet computers, and handhelds, and also include associated cabinets for powering and updating eTools used in the disconnected mode.

Engineering Change Proposal (ECP) : A proposed engineering change and the documentation that describes and suggests the change. ECPs are submitted by contractors or from internal Air Force sources to the PM CCB for approval.

Equipment Specialist (ES): The individual or position responsible for assisting the acquisition team during the development/production phase and for technical management of a system, subsystem or commodity during the sustainment phase of a program.

Errata Sheets: Cover sheets used to transmit TO pages either omitted from or misprinted in distributed TO increments. The errata sheets will list the pages included and the actions to be taken to post them to the affected TO.

ETIMS eTO: A digital TO in AF HTML or PDF format that is uploaded to and distributed or viewed using ETIMS. These eTOs will be numbered with a "-WA-1" TO number suffix. Both AF HTML and PDF TO files will be indexed as merged basics with the date of the latest TO increment. AF Portal users/eTools associated with TO Accounts on subscription for eTOs will always have access to most current and complete TO data available.

ETIMS Subject Matter Expert (SME) : An individual selected by the MAJCOM or base to receive intensive training on the use of ETIMS in the operating environment. The SME provides help and training to other base/unit ETIMS users.

ETIMS Version Date: ETIMS uniquely identifies every TO and TO increment by TO Number and Version date. The version date for any TO is the publication date of the most recent active TO increment (TO Change or TO Supplement).

Field-Level Maintenance: On-or Off-Equipment maintenance performed at an operating location. Field maintenance includes the traditional Organizational-level and portions of Intermediate-level maintenance under the Two-level maintenance concept (the rest of intermediate-level maintenance is covered under depot level maintenance).

Form, Fit, and Function: The physical and functional characteristics of an end item, but not the characteristics of any of the item components.

Formalization: The process of reviewing a TO for completion of the acquisition process. Verification should have been completed to the maximum extent possible, all corrections must have been made, and an AFTO Form 27 recommending formalization must be completed and signed by the TORB.

Format: ***n***. 1. The shape, size, binding, typeface, paper and general makeup or arrangement of a publication, as determined by military or commercial specifications and standards; **2**. Digital files developed to a particular computer application, such as Microsoft Word, Adobe Portable Document Format (PDF), or Standard Generalized Markup Language (SGML); **3**. Publication medium, such as paper versus digital. – ***v***. To arrange a document or publication IAW a specific format.

Formatting Output Specification Instance (FOSI): The FOSI specifies the layout for each page (page set), frame, or screen IAW the applicable specification and standard. The FOSI "reads" an SGML-tagged file and produces an output formatted for the specified presentation method (printer, computer screen, etc.) A separate FOSI is required for each document type and each output medium. Only print FOSIs are provided for JCALS publishing using the DataLogics (DL) Composer.

Functional User Guide (FUG) : Detailed, procedural documents on the Air Force Technical Order Managers CoP which are to be used in the management of fielded TOs.

Hardness Critical Item (HCI) : A hardware item at any indenture level that is mission critical and which could degrade system survivability in a nuclear or nonnuclear operational environment if special procedures are not used in the design, repair, manufacture, installation, or maintenance of the item.

Hardness Critical Procedure (HCP) : Procedures which could adversely affect the nuclear hardness of a system or equipment item, or compromise the safety and reliability of a nuclear weapon system.

Integrated Master Plan (IMP) : An event-driven document provided by a contractor as part of the proposal, covering the critical events leading to successful contract completion. Events will be listed with entry and exit criteria (what must happen before the process leading to the event can start, and what must be completed before the event is complete). For example, the event "Deliver TOs" could have an entry criterion of "Complete In Process Reviews," and an exit criterion of "Perform included procedures successfully as written."

Integrated Master Schedule (IMS) : The IMS is a CDRL deliverable, updated as required during contract performance, used for managing and tracking completion of program events.

Integrated Product Team (IPT) : A team formed to manage and execute an acquisition program, composed of personnel from all activities affected by the product. The TO IPT should consist of the TO Manager, other affected AFMC managers, using command and other support agency representatives, and contractor personnel involved in the development and delivery of TOs.

Integrated Weapon System Management (IWSM) : Empowering an PM with authority over the widest range of military system program decisions and resources to satisfy customer requirements through the life cycle of that system. This is the AFMC management philosophy for all military systems and commodities.

Intellectual Property: Intellectual property is a form of legal entitlement which allows its holder to control the use of certain intangible ideas and expressions. The term reflects the idea that once established, such entitlements are generally treated by courts as if they were tangible property. The most common forms of intellectual property include patents, copyrights, trademarks, and trade secrets.

Interactive Electronic Technical Manual (IETM): Technical Manual authored in a non-linear fashion for the purpose of non-linear display (Type 2). IETM organization facilitates easy user access to technical information while the display device provides interactive procedural guidance, navigational directions, and supplemental information. An IETM facilitates the interchange of maintenance manual information with logistic support data supplemental to maintenance, such as maintenance data collection, training documentation, supply interface and data presentation control.

Item Unique Identification (IUID) : Labeling which allows the automatic scanning of data matrices on parts to improve the reliability and usability of the Air Force's future Information Technology systems.

JCALS Subject Matter Expert (SME) : An individual selected by the JCALS-using base or unit to receive intensive training on the use of JCALS in the operating environment. The SME provides help and training to other base/unit JCALS users.

Lead Command: The Air Force assigns responsibility for overall management of each system to a "lead command" to ensure that all requirements associated with every system receive comprehensive and equitable consideration. This lead command provides a primary input into the process of developing and maintaining a force structure with a balance of complementary capabilities, and it establishes a basis for rational allocation of scarce resources among competing requirements. When only one command uses a weapon or equipment system, it is automatically assigned Lead Command. See AFPD 10-9 for aircraft/missile systems and AFI 10-901 for communications and information systems assignments.

Major Command (MAJCOM): The activity at the higher echelon responsible for management and command control of systems or commodities. As used in this TO, MAJCOM includes Field Operating Agencies (FOA) and Direct Reporting Units (DRU).

Militarily Critical Technology List : Issued by DoD under authority of the Export Administration Act of 1979 as amended and Executive Order 12730. It provides descriptions of technologies that DoD assesses to be critical to the development, production, and use of military capabilities of significant value to potential adversaries.

Military System: A discrete stand-alone collection of systems and related resources which, in conjunction with user support and operation, provides a capability to accomplish a specific military mission. The generic phrase used to describe the systems developed and supported by AFMC.

Modification: Any change, either retrofit or update, to the configuration of a CI.

Non-Configured Equipment: Equipment that is representative of but does not reflect the current configuration of vehicles or systems in the Air Force operational inventory (e.g., a prototype of a new aircraft which will not be updated to the final approved configuration, or a test-bed aircraft used to flight test and evaluate aeronautical commodities and subsystems.) The latest issues of the TO information compatible with the specific items of equipment are mandatory for use with this equipment, but might not be listed as active in the TO Catalog.

Non-ETIMS eTO: Electronically accessed, distributed and used digital TOs which are not available in ETIMS for various reasons. These eTOs will be numbered with a "-WA-2" TO number suffix to differentiate them from ETIMS eTOs. TODOs must independently establish access to these eTOs IAW procedures provided by the TO Manager (check the TO Catalog Notes).

Non-Government Specifications (NGS) : Specifications and standards developed and maintained by commercial interests. NGS may be cited on contracts when there are no government performance specifications (MIL-PRF). Any NGS proposed for development of TOs must be approved by 754 ELSG/ILMT.

Nuclear Surety Procedure (NSP) : Procedures which could adversely affect the nuclear hardness of a system or equipment item, or compromise the safety and reliability of a nuclear weapon system.

Organic Maintenance: Maintenance performed by the government under military control, using government-owned or controlled facilities, tools, test equipment, spares, repair parts, and military or civilian personnel.

Operating Location: Generally, a physical location where military systems or commodities are assigned, operated, and maintained.

Performance Specification: Specifications limited to defining Form, Fit, Function and Interface (F3I), without defining or limiting processes, procedures and methods used to achieve the end result.

Personal Digital Assistants (PDA) : Also known as palmtops, hand-held computers, and pocket computers, are any small hand-held device that provides computing and data storage capabilities. Examples of PDAs include, but are not limited to, Blackberrys, Treos, Palm Pilots, and Smartphones.

Portable Document Format (PDF) eTO : An Adobe® PDF format TO file (updated using any update format), merged and indexed as a revision, uploaded ETIMS (-WA-1) or other sources (-WA-2) for distribution and viewing.

Preliminary Technical Orders (PTOs) : PTOs are in-work drafts of TOs from initial assignment of TO numbers until formalization. PTOs are assigned a TO number and are identified by a warning and the word ‘PRELIMINARY‘ on the title page; PTOs will contain a Verification Status Page (VSP) (MIL-STD-38784).

Preparing Activity: The organization or activity responsible for developing and maintaining specifications, standards and DIDs in accordance with DoD 4120.24-M, Defense Standardization Program Policy and Procedures. The preparing activity for most AF TMSS is 754 ELSG/IMLT. Two TMSS are managed by AFSPC for space and missile TOs. One specification is managed by AFMETCAL for calibration TOs.

Pre-publication Review: A final review of a TO, prior to reproduction, to ensure that all verification comments are included and the TO conforms to all specification and contract requirements. The TO Manager and designated representatives from the using and supporting commands, verification team, and contractor will comprise the review team. Members should have technical background in the area covered by the manual(s) under review. Familiarity with the specific hardware being covered is desirable.

Prime ALC: The Air Logistics Center where the PM sustainment function is located.

Product Group: Aggregations of multiple products in all life cycle phases characterized by an ongoing development requirement as well as a much larger cumulative sustainment requirement. A Product Group consists of commodities which can benefit from common management practices.

Product Group Manager (PGM) : The program manager for a Product Group. PGMs fulfill the same responsibilities for their assigned products as a System Program Director for the assigned system. The PGM products are usually in direct support of one or more SPDs.

Program Manager (PM): As used in this instruction applies collectively to System Program Director, Product Group Manager, Single Manager, Supply Chain Manager or acquisition program manager. The PM has total life-cycle system management for one or more programs and is accountable to the Center Commander. The PM is vested with full authority, responsibility and resources to execute a program on behalf of the Air Force.

Program Manager Office (PMO) : The integrated AFMC organization responsible for cradle-to-grave management of a military system.

Programmed Depot (Equipment) Maintenance (PDM/PDEM): PDM and PDEM requirements as identified by the using command and system engineers are compiled as work specifications in a Statement of Work (SOW). Requirements may include programmed upgrades, analytical condition inspections, and scheduled preventive maintenance. Aircraft MDS, equipment TMS, and system age determine PDM requirements.

Proprietary Data: Proprietary data is technical data submitted to the sponsor under a contract and subject to protection by the contractor. Proprietary information is confidential information that constitutes a trade secret and/or information that is commercial or financial and confidential and privileged. Something proprietary is something exclusively owned by someone, often with connotations that it is exclusive and cannot be used by other parties without negotiations. It may specifically mean that something is covered by one or more patents.

Prototype: A model or preliminary design of a system or commodity suitable for evaluation of design, performance, and production potential.

Program Management Directive (PMD) : The PMD is the official Air Force document used to direct program responsibilities to the appropriate MAJCOMs, Program Executive Officer (PEO), Product Center Commander (CC), or appropriate organization for a specific system/subsystem development, modification, acquisition or directed procurement effort.

Publication Date: The TO title page date established by the TO Manager; normally the date the reproduction copy is accepted by the Air Force, or the date after which h no further changes to be contents are allowed (copy freeze date). This date shall be adjusted due to publication delays, issuance of Supplements or receipt of urgent changes, and should be within 30 days of actual TO publication/distribution. In all cases this date shall be later than all previously released increments (Basic, Revisions, Changes, and Supplements).

Quality Assurance (QA): QA is the process by which the contractor and government ensure TOs and source data are technically accurate, adequate, safe and readily understandable. The contractor QA program will be specified in the Integrated Master Plan. The primary government QA process is verification (Chapter 9). QA may include process controls which include actual task performance, simulation (when performance could cause hazards to personnel or equipment) or desktop analysis (for non-procedural data).

Rapid Action Changes (RAC): Emergency or Urgent TO Changes distributed electronically to correct safety hazards or prevent mission degradation and work stoppages. RACs are formatted like routine TO Changes using the digital TO file composition software to allow seamless merging with the basic TO file. If the RAC is not composed for seamless merging, regardless of presentation format (page- or non-page-oriented), the data must be directly accessible via hyperlink to and from the affected location in the TO.

Recommended Changes (RC): Recommendations submitted on AFTO Forms 22, 27, 158 or 252 for improvement of TOs or PTOs. RCs for flight manuals are submitted on AF Forms 847 and AFTO Forms 252. RCs are divided into the three categories of Emergency, Urgent and Routine specified in Chapter 12.

Removable Storage Media: Refers to cartridge and disc-based removable and portable storage media devices that can be used to easily move data between computers. Examples of removable storage media include, but are not limited to, floppy disks, compact disks and external hard drives that contain non-volatile memory.

Scientific and Technical Information (STINFO) : Information relating to research, development, engineering, testing, evaluation, production, operation, use, and maintenance for military products, services, and equipment for military systems. This includes production, engineering, and logistics information. (AFI 61-204)

Significant Military Equipment : Designated equipment on the USML with associated technical information which requires higher levels of protection. This technical information shall be restricted solely to U.S. DoD activities or U.S. DoD contractors who hold contracts to specifically support such military equipment or have a legitimate business relationship with the Department of Defense.

Single Point of Access : A single program and web site which allows a user to access all active digital TOs, no matter where stored, required to perform mission requirements.

Standard Generalized Markup Language (SGML - MIL-PRF-28001): SGML is a computer-processable syntax for describing the logical and content structures of a document. Using an SGML document type definition (DTD), a specification can rigorously and strictly define the structure of a class of documents such as job guides, flight manuals, fault isolation procedures, etc. SGML describes the format and structure of the text in a document, not how the document will appear as an output. A Formatted Output Specification Instance (FOSI) is required to build an output presentation for a particular SGML document. Perhaps the most attractive feature is that documents coded with SGML can be output in many different ways without conversion or manual intervention with the copy. Additionally, MIL-PRF- 28001C, dated 2 May 1997 is inactive for new design and shall no longer be used as a guidance reference for new designs. (See NOTICE 1 attachment, dated 22 April 2010)

Static Filename : When uploading PDF eTO files to the ETIMS repository, the naming convention is the paper TO number with a ".PDF" extension using all capital lettering (e.g., eTO "00-5-3-WA-1" would be "00-5-3.PDF"). This filename remains "static" in support of external liking to eTOs within and outside of their management control.

Static IP Address: When one's computer uses the same address every time one logs on to the Internet.

Supply Chain Manager (SCM): Designated individual(s) at an ALC responsible for managing a line of National Stock Number (NSN)-coded items. SCM functions include requirements determination; cataloging, standardization and engineering data management; stock control and distribution; technical management functions; and pricing for their assigned items. SCMs report to ALC Commanders, but are responsible for supplying, repairing, and managing materiel to support PMs.

System: A final combination of equipment items, technical data, supply support, transportation, policies and procedures which make up a self-sufficient entity designed to perform a specific mission.

System Maturity: System maturity occurs during the "Production and Deployment" phase when the system design is stable and management emphasis changes from the acquisition to the sustainment function.

System Program Director (SPD) : The individual in a SPO who is ultimately responsible and accountable for decisions and resources in overall program execution. SPD is the designated title for the program manager of a program that reports to a Program Executive Officer (PEO)/Product Center Commander during the acquisition phase, or an ALC/CC during system sustainment, and who presents the single face to the user while overseeing the seamless life-cycle processes.

System Support Manager (SSM) : The lead individual at the ALC responsible for support when the PM is located at a PC. The SSM reports directly to the PM.

System Verification Managers : Personnel assigned to manage the verification of specific functional area TOs for the TO Manager or VTM.

Tag Description Table (TDT) : A TDT is a document that describes each element in the DTD.

Technical Content Manager (TCM): The individual, usually an Equipment Specialist (see definition) or Engineer, responsible for maintaining the accuracy, adequacy, modification, classification, review and currency of the technical content of TOs and TCTOs supporting assigned systems, commodities or processes. TCMs are not generally responsible for style and format or other non-technical aspects of manuals.

Technical Data: **1**. (FAR definition) Technical data is defined in the Federal Acquisition Regulations (FAR) as "recorded information (regardless of the form or method of recording) of a scientific or technical nature (including software documentation) relating to supplies procured by an agency. Technical data does not include computer software or financial, administrative, cost or pricing, or management data or other information incidental to contract administration." This definition includes engineering data, source data and TO data (for example, schematic diagrams, flow diagrams, manufacturer handbooks, manuscripts of O&M instructions, PTOs, commercial TMs, Research and Development (R&D) TMs, and other system or equipment O&M procedures developed under AFMC or other acquisition agency directions during the system acquisition phase). Avoid use of this term when referring to specific types of data. **2**. (DODD 2040.2, *International Transfers of Technology, Goods, Services, and Munitions*, definition) - Classified or unclassified information of any kind that can be used, or adapted for use, in the design, production, manufacture, repair, overhaul, processing, engineering, development, operation, maintenance, or reconstruction of goods or munitions; or any technology that advances the state of the art or establishes a new art in an area of significant military applicability in the United States. The data may be tangible, such as a model, prototype, blueprint, or an operating manual, or may be intangible, such as a technical service or oral or visual interactions.

Technical Manual (TM): A document that contains operational or maintenance instructions, parts lists or parts breakdown, or other related technical information or procedures (exclusive of administrative procedures) for a weapon system, weapon system component, support equipment or other item procured by DoD. This data can be presented in any form (e.g. hard copy, audio and visual displays, magnetic tape, disks, or other electronic devices). Technical manuals displayed electronically consist of electronic technical manuals (ETM) and interactive electronic technical manuals (IETM).

Technical Manual Contract Requirement (TMCR) Document, TM-86-01): The document approved for use by the Department of the Air Force to acquire TOs. It fully describes statement of work criteria for contractor program management, TO Quality Assurance, TO development and update, TCTOs, delivery instructions, and generic tailoring of the approved standards and specifications.

Technical Order (TO): TMs developed to MILSPECs or commercial manuals reviewed and approved in accordance with MIL-PRF-32216, managed in the Air Force TO System, and meeting the criteria for TMs listed above. The term Technical Order is equivalent to the DoD term Technical Manual.

Technical Order Distribute and Print Services (TODPS) : TODPS is a Print on Demand concept of operation being implemented enterprise wide in the Air Force to replace legacy stock, store and issue processes and reliance upon JCALS for process management. TODPS requires the distribution and storage of digital TO files in the DLA Document Services central repository.

Technology: The technical information and know-how that can be used to design, produce, manufacture, use, or reconstruct goods, including technical data and computer software. The term does not include the goods themselves.

TO Manager: The individual or organization responsible for managing TOs related to systems and commodities assigned in the D086, *Mission Workload Assignments System*. Management encompasses all activities (except content management) from acquisition through disposal of TOs after the systems or commodities supported leave the Air Force inventory. TO Managers are generally responsible for style, format and other non-technical aspects of manuals.

TO Management Plan (TOMP): The government plan for management of all facts of a major acquisition TO program. Less-than-major programs may not require a TOMP.

TO Review Board (TORB)/Flight TORB (FTORB) : The review boards responsible for evaluation and approval of suggested changes to TOs and flight manuals. The boards may be formal panels or a loosely structured group of qualified individuals, but must be instituted and empowered by PM letters of appointment.

TO System: The Air Force specialized publication system for the acquisition, management, publication, filing and use of technical manuals. The TO System includes the hardware and software for the standard TO management system, personnel and facilities, and all manuals developed or acquired for organic operation, maintenance, inspection, modification, or management of centrally-acquired and managed Air Force military programs and end items. This includes paper and digital copies of manuals developed IAW Technical Manual Specifications & Standards, non-embedded personal computer software which automates the function directed by a TO, contractor- developed manuals adopted for Air Force use, and approved Commercial Off-The-Shelf (COTS) manuals.

TO System Functions: The standard set of functions consists of manage, acquire, improve, publish, stock, distribute and use TOs. These functions encompass the entire gamut of business practices and procedures from initial TO development or acquisition through final disposition.

TO Verification Plan (TOVP) : The government plan for management of TO Verification throughout the life of the program.

Type 1 Technical Manual: See “Electronic Technical Manual (ETM)”

Type 2 Technical Manual: See “Interactive Electronic Technical Manual (IETM)”

Updates: Any changes to TOs or PTOs based on approved RCs. Updates are distributed to users in TO changes, revisions, and supplements IAW TO 00-5-1.

User Friendly : Clear and concise instructions, easily found and accessed, reliable with standard processes for operating the eTool while navigating through the file and standard formats linking related sections of the file to provide a high quality and time saving experience during TO use. This implies user friendly tech data, user friendly eTO applications, and user friendly equipment to view them on.

Using Command: The MAJCOM(s) responsible for operating a system, subsystem, or commodity end item. Generally, it applies to those commands or organizations designated by the USAF to conduct or participate in operations or operational testing.

US Munitions List: This list designates defense articles and defense services that are subject to the International Traffic in Arms Regulations.

Verification: Verification is the process through which Air Force personnel evaluate and prove TOs, TO updates and TCTOs are accurate, adequate, safe, and usable to support the using command operational and maintenance concepts. TO procedures shall be performed using the appropriate production hardware to determine if the PTO is suitable for transition to a formal TO. Verify TCTO instructions and integrity of any associated kits and TO updates by installation of the first production kit on an operational CI using the preliminary TCTO instructions. Verification is required by the Department of Defense for all organic TMs. Verification, and the TO Verification Plan, are not required for CLS programs.

Verification Status Page (VSP) : A VSP shall be included in preliminary TOs to list all procedures requiring verification, and shall conform to the requirements of MIL-STD-38784. On PTOs that are 100% verified, the VSP may be blank, but will indicate the current date of the TO and any changes. The VSP will also be included in formal TOs containing unverified procedures.

Verification Team: Personnel assigned from various participating commands to verify procedures and to participate in the TORB/FTORB when required. Team members should include personnel of the lowest skill level planned to perform the procedures in the operational units.

Verification Team Manager: The individual assigned the task of managing a verification effort, responsible for the verification of assigned system TOs as chartered by the TO Manager. The VTM shall be provided by the using command.

Work Stoppage: Work stoppage refers to the inability to proceed with production on a repair or modification of an end item or commodity, or where a given process stops due to nonconforming material, inadequate technical data, or lack of proper parts, materials, components, tooling or facilities. Halted production of a component or part that prevents the repair or continued scheduled production flow of an end item constitutes a work stoppage.

APPENDIX B
GENERIC TECHNICAL ORDER MANAGEMENT PLAN (TOMP)

UNITED STATES AIR FORCE
(WEAPON SYSTEM)
TECHNICAL ORDER MANAGEMENT PLAN
ORGANIZATIONAL/INTERMEDIATE/DEPOT

NOTE

1. The TOMP is an important management tool which is mandatory for major programs (TO 00-5-3) and should be considered for ALL programs. The generic TOMP provided herein may be tailored and used for any program. A program-specific TOMP containing these requirements may be developed separately.

2. Paragraph numbering is in ATOS-compatible format in this Appendix. For actual use, delete the “B” in front of each number.

PREPARED BY:

DATE:

REV:

TABLE OF CONTENTS

Paragraph Number	Title
B.1	Introduction
B.2	Policy
B.3	Purpose
B.4	Program Summary
B.4.1	Description
B.4.2	Operational Concept
B.4.3	Maintenance Concept
B.5	Reference Material
B.6	Definitions
B.7	Responsibilities
B.7.1	Technical Order (TO) Manager
B.7.2	Using Commands
B.7.3	Air Logistics Centers (ALCs)
B.7.4	Air Education and Training Command (AETC)
B.8	Scope of Technical Order Requirements
B.8.1	General
B.8.2	Technical Orders To Be Developed
B.9	Acquisition Process
B.9.1	Segment Efforts
B.9.2	Delivery Options
B.9.3	Technical Order Preparation
B.9.3.1	Development Flow
B.9.3.2	Specification Interpretation, Deviations, and Waivers
B.9.3.3	Reviews
B.9.3.4	Quality Assurance
B.9.3.5	Verification
B.9.3.6	TO Security and Information Assurance
B.9.3.7	Configuration Control
B.9.3.8	Updates and Update Information
B.9.3.9	Formalization
B.9.4	Maintenance of TOs
B.9.5	Management of TCTOs
B.9.6	Schedules
B.9.7	Financial Plan

Attachments/Annexes:

Attachment 1 Technical Order Verification Plan

(To be added at least 120 days prior to the first TO verification event)

Annex A(n) TO Listings

(There may be “n” number of Annexes, as required)

B.1 INTRODUCTION.

This plan describes the management approach to acquire Technical Orders (TOs) for the __(W/S)__ program. The plan amplifies the TO portions of the Life Cycle Management Plan (LCMP). The plan outlines management responsibilities, program establishment, program guidelines, implementation procedures and initiatives. This plan was developed by the TO Manager, (Office Symbol), in coordination with (add participating organizations) and is based on the most current information available at the time of publication.

B.2 POLICY.

__(W/S)__ TOs will be acquired in the most economical manner without sacrifice of accuracy, quality or adequacy. All TOs will be developed and tailored to meet the needs of the user. The TO Manager is the Program Manager (PM) focal point on all TO matters.

B.3 PURPOSE.

This plan provides management policy, assigns responsibilities, defines terminology and specifies procedures for the __(W/S)__ TO Acquisition Program. This plan provides basic instructions for development, contractor Quality Assurance (QA), verification and formalization of __(W/S)__ TOs during the program acquisition phase, and maintenance of the TOs after formalization. This plan applies to all acquisition activities, including those at using command bases, Product Centers, ALCs and contractor/subcontractor facilities. This plan was developed in accordance with requirements of TO 00-5-3.

B.4 PROGRAM SUMMARY.

B.4.1 Weapon System Description. (Insert the appropriate description of your weapon system).

B.4.2 Operational Concept. (Insert the approved concept of operations for your weapon system).

B.4.3 Maintenance Concept. (Insert the approved concept of maintenance for your weapon system).

B.5 REFERENCE MATERIAL.

(See Appendix A.1, TO 00-5-3) *

* Tailor to add additional references as required, to include program management documents, DoD, AF and AFMC Directives and Instructions, TOs, and TM Specs and Standards.

B.6 DEFINITIONS.

(See TOs 00-5-1 and 00-5-3.) (Add definitions as required.)

B.7 RESPONSIBILITIES.

(Tailor as required.)

B.7.1 TO Manager. The TO Manager will:

B.7.1.1 Prepare and distribute a draft TOMP and TO program inputs to the RFP to all organizations associated with the _____ system acquisition program as required by TO 00-5-3.

B.7.1.2 Call and chair the TO Planning/Requirements Conference with representatives from the using command, ALC, and other affected agencies to finalize and approve the TOMP and initial RFP/contract inputs for TO acquisition. These participants constitute the initial membership in the TO Integrated Product Team (IPT). After contract award, the contractor representatives will become part of the team. Review TM performance specifications and standards (TMSS) for operational compatibility and adequacy to support program acquisition. Ensure special or unique requirements (TO 00-5-3, Chapter 4) are included in the contract. Following the conference, provide input as required to the program Statement of Objectives (SOO), Instructions to Offerors (ITO) and Evaluation Criteria, partly-tailored TMCR and CDRL for the RFP.

B.7.1.3 Participate in source selection and proposal reviews, and contract negotiations if required. Ensure the final contract meets all requirements of the RFP regarding TOs.

B.7.1.4 Conduct and chair all TO conferences, meetings, reviews, and other joint agency efforts related to the program during acquisition. Ensure all participating organizations are invited as far in advance of scheduled reviews as possible. Request organizations to provide the same personnel to participate in reviews, thus ensuring continuity of effort. (Requirements for AF review team personnel are prescribed in TO 00-5-3, Chapter 9 and Chapter 11.) Arrange for Contracting Officer representation during guidance conferences and meetings where matters which could affect the scope of the contract will be discussed. Ensure copies of specifications, exhibits, directives, policy documents, and other references are furnished in sufficient time to allow familiarization by the participants prior to the review.

B.7.1.4.1 Develop an event-phased schedule with the contractor for review of TOs.

B.7.1.4.2 Ensure that the contractor records and distributes minutes of meetings, noting all required actions and responsible agency action, and takes necessary action to effect required changes.

B.7.1.4.3 At IPRs, ensure manuals being reviewed comply with all contractual requirements, applicable specifications, standards, exhibits, maintenance plans, provisioning and source coding actions. Clarity, reading grade level of writing, consistency, adequacy, and accuracy will be stressed.

B.7.1.5 Arrange for government participation in the contractor QA program.

B.7.1.6 Establish and chair the Technical Order Review Board (TORB).

B.7.1.7 Establish and manage a verification program by (*or "IAW the TO Verification Plan"*):

B.7.1.7.1 Requiring identification and submission of those organizational level operational and maintenance tasks on mission equipment that must be verified prior to releasing the TOs to the operating command. This same procedure shall also be followed on intermediate and depot level TOs making use of complex support equipment on advanced technology subsystems/commodities.

B.7.1.7.2 Developing, coordinating, and publishing, in conjunction with all participating commands and affected agencies, a detailed verification plan not later than 120 days prior to the start of the first scheduled verification. The coordinated and approved plan will become an appendix to this document.

B.7.1.7.3 Developing basic requirements and schedules to ensure that TOs are verified, corrected, and published in time to permit the distribution of verified preliminary or formal TOs to operating units before or concurrent with delivery of the system/commodity.

B.7.1.7.4 Requesting technically qualified personnel from the operating and supporting commands to accomplish the verification. Coordinate the verification effort with the contractor and arrange for contractor support as required.

B.7.1.7.5 Informing all activities directly concerned with verification as far in advance as possible when each verification effort will begin.

B.7.1.7.6 Appointing a Verification Team Manager to ensure that:

B.7.1.7.6.1 Support equipment is available to support the verification.

B.7.1.7.6.2 Necessary hardware (i.e., test equipment, support equipment, consumables and inert munitions) is available to support the verification.

B.7.1.7.6.3 Instructions can be used to operate and maintain the system and/or commodity.

B.7.1.7.6.4 Information reflects the latest configuration of the system and/or commodity delivered to the user.

B.7.1.7.6.5 Current safety criteria are met.

B.7.1.7.6.6 Updates are accomplished on a "fast reaction" basis (TO 00-5-3, Chapter 11) and restricted to those of a technical nature which affect accuracy of operations and maintenance procedures. Editorial updates will be made only when the errors affect understandability.

B.7.1.8 Conduct post-publication reviews as determined necessary.

B.7.1.9 Place follow-on requirements on contract.

B.7.1.10 Provide a status report of scheduled TO events.

B.7.2 Using Commands. Using Command(s) (specify) will:

B.7.2.1 Assist the TO Manager by verifying that arrangement of material and method of presentation are commensurate with the established maintenance concept, and the skills and training of personnel planned to operate and maintain the equipment.

B.7.2.2 Provide qualified personnel as requested by the TO Manager to support TO reviews and verifications. Personnel must have signatory authority for on-site decisions. The MAJCOM may delegate the authority to the TO Manager or to command assets assigned to the test activity or operating wing to preclude delays in TO development. During early contractor guidance conferences and 50% or less in-process reviews, support should be 7-9 level enlisted personnel or civilian equivalent. For higher IPRs and membership on the verification team, personnel should be of the lowest grade and skill level (5-level minimum) expected to operate the equipment, as well as the representative(s) attending the other reviews.

B.7.2.3 Provide other support required for verification of TOs in accordance with plans and schedules established by the TO Manager.

B.7.2.4 Report safety or personnel hazard conditions to the TO Manager.

B.7.2.5 Continually review preliminary TOs to detect errors, deficiencies, and obsolete or nonessential material and report problems to the TO Manager.

B.7.2.6 Identify TOs which require post publication reviews to the TO Manager.

B.7.3 Air Logistics Centers. Air Logistics Centers (ALCs) will:

B.7.3.1 When NOT the acquisition agency, assist the acquisition TO Manager as requested to ensure adequacy of established TO development program.

B.7.3.2 Attend in-process reviews, verification and pre-publication reviews in accordance with jointly-established schedules, providing guidance throughout the development cycle to facilitate transition of adequate, timely, economical and operationally suitable TOs at system maturity.

B.7.3.3 Continually review preliminary TOs to detect errors, deficiencies, and obsolete or nonessential material and report problems to the TO Manager.

B.7.3.4 Perform using command functions for depot manuals.

B.7.3.5 Identify TOs which require post-publication reviews to the TO Manager.

B.7.4 Air Education and Training Command (AETC). Air Education and Training Command (AETC) will:

B.7.4.1 Continually review preliminary TOs to detect errors, deficiencies, and obsolete or nonessential material and report problems to the TO Manager.

B.7.4.2 Furnish necessary assistance to the TO Manager for review efforts and verification of TOs.

B.7.4.3 Perform using command functions for TOs on training systems or commodities acquired for AETC.

B.7.5 Other Affected Units. Add other affected units as required: see TO 00-5-3, Chapter 4 and Chapter 16.

B.8 SCOPE OF TECHNICAL ORDER REQUIREMENTS.

B.8.1 General. The TO Manager establishes overall TO program guidance through coordination with users and support agencies, and retains TO management responsibilities until program transition to the ALC (if applicable) at system maturity. TO management decisions will be based on operational needs and budget constraints.

B.8.2 TOs To Be Developed. There are __(#)__ families of TOs to be developed for the __(W/S)__. The family general characteristics and structure are as follows:

B.8.2.1 Operations Manuals: Manuals providing operation and use instructions, such as Flight Manuals.

B.8.2.2 Organizational Level Manuals: The organizational level manuals provide instructions in Job Guide format for on-equipment maintenance at the field level.

B.8.2.3 Intermediate/Depot Level and Engine Maintenance Manuals: These manuals contain instructions in Work Package format for off-equipment maintenance to be performed in the field and at the ALCs. In those instances where depot level instructions are identical, the intermediate level will not be duplicated in depot level work packs

B.8.2.4 Illustrated Parts Breakdowns (IPB): IPB manuals provide instructions for identifying and requisitioning of parts and for illustrating assembly and disassembly relationships.

B.8.2.5 Support Equipment (SE) Manuals: The SE manuals contain operation and maintenance instructions for all levels of maintenance. When the page count is less than 800 page units, these manuals will also contain the IPB.

B.8.2.6 Training Equipment Manuals: The training equipment manuals contain the instructions for all levels of maintenance and operation of training systems.

B.8.2.7 Software Manuals: These manuals provide instruction on operation, troubleshooting, loading, etc. for installed software.

B.8.2.8 Commercial Off-The-Shelf (COTS) Manuals: These commercial-format manuals are provided by venders in support of their equipment used to support the overall W/S program.

B.9 ACQUISITION PROCESS.

B.9.1 Segment Efforts. The __(W/S)__ TO effort is segmented as follows: (Tailor as required)

NOTE

The below examples are for a typical aircraft program using discrete TOs. For commodities or programs using IETM databases, other divisions (or none at all) would be used depending on the program.

Segment	TO Effort
PHASE I	Flight-Test-Required TOs
PHASE II	Remaining O&M Manuals
PHASE III	Illustrated Parts Breakdown
PHASE IV	Depot Level Manuals

B.9.2 Delivery Options. See TM-86-01.

B.9.3 TO Preparation.

B.9.3.1 Development Flow. The TOs will be developed from data in Supportability Analysis Reviews, design data specifications, schematics, engineering drawings, engineering reports, vendor data, engineering assembly and test procedures, manufacturing engineering procedures, support equipment procedures, and other TOs. At the TO Guidance Conference, all agencies involved in the TO program must ensure the contractor understands Air Force needs and requirements. The basis for requirements will be the IMP, SOW, TMCR, CDRLs, MILSPECs and standards, maintenance concept, skill levels of personnel using the TMs and support capabilities.

B.9.3.2 Specification Interpretations, Deviations, and Waivers. Approved Specification Interpretation Documents (SID) and requests for deviations or waivers (TM-86-01) will be made a part of the contract by modifying the Specification/Standard Interface Record (SIR) for the applicable MILSPEC. Deviations and waivers can only be approved by HQ AFMC/A4U, with the concurrence of the PM and Lead Command.

B.9.3.3 Reviews: All reviews will be chaired by the TO Manager or a designated representative, with participation by all affected agencies as determined by the TO Manager. The prime contractor will host reviews when directed by the TO Manager, including those for any subcontractor-prepared manuals.

B.9.3.3.1 In-Process Reviews (IPR) are conducted to evaluate contractor progress, understanding of contractual requirements and to make sure TOs are being prepared in accordance with applicable specifications. In addition, guidance may be

given concerning TO technical content, data that requires amplification, missing data and standardization of data. IPRs will be conducted as specified in the TMCR. The objective of IPRs will be to:

B.9.3.3.1.1 Minimize deficiencies in delivered data resulting from failure of the preparing activity to fully and clearly understand contract/program requirements, the Air Force maintenance concept, Air Force policy and user capabilities/needs.

B.9.3.3.1.2 Identify deficiencies while corrective action is economical and can be accomplished without adverse effects to delivery schedules.

B.9.3.3.1.3 Assure the completion of manuals which meet quality requirements in terms of accuracy, adequacy, completeness, usability and compatibility with approved maintenance plans and support equipment.

B.9.3.3.2 Pre-publication Reviews will be conducted (if required) prior to preparation of the TO masters for formal delivery to verify inclusion of verification comments and as a final check on contract compliance.

B.9.3.3.3 Post-Publication Reviews are conducted after TOs have been delivered to the using command to evaluate and correct the instructions contained in the TOs. The need to conduct a Post-Publication Review will be determined by the TO Manager based upon equipment modifications, AFTO Forms 22 or 847 received, and using command or PM recommendations.

B.9.3.3.4 Results of all reviews will be documented by minutes and a master markup copy of the TOs.

B.9.3.4 Quality Assurance: TO QA is the responsibility of all personnel involved in the development effort. The government will participate in the contractor QA program through the TO IPT, and vice versa.

B.9.3.4.1 The contractor QA program will be in accordance with the contract.

B.9.3.4.2 Schedules for QA checks must provide for sufficient time to incorporate any corrections or comments prior to the scheduled start of verification on the procedures or TOs checked.

B.9.3.4.3 When allowed in the contract, the contractor may certify manuals and source data instead of performing more detailed Quality Assurance checks.

B.9.3.5 Verification : Verification is the Air Force evaluation of TO adequacy and accuracy. All agencies and organizations involved must provide the support required. The general guidelines for verification are:

B.9.3.5.1 The initial effort will concentrate on TOs required for flight test (priority listing in TO 00-5-3, Chapter 9).

B.9.3.5.2 All PTOs (except non-procedural TOs) will contain a VSP to identify unverified functions, tasks, or procedures, and provide warnings about use. The VSP will be continuously updated by annotating the page in the master mark-up TO copy following each verification effort. The contract will require updated VSPs with each change or revision issued.

B.9.3.5.3 The process of verification will be accomplished on a scheduled basis in accordance with the TOVP (TO 00-5-3, Appendix C) developed by the TO Manager in conjunction with the using and supporting commands and the contractor. The verification activities will be scheduled far enough in advance (minimum of 30 days) to allow participation by all agencies.

B.9.3.5.4 Verification can begin only after a procedure/data has been contractor certified. Notification of manual or procedure completion will be provided by the respective contractors to the TO Manager. The TO Manager or VTM will coordinate availability of required assets to support the verification.

B.9.3.5.5 The contractor will provide on-site engineering and technical publication representation during all verification efforts in accordance with the contract. The representative will maintain a master copy of the procedure/data being verified. The master copy will be used to record recommended changes during verification. A copy of the corrected master will be retained by the verification team and a copy will be sent to the *[TO Manager]

*: Tailor as required.

B.9.3.5.6 Concurrent contractor testing and verification will be permitted IAW TO 00-5-3.

B.9.3.5.7 The manuals will remain PTOs until determined both accurate and adequate by the TORB, and formalized by the TO Manager. During the period after verification TO discrepancies will be reported as specified by the TO Manager (TO 00-5-3).

B.9.3.6 TO Security and Information Assurance:

B.9.3.6.1 Classified Data Control. Classified material and equipment will be handled in accordance with DoD 5200.1-R/AFI 31-401, Information Security Procedures Regulation, and DoD 5220.22-R/AFI 31-601, Industrial Security Procedures. If any Air Force activity has reason to believe that security considerations support the reclassification or declassification of a specific TO, the activity will report the discrepancy in accordance with procedures outlined in AFI 31-401.

B.9.3.6.2 Controlled, Unclassified Information (CUI). Unclassified technical data and TOs will be marked and controlled IAW DoDD 5230.24, 5230.25, DoD 5400.7-R, AFI 61-204, and TO 00-5-3

B.9.3.7 Configuration Control. To ensure that the user is provided both accurate and adequate information to operate and maintain the __(W/S)__ and support equipment, the following measures must be applied.

B.9.3.7.1 The contractor shall continuously monitor and provide information to the TO Manager on all configuration changes to the military system and support/test equipment.

B.9.3.7.2 The TO Manager will work closely with the contractor(s) to ensure TO QA and verification are accomplished on production configured systems and commodities.

B.9.3.7.3 Deviations will be permitted only where like systems/commodities do not effect operations and maintenance procedures being checked or verified. In these cases approval to use other than production configured systems or commodities must be coordinated between the TO Manager, using command and supporting agencies.

B.9.3.8 Updates and Update Incorporation.

B.9.3.8.1 Updates resulting from In-Process Reviews will be incorporated prior to the next scheduled review.

B.9.3.8.2 Updates resulting from contractor QA procedures will be incorporated prior to delivery of PTOs for verification.

B.9.3.8.3 Updates resulting from Air Force verification will be incorporated by the contractor(s) prior to preparation of formal TO reproduction media.

B.9.3.9 Formalization. When verification is completed, the Verification Team will complete an AFTO Form 27 to document any TO discrepancies and recommend either further verification or formalization of the TO. The AFTO Form 27 will be sent to the TO Manager (or TORB/FTORB) for review, coordination and approval. Approved AFTO Forms 27 will be sent to the contractor for update of the TO, and if applicable, preparation of formal copies. Upon formalization of the PTO, the VSP will be removed unless some portion of the TO could not be verified (example: wing removal and replacement). The VSP for formal TOs must identify all procedures/tasks/paragraphs within the TO that have not been verified and must contain instructions for accomplishing and reporting verification by field units in accordance with TO 00-5-1.

B.9.4 Maintenance of TOs. The maintenance of TO accuracy is the responsibility of the TO Manager. During the acquisition phase, this is usually through a contract with the prime contractor. The update schedule will be specified in the TMCR.

B.9.5 Management of Time Compliance TOs (TCTOs). TCTOs required in support of the (program) will be managed by the *[TO Manager] IAW TO 00-5-15 and AFMCI 21-301.

*: Tailor as required.

B.9.6 Schedules. The schedules for the TO acquisition process are dependent upon overall program schedules and the availability of support equipment, hardware, and personnel needed for TO development, review and acceptance.

B.9.7 Financial Plan. The __(W/S)__ PM will budget for TO support from other organizations in accordance with AFI 65-601V1. All organizations must project budget requirements by developing and submitting a TO Requirements Plan (TORP) IAW the TO Requirements Guide (TORG, CAFTOP Handbook).

APPENDIX C
GENERIC TECHNICAL ORDER VERIFICATION PLAN (TOVP)

UNITED STATES AIR FORCE
(MILITARY SYSTEM)
(DESIGNATION)
TECHNICAL ORDER VERIFICATION PLAN (TOVP)
ORGANIZATIONAL/INTERMEDIATE/DEPOT

NOTE

1. The TOVP is mandatory for ALL TO acquisition programs, unless otherwise justified in writing and approved by the PM. The generic TOVP provided herein may be tailored and used for any program. A program-specific TOVP containing these requirements may be developed separately.

2. Paragraph numbering is in ATOS-compatible format in this Appendix. For actual use, delete the “C” in front of each number.

PREPARED BY: (SPO)

DATE:

TABLE OF CONTENTS

Paragraph Number	Title
C.1	INTRODUCTION
C.2	PURPOSE
C.3	SCOPE
C.4	REFERENCES
C.5	ANNEXES
C.6	VERIFICATION PLAN GENERAL PROVISIONS
C.6.1	General
C.6.2	Organizational Structure
C.6.3	Definitions
C.6.4	Policy
C.7	RESPONSIBILITIES
C.7.1	TO Manager
C.7.2	Central TO Control Unit (CTOCU)
C.7.3	Administrative Unit
C.7.4	Verification Team Manager (VTM)
C.7.5	System Verification Manager (SVM)
C.7.6	Technical Order Review Board (TORB)
C.7.7	Flight TORB (FTORB)
C.7.8	Contractor Personnel
C.7.9	Using and Participating Agencies
C.8	PROCEDURES FOR VERIFICATION
C.9	ADMINISTRATIVE PROCEDURES
C.9.1	RC and Comment Sheet Control and Tracking
C.9.2	AFTO Form 27
C.9.3	Verification Records

C.1 INTRODUCTION.

This plan establishes policy, defines terminology, assigns responsibility, and specifies schedules for the Air Force (Military System) TO Verification Program. This plan will apply to all verification activities, including those at using command bases, remote sites, depots, and contractor facilities. This plan was developed in accordance with TO 00-5-3, Chapter 9.

C.2 PURPOSE.

The purpose of this plan is to establish Air Force objectives, requirements, responsibilities, schedules and procedures for the __(W/S)__ TO Verification program.

C.3 SCOPE.

This plan will apply to the verification of contractor-approved *Organizational, *Intermediate, *Field and/or *Depot Preliminary TOs (PTOs) for the __(W/S)__ and associated support equipment during *Development Test and Evaluation (DT&E), *Initial Operation Test and Evaluation (IOT&E), *Follow-On Test and Evaluation (FOT&E), *Operational Base Activation, and *Depot Activation.

*: Tailor as necessary.

C.4 REFERENCES.

See Technical Order Management Plan (TOMP), paragraph 5. (add any required.)

C.5 ANNEXES.

A1 (thru A(n))* List of ( ) TOs.

* There may be “n” number of annexes, as required to identify groupings of TOs by verification type, location, etc.

C.6 VERIFICATION PLAN GENERAL PROVISIONS.

C.6.1 General. This plan establishes the management relationships between the (PM Office Symbol) and *(list Other Participants). Military system, subsystem, support equipment, weapons and munitions, and depot TO verifications shall be managed in accordance with applicable references and this plan.

*: Tailor as necessary.

C.6.2 Organizational Structure.

C.6.2.1 Overall TO acquisition team organization (TO Manager, PM, User, CTOCU/TOCU, Verification Team, TORB/FTORB, etc.)

C.6.2.2 CTOCU/TOCU composition, location, and organization.

C.6.2.3 Verification team membership, location(s).

C.6.2.4 TORB/FTORB membership, location.

C.6.3 Definitions. See TOMP paragraph 6; add any required.

C.6.4 Policy. Overall verification policy is specified in TO 00-5-3. Unless otherwise specified by the TO Manager, the VTM or designated representative has the authority to chair all verification meetings in accordance with approved schedules and this document. The goal is one hundred percent verification of all procedures prior to initial deployment of the system/commodity. Verification of task-type procedures shall be accomplished on contractor-tested or certified data by performance unless otherwise authorized by the TO Manager. The CTOCU/TOCU and verification team are under the operational control of the TO Manager. The VTM shall report directly to (Office Symbol). All recommended changes (RC) and verification changes shall be reviewed and approved/disapproved by the TORB/FTORB; approved changes will be sent to the contractor for incorporation.

C.6.4.1 Verification can begin only after procedures/data have been certified by the contractor.

C.6.4.2 Prior to scheduling a verification effort, the VTM shall ensure that all required assets (equipment, SE, tools, supplies, personnel, and facilities) are available for the verification. The TO Manager shall notify all participants of the scheduled verification.

C.6.4.3 Verification by actual performance shall be accomplished on all procedural data to the maximum extent possible; however, procedures which would activate one-time devices such as squibs and EEDs, or could result in equipment degradation or damage and/or personnel injury (such as certain emergency procedures) may be verified by simulation or desktop analysis. Troubleshooting procedures requiring destructive action or removal and replacement of soldered components solely for demonstration/verification shall not be accomplished by performance unless directed by the TO Manager.

C.6.4.4 Legacy, previously verified technical data being converted into electronic files will be reverified IAW TO 00-5-3. Re-verification is the desk-top comparison of existing tasks written in a paper TO format against the new (Interactive) Electronic Technical Manual ([I]ETM) format viewed on an e-tool, ensuring all warnings, cautions, notes, and illustrations have been accurately converted. Additionally, all functionalities and links will be exercised during this re-verification effort.

C.6.4.5 Illustrated parts breakdowns (IPB), theory of operation, and other non-procedural data may be checked by desktop analysis during IPRs.

C.7 RESPONSIBILITIES*.

* These responsibilities may be tailored to fit ETM or IETM database verification and TO sustainment verification.

C.7.1 TO Manager.

C.7.1.1 Provide overall management for the acquisition of TOs required for the operation and maintenance of the military system and associated commodities.

C.7.1.2 Update this plan as required.

C.7.1.3 Initiate agreements with the using command and support activities to resolve all TO difficulties in a timely manner.

C.7.1.4 Ensure that TOs are available to support the deployment of the (W/S) and associated commodities.

C.7.1.5 Monitor the activities of the CTOCU/TOCU and verification team to ensure that verification is proceeding on schedule.

C.7.1.6 Ensure that all necessary TOs and assistance are available, as required, to accomplish the complete verification effort.

C.7.1.7 Support the CTOCU/TOCU and VTM by ensuring all resources required for verification are scheduled and available.

C.7.1.8 Approve/disapprove recommendations for updates that the TORB/FTORB cannot resolve.

C.7.1.9 Provide disposition on TORB/FTORB recommendations which impact the contract.

C.7.1.10 Approve transition of PTOs to formal TOs based on TORB/FTORB recommendations.

C.7.2 Central Technical Order Control Unit. (if used) **NOTE**: TOCU duties are delegated from the CTOCU, and are usually limited to a single location.

C.7.2.1 Participate with the contractor in TO QA programs. Serve as the verification management and control agency.

C.7.2.2 Review RCs for technical content, format, quality, and specification compliance.

C.7.2.3 Identify which assets are suitable substitutes for use during verification effort.

C.7.2.4 Receive and file TOs and contractor data.

C.7.2.5 CTOCU Processing of RCs. The following time elements shall be used in the processing of RCs submitted:

C.7.2.5.1 Emergency RC. The CTOCU shall assign the RC control number, log the RC, and schedule an Emergency TORB/FTORB. An Interim TO (ITO) shall be issued by the contractor or CTOCU within 48 hours for TORB/FTORB-approved RCs.

C.7.2.5.2 Urgent RC. The CTOCU shall process the urgent RC in the same manner as the emergency RC except for the time element. An ITO shall be issued by the contractor or CTOCU within 15 days for TORB/FTORB-approved RCs.

C.7.2.5.3 Routine RC. The CTOCU shall assign the RC control number, log the RC, reproduce and distribute the RC to all TORB/FTORB members. The CTOCU shall then schedule the RC for review at the next scheduled TORB/FTORB.

C.7.2.5.4 Transmitting Approved Changes to Contractor(s) . TORB/FTORB-approved RCs shall be transmitted to the contractor(s) by the CTOCU in accordance with the contract.

C.7.3 Administrative Unit. (Part of the CTOCU, if used)

C.7.3.1 Provide clerical support.

C.7.3.2 Keep an accurate up-to-date record of AFTO Form 22s, 27s, 158s, and AF Form 847s by control numbers and reflect approved/disapproved status.

C.7.3.3 Prepare copies of RCs and distribute to TORB/FTORB members prior to consideration by the TORB/FTORB.

C.7.3.4 Perform duties specified by the TO Manager or representative.

C.7.4 Verification Team Manager (VTM).

C.7.4.1 Implement this TO Verification Plan (TOVP) for all __(W/S)__ and support equipment TOs.

C.7.4.2 Serve as the focal point on all TO verification matters.

C.7.4.3 Assist TO Manager as test site liaison as applicable.

C.7.4.4 Determine if all required systems, munitions, support/special equipment, and personnel are available to support each verification task listed on the TO verification schedule.

C.7.4.5 Convene pre-verification meetings to plan actions and assign taskings.

C.7.4.6 Supervise TO verification to ensure maximum completion of TO verification prior to formalization.

C.7.4.7 Convene a post-verification meeting to discuss and resolve discrepancies.

C.7.4.8 Supervise the generation of RCs resulting from verification and forward them to the CTOCU/TORB/FTORB.

C.7.4.9 Prepare a monthly report showing the current status of the TO verification effort and forward one copy of this report to the TO Manager and designated offices.

C.7.4.10 Chair meetings when requested as the TO Manager representative.

C.7.5 System Verification Manager (SVM). Under direction of the VTM:

C.7.5.1 Supervise and perform verification on specific subsystem or functional area TOs.

C.7.5.2 Coordinate locally the availability of support/special equipment, systems, munitions, and personnel for verification.

C.7.5.3 Assemble the system verification team for each verification.

C.7.5.4 Keep accurate, up-to-date records showing exactly which procedures/data of assigned TOs have been verified and any problems existing with the verified data.

C.7.5.5 Generate RCs to correct discrepancies.

C.7.6 Technical Order Review Board (TORB).

C.7.6.1 The TORB shall conduct meetings as scheduled by the TO Manager to take action on RCs as follows:

C.7.6.1.1 Review and approve/disapprove recommended updates.

C.7.6.1.2 If technical assistance is required, forward the RC as necessary for engineering/policy evaluation. After evaluation, the recommendations shall be returned to the TORB for action.

C.7.6.1.3 Return reviewed RCs to the CTOCU for disposition.

C.7.6.1.4 Board members shall be prepared to discuss recommendations when the board convenes. Members or the chairperson may bring advisors to contribute to the consideration of a recommendation.

C.7.6.2 Emergency and urgent RCs shall be processed immediately on receipt, by telecon if necessary.

C.7.6.3 The TORB will recommend formalization of PTOs after verification has been completed to the maximum extent possible.

C.7.7 Flight TORB (FTORB). The FTORB performs the same functions as the TORB for Flight Manuals Program manuals. The FTORB must include at least three flight-rated members (AFI 11-215).

C.7.8 Contractor Personnel.

C.7.8.1 The Contractor will provide a representative to the TORB/FTORB with contractor signature authority for technical updates.

C.7.8.2 Provide necessary support personnel at verification site(s).

C.7.8.3 Review each RC before TORB/FTORB discussion and be prepared to present the contractor position on the proposed update.

C.7.8.4 Assist in resolving problems with contractor equipment or TOs as a member of the TORB/FTORB.

C.7.8.5 Prepare TO updates as required.

C.7.9 Using and Participating Agencies. See TOMP, paragraph 7. (If there is no TOMP for the program, add responsibilities here.)

C.8 PROCEDURES FOR VERIFICATION*.

* These procedures may be tailored to fit ETM or IETM database verification and TO sustainment verification.

C.8.1 The TO Manager, VTM and contractor representative shall establish verification schedule times based on availability of contractor-approved PTOs, systems, support/special equipment, munitions, and personnel.

C.8.2 Verification of Electronic Tech Manuals (ETM) and Interactive Electronic Tech Manuals (IETM) will be accomplished with the ETM/IETM installed on the e-tool to be used by the aircraft maintainer. Verification will ensure all Warnings, Cautions, Notes, illustrations, functionalities and links are contained in the ETM/IETM and that all links are executable. During the performance of the verification effort, the verification team shall perform tasks in accordance with appropriate TOs and the following instructions:

C.8.2.1 Read aloud the step to be performed.

C.8.2.2 Perform the step. For IETMs, use the appropriate links to access additional information for the task.

C.8.2.3 Annotate discrepancies in the Air Force master copy of the TO. For ETMs/IETMs, use an internal bookmark function when available.

C.8.2.4 The contractor/writer shall note discrepancies in the contractor master copy and shall advise and assist in the preparation of RCs to correct the discrepancies.

C.8.2.5 Participating agency representatives shall coordinate on discrepancies and corrective actions during the post-verification meetings.

C.8.2.6 Contractor (writer) shall use the master copy and the TORB/FTORB-approved RC to incorporate the recommended updates in the TO.

C.8.2.7 The CTOCU shall maintain a master copy of the TO and TO updates from the contractor. A new RC shall be submitted to the contractor when verification comments are not fully incorporated or adequately rebutted.

C.8.3 The CTOCU shall take action on RCs as follows:

C.8.3.1 TORB/FTORB approved changes and recommendations for improvements shall be forwarded to the contractor.

C.8.3.2 Disapproved recommendations shall be returned to the originator with reason for disapproval.

C.8.3.3 Unresolved or contractual issues shall be sent to the TO Manager for disposition.

C.8.4 When a PTO is determined to be suitable for use, the TORB/FTORB shall approve or disapprove the AFTO Form 27 recommendation and send the form to the TO Manager. The CTOCU or TORB/FTORB shall advise the TO Manager on the need for a pre-publication review.

C.9 ADMINISTRATIVE PROCEDURES.

C.9.1 RC and Comment Sheet Control and Tracking. An RC and Comment Sheet control/tracking log shall be established by the CTOCU AU. The control log must include the date the RC or Comment Sheet is forwarded to the contractor and the date of final disposition or incorporation into the TO. RC control numbers (AFTO Form 27, Block 3) shall be assigned as specified in TO 00-5-3, and will be used to control and track the processing/progress of the RC.

C.9.2 AFTO Form 27, *Preliminary Technical Order (PTO) Publication Change Request (PCR)/TO Verification Record/Approval*. This form is used to recommend changes, certify completion of TO Verification and recommend formalization of the TO. In cases where some portion of a TO has not been verified, the AFTO Form 27 shall provide the status of procedures within the PTO.

C.9.3 Verification Records. The CTOCU shall maintain copies of all verification records (minutes of each effort, RCs generated, TORB/FTORB actions, etc.) through the acquisition phase. At that time, the records will be transferred to the TO Manager.

ANNEX A1

TABLE 1. TO LISTING

(These tables will group the TOs to be verified and specify locations and types of verification, support equipment and assets required, and personnel and facilities required, etc.)

APPENDIX D
POINTS OF CONTACT

D.1

Organization/Address	Function
HQ USAF/A4LX 1030 Air Force Pentagon Washington DC 20330-1030 DSN: 227-8247	Air Force TO policy and procedures, TM Specifications and Standards (TMSS), Joint Computer-aided Acquisition and Logistics Support (JCALS) System, E-mail: afa47.Workflow@pentagon.af.mil
HQ AFMC/A4UE 4375 Chidlaw Rd, Ste 6 Wright-Patterson AFB, OH 45433-5006 DSN: 787-5667	TO System and HQ AFMC TO policy, practices and procedures; TCM for 00-5-series TOs, AFMC 21-3 series publications; OPR for TMCR; OPR for TO Forms; TO warehousing policies and procedures, single point for all TO issues. E-mail: AF.TOPP@wpafb.af.mil
754 ELSG/ILMT 4170 Hebble Creek Rd, Door 15 Wright-Patterson AFB, OH 45433-5653 DSN: 787-3085	AF TMSS preparing activity; Legacy Data conversion; Legacy TO Data Systems (ATOMS, ATOS, JCALS, etc.); AF Std TO Mgmt System Program Office.
HQ AFMC/A3V 508 W Choctawhatchee Ave, Ste 4, Bldg 35 Eglin AFB FL 32542-5713 DSN: 872-7887	Flight Manuals Program (FMP) publications policy and procedures -- AFI 11-215
HQ AFMC/ENS 4375 Chidlaw Rd, Ste 6 Wright-Patterson AFB,, OH 45433-5006 DSN: 787-5572	STINFO policy
HQ AFMC/A6O 4227 Logistics Ave, Ste 6 Wright-Patterson AFB OH 45433-5745 DSN: 787-1904	Information Assurance; FOIA requests
88 CG/SCQIP 2275 D St, Rm 90 Wright-Patterson AFB OH 45433-7220 DSN: 787-7924	AFTO forms development, AFMC publications manager
HQ AFMC/SE 4375 Chidlaw Rd, Ste 6 Wright-Patterson AFB OH 45433-5006 DSN: 787-1531	Safety policy and procedures; Make-Safe procedures for public display; Combat Sortie Generation TOs and Procedures
AFCESA/CEXD 139 Barnes Dr, Ste 1 Tyndall AFB FL 32403-5319 DSN: 523-6120	Disaster Preparedness TOs and procedures

Organization/Address	Function
AFCESA/CEXF 139 Barnes Dr., Ste 1 Tyndall AFB FL 32403-5319 DSN: 523-6150	Aircraft Emergency Rescue Information (TO 00-105E-9) http://www.dodffcert.com/00-105E-9/index.cfm E-mail: HQAFCESA.CEXF@tyndall.af.mil
AFSAC/XPO 4375 Chidlaw Rd, Bldg 262 Wright-Patterson AFB OH 45433-5006 DSN: 787-4258	Security Assistance TO Program (SATOP) policy and procedures.
AFMETCAL 813 Irving-Wick Dr West, Ste 4M Heath OH 43056-6116 DSN: 366-5174	Calibration TOs and Procedures
46 SK/SKA 205 West D Ave, Ste 348 Eglin AFB FL 32542-6865 DSN: 872-0450	SEEK EAGLE Office (Aircraft Flight Certification).
Det 63 HQ ACC 2008 Stump Neck Rd Indian Head MD 20640-5099 DSN: 354-6824	Nonnuclear Explosive Ordnance Disposal (EOD)/ Render Safe Procedure (RSP) TOs for all new or modified aircraft, munitions, delivery systems and ordnance items.
OC-ALC/ENGL 7851 Arnold St., Ste 201 Tinker AFB OK 73145-9160 DSN: 336-2050	TO Home Office, TO Numbering, TODO Support; TO Archive, Security Assistance TO Program (SATOP), Automated Computer Program Identification System (ACPINS), JCALS and ETIMS.
AAC/AQY 102 West D Ave Ste 160 Eglin AFB FL 32542-5415 DSN: 875-3282	1-1M-33 and 1-1M-34 Standard Volumes, JCALS Help Desk.
708 NSUS 1551 Wyoming Blvd SE Kirtland AFB NM 87117-5617 DSN: 246-4153	Air Force Joint Nuclear Weapons Publication System (JNWPS) TO Manager E-mail: NW708NSSTOWork@kirtland.af.mil
AFRL/MLS-OL 4750 Staff Dr Tinker AFB OK 73145-3317 DSN: 339-4931	Non-Destructive Inspection (NDI) TOs and procedures
HQ AFMC/A4RC 4375 Chidlaw Rd Ste 6 Wright-Patterson AFB, OH 45433-5006 DSN: 787-8185	Aircraft Battle Damage (Assessment and) Repair (ABDR) TOs and procedures

Organization/Address	Function
OO-ALC/GHGMA 6043 Elm Lane (Bldg 1246) Hill AFB UT 84056-5838 DSN: 777-2666	Global Ammunition Control Point (GACP) (all conventional munitions and explosives except tactical missiles, but with Maverick) 784CBSG/GACP@hill.af.mil
OO-ALC/GHGAMA 460 Richard Ray Blvd, Suite 200 Robins AFB GA 31098-1813 DSN: 497-4371	Warner Robins Air Logistics Center (WR-ALC) Global Ammunitions Control Point (GACP) Air Superiority Cell (ASC) (all tactical missiles except Maverick); 575cbss/gacp.mw@robins.af.mil
AFRL/RXSSR 325 Richard Ray Blvd, Bldg 165 Robins AFB GA 31098-1639 DSN: 468-3284	Corrosion Prevention and Control policies and procedures
AFNIC/EVPI 203 W. Losey St, Rm 2200 Scott AFB IL 62225-5222 afnic.evpi.org@us.af.mil DSN 779-6667	Communications Security (COMSEC) policy and procedures
AFNIC/ESPP 203 W. Losey st, Rm 1200 Scott AFB IL 62225-5222 afnic.espp@us.af.mil DSN 779-6281	Communications activity management and communications systems/equipment management policy and procedures (as defined in AFI 33-150, Management of Communications Activities)
505 CBSS/GBLA 6043 Elm Lane (Bldg 1246) Hill AFB, UT 84056 DSN 777-4590/775-3078	Publish/manage all munitions loading SDPs. Performs validation/verification of all munitions loading SSDPs before T.O. inclusion.

TO Home Office (PC & ALC)		Dissemination of TO System policy and procedures, management of centralized functions (JCALS, ATOS, SATODS, etc.)	
Office Symbol	Address	Base/State/Zip	DSN
WR-ALC/ENGLT	460 Richard Ray Blvd, Ste 200	Robins AFB GA 31098- 1813	468-3010
AFMETCAL	813 Irving-Wick Dr West, Ste 4M	Heath OH 43056-6116	366-5174
708 NSUS/NWLT	1551 Wyoming Blvd	Kirtland AFB NM 87117-5617	263-3610
OO-ALC/ENLDA	6042 Fir Ave, Bldg 1237	Hill AFB UT 84056-5820	586-0669
AAC/AQY	102 West D Ave, Ste 160	Eglin AFB FL 32542-5415	872-9300
ASC/AEPL	1790 10th St B572	Wright-Patterson AFB, OH 45433-7630	785-7186
Det 63, HQ ACC	2008 Stump Neck Rd	Indian Head MD 20640-5099	354-6824
ESC/XP	5 Eglin St	Hanscom AFB MA 01731-2116	478-2774
OC-ALC/ENGL	7851 Arnold St Ste 201	Tinker AFB OK 73145-9160	336-2937
SMC/AXLM	160 Skynet, Ste 1070B	LAAFB CA 90245-4069	833-6424

APPENDIX E
GUIDANCE FOR DEVELOPING REQUEST FOR PROPOSAL (RFP) EVALUATION CRITERIA AND INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS OR QUOTERS

E.1 INTRODUCTION.

E.1.1 General. The information in this appendix is based on the premise that the reader has a working knowledge of the requirements of TOs 00-5-1, 00-5-3, and 00-5-15.

E.1.2 Roles. Developing the RFP inputs for TOs is normally the responsibility of the TO Manager or other PM functional assigned the task of acquiring the TOs required to support the system or equipment. Roles and responsibilities for TO acquisition are defined in Chapters 1 through 7 of this TO.

E.1.3 Responsibilities. The TO Manager is responsible, in coordination with members of the TO IPT (Chapter 4), for translating program concepts and requirements into contract language that results in delivery of quality TOs to the Air Force. The following discussion provides guidance in the preparation of Evaluation Criteria (RFP Section M) and the Instructions, Conditions, and Notices to Offerors or Quoters (abbreviated “Instructions to Offeror” or “ITO” - RFP Section L), and the use of the Technical Manual Contract Requirements (TMCR) document, TM-86-01 (https://techdata.wpafb.af.mil/toprac/working.htm).

E.2 REQUEST FOR PROPOSAL.

E.2.1 RFP Contents. The TO objective for a program will be included in the Statement of Objectives (SOO), either as a discrete entry when TOs represent a considerable risk to program funding or schedules, or as an element of the organic maintenance or supportability objectives when the risk is low. Risk assessment is performed by the program Integrated Product Team (IPT) during initial planning. As a minimum, with regard to TO requirements, the RFP will contain a TO Contract Line Item Number (CLIN) to be separately priced, a SOO objective that relates to a TO need (supportability, organic maintenance, etc.), and a TMCR to be tailored by the offeror. Integrated Data System (IDS) requirements should accompany the RFP as GFI to the offerors. The IDS requirements will specify program data interchange standards and formats, and should be developed by the program IPT in conjunction with the TO Manager.

E.2.2 RFP Development. In most cases, the TO Manager will do preliminary tailoring of the TMCR placed in the RFP, based on the program Operational and Maintenance Concepts and the IDS for implementation, such as selection of known TO type requirements and providing addressees for deliverables. AF-only tailoring of joint-service performance specifications is provided in the Specification/Standard Interface Records (SIR) included in the TMCR. The preferred location for the TMCR is attached to a draft CDRL placed in an exhibit to the RFP and referenced in Section J. Other possible locations are: a) attached to the system or technical requirements document (SRD/TRD), or b) in the proposal technical library.

E.2.3 Evaluation Criteria. Evaluation Criteria used to discriminate between offerors are derived from the SOO and the key risk areas. When TOs are considered low-risk, there may be no Evaluation Criteria or supporting ITO inputs on the TO program. In this case, the TO Manager may not be included on the source selection team. This is NOT the preferred business practice!

E.2.3.1 Under these circumstances, the IDS, TO CLIN and contract exhibit (CDRL and TMCR) must stand alone to provide the information and instructions to offerors needed to obtain an acceptable proposal. If an offeror does not fully respond to the contract exhibit, the PCO would write Evaluation Notices (EN) and require the offeror to respond prior to source selection and contract award.

E.2.3.2 The TO Manager must develop the CLIN, CDRL, and preliminary tailoring of the TMCR to ensure adequate guidance is provided. Sub CLINs should be developed for each level and type of TO required to support the program Ops and Maintenance Concepts. The CDRL must specify inspection and acceptance requirements, distribution statements, delivery media, numbers of deliveries, and timing of deliveries. The TMCR should indicate known TO type requirements, preliminary specification tailoring, and delivery addressees.

E.2.4 Referenced Documents. In every case, the TO Manager should include a copy of all referenced documents in the RFP technical reference library to assist the offeror in understanding Air Force methods and procedures for the acquisition and management of TOs.

E.2.5 TOs as Key Objectives. The remaining instructions deal with the approach to the evaluation criteria and instructions when TOs are considered key objectives and/or higher risks in a particular acquisition.

E.3 TO PROGRAM REQUIREMENTS.

E.3.1 TO Development. Development of page-based TOs must include tagging text files using Standard Generalized Mark-up Language (SGML) IAW the Document Type Definitions (DTDs) associated with selected performance specifications. Non-text files (illustrations, drawings, etc.) must be prepared IAW one of the authorized graphics formats listed (https://techdata.wpafb.af.mil/tmss/index.html, click on "Guidelines"). To accomplish this, the contract must contain a fully-tailored TMCR with completed Specification/Standard Interface Record (SIR) documents, CDRLs for supporting data deliverables, and a separately-priced TO CLIN. The SOW, IMP and IMS will contain the contractor methods of accomplishing the tasks, specific events covered, and schedules. The offeror must obtain, through the TO Manager, a waiver approving the proposed use of non-government or canceled specifications and non-standard DTDs and FOSIs (prior to any development effort), from HQ AFMC/A4UE. This should be one of the entrance criteria for "Develop TOs" in the IMP. Non-page-based (task oriented) TOs, Interactive Electronic TM (IETM) databases must be developed in accordance with AIA S1000D and associated Business Rules (BR) in the TMCR. The reason for requiring use of the specified TMSS is to ensure standardization, transportability and compatibility with ETIMS.

E.3.2 TO Quality. TOs must meet the minimum requirements of 100% technical accuracy, a depth and scope of coverage sufficient to support the operations and maintenance concepts, compatibility with the AF Standard TO Management System, proper markings for classification and distribution limitations, and a Reading Grade Level (RGL) in accordance with MIL-STD-38784.

E.3.3 Data Rights (Defense Federal Acquisition Regulation Supplement (DFARS) clauses 252.227-7013). Source data and TOs prepared specifically for the contract, and derivative works developed from them would normally be provided with Unlimited Data Rights. (Derivative works are publications such as checklists and workcards developed from one or more basic manuals.) The data and manuals may be copyrighted, or contain proprietary data or procedures. In these cases, data and manuals may be supplied with Limited Rights or Government License Rights (GLR) only. Commercial manuals are procured IAW DFARS clauses at 252.227-7015, with Unlimited Rights, GLR, or Limited Rights. The TO Manager must verify that the appropriate FAR/DFARS clauses have been identified in RFP Section H. The Program Manager (PM) should assess the long-term needs for technical data rights to support weapons systems. The PM should consider an acquisition strategy that provides for a future delivery of sufficient technical data should the need arise to select an alternative source or to offer the work out for competition.

E.3.4 Classification, Distribution, Destruction, Disclosure, and Export Control Notices. All TOs fall into some category of distribution restriction. Data may be classified and controlled IAW DoD 5200.1-R/AFI 31-401. Non- classified technical data considered technologically sensitive is subject to distribution limitations and export control requirements. The exact wording of distribution statements and restrictive notices is contained in AFI 61-204 and MIL-STD- 38784. The TO CDRL will provide appropriate direction for applying distribution limitation markings to TOs. In most cases, specific notices are determined on a case-by-case basis by the TO IPT as TOs are developed, depending on TO content. NOTE: Blanket use of the same distribution restrictions for all TOs managed by a program office may result in successful legal challenges and force inappropriate dissemination of restricted data.

E.3.5 TO Delivery. Delivery formats, methods, destinations, and user needs (see below) are critical elements of initial program support and life-cycle support costs. In all cases, deliveries must be in a digital format. The particular format used will depend on the TO sustainment concept, TO Management System requirements, and user needs, and will be specified in the IDS and TMCR.

E.3.5.1 Delivery Formats.

E.3.5.1.1 Organically-Maintained, Page-Oriented TOs. Contractors should deliver SGML-formatted TO files which are convertible to ETIMS eTO Viewer-compatible HTML files. The SGML files must be accompanied by the appropriate and approved Air Force DTDs to the government. TO deliveries should include SGML tagged instances of the TOs; including authorized graphics files.

E.3.5.1.2 Contractor-Maintained, Page-Oriented TOs. If the prime contractor will maintain system TOs for the life of the system, the TO files should be accessible from the contractor's data system for view and distribution in IPDF or SGML-tagged format. Source data files for updating other TOs, manuals, and data files must be delivered (or accessible) as an SGML tagged instance (TO file). All SGML deliveries must be convertible to ETIMS eTO Viewer-compatible HTML files.

E.3.5.1.3 Interactive Electronic TMs. IETMs are accessed by or delivered to the government in native formats and are distributed electronically for use on a system-specific electronic display system (e-tool).

E.3.5.2 Delivery Method. The preferred method of delivery is by direct government access to the TO files in the contractor database, through a contractual agreement. Access applies to all data, not just TOs. Physical delivery of digital media, when required, may include any medium allowed by MIL-STD-1840 and specified in the TMCR. The program digital delivery concept will be documented in the IDS.

E.3.5.3 Delivery Destinations. TOs and preliminary TOs are delivered IAW the requirements on the TO CDRL and detailed in the TMCR delivery matrices. These should be tailored before the RFP is finalized. The CDRL must also specify the TO inspection and acceptance agency.

E.3.5.4 User Requirements. Paper copies of TOs will be required for the foreseeable future, and will continue to be printed and distributed IAW TO 00-5-1. However, if users have a validated requirement to view specific TOs on an e-tool, the TOs must also be available in digital format. The format for digital delivery will either be an IPDF file indexed IAW the Technical Order Conversion Requirements (TOCR) (https://techdata.wpafb.af.mil/toprac/working.htm), or in the native format specified for the program or system. Indexing permits the user to move quickly between TO chapters, sections, figures and tables, or move to specified words or character strings. TOCR indexing instructions are referenced in the TMCR.

E.3.6 Schedule. Air Force policy requires delivery of verified TOs prior to or concurrently with delivery of operational equipment to the field. This requirement drives TO development and delivery schedules throughout the acquisition phase of a program. These schedules will typically be submitted as part of the offeror proposed IMS, and are updated throughout the period of performance.

E.3.7 Time Compliance Technical Orders (TCTOs). TCTOs are often used to implement contractor Engineering Change Proposals (ECPs) for permanent modifications to configured items. ECPs are reviewed and approved by the program Configuration Control Board (CCB). When the CCB decides that a TCTO is the appropriate method of implementation, the contractor may be requested to develop the TCTO package for Air Force coordination and approval. See TO 00-5-15 for a detailed description of the TCTO system.

E.4 EVALUATION CRITERIA.

Section M of the RFP includes evaluation criteria listed in relative order of importance. Evaluation criteria for TO requirements may address any or all of the following areas, as required by the program: Selection, Preparation, Quality, Verification Support, Delivery, Sustainment and TCTO Development. Some of these areas may be combined in the evaluation criteria, and/or additional requirements may be identified by the TO IPT program analysis. The following paragraphs illustrate evaluation criteria for the listed areas, with sample wording:

E.4.1 TO Selection. TO types are selected by tailoring the TMCR to reflect program needs based on operating and maintenance concepts. Tailoring includes determining TO types; content formats based on MIL-PRF, MIL-DTL or commercial specifications; delivery formats, schedules and destinations; and deleting non-applicable requirements from and selecting specific options offered in cited specifications, through the use of SIRs. Sub-areas, which may be covered in the ITO, include development and use of source data for TOs, use of COTS and other commercial manuals, and identification of additional TO requirements after contract award.

SAMPLE: "The offeror proposed approach to TO development will be evaluated for an understanding of program TO requirements. The offeror planning for the overall TO program, including the tailoring of the TMCR and selection and application of required specifications (either military performance [MIL-PRF], detail [MIL-DTL]or commercial) and standards, with associated Document Type Definitions (DTDs) and Formatted Output Specification Instances (FOSIs) will be evaluated. Data requirements recommended for support of the TO development program will also be evaluated."

E.4.2 TO Preparation. Preparation includes the method of TO content development; use of approved DTDs for SGML TO text file generation; use of authorized graphics formats for development and presentation of illustrations; determination of data classification and distribution limitations; and procedures for requesting TO numbers. The initial TO Guidance Conference (whether held as a stand-alone function or as part of a program Technical Interchange Meeting (TIM)) is covered under this topic, as the conference is essential in resolving any possible problems with contract requirements interpretation.

SAMPLE: "The offeror proposed approach for TO development will be evaluated for an understanding of TO interface requirements with JCALS. The development process, including planned use of approved military standards (MIL-STD) and MIL-PRF, MIL-DTL or commercial specifications, DTDs and FOSIs; method of reviewing and using source data; method of requesting TO numbers; and processes for determining and marking data classification and distribution limitations will be evaluated."

E.4.3 TO Quality Assurance. The offeror is responsible for delivery of adequate, accurate and safe TOs which conform to government requirements. The content must be fully compatible in depth and scope with the established maintenance concept and the approved logistic support plan. Content must be checked for security classification, distribution restrictions, and RGL. The quality process includes TO technical reviews, the offeror internal process controls, and checking TO procedures for validity and usability.

SAMPLE: "The offeror quality processes will be evaluated to ensure preparation and production of a total quality product. Checks and balances must be adequate to detect and correct any process errors, and ensure proposed TO procedures are valid and usable. The evaluation will also include the flow-down of quality requirements to subcontractor and vendors."

E.4.4 Verification Support. Most programs and projects which require acquisition or modification of TOs will also require contractor support of the government verification effort. This support may consist of any or all of the following: Engineers and/or writers to correct any TO errors detected; program-peculiar equipment, parts and supplies; participation in TO Review Boards; and travel as required to verification sites. For a combined contractor/government certification of TO procedures (formerly called "val/ver"), the offeror proposal must address questions of liability, locality, and division of labor.

SAMPLE: "The offeror proposed support for the government TO verification program will be evaluated for proper utilization of personnel, supplies, support equipment, production-configured system or commodity assets, and spare parts. Proposed allocation of liability during combined contractor/government certification efforts will be evaluated. Procedures for incorporating updates developed during verification will be assessed."

E.4.5 TO Delivery. Several areas, including digital formats, methods (on-line vs. physical media), and schedules, must be assessed in the offeror proposal for delivery of TOs. Digital formats depend on the circumstances and the users' needs (paragraph E.3.5). Direct electronic access of TO files from the contractor's data system is preferred over physical delivery of data. The IMP and IMS must support program requirements for delivery of verified TOs (paragraph E.3.6).

SAMPLE: "The offeror proposed format for digital delivery of TOs and method of delivery shall be evaluated for compatibility with existing government Automated Information Systems (AIS). Refer to the Integrated Data System requirements (insert location) for guidance. The proposed level of government data rights will be evaluated to ensure compliance with Federal Acquisition Regulation/Defense Federal Acquisition Regulation Supplement (FAR/DFARS) clauses. The IMP event and IMS schedule for TO delivery will be evaluated for support of program objectives."

E.4.6 TO Sustainment. In most cases, the offeror will be required to maintain program source data and TOs for some time after the development and formalization. This is particularly true under acquisition reform guidelines calling for maximum "privatization" of military functions.

SAMPLE: "The offeror proposed processes for preparing and delivering updates to maintain the currency of TOs and TO source data will be evaluated for adequacy and timeliness."

E.4.7 TCTO Development. Contractors may be requested to develop TCTO packages for Air Force coordination and approval, especially while the contractor has engineering responsibility for the program. TCTO development and coordination procedures are covered in TO 00-5-15. MIL-PRF-38804 specifies TCTO content requirements.

SAMPLE: "The offeror proposed approach to the development and delivery of Time Compliance Technical Orders (TCTOs) and related TO updates required as a result of engineering change proposals (ECPs) will be evaluated to ensure contractor understanding of TCTO requirements."

E.5 INSTRUCTIONS TO OFFERORS.

The ITO informs offerors of what to include in proposals to ensure each evaluation criterion is addressed. Additional guidance is obtained from the IMS and other GFI in the RFP Technical Library. The ITO must clearly instruct offerors in the preparation/structure of the proposal and emphasize special government concerns. The ITO and Evaluation Criteria do not necessarily have a one-to-one correspondence; a criterion may be supported by several ITO statements and vice versa. ITO requirements will instruct offerors to complete tailoring of the TMCR and required CDRLs, and develop pertinent SOW paragraphs (for processes), IMP entries with entry and exit criteria (for events), and IMS entries (for schedules). In some

cases, an ITO statement could affect all proposal areas. Several possible sample ITO statements are presented below, divided into the same areas as the previous Evaluation Criteria section. They must be tailored for each program, and may be combined or even eliminated depending on program needs.

(TO Selection Criterion)

E.5.1 TMCR Tailoring. Sufficient explanation must be included in the ITO to ensure that offerors understand where to find the TMCR in the RFP, what additional tailoring is allowed or expected, and how to include TMCR tailoring in the proposal.

E.5.1.1 TO Type Requirements. The ITO should require offerors to identify specific TO types and corresponding AF-approved performance specifications from the TM Type Delivery Tables in TMCR Section 2. TMCR Section 2 also contains delivery matrixes which must be partially tailored by the government prior to issue of the RFP to provide delivery addressees. The contractor must complete tailoring to specify delivery parameters.

E.5.1.2 Specification/Standard Interface Record (SIR) tailoring. SIRs document the program-selected options in specifications and standards. Section 3 of the TMCR contains pre-tailored SIRs which document the Air Force options for applicable tri-service TMSS. The ITO must require the offeror to complete tailoring of the included SIRs and prepare a SIR for each additional direct-cite specification or standard proposed, government or commercial. All standardization documents must be tailored to impose only the minimum requirements for the TO program.

E.5.1.3 Specification Interpretation Documents (SIDs). SIDs are submitted by offerors and contractors to request clarification (interpretation) of the applicable "shall-statements" in performance specifications and standards, if necessary. The ITO may inform the offeror of the right to request clarification of any invoked contract requirements.

SAMPLE: "The offeror shall identify proposed TO types in the Technical Manual Contract Requirements (TMCR) document, TM-86-01, provided in (state where in the RFP the TM-86-01 is located). The TMCR TM Type Delivery Tables and Delivery Matrices in Section 2 will be tailored as required. In Section 3, the offeror shall provide Specification/Standard Interface Records (SIR) for each specification or standard cited in Section 2 to indicate any required application tailoring. Questions on specification or standard requirements may be submitted via Specification/Standard Interpretation Documents (SID) through the PCO to the TO Manager. See TO 00-5-3 (location) for TO selection and tailoring guidance."

E.5.2 Commercial Manuals. The ITO should cite the government preference for use of existing commercial manuals when adequate for program support. The contractor should recommend them using CFAE/CFE Notices (see below) or letters. The ITO should reference MIL-PRF-32216 as the guide for review and acceptance of commercial O&M manuals, and reference MIL-DTL-7700 as an additional guide used for review of Flight Manual contents.

SAMPLE: "The offeror shall describe (in the TMCR and/or SOW) proposed use of commercial manuals, to the maximum extent practical, when determined adequate for program support. MIL-PRF-32216 (for all manuals) and MIL-DTL-7700 (for flight manuals) may be used as guidance to determine suitability of the manuals."

E.5.3 Contractor Furnished Aeronautical Equipment/Contractor Furnished Equipment (CFAE/CFE) Notices. Depending on the scope of the acquisition and development program, contractors may determine that there are TO and commercial manual requirements in addition to those initially proposed. The TO Manager should ensure the RFP includes a CDRL invoking the DID for CFAE/CFE Notices (DI-TMSS-80067). The alternative is to have the ITO direct offerors to propose a method for the contractor to notify the government of possible new TO requirements.

SAMPLE: "The offeror shall describe (in the SOW or draft CDRL) proposed methods for notifying the government and recommending use of additional technical manuals, including commercial manuals, determined necessary for program support after contract award. The suggested method is by submittal of Contractor Furnished Aeronautical Equipment/Contractor Furnished Equipment (CFAE/CFE) Notices (DI-TMSS-80067)."

E.5.4 Source Data. The ITO should require the offeror to describe how source data will be acquired or developed, used and distributed. Source data is used to develop program TOs, Interim TOs, commercial manual supplements, TCTOs, and updates to other TOs affected by the program. Source data for EOD and Aircraft Emergency Rescue TOs are formatted and delivered IAW specific DIDs.

SAMPLE: "The offeror shall fully describe (in the TMCR, SOW and IMP) proposed processes for the preparation, use and delivery of source data for the development and update of program TOs and other TOs affected by the program. (If applicable, add:) This must include the development and delivery of EOD and Aircraft Emergency Rescue TO source data (in draft CDRLs)."

(TO Preparation Criterion)

E.5.5 Guidance Conference. The offeror should host an initial TO Guidance Conference or program TIM to introduce members of the program TO IPT and ensure mutual understanding of all contract requirements.

SAMPLE: "The offeror shall propose (in the IMP) an initial TO Guidance Conference or Technical Interchange Meeting (TIM) within 60 days of contract award to discuss management and administration of the TO program and ensure complete understanding of contract requirements."

E.5.6 TO Development. The ITO should require the offeror to describe the processes to be used during TO development. These process descriptions should cover use of approved specifications and DTDs, preparation methods for TO text and graphics, etc.

SAMPLE: "The offeror shall describe (in the SOW) proposed processes for developing digital TO text and graphics in a format compatible with the government TO management system (JCALS), including processes for obtaining approval of rescinded or non-AF specifications and DTDs, when applicable."

E.5.7 TO Classification and Distribution Controls. The ITO should direct offerors to determine and apply proper classification and distribution limitation markings to TOs and other technical data.

NOTE

TOs are classified in accordance with the security classification guide (SCG) provided by the government. On small programs that do not have a SCG, the DD Form 254, *Contract Security Classification Specification, Department Of Defense*, provides this information. Distribution limitations and other TO title page markings are determined IAW AFI 61-204 and MIL-STD-38784, and are specified by the government based on TO content.

SAMPLE: "The offeror shall describe (in the SOW) proposed processes for determining and marking classification of and distribution, destruction, disclosure, and export control notice requirements for technical information developed and used in TOs."

E.5.8 TO Numbering. The ITO should inform offerors of the procedures used to request TO numbers. The procedures should be reflected in the SOW.

SAMPLE: "The offeror shall describe (in the SOW) proposed processes for requesting TO number assignment for proposed TOs (letter request and/or submittal of CFAE/CFE Notices)."

(TO Quality Assurance Criterion)

E.5.9 Quality Process. The ITO may require offerors to describe the contractor quality processes (including product reviews and contractor testing) when there is no "past performance" history for the offeror, or when the TO program is considered very high risk. TO quality should always be included as an exit criterion for "Develop TOs" in the IMP.

SAMPLE: "The offeror shall describe (in the SOW) proposed processes for ensuring production of quality products. Processes described should include: a) parsing of SGML-tagged files; b) determining and marking security classification and distribution limitations (see DoD 5200.1-R/AFI 31-401 and AFI 61- 204); and c) procedures to allow for government insight into the technical writing effort status/progress. Completion of this process should be an exit/entrance criterion for appropriate events in the IMP."

E.5.10 Conferences and Reviews. The ITO should ask the offeror to establish and define criteria in the IMP for conducting technical reviews of TOs during and after development (In-Process Reviews (IPRs) and Pre-publication Reviews). Sufficient reviews should be proposed to ensure correct implementation of government requirements by the contractor and any subcontractors or vendors. The criteria should include both entry and exit conditions.

SAMPLE: "The offeror shall describe (in the IMP and IMS) proposed periodic technical reviews (In-Process Reviews (IPRs), Pre-publication Reviews (PPR), etc.) to ensure TOs are being developed IAW specification and associated DTD requirements, and contain data and procedures in sufficient depth and scope to support the Ops and Maintenance Concepts. **NOTE**: PPRs shall be proposed for critical safety and nuclear surety procedures TOs, and may also be required for other complex procedures TOs."

E.5.11 TO Procedures Certification. The ITO should suggest that offerors plan and propose actual "hands-on" performance of all operation and maintenance procedures to ensure accuracy, adequacy and suitability for the target audience.

SAMPLE: "The offeror shall describe (in the SOW) proposed processes for certification of the accuracy, adequacy and usability of TO operation and maintenance procedures. Processes used for government notification shall also be described in the IMP. These processes should include actual performance of most procedures, with simulation reserved for those procedures which would activate explosive devices or present a hazard to personnel or equipment. Non-procedural data in TOs should be assessed by desktop analysis as part of the quality process. **NOTE**: The government arranges for all performance testing of EOD Data and JNWPS TOs."

(Verification Support Criterion)

E.5.12 Verification Support. The ITO should require offerors to describe proposed contractor support of government verification, including provisioning of equipment and supplies, contractor personnel, and TO configuration and update. Contractor membership on the TO Review Board (TORB) and/or Flight TORB is essential.

SAMPLE: "The offeror shall describe (in the SOW and IMP) proposed support of government TO verification, to include writers and/or engineers to resolve problems during verification, provision of program peculiar equipment and supplies, maintenance of TO configuration, incorporation of government comments, and participation in TO Review Boards (TORBs) and Flight TORBs."

(TO Delivery Criterion)

E.5.13 Delivery. Contract TO-related deliveries can include source data, management data, and preliminary and finalized TO files. Delivery requirements are specified in the IMS (provided as GFI in the RFP), and TO contract exhibit (CDRL and TMCR). The TO Manager must determine the offeror ability (i.e., the risk) to deliver digital files and in what format. The ITO should require the offeror to include delivery entry and exit criteria (including parsing of SGML-tagged files in addition to other quality assurance measures) in the IMP, and include delivery schedules in the IMS.

SAMPLE: "The offeror shall describe (in the SOW and/or IMP) proposed formats for delivery of digital TO data. The proposal must include the media for physical delivery (IAW MIL-STD-1840) or means by which the Government will access the technical data files from the Contractor's database. For guidance, refer to the program Integrated Data Environment (IDE - location in RFP). Delivery entry and exit criteria (including file parsing) will be included in the IMP, and delivery schedules will be included in the IMS. **NOTE**: The URL for obtaining public domain SGML parser software is ftp://ftp.jclark.com/pub/sgmls/."

E.5.14 Data Rights. As a general rule, the government should receive unlimited rights in any data developed with government money. Exceptions for proprietary and copyrighted data may result in receiving only "Government License Rights" (GLR - FAR/DFARS). Some commercial manuals may be totally restricted from reproduction or redistribution. The ITO should request offerors to specify data rights levels for new data, and direct them to the location of the FAR/DFARS clauses. The PM should assess the long-term needs for technical data rights to support weapons systems. The PM should consider an acquisition strategy that provides for a future delivery of sufficient technical data should the need arise to select an alternative source or to offer the work out for competition. Therefore, a separate Contract Line Item (CLIN) number may be needed for a separately priced option for the government to obtain rights to technical data that is proposed by the Offeror as limited.

SAMPLE: "The offeror shall clearly describe (on the TO contract exhibit CDRL) the proposed level of government data rights IAW the FAR/DFARS, for all data developed specifically for the government. FAR/DFARS clauses are located in Section (insert the location FAR/DFARS clauses as appropriate) of this RFP."

E.5.15 TO Reproduction Management. In some cases, a program may request the contractor to manage the reproduction and distribution of TOs for the program. This requirement must be indicated in the ITO, or on the TO contract exhibit CDRL. Reproduction includes printing of paper copies and/or reproduction of the digital file on magnetic/optical media. For TO printing, the contractor must assemble a print package consisting of the reproduction media, a Reproduction Assembly Sheet (AFTO Form 30) (if required), and a deck of TO Initial Distribution labels provided by the TO Manager. The completed package is submitted to a printer as directed by the local DLA Document Services office. After use, reproduction media (except for direct image copy or digital reproduction masters, if used) is normally returned to the contractor for storage and updating. The event criteria should be described in the IMP and the milestones included in the IMS.

SAMPLE: "The offeror shall describe (in the SOW and IMP) proposed processes for preparation and management of reproduction packages, release of reproduction masters for publication, and initial distribution of TOs and updates. Applicable proposed milestones shall be included in the IMS."

(TO Sustainment Criterion)

E.5.16 TO and Source Data Maintenance. During the contract period of performance, the contractor must update preliminary and formal TOs and source data to incorporate corrections, equipment configuration changes, and maintenance and operational concept changes. The ITO should ask the offeror to describe how program TOs covered by the contract will be maintained. Maintenance should include preparation of changes, revisions and supplements to program TOs, and updates prepared for TOs affected by, but not developed as a part of, the contract (see TO 00-5-1).

SAMPLE: "The offeror shall describe (in the SOW and/or IMP) proposed processes for maintaining currency and accuracy of source data and TOs developed and delivered under this contract, including preparation of updates for TOs affected by, but not developed as part of the contract. A proposed schedule of updates will be included in the IMS."

(TCTO Development Criterion)

E.5.17 Time Compliance Technical Orders (TCTOs). TCTOs are separately priced on an "as-required" basis. The ITO should request the offerors to detail contractor procedures and the entrance and exit criteria for the events involved in preparing and delivering TCTOs, without a price proposal for the effort. Proposals for individual TCTOs will include schedules and costs. TCTO preparation includes updates to any affected TOs. Schedules depend on TCTO urgency, need for kits, and method of accomplishment. Deliveries will be in a digital format as specified for other program TOs.

SAMPLE: "The offeror shall describe (in the SOW and IMP) proposed processes for development of Time Compliance Technical Orders (TCTOs) and updates to affected TOs resulting from ECPs. Proposed processes shall cover every facet of development, review, coordination approval, delivery, publishing and distribution. This procedure will not be priced or scheduled until invoked by a contract change based on approval of an ECP."

Contract_____ Exhibit_____

Exhibit date_____ CLIN_____

ORGANIZATIONAL TECHNICAL ORDERS

Program_____

ELIN/ SELIN	SUPPLIES/SERVICES	CLASS	QUANT/ UI	DELIVERY DATE	PRICE/ SET
X001	noun: * spec no: # acrn: (contracting office) site codes pqa: acp: fob: pr/mipr:	U	(as per the Matrices, Section 2)		$0,000
X002	noun: * spec no: # acrn: (contracting office) site codes pqa: acp: fob: pr/mipr:	U	(as per the Matrices, Section 2)		$0,000
Y001	noun: * spec no: # acrn: (contracting office) site codes pqa: acp: fob: pr/mipr:	U	(as per the Matrices, Section 2)		$0,000
Z001	noun: * spec no: # acrn: (contracting office) site codes pqa: acp: fob: pr/mipr:	U	(as per the Matrices, Section 2)		$0,000

* Enter either the Table and item number(s) or the TO number/type. For other CDRL items included in the exhibit (TO-related plans, schedules, etc.), use the CDRL number or item title.

Enter the Specification number listed in the Table specifying TO types to be provided, or for other CDRL items, the DID controlling format and content.

H0617129

Figure E-1. Example of Contract Line Item Numbers (CLINs) for TO Exhibit

APPENDIX F
ADDING EQUIPMENT NUMBERS TO A JCALS TECHNICAL ORDER RECORD

F.1 UPDATE TECHNICAL ORDER-TO-EQUIPMENT CROSS REFERENCE.

Table F-1. Technical Order to Equipment Part Number Cross Reference Report

Step	Screen	Field
1	JCALS Session Manager	Select TM Tools
2	TM Tools	Select TM Report Generator
3	TM Report Generator Type	Select Generate TM Index Report
4	TM Report Generator Sub-Type	Select Inter-service Technical Information Exchange System (ITIES) Cross Reference Report and Click, OK
5	Inter-service Technical Information Exchange System Cross Reference Report screen will display. *Note: Wildcard searches are permitted.	Enter the equipment part number in the Equipment ID No field.
6	Report results will display in bottom half of the ITIES Report Screen in order by Equipment ID No, Service, Pub Type, Pub Status, Pub No, Pub Date, Prop ID, Cage Code, Nomenclature, FSC, NIIN, CF(A)E, MMAC, and Contract No.	If you would like to save the report click on the Save as File button at the bottom of the screen and save the report to your PC. To exit this screen Click the Close button.
7	Continue next report action from the Choose a Report Type and Subtype Screen	Perform Steps 3 thru 6.

NOTE

You may choose to perform this task before “Adding New Equipment Part Numbers to JCALS” (paragraph F.2) or “Updating Equipment Part Number in the JCALS Index” (paragraph F.3) to ensure the Equipment Part Number has already been established in JCALS.

F.2 ADDING NEW EQUIPMENT PART NUMBERS TO JCALS.

NOTE

Before performing the task below the responsible equipment specialist must provide the part number and equipment nomenclature, same format as entered/maintained in the D043, to the TO Manager for adding to the JCALS database.

Table F-2. Adding New Equipment Part Numbers to JCALS (Version 2.0, 10 Sep 03)

Step	Screen	Field
1	JCALS Session Manager	Select **TM Tools**
2	TM Tools	Select **TM Processes**
3	TM Processes Type	Select **Perform Acquisition**
4	TM Processes Sub-Type	Select **Manage Item Data** and Click the **OK** button
5	The Manage Item Data Screen will display. Go to the bottom half of the screen, right side of Results.	Click the **Add** button
6	The Add Item Data will display. **NOTE**: More than one equipment part number may be added from this screen by Clicking the Apply button instead of Clicking the OK button after the first database entry.	Enter the new equipment part number in the Part Number field and the new equipment nomenclature in the Nomenclature field. **Both entries are required.** Continue to enter as much data as is known in the remaining fields. When you have completed entering data, click **Apply** when entering more than one equipment part number, or click **OK** when entering only one (or the last) equipment part number entry. Repeat this step for more than one equipment part number.
7	The Manage Item Data Screen will display. Results field will display new entries.	Click the **OK** button.

F.3 UPDATING EQUIPMENT PART NUMBERS IN JCALS.

Table F-3. Updating Equipment Part Numbers in the JCALS Index (Version 2.0, 10 Sep 03)

Step	Screen	Field
1	JCALS Session Manager	Select TM Tools
2	TM Tools	Select TM Processes
3	TM Processes Type	Select Manage TM Index
4	TM Processes Sub-Type	Select Update TM Index Entry and Click the OK button.
5	The Choose Publication Screen will display in the Search Criteria section of the screen	Enter publication number in the Publication No field for the equipment P/N you choose to update and Click the Apply button.
6	The following fields will display in the Results section of the Choose Publication Screen; Publication No, Pub Stock No, Media Type, Pub Date, Rev No, Change No, Change Date, and Publication Title.	Highlight the TO version you choose to update and Click the OK button.
7	The Update TM Index Screen will display	From the Options Menu, Select Update Index Data, Select Update Publication, Management and Stock Data
8	The Update Publication, Management and Stock Data Screen will display	Select the Multiple Items to Pub Assoc Tab
9	The Multiple Items to Pub Assoc Screen will display, Weapon System, Equipment Items, NSN Items, and Publication Index	Click on the Choose button to the right of the Equipment Items field.
10	The Choose Equipment Item Screen will display from the Search Criteria section of the screen. NOTE: You may use the “%” in your search criteria.	Enter equipment part number in the Equipment/ Model No field. Click the OK button.
11	The results will display in the Choose Equipment Item Screen in the Results field. NOTE: If the part number and nomenclature are not available in the results field CANCEL out of this process and follow the instructions on Page 2 of this document for “Adding New Equipment Part Numbers to JCALS.” The Technical Content Manager (TCM)/Equipment Specialist (ES) is normally the source for providing you with the equipment part number and equipment nomenclature, as designated in the D043.	Highlight the Result you want to update the TO Index with and Click the OK button.
12	The Update Publication, Management and Stock Data, Multiple Items to Pub Assoc Screen will display. NOTE: To add multiple part numbers repeat Steps 9-11.	If you made a selection from the results in the previous screen, then your selection will display. Click the OK button.
13	The Update TM Index Screen will display with the Request field populated.	Highlight the Result. From the Options Menu, select - Approve. To exit this process, go to the File Menu and click on Close.

APPENDIX G
DEVELOPING TECHNICAL ORDER TITLES

G.1 GENERAL.

A TO title relates to the subject and content so users can recognize the applicability of the TO and tell the difference between TOs with similar applications. The TO title is used to determine the TO number Category and assign the last segment of the TO number. TCTO Series Headers use abbreviated titles containing only the Mission/Design/Series (MDS - e.g., "MODEL B-52 SERIES H") or Type/Model/Series (TMS - e.g., "TYPE AN/ARN131") of the systems or equipment covered. The TO Manager will enter the specific titles of individual TCTOs when requesting TCTO number assignment. When a commercial manual does not include a complete title, prepare an Identifying Technical Publication Sheet (ITPS) IAW MIL-PRF-32216, *Evaluation of Commercial Off-the-Shelf (COTS) Manuals and Preparation of Supplemental Data*, identifying the complete, accurate TO title and any supplemental data provided. TO titles are limited to 2000 characters in JCALS.

G.2 RULES.

G.2.1 Administrative. (For AFTO Form 203/204 submittal)

G.2.1.1 For the TO title itself, use lines T01 through T05, and if necessary, the "Txx" lines on the reverse (numbered 06 through 0N).

G.2.1.2 Enter all alpha characters as capital (upper case) letters. Enter a slash through all numeric zeros.

G.2.1.3 Do not use a period after abbreviations, except the abbreviation for "number" ("NO.").

G.2.1.4 Leave one space after double dashes, commas and words in the title. Do NOT leave two spaces.

G.2.1.5 If a word or identifying number cannot be completed on a line, do not start it. Do not split an application title entry between title lines such as "KC" one line and "135" on the next line.

G.2.2 Technical.

G.2.2.1 Do not enter "TECHNICAL MANUAL" as part of the TO title (included automatically IAW MIL-STD-38784).

G.2.2.2 Do not enter the word "PRELIMINARY," for the same reason. Preliminary status is shown by setting JCALS "flags" during indexing.

G.2.3 Supplemental Manuals. Identify supplemental manuals in the first line of the title. Separate from the rest of the title by a space, two dashes, and a space. Example:

SUPPLEMENTAL MANUAL -- OPR INSTR,

G.2.4 Technical Order Type. In the next part of the TO title, list the type of TO g., maintenance instructions, flight manual, illustrated parts breakdown (IPB), etc. to tell what kind of technical data is included in the TO and determine the "Group (segment) Three" (TO type) portion of the TO number. Separate the type of TO or medium from the rest of the TO title by using a space, two dashes, then a space. **EXCEPTION**: MIL-PRF-83495 TOs will be listed as shown in paragraph G.2.6, below.

G.2.4.1 Use only the types of TOs or media listed in the applicable categories in TO 00-5-18.

G.2.4.2 Abbreviations may be used (OPR = Operation; INSTR = Instructions; MAINT = Maintenance; INTMD = Intermediate; INSP = Inspection; etc.), but must be easily translatable.

G.2.4.3 Include "INSTR" in the title of any instructional TOs.

G.2.4.4 Examples:

- FLIGHT MANUAL --
- OPR INSTR --
- MAINT INSTR --
- JOB GUIDE --
- CHECKLIST --
- INTMD INSTR --
- INSP REQUIREMENTS --

G.2.4.5 If the TO consists of a combination of types, the types are listed in the order listed in TO 00-5-18 (e.g., operating instructions (-1) first, maintenance instructions (-2) next and parts list (PL) or IPB (-4) following).

G.2.4.6 Examples:

- OPR AND SVC INSTR --
- MAINT INSTR WITH IPB --
- OVHL INSTR WITH IPB --
- OPN AND SVC INSTR WITH PL --

G.2.5 Restricted Use. The next part of the title identifies the intended level of maintenance if the TO is **restricted** for use at a specified level. (Note that "INTMD INSTR" as used in paragraph G.2.4.4 above is not restricted to use at the intermediate level.) Separate the intended level of maintenance from the rest of the title by using a comma and one space. Examples:

- MAINT INSTR -- DEPOT,
- ASSEMBLY, CHECKOUT, AND MAINT INSTR -- ORG AND INTMD,
- CHECKLIST -- MAINT INSTR, ORG (FLT LINE).
- MAINT INSTR WITH IPB -- INTMD.

G.2.6 MIL-PRF-83495 Organizational Maintenance Manuals. For these manuals, the type of TO or medium and the intended level of maintenance may be combined, followed by the function. Separate the type of TO and the level of maintenance from the function with a space, two dashes, and a space. Separate the function from the main part of the TO title by using a comma and a space. Examples:

- ORG MAINT -- JOB GUIDE,
- ORG MAINT -- FAULT REPORTING,
- ORG MAINT -- GENERAL SYSTEM,

G.2.7 Technical Order Subject or Equipment Covered. Enter the subject or the equipment identification in the main part of the title. List the subject of the TO or name of the equipment and the type, series, model and part number, in that order, when these elements apply. The NSN may be shown if required by the acquisition agency. Enter the manufacturer's name in parentheses following the equipment number. Do not split a type, series, model or part number between two lines. The words type, series, model or part number are not considered part of the number. Examples:

- IPB -- HOT AIR SHUTOFF VALVE, MODEL CV-2S3.5, PN 105150-2 (STRATOS)
- OVHL INSTR WITH IPB -- POWER SUPPLY, TYPE ECU-45/A, PN 28VS1006 (WAGNER)

NOTE

The classification of a TO and title is entered into JCALS during the indexing process, and will automatically appear as a "U," "C" or "S" in the TO detail screen of the AF TO Catalog. The classification is not a part of the TO title, unless the title itself is classified. The Department of Energy classifications "Restricted Data" and "Formerly Restricted Data" for nuclear weapons technical data are not currently supported in JCALS, and must be made part of the TO title when applicable.

G.2.8 Titles for Classified Technical Orders. List the TO title classification in parentheses following the main part of the classified TOs. Example of an unclassified title for a classified TO:

- MAINT INSTR -- INTMD,
  COUNTER-MEASURES RECEIVER,
  TYPE R-1854/ALR-46(V),
  PN 31-032491-02 (ITEK),
  (TITLE UNCL)

G.2.9 Sectionalized Technical Orders. When a proposed TO meets the criteria for a sectionalized manual (that is, it is sufficiently large and has natural divisions in tasks or equipment breakout which make several smaller manuals more usable and more manageable), each section must be numbered and indexed individually. A separate JCALS "Manage TM Numbering; Assign a Publication Number" request or AFTO Form 203 must be submitted for each section. Each submittal lists the individual title, and the relationship of each section to the group is set using the "Manage TM Index; Update an Index Entry" process, "Options; Update Index Data; Publication Association" function. The following examples show TO titles for a group of four sections, all having the same basic TO number. Examples:

- IPB -- RECEIVER GP, TYPE OA-2504/ALD-5
  (RAYTHEON)
- IPB -- INDICATOR RECORDER GP,
  TYPE OA-2506/ALD-5
  (RAYTHEON)
- IPB -- SIGNAL ANALYSIS, PROGRAMMER
  GP, TYPE OA-2505/ALD-5
  (RAYTHEON)
- IPB -- ANTENNA GP,
  TYPE OA-2507/ALD-5
  (SYLVANIA)

G.2.10 Software-Related Instructions. Various terms are used to describe the test procedures or operator manuals and the reference manuals which describe software-related instructions for embedded computers. These "dash eight" (-8) manuals contain documentation on how to use software programs identified in the CPIN System to check out, test or maintain computerized hardware. The initiator ensures the title always identifies the specific function of the software documentation. Examples:

- CHECKOUT TAPE MANUAL -- INDICATOR
  PANEL, TYPE RU-118,
  RADAR BOMB DIRECTING
  CENTRAL TYPE AN/TSQ-96
  (REEVES)
- TEST PROCEDURES MANUAL -- CONTROL
  INTERCOMMUNICATIONS SET, C-9655/A,
  PN 3397101-102
  (HUGHES)

G.2.11 Title Notations. List any special TO title notations in parentheses. Only notations of a permanent nature about the TO itself are listed here. See paragraph G.4 below for other catalog notes. Examples:

- (FORMERLY TO 12R2-4-171-2)
- (WR-ALC USE ONLY)
- (THIS MANUAL INCOMPLETE
  WITHOUT TO 31M-2TMQ15-2)
- (USED WITH TO 36A11-21-2)

G.2.12 Commercial Manuals. Identify commercial manuals with an entry in parentheses at the end of the title. Example:

- OPR INSTR -- DODGE TRUCKS, MEDIUM
  AND HEAVY DUTY
  (COMMERCIAL MANUAL)

G.2.13 Contractor Data. Identify contractor data as follows.

- CONTRACTOR ACCEPTANCE
  REQUIREMENTS DOCUMENT
  AR30873-702

G.3 SYSTEM APPLICATION.

System application data is required both as part of the TO title and the TO record in the JCALS Pub Index. The data are used to provide Lists of Applicable Publications (LOAP) and to update ETIMS TO Catalog TO Number to Equipment Number cross-reference data. The LOAPs provide an aid for selection of or familiarization with TOs for a specific system and

determination of TO file requirements. The Catalog cross-reference provides the capability to determine TO coverage for a specific piece of equipment, and helps to prevent acquiring duplicate tech data between services. The capability to withdraw data by system application requires consistent adherence to the rules below.

G.3.1 Weapon System Identification (Appendix F). Using the "Manage TM Numbering; Assign a Publication Number" process, enter only applications to prime aircraft, missiles, space launch vehicles, C-E systems, and engines listed in the D086, *Mission Workload Assignments System* into the "Request Air Force Pub Number" screen, in the "Weapon System Application" field.

NOTE

The system or end item must FIRST be identified in JCALS using the procedures in Appendix F.

G.3.2 Equipment Identification. In order to provide a record of application and cross-reference to equipment and commodities, enter the applicable equipment TMS, part number, etc., using the JCALS "Perform Acquisition; Update Equipment Data" process to associate TO numbers with Equipment part numbers. If submitting via AFTO Form 203, enter the data in line A01. If additional lines are required, continue on the form reverse with lines "A02", "A03", etc.

G.3.3 TCTO Headers, General and MPTOs. Leave system application data blank when establishing a TCTO series and for General and MPTOs. Enter the data when individual TCTOs are indexed.

G.3.4 Data Entry Formats. Enter system, equipment or commodity numbers as part of the TO title, as follows:

G.3.4.1 Enter the appropriate system (e.g., "B52A," "F15A," etc.) Eliminate all dashes except those between numerals. Do not split an application title entry between title lines such as "KC" one line and "135" on the next line.

G.3.4.2 The applicable aircraft or missile series designation must be included (DoD 4120.15-L, *Model Designation of Military Aerospace Vehicles*). When entering applications of several series in the same system, include the complete listing for each series. Use a comma between applications in the same series. Do not leave a space after the comma. Example: Use "F16A,F16B,F16D," not "F16A,B,D." For a TO applicable to B-52G and H enter "B52G,B52H."

G.3.4.3 Use an asterisk (*) between systems (no spaces). Example: "B52G, B52H*KC135C*F5A."

G.3.4.4 When a modified mission is designated, it is considered a separate system for application entry. Example: Use "F15A*TF15A," not "F/TF15A" nor "F15A,TF15A."

G.3.4.5 Include covered equipment and commodity TMS/part number/contractor number information as part of each applicable TO title. Examples: Use "MA-1A," "MD-3," "PN 324576-4," "Lockheed 458632-15."

G.4 CATALOG NOTES.

Enter notes of a temporary or explanatory nature using the "Manage TM Index; Update an Index Entry" process, "Options; Update Index Data; Issue Data," in the field called "Catalog Note." These notes will NOT appear on the TO title page but will appear in the web-based Air Force TO Catalog detailed information window for the TO. When using the AFTO Form 203, use the "N01" line on the reverse. If additional lines are required, number them as "N02", "N03", etc.

G.4.1 Joint Service Technical Orders. Use a note to enter joint service TM numbers in the TO catalog. Examples:

- (TM 9-8212 INCLUDING C1)
- (NAVAIR 16-30APQ126-1-1)

G.4.2 Application Notes. A note may be used to enter application data for intermediate systems not reportable under paragraph G.3.1. Use an application data note only when it contributes to improved TO requirements data. The note entry must be brief. Examples:

- (PO CMD/CONT/COMM SYS) - shows that the TO applies to equipment that is part of (PO) the E-4B Command, Control and Communications System
- (PO AN/ARC-183 SYS) - shows application to the AN/ARC-183 Radio Communication System

G.4.3 Location Notes. Enter a note explaining where digital copies of the TO may be accessed (Internet) or giving the TO number for the distributed CD ROM collection of TOs that contains the TO file. Example:

- (PUBLISHED ON CD-ROM TO 42-CD-1)

G.4.4 Format Notes. In the catalog entry for a CD-ROM, enter information on the software programs required to read digital TO files published on the CD-ROM, and where to get copies of the software. Example:

- INCLUDED TO FILES ARE IN ADOBE ACROBAT®, INDEXED PORTABLE DOCUMENT FORMAT (IPDF)™.
  USE ADOBE® READER™ -- AVAILABLE AT HTTP://WWW.ADOBE.COM/]

G.4.5 Configuration Notes. Enter a note for digital versions of a TO explaining any differences between it and its paper copy due to different methods of updating the two formats (revision only vs. changes and revisions). Example:

- (THIS REVISION, DATED YYYYMMDD, IS THE SAME AS THE PAPER TO XX-XXX-X-X DATED YYYYMMDD, CHANGE N DATED [same as digital revision date])

G.5 EQUIPMENT IDENTIFICATION (APPENDIX F).

NOTE

May also be submitted using AFTO Form 204, *Technical Order Numbering, Indexing and Control Record (Continuation).*

G.5.1 Nomenclature and Manufacturer.

G.5.1.1 Enter the name of the equipment with the primary noun first and description following. Military standard abbreviations are permitted. Avoid uncommon abbreviations.

G.5.1.2 Contractor and Government Entity (CAGE) Code - Enter the CAGE code for the equipment manufacturer (reference http://www.dlis.dla.mil/cage_welcome.asp).

G.5.2 Equipment Data. Enter all applicable identifying equipment data (i.e., NSC, manufacturers part number, etc.).

G.5.2.1 Use a separate entry for each equipment item.

G.5.2.2 NSC - Enter the appropriate supply class.

G.5.2.3 MMAC - Enter the appropriate Materiel Management Aggregation Code (AFMAN 23-110, Volume 1, Part 4, Chapter 1, and Volume 2, Part 2, Chapter 3).

G.5.2.4 Do not preface the number with “Model,” “Series,” “Type,” “TMS,” “Part Number,” etc.

G.5.2.5 Do not enter measurements as part of an equipment number. Include them in the equipment nomenclature when essential.

G.5.2.6 Enter all alpha characters as capital letters.

G.5.3 Contract Information.

G.5.3.1 Contract Number - Enter the complete contract number when known.

G.5.3.2 CFAE/CFE (Contractor Furnished [Aeronautical] Equipment) Notice (CFEN) Number - Enter the applicable CFEN Number.

APPENDIX H
TECHNICAL ORDER MANAGEMENT TRAINING

SECTION I TRAINING PLAN

H.1 PURPOSE.

The purpose of this plan is to provide a comprehensive training outline capable of meeting the training needs of all Air Force TO managers. The plan includes a description of the training products available for TO managers and a listing of the OPR for each training product. The plan is followed by an On-The-Job Training (OJT) syllabus addressing TO manager training areas of concern.

H.2 TRAINING PREMISE.

TO management within AFMC encompasses TO acquisition, improvement/update, printing, distribution, and ultimately rescission. Using Command TO managers are involved in TO acquisition, improvement, and distribution. To meet the training needs of these diverse management functions, the training products were developed to be used in a modular format. This allows tailoring of the product to the particular area of TO management the trainee will be supporting. Training for TO managers should start at familiarization with basic TO management principles and build to more complex and specific TO management functions. The syllabus (see Section II) is a suggested progression for training accomplishment.

H.3 KNOWLEDGE NOW.

The KN site integrates the best features of the Air Force Knowledge Management site, the AFMC Help Center and the AF portion of the Defense Acquisition Deskbook into one resource. You can still access high-value "pedigreed" information from Deskbook, search AFMC websites and access Communities of Practice (CoP) from the site. The Knowledge Areas/Communities of Practice section in the center of the Entry page (URL above) directs users to high-level knowledge areas (categories) such as Acquisition, Intelligence, Logistics and Financial Management and provides the ability to drill down into specific Communities of Practice, tools, training and other resources. For more information on how to navigate this site, check the "How to use this site/FAQ" information.

H.3.1 Air Force Knowledge Management. The Air Force Knowledge Management site began in 1998 as a "Lessons Learned" effort on a wide variety of Air Force topics in response to an Air Force IG report dated 18 Jun 98. The site included high-value links to a variety of Air Force resources and access to Communities of Practice.

H.3.2 AFMC Help Center. The AFMC Help Center was deployed in February, 2000, borne out of an effort originally supporting Air Force efforts in Kosovo. A battle staff of 24 personnel was assigned to answer questions on a wide variety of AFMC topics during the Kosovo crisis. After this need had been fulfilled, HQ AFMC/CC expressed a desire to continue to provide access to AFMC information. In response, the AFMC Knowledge Now team installed a Verity search engine that currently searches over 400,000 non-classified AFMC web documents on innumerable topics. Research papers, reports, briefings, Points of Contact, MAJCOM priorities and web links can be found, and a selectable search allows end users to look for Air Force Deskbook documents, pubs and forms. The Search Smarter feature allows users to set case and date parameters as well as search within a search. These search features have been retained in the Knowledge Now search tools.

H.3.3 Defense Acquisition Deskbook. The Knowledge Now site integrates the Air Force portion of the Defense Acquisition Deskbook content and provides a mechanism for updating and keeping this information current. In response from a memo from HQ AFMC/CC, the Knowledge Now team captured and integrated the essential Deskbook features - both the AF mandatory and discretionary content - into Knowledge Now.

H.4 AIR FORCE INSTITUTE OF TECHNOLOGY (AFIT) COURSES.

H.4.1 AFIT System 110. A one week course offered through AFIT and held in-residence at Wright-Patterson AFB or locally. This course provides an introduction to the fundamental principles of data management and the importance of the data management function in an Integrated Product Team (IPT). Topics covered include the following: evaluating data requirements to achieve the goal of "minimum essential" of being placed on contract; ensuring the data being ordered are legally binding (authorized Data Item Descriptions) and properly called out on the Contract Data Requirements List (CDRL,

DD Form 1423); and coordinating the data order through a data review process to achieve an accurate order tailored down to fit the program.

H.4.2 AFIT System 230. A four day course offered through the Air Force Institute of Technology (AFIT) held in-residence at Wright-Patterson AFB, or locally. This course provides Technical Order (TO) Managers, program managers, engineers, logisticians, equipment specialists and other specialists with the general concepts, policies and functional responsibilities of the Air Technical Order System. The management responsibility of the TO manager is the primary theme. This course develops the TO acquisition concept from identification of TO requirements through preparation, development, and sustainment of TOs. This course will review in detail the responsibilities of the TO manager in the total acquisition and development cycle and interface with other logistics discipline and demonstrate the importance of coordination with these disciplines. Other areas of discussions are guidance conferences, in-process reviews, quality control, data rights, and printing both paper and digital. This course will also address Continuous Acquisition and Life Cycle Support/Joint Computer-Aided Acquisition and Logistics Support (CALS/JCALS) and its impact on the development of TOs.

H.5 SEMINARS AND WORKSHOPS.

If it becomes evident that a special acquisition program, AFMC center, or TO policy training requirement exists, a unique workshop or seminar can be developed to address the issue. Workshops are structured to be an open forum discussion with a hands-on lesson on topics tailored to the needs of a specific TO management level or area. The workshop can be held on site or at select locations and structured commensurate with the time required to properly address the issue. Past workshops have addressed TMCR tailoring, TO policy updates, and Automated Technical Order Management System (ATOMS) functionality.

H.6 TO MANAGER AND TECH CONTENT MANAGER (TCM) ON-THE-JOB-TRAINING (OJT).

OJT following the syllabus in Section H.2, will provide a well-rounded education on wholesale TO management. OJT activities can include reading of policy and guidance, attendance at meetings, review of programmatic documents, and hands-on accomplishment of TO management functions. A comprehensive OJT program administered by supervisory personnel can provide detailed standardized instruction and guidance of the day-to-day job requirements. OJT is a long-term activity that should be accomplished in parallel with the above training activities.

H.7 TODO/TODA/LIBRARY CUSTODIAN TRAINING.

Training for field organization TO file custodians is available in CBT format. Prospective students or newly assigned TO Distribution Office or Account personnel should refer to TO 00-5-1, *TO System Training*, for more details.

H.8 TO TRAINING PRODUCTS ACCESS LIST.

The following are the Points of Contact/OPRs for TO training products:

H.8.1 Air Force Knowledge Now Support

HQ AFMC/A8C
4225 Logistics Ave
Bldg 266, Rm S146, Post 116P
Wright-Patterson AFB, OH 45433-5066
DSN: 986-2356
Web Site: https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=OO

H.8.2 AF Institute of Technology (AFIT) Courses

AFIT/LSA
3100 Research Blvd.
Kettering, Oh 45420-4022
DSN: 785-7777, ext. 3164 FAX: 785-8458
Web Site: http://www.afit.edu/ls

H.8.3 Defense Acquisition University (DAU) Logistics Support Analysis Course, LOG 202

Commandant US Army Logistics Management College
ATTN: ATSZ-ATR
Fort Lee VA 23801-6041
DSN: 539-4965 FAX: 539-4663

H.8.4 TO Points of Contact Roster, TO System Information Page and Seminars/Workshops

754 ELSG/ILMT
4170 Hebble Creek Rd, Door 15
Wright-Patterson AFB, OH 45433-5653
DSN: 787-3085 FAX: 986-2164

H.8.5 Air Force TO Functional Support Team (AF TOFST)

AAC/AQY
102 West D Ave, Ste 160
Eglin AFB FL 32542-5415
DSN: 872-9300
CoP: https://afkm/wpafb.af.mil/community/views/home.aspx?Filter=OO

SECTION II TECHNICAL ORDER MANAGER TRAINING SYLLABUS

H.9 MONTH 1 – BASIC TECHNICAL ORDER SYSTEM FAMILIARIZATION.

H.9.1 Reading.

- AFPD 63-1/AFPD 20-1*Acquisition and Sustainment Life Cycle Management*
- AFI 63-101, *Acquisition and Sustainment Life Cycle Management*
- TO 00-5-1, *AF Technical Order System*

H.9.2 Formal Training Requirements.

Air Force TOFST General and Advanced TO System CBT Courses (see TO 00-5-1)

H.9.3 Training Tool.

- TO System Information Page (https://techdata.wpafb.af.mil/toprac/to-syste.htm)

H.9.4 Trainee Familiarization.

a. The trainee should become thoroughly familiar with the TO system as a whole and the specific types and uses of TOs. The trainee must have a basic understanding of the retail (TO user) tools and processes employed to manage and control TO accounts, libraries, posting updates, recommending improvements, and TO disposition.

b. The trainee must understand the retail management structure and the responsibilities of TO Distribution Office personnel. This will help the trainee to understand customer requirements.

H.9.5 Trainee Participation.

(None)

H.10 MONTH 2 – TECHNICAL ORDER LIFE CYCLE MANAGEMENT INTRODUCTION.

H.10.1 Reading.

- *Defense Acquisition Guidebook* (DAG) (http://akss.dau.mil/dag/)
- AFI 63-101, *Acquisition and Sustainment Life Cycle Management*
- AFMCI 21-301, *Air Force Materiel Command Technical Order System Implementing Policies*
- TO 00-5-3, *AF Technical Order Life Cycle Management*, Chapter 1, Chapter 2, Chapter 3

H.10.2 Training Tool.

* AF Knowledge Now (https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=OO)

H.10.3 Trainee Familiarization.

a. The trainee should understand the Purpose and Concept of the TO System.

b. The trainee must understand the wholesale (provider) TO management structure and responsibilities of fellow TO management personnel. This will help clarify the trainee's position within the organization and define duties and responsibilities.

c. The trainee must be familiar with the tools used for TO management.

d. The trainee must understand the differences between the roles of the acquisition and sustainment TO management personnel.

H.10.4 Trainee Participation. The trainee should learn how to use the AF Knowledge Now site.

H.11 MONTHS 3 & 4 – BASIC TECHNICAL ORDER ACQUISITION PROGRAM FAMILIARIZATION.

H.11.1 Reading.

Program Management Directive (PMD)

Mission Need Statement (MNS)

Statement of Work (SOW) for the specific program

Integrated Logistics Support Plan (ILSP)

- *Defense Acquisition Guidebook* (DAG) (http://akss.dau.mil/dag/)
- TO 00-5-3, *AF Technical Order Life Cycle Management*, Chapter 3, Chapter 7, Chapter 9, Appendix B, Appendix C
- ASSIST (Acquisition Streamlining and Standardization Information System) (Quick Search, https://assist.daps.dla.mil/quicksearch/)

NOTE

Basic familiarity with location and content arrangement only.

H.11.2 Formal Training Requirements.

AFIT Systems 100 Course: Introduction to Acquisition Management

H.11.3 Training Tool.

(None)

H.11.4 Trainee Familiarization.

a. The trainee should review the Lifecycle of a program as specified in the DAG for all acquisition and sustainment phases. The trainee should understand how an acquisition program is established from the basic user requirement as stated in the Mission Need Statement (MNS) to the Statement of Work (SOW). (DAG)

b. The trainee should review the DoD requirement to acquire digital data and understand the process of evaluating TO data life-cycle costs. (DAG)

c. The OJT instructor should provide the trainee with the local procedures for conducting a data call and guidance conference. Basic knowledge is required of TO acquisition procedures and their impact upon future sustainment functions.

d. The trainee should understand the different types of TO reviews (In-Process Review, Verification, and Pre-Publication) and the role of the sustainment TO manager. The trainee must understand the purpose of each review and the interfaces with appropriate agencies that participate. (TO 00-5-3, Chapter 7)

e. The trainee should become familiar with ASSIST to the extent necessary to locate a particular specification and verify its status. ASSIST is comprised of three standardization databases: the DoD Index of Specifications and Standards (DODISS), the SD-4, and the Acquisition Management Systems and Data Requirements Control List (AMSDL). The SD-4 contains standardization project tracking data. The AMSDL is an index listing all active and cancelled Data Item Descriptions (DIDs). The trainee should understand the structure of the ASSIST database and identify the various sections of the database.

H.11.5 Trainee Participation.

a. The trainee should participate in or review documentation from a program data call to learn the process of identifying TM requirements. Assist in the preparation of AF Form 585 and DD Form 1423, when required, justifying requirements for TMs and management support data.

b. The trainee should participate in or review documentation from a Technical Order Planning/Requirements Conference. This participation is to include tailoring of the appropriate Technical Manual Specifications & Standards (TMSS) IAW TM-86-01 Preparation Instructions, paragraph 7, and utilizing the applicable Specification/Standard Interface Records (SIR) of Section 3.

c. The trainee must be able to create and coordinate the various management plans (e.g. TO Management Plan (TOMP) and TO Verification Plan (TOVP)) required to support TO acquisition management. TO 00-5-3 contains generic examples of these plans to aid in development. (TO 00-5-3, Appendix B & Appendix C)

d. The trainee should attend or review documentation from a TO guidance conference. Trainee should be aware of the program requirements that will ensure sustainment capabilities after conclusion of the acquisition portion of the program.

e. The trainee will participate in the planning, scheduling, interface actions and accomplishment of a TM in-process review.

f. The trainee will assist in accomplishing a TO verification activity.

H.12 MONTH 5 – INTERFACING ORGANIZATIONS, CONTRACTING FOR TECHNICAL ORDERS, AND CONTRACTOR PROPOSALS.

H.12.1 Reading.

- Defense Acquisition Guidebook (DAG) (http://akss.dau.mil/dag/)
- AFI 11-215, *USAF Flight Manuals Program* (If required for the program)
- TO 00-5-3, *AF Technical Order Life Cycle Management*, Chapter 4, Chapter 5, Chapter 6

H.12.2 Formal Training Requirements.

AFIT System 110 Course: Fundamentals of Data Management

AFIT System 230 Course: Air Force Technical Order Acquisition and Management

H.12.3 Training Tool.

AF Knowledge Now: https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=OO

H.12.4 Trainee Familiarization.

a. The trainee must be familiar with required interfaces with other TO Managers and users: (TO 00-5-3, Chapter 4)

(1) Using Command and/or Depot repair center: The main interface will be the defining and refining of TO requirements and TO verification.

(2) Supporting Activity: The main interface will be with the applicable ALC having depot repair responsibility and the centralized TO management activity involved with sustainment functions.

(3) Contractor: The main interface will be for clarification of contractual requirements, oversight of the Quality Assurance Program and monitoring the TO/source data development.

(4) Defense Contract Management Agency: The main interface will be with the Administrative Contract Officer (ACO) and the Quality Assurance representative.

(5) (Central) Technical Order Control Unit (CTOCU/TOCU): The main interface will be the CTOCU management of the acquisition TO quality program as authorized by the TO Manager.

b. The trainee must understand the different methods by which TO requirements are identified and how those requirements are reviewed and approved. This includes thoroughly defining specific requirements in preparation for review/approval at Data Requirements Review Boards, Support Equipment Review Boards, and Configuration Control Boards.

c. The trainee should understand their participation in the review process and their responsibility to defend the defined TO requirement.

d. The trainee must be familiar with Memorandums of Agreement (MOA), Memorandums of Understanding (MOU) and Program Introductory Documents (PID) as they exist and affect the relationship among participating agencies. The MOA between the SPO/PO and the Defense Plant Representative, and the PID with the CTOCU are of particular interest.

H.12.5 Trainee Participation.

a. Assist in preparation for and attend a Data Requirements Review Board (DRRB).

b. Attend and review documents for Support Equipment Review Board (SERB).

c. Assist in evaluation of an Engineering Change Proposal (ECP)/Contract Change Proposal (CCP).

d. Assist in preparation for and attend a Configuration Control Board (CCB).

H.13 MONTHS 6 & 7 – BASIC TECHNICAL ORDER SUSTAINMENT PROGRAM FAMILIARIZATION.

H.13.1 Reading.

- AFMCI 21-301, *Air Force Materiel Command Technical Order System Implementing Policies*
- TO 00-5-1, *AF Technical Order System*, Chapter 7
- TO 00-5-3, *AF Technical Order Life Cycle Management*, Chapter 8, Chapter 9, Chapter 10
- TO 00-5-18, *USAF Technical Order Numbering System*, Chapter 1
- DODI 5330.03, *Document Automation and Production Service (DAPS)*

H.13.2 Formal Training Requirements.

(None)

H.13.3 Training Tool.

JCALS User Web-Based Training (https://trainingweb3.jcals.army.mil/)

H.13.4 Trainee Familiarization.

a. The trainee must know the procedures for requesting TO numbers, indexing TOs in JCALS, and updating index records (including equipment cross-reference data).

b. The trainee must know the procedures for managing Preliminary TOs (PTO) and developing AFTO forms as required.

c. The trainee must know how to notify users of the transition from distribution of legacy paper-based TOs to digital distribution, and how to mitigate transition problems caused by inadequate infrastructure.

d. The trainee must be familiar with the processes for rescinding and reinstating TOs, and for transferring TO management to different proponents.

e. The trainee must know how to perform sustainment functions using JCALS or the replacement TO Management System. These procedures must include TO stock management and TO access controls.

f. The trainee must be familiar with the procedures for monitoring Contractor Certification of and performing Verification on TOs and updates.

g. The trainee must be familiar with the procedures for reproducing and distributing TOs, in both paper and digital formats. The trainee must know how to screen access to TOs. The trainee must know the methods for secure transmission of digital files. (DODD 5330.03/AFI 33-395, AFI 61-204, TO 00-5-3, Chapter 10)

H.13.5 Trainee Participation.

a. The trainee must complete JCALS User Training and obtain access to JCALS.

b. The trainee will submit a request for a TO number, and properly index the TO in JCALS, including equipment cross-reference data.

c. The trainee will perform a representative sampling of TO Management procedures using JCALS. (TO 00-5-3, paragraph 8.8)

d. The trainee shall prepare a digital TO or update for secure transmittal to registered users.

H.14 MONTH 8 – UPDATING TECHNICAL ORDERS (AF FORM 847, AFTO FORMS 22, 27, 158 & 252).

H.14.1 Reading.

- AFI 11-215, *USAF Flight Manuals Program (FMP)*
- AFI 63-101, *Acquisition and Sustainment Life Cycle Management*
- AFI 61-204, *Disseminating Scientific and Technical Information*
- AFMCI 21-301, *Air Force Materiel Command Technical Order System Implementing Policies*
- TO 00-5-1, *AF Technical Order System*, Chapter 9
- TO 00-5-3, *AF Technical Order Life Cycle Management,* Chapter 11, Chapter 12, Chapter 13

H.14.2 Formal Training Requirements.

(None)

H.14.3 Training Tool.

AF Knowledge Now (https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=OO)

H.14.4 Trainee Familiarization.

a. TO Recommended Changes (RC) are submitted to correct and improve TOs. The trainee should review the different types of RCs (AF Form 847, AFTO Forms 22, 27, 158 & 252), RC priorities (emergency, urgent, routine), and understand the associated unique processing requirements for both the acquisition phases and the sustainment phase of a program. (AFI 11-215, AFMCI 21-301, TOs 00-5-1 & 00-5-3)

b. The trainee should consult local guidance for unique processing methods utilized at his/her center. The OJT trainer should identify how the trainee's function fits into the total TO improvement approval/implementation process. This includes the accomplishment of the AFTO Form 252 and the associated update and printing of TO changes. (TO 00-5-3, Ch 12)

c. TO printing/reprinting management is a complex process. The TO manager must be able to coordinate with numerous outside agencies to accomplish printing of TOs. The trainee must know printing process POCs and the roles and responsibilities each plays in the printing process. (TO 00-5-3, DODD 5330.03/AFI 33-395)

d. A critical part of the print management process is the quality review of the reproducible package. The package is reviewed prior to submission to the printing agency. The trainee should understand the review procedure, the critical inspection items, and the process for correcting deficient products.

H.14.5 Trainee Participation. The trainee should actually perform the procedural steps in the Technical Improvement Report process. This should include the evaluation of the AFTO Form 22, accomplishment of the AFTO Form 252, development of the TO update, review of the print package, and the routing to the appropriate print agency.

H.15 MONTH 9 – REQUISITION PROCESSING, FREEDOM OF INFORMATION, RELEASE OF TECHNICAL ORDERS TO THE PUBLIC, AND RELEASE UNDER AFI 61-204.

H.15.1 Reading.

- TO 00-5-3, *AF Technical Order Life Cycle Management*, Chapter 3, Chapter 10
- DoD 5200.1-R, *Information Security Program Regulation*
- DoDD 5230.24, *Distribution Statements on Technical Documents*
- DoDD 5230.25, *Withholding of Unclassified Technical Data From Public Disclosure*
- AFI 31-401, *Information Security Program Management*
- AFI 61-204, *Disseminating Scientific and Technical Information*
- DoD 5400.7-R/AF Sup, *DoD Freedom of Information Act (FOIA) Program*

H.15.2 Formal Training Requirements.

Annual Information Assurance Training

H.15.3 Training Tool.

STINFO Web-Based Training (https://afkm.wpafb.af.mil/database/OO-EN-MC-02/index.htm?Filter=OO-EN-MC-02)

H.15.4 Trainee Familiarization.

a. The trainee should understand the process involved in TO requisitions submitted by field organizations. Both manual and automated requisitions must be understood. Requisitions can include requests for Classified, Unclassified, Foreign Military Sales, Special Weapons, and Country Standard TOs. (TO 00-5-3)

b. The trainee must understand the legal rights of individuals to request information including TOs under the Freedom of Information Act. Knowledge of the proper forms usage and evaluation criteria is required. The trainee must be able to properly screen and evaluate information requester's qualifications to receive data. Proper control log book usage is stressed. (AF Supplement to DoD 5400.7-R, DoDD 5230.24, TO 00-5-3)

c. The trainee must be able to evaluate/calculate the cost of the requested information and request payment from the requester. (DoD 5400.7-R/AF Sup)

H.15.5 Trainee Participation.

a. The trainee should assist in screening of Freedom of Information Act TO requests and log book usage. The trainee should calculate costs of numerous TO request to gain insight into cost variances.

b. The trainee should actually process a TO requisition through all of the steps from processing computer generated shipping labels through processing emergency requests.

H.16 MONTH 10 – TIME COMPLIANCE TECHNICAL ORDER MANAGEMENT.

H.16.1 Reading.

- AFI 61-204, *Disseminating Scientific and Technical Information*
- AFMAN 23-110, *USAF Supply Manual*, Vol 3, Part 1, *Miscellaneous Materiel Management Procedures*, Ch 11, *Time Compliance Technical Order (TCTO) Supply Operating Procedures*

* AFMCI 21-301, *Air Force Materiel Command Technical Order System Implementing Policies*

* TO 00-5-15, *Air Force Time Compliance Technical Order Process*

H.16.2 Formal Training Requirements.

(None)

H.16.3.1 Training Tool.

(None)

H.16.4 Trainee Familiarization.

a. The trainee should understand the overall process involved in developing, publishing and managing TCTOs. (TO 00-5-15, Ch 1)

b. The trainee must know the various categories, types and levels of TCTOs, as well as authorized Non-TCTO modification methods. The trainee must know how TCTO compliance is documented and tracked. (TO 00-5-15, Ch 2)

c. The trainee must understand the TCTO and kit numbering process, including assignment of data codes. (TO 00-5-15, Ch 3)

d. The trainee must understand the practices used for TCTO kits and the process for verifying TCTOs, kits and affected tech data. (TO 00-5-15, Chs 4 & 5)

e. The trainee must understand the procedures involved in TCTO compliance, including compliance periods, waivers, reinstatement of rescinded TCTOs, etc. (TO 00-5-15, Chs 6 & 7)

f. The trainee must know how and when to issue Interim TCTOs. (TO 00-5-15, Ch 8)

H.16.5 Trainee Participation.

a. The trainee should build a TCTO package (AFTO Forms 873, 874 & 875, AFTO Form 82), and obtain coordination and approval for publication.

b. The trainee should develop an Interim TCTO message, provide required advanced notification, and determine distribution methods and addressees.

H.17 MONTH 11 – OJT INSTRUCTOR'S END OF COURSE EVALUATION.

The OJT instructor and TO Manager-in-training will review training accomplishments to:

a. Ensure TO Manager has completed mandatory training requirements

b. Evaluate results of training

c. Prepare recommended course improvements, as applicable

d. Ensure new TO Manager's training records and training database are updated

e. Identify and schedule residual training requirements