

**MANAGEMENT AND PROCEDURES
MANUAL**

**COGNIZANT FIELD ACTIVITY
PROCEDURES FOR
MANAGEMENT OF ASSIGNED
TECHNICAL
MANUALS APPLICABLE TO IN SERVICE
OUT-OF-PRODUCTION CATEGORY
AIRCRAFT/SYSTEMS/COMPONENTS**

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Page No.	# Change No.	Page No.	# Change No.	Page No.	# Change No.
Title	0				
A	0				
i - iv	0				
1-1 - 1-4	0				
2-1 - 2-11	0				
2-12 Blank	0				
3-1 - 3-34	0				
4-1 - 4-27	0				
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5-1 - 5-3	0				
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6-1 - 6-11	0				
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7-1 - 7-6	0				
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A-4 Blank	0				
B-1 - B-6	0				
G-1 - G-7	0				
G-8 Blank	0				

Zero in this column indicates an original page.

TABLE OF CONTENTS

Section	Page	Section	Page
LIST OF ILLUSTRATIONS.....	iv	3-37 TPDR Followup Action....	3-15
I INTRODUCTION.....	1-1	3-39 Manual Change Release (MCR).....	3-17
1-1 Purpose.....	1-1	3-46 Changes to a Conventio- nal Manual.....	3-19
1-3 Scope.....	1-1	3-49 Conventional Manual Change Symbology.....	3-22
1-5 Background.....	1-1	3-52 Revision of a Conven- tional Manual.....	3-22
1-7 Technical Manual Man- agement.....	1-1	3-53 Conventional Manual Dif- ference Data Sheets...	3-22
1-13 TMCFA Assignments.....	1-2	3-55 Change to a Work Package (WP) Manual.....	3-23
II RESPONSIBILITIES.....	2-1	3-61 WP Manual Change Symbol- ogy.....	3-24
2-1 Organizational Responsi- bilities.....	2-1	3-63 Revision to WP Manual...	3-25
III TECHNICAL DOCUMENTATION DATA MANAGEMENT.....	3-1	3-66 Revision to WP Manual Change Symbology.....	3-26
3-1 General Policy.....	3-1	3-68 NAVAIR Technical Manual (TM) Notices.....	3-26
3-5 TMCFA Data Management...	3-2	3-71 Annual Determination of Update Requirements, Priorities, and Fund- ing Requirements.....	3-27
3-7 Specifications.....	3-5	3-77 Technical Manual Transi- tioning Actions.....	3-32
3-9 MDP.....	3-5	3-87 Management of Technical Manual Quality.....	3-33
3-13 Source Data Package.....	3-6	3-89 Procedures for Deletion of Technical Data Sup- port for an Aircraft Scheduled for Retire- ment from the Navy Inventory.....	3-33
3-15 Instructions for Prepa- ration of Source Data Package.....	3-6	3-95 Annual Management Meet- ing.....	3-34
3-17 Establishing a Source Data Package.....	3-6	IV TECHNICAL MANUAL UPDATE PRO- CEDURES.....	4-1
3-20 Source Data Package to Contractor.....	3-6	4-1 Navy Managed Update Pro- cedures.....	4-1
3-22 Source Data Package for In-House Change.....	3-7		
3-24 Documenation Require- ments.....	3-7		
3-28 Technical Manual Update Methods.....	3-7		
3-29 RAC's.....	3-7		
3-33 RAC Incorporation in the Technical Manual.....	3-13		
3-34 Technical Publication Deficiency Reporting..	3-15		

Section	Page	Section	Page
4-3 Update Procedures when Dealing with the Prime Contractor.....	4-1	4-73 Rapid Action Minor Engineering Changes (RAMEC's).....	4-25
4-5 Basic Ordering Agreement (BOA) with Original Equipment Contractors.	4-1	V TECHNICAL MANUAL QUALITY-ASSURANCE.....	5-1
4-10 MDP Control and Out-of-Production Technical Manual Program Plan Intent.....	4-2	5-1 General.....	5-1
4-13 Contractor Assistance Through Regional Documentation Contracts...	4-2	5-4 Responsibilities.....	5-1
4-17 Preparation of Technical Manual Contract Requirement Work Statement (TMCRWS) and Government Cost Estimate.....	4-3	5-7 Quality Assurance Procedures.....	5-1
4-24 NAVAIRTECHSERVFAC Ordering Officer.....	4-15	VI MICROFILM PREPARATION ACTIVITY (MPA).....	6-1
4-29 Evaluation of Regional Contractor Performance.....	4-15	6-1 MIARS Master Data Package.....	6-1
4-32 Criteria for Determining Requirements.....	4-17	6-3 Arrangement of Manuals in MIARS MDP.....	6-4
4-33 General Change Procedures.....	4-17	6-4 MIARS MDP Management....	6-4
4-40 Rapid Action Change (RAC) Procedures.....	4-18	6-5 MIARS MDP Assignment....	6-4
4-45 Routine Changes and Revision.....	4-20	6-6 MIARS MDP Establishment.	6-4
4-46 Determining a Change or Revision.....	4-20	6-8 MPA Cognizance.....	6-8
4-48 Manual Change Release (MCR).....	4-20	6-10 Determination of Update Requirements and Priorities.....	6-8
4-49 Processing of Change Data for Technical Manuals Under Cognizance of Another TMCFA.....	4-20	6-11 Updating.....	6-8
4-51 Changes Affecting Operational Technical Manuals.....	4-21	6-12 Filming Cycle.....	6-8
4-59 ECP's Affecting Out-of-Production Weapon System or Equipment TM's.		6-13 Film Scheduling.....	6-8
4-67 Out-of-Production ECP/RAMEC Funding and Preparation Flow.....	4-23	6-14 Cartridge Order Sheet (COS).....	6-9
4-70 Responsibilities for Out-of-Production ECP's.....	4-24	6-15 MIARS MDP Quality Control.....	6-9
		6-16 MPA Management Categories.....	6-9
		6-18 Contractor Assistance Through Regional Microfilm Contracts.....	6-11
		VII PRINTING AND FILMING, PRINTS AND REMAKES.....	7-1
		7-1 Printing and Filming....	7-1
		7-2 NAVAIRTECHSERVFAC Responsibilities.....	7-1
		7-4 Preparing Activity Responsibilities.....	7-1
		7-7 NPPSO Responsibilities..	7-1
		7-9 MIARS MDP Filming and Remake.....	7-2
		7-10 NAVAIRTECHSERVFAC Responsibilities.....	7-2

Section	Page	Section	Page
7-11 MPA Responsibilities....	7-6	9-10 Related Technical Manual Budgets.....	9-2
7-12 NPPSO Responsibilities..	7-6	9-13 Other than ECP Related Technical Manual Budgets.....	9-2
VIII DISTRIBUTION.....	8-1	9-19 TMCFA Funding Support...	9-2
8-1 Printed Technical Manual Distribution.....	8-1	9-21 O&MN Appropriations for Technical Manual Update Support.....	9-3
8-3 TMCFA Printed Manual Distribution Responsibilities.....	8-1	9-24 Charging to Other Appropriations.....	9-3
8-5 NPPSO Printed Manual Distribution Responsibilities.....	8-1	9-25 Update of MIARS Data Packages.....	9-3
8-7 NAVAIRTECHSERVFAC Printed Manual Distribution Responsibilities.....	8-1	9-26 Financial Reporting.....	9-4
8-9 Microfilm Distribution..	8-1	9-28 Contractor Task Funding.	9-4
8-11 MPA Microfilm Distribution Responsibilities.	8-4	APPENDIX	
8-13 NPPSO Microfilm Distribution Responsibilities.....	8-4	A Instructions for Completion of the Firm Update Workload and Priorities Form.....	A-1
8-15 NAVAIRTECHSERVFAC Microfilm Distribution Responsibilities.....	8-4	B Instructions for Preparation of Technical Manual Contract Requirement Work Statements (TMCROWS).....	B-1
IX BUDGET AND FUNDING.....	9-1	GLOSSARY	
9-1 General.....	9-1	PART I Glossary of Terms...	G-1
9-4 Evaluation of Budget Calls.....	9-1	PART II Glossary of Abbreviated Titles and Phrases.....	G-6
9-6 Out-of-Production Budgeting.....			

LIST OF ILLUSTRATIONS

Number	Title	Page	Number	Title	Page
1-1	Technical Manual Cognizant Field Activity Assignments.....	1-3	4-2	Typical List of Associate COTR Duties.....	4-7
1-2	Cognizant Field Activity Codes.....	1-4	4-3	Typical Technical Manual Contract Requirement Work Statement.....	4-8
2-1	Sample of TMCFA Requirements for Out-of-Production Joint Manuals Form.....	2-3	4-4	Sample of Government Estimate of Cost Form.....	4-12
2-2	Sample of Manuscript Copy Request Form (4WD-NATSF 5600/16 (REV 10-67)).....	2-4	4-5	Typical TMCRWS and Cost Estimate Forwarding Correspondence Format.....	4-14
2-3	Sample Letter of Transmittal Request.....	2-5	4-6	Sample of Report on Contractor Performance.....	4-16
2-4	Sample of Joint Service Out-of-Production Technical Manual Coordination Request.....	2-7	4-7	Typical TMCR Transmittal Letter Identifying ECP's..	4-26
2-5	Sample of Request for Changes to Initial Outfitting List (IOL) Form.....	2-8	4-8	Typical TMCFA Preparation of Work Statement Form Letter Identifying Applicable ECP's.....	4-27
3-1	Typical Marked-up Page.....	3-8	6-1	Example of a Single Column Table of Contents.....	6-2
3-2	Typical Data Input.....	3-9	6-2	Example of a Right Hand Column Split Page.....	6-3
3-3	Typical Source Data Worksheet.....	3-11	6-3	Example of a Cartridge Filming Sequence Sheet.....	6-5
3-4	Typical Work Summary Form...	3-12	6-4	Example of Camera Operator Instructions.....	6-7
3-5	Typical Paper Copy Interim RAC Identification Method.	3-14	6-5	Typical Cartridge Order Sheet (COS) (4ND-NATSF-5600/171).....	6-10
3-6	Sample Technical Publication Deficiency Report (TPDR) (OPNAV Form 4790/66) (REV 11-78).....	3-16	7-1	Technical Publications Reprint Action Request Form (NATSF-5600/126B)(REV 8-79).....	7-3
3-7	Typical MCR Form.....	3-18	7-2	Printing Sequence and Collation Record form (GEN-PHILA 5603/2) (REV 5-83)	7-4
3-8	Typical MCR Changed Page....	3-20	7-3	Requisition for Local Duplicating Service (DD Form 844).....	7-5
3-9	Manual Change Release Title Page Format.....	3-21	8-1	Publication Order Sheet (POS)(NATSF 5600/126A) (REV 7-83).....	8-2
3-10	NAVAIR TM Notice.....	3-28	8-2	Picking Slip.....	8-3
3-11	CFA Identification Form of Firm Update Workload and Priorities.....	3-29			
3-12	Budget Estimate Form (Five Year Defense Plan).....	3-30			
3-13	MIARS Program MDP Budget Form.....	3-31			
4-1	Listing of Principal COTR's Duties.....	4-4			

SECTION I**INTRODUCTION****1-1. PURPOSE.**

1-2. This manual provides management procedures applicable to the maintenance and update of in-service out-of-production category technical manuals that have been transitioned to the Cognizant Field Activity (CFA) for technical and production management of update cycles. It defines responsibilities, establishes procedures and furnishes detailed information to standardize and simplify technical manual maintenance and provide a better understanding of the overall technical manual program and its objectives.

1-3. SCOPE.

1-4. This manual of procedures is applicable to technical manuals that have been transitioned from a prime weapon system/equipment contractor to a designated CFA. It applies also to those activities assigned specific responsibilities for Naval Air Training and Operating Procedures (NATOPS), tactical, weapons loading, general maintenance categories, etc. technical manuals.

1-5. BACKGROUND.

1-6. The Naval Air Systems Command (NAVAIRSYSCOM) objective to procure and provide fleet and field users with complete and comprehensive technical manuals for in-service out-of-production aircraft and equipment led to expanded in-house support through the introduction of competition and the utilization of small business technical writing houses for product support in order to achieve the desired result with the limited personnel resources and appropriated Operation and Maintenance, Navy (O&MN) funds.

1-7. TECHNICAL MANUAL MANAGEMENT.

1-8. In NAVAIRSYSCOM Headquarters the Technical Documentation Officer is assigned responsibility for overall centralized management of the NAVAIRSYSCOM technical manual program. This responsibility entails development and maintenance of policy, procedures and specifications that ensure distribution and documentation that will effectively support weapons and equipment in the hands of the fleet user. The Technical Documentation Officer maintains program control of the out-of-production technical manual effort, provides administrative and technical direction as required to accomplish program objectives, continuity of actions and continuous support of required update task.

1-9. NAVAIRTECHSERVFAC is assigned as the Technical Manual Management Agency, (TMMA) with responsibility for coordinating and administering the technical manual program.

1-10. Technical Manual Cognizant Field Activities (TMCFA's) under the policy guidance of NAVAIRSYSCOM and direction of NAVAIRTECHSERVFAC have been assigned the data management role previously exercised by the prime weapon system/equipment contractor in supporting out-of-production technical manual update tasks. Specifically, the TMCFA is responsible for the development and maintenance of the Master Data Package (MDP) and will participate in and/or direct the update of technical manuals for assigned aircraft and equipment. Further, the TMCFA is identified as the preparing activity for out-of-production weapons systems/equipment technical

manuals and will comply with all of the applicable Quality Assurance (QA) requirements imposed by NAVAIRSYSCOM/NAVAIRTECHSERVFAC.

1-11. NAVAIR will assign weapon systems/equipment technical manuals to each TMCFA in conjunction with engineering cognizance transition agreements approved by the weapon systems support division and applicable NAVAIR instruction and specifications. Each NAVAIR Engineering Support Office (NESO) within the Weapon Systems Support Department (WSSD) at the respective Naval Air Rework Facility (NAVAIREWORKFAC) will provide engineering and technical support. As defined by existing instructions and amplified herein, the Naval Aviation Logistics Center (NAVAVNLOGCEN) will be responsible for the administration of the NESO's technical manual engineering cognizance accomplishments. Each CFA or non WSSD activity designated by NAVAIRSYSCOM as a TMCFA will be responsible for the administration of its non WSSD activity technical manual engineering cognizance accomplishments.

1-12. NAVAIRSYSCOM has designated the Microfilm Preparing Activity (MPA) as the activity to implement Maintenance Information Automated Retrieval System (MIARS). The MPA is responsible for preparing, maintaining, updating and controlling the MIARS MDP of those technical manuals assigned. The MPA is essentially the TMCFA for the storage and retrieval of MIARS manual information. The term TMCFA reflects the full responsibility for managing the update function including associated engineering except when that engineering is not available locally.

1-13. TMCFA ASSIGNMENTS.

1-14. The NAVAIRTECHSERVFAC list of TMCFA assignments, taken from the current master file of the Initial Outfitting List (IOL) system, is issued to all TMCFA's.

1-15. The purpose of the listing is to identify which TMCFA has cognizance over a particular technical manual. Each TMCFA is responsible for keeping current all technical manuals under their cognizance.

1-16. As shown in Figure 1-1, this listing is provided in columnar format. In the first column "Technical Manual Number," the manuals are listed in alpha numeric sequence order. In the second column "Production Status," the letter "I" stands for In-Production, the letter "O" stands for Out-of-Production and the letter "X" means that the manual is not applicable to production. In the third column, TMCFA's are identified as single characters in accordance with the codes as listed in Figure 1-2.

1-17. NAVAIRINST 5400.15 provides a master list of engineering cognizance assignments for specific weapons systems/equipment. As a general rule the activity having maintenance engineering cognizance of the weapon system/equipment also has the cognizance of the related technical manuals except as follows:

- a. Manuals not related to a specific equipment retain the identification of the preparing activity.
- b. When a manual of an applicable weapons system/equipment is under the cognizance of several activities, the assignment remains at the activity previously assigned by NAVAIRTECHSERVFAC.
- c. When a manual is applicable to more than one weapon system and it was not previously assigned to a TMCFA, it is assigned to the maintenance engineering cognizant activity that is also shown as a Designated Rework Point (DRP) in the Master Repair List (MRL).

TECH MANUAL		PRDD TM	TECH MANUAL		PRDD TM	TECH MANUAL		PRDD TM	TECH MANUAL		PRDD TM
NUMBER	STAT	CFA	NUMBER	STAT	CFA	NUMBER	STAT	CFA	NUMBER	STAT	CFA
A1-5735A-MDB-000	O	7	A1-774AA-IPB-400	I	3	A6-750AD-DMI-000	O	E	00-80ZZ-91	X	N
A1-573VB-MIB-000	I	3	A1-774VB-MDB-000	I	3				00-110A	X	N
A1-580AA-MIB-200	O	7	A1-776AA-IPB-400	I	6	A8-W00AA-HBK-000	O	8	00-110A-1	X	N
A1-580AB-MIB-200	O	7	A1-776AA-MMD-300	I	6	A8-000AA-WUC-800	O	8	00-10AGM-1	O	E
A1-580AC-240-000	I	6	A1-776VB-MDB-000	I	3	A8-000AA-WUC-820	O	8	00-110AA52-1	X	N
A1-580AC-240-010	I	6	A1-776VB-MIB-000	I	3	A8-1AAA4-WUC-800	O	8	00-110ATH57-1	O	N
A1-580AC-240-020	I	6	A1-780VB-MIB-000	I	3	A8-1AH46-WUC-800	O	8	00-110AA3-3	X	N
A1-580AC-240-030	I	6	A1-790PA-290-000	I	5	A8-1AH60-WUC-800	O	8	00-110AA3-4	X	N
A1-580PA-240-000	I	5	A1-790PA-290-100	I	5	A8-120AA-WUC-800	O	8	00-110AA3-5	X	N
A1-580PA-290-100	I	5	A1-792CA-MDB-300	I	3				00-110AA3-6	X	N
A1-580PA-290-200	I	5	A1-793AA-IPB-400	I	3	00-00-000	X	N	00-110AA3-7	X	N
A1-654AA-MDB-300	I	6	A1-793AC-290-000	I	6	00-25-100	X	N	00-110AA4-4	X	N
A1-700AC-290-000	I	6	A1-793VB-MIB-000	I	3	00-25-200	O	8	00-110AA4-6	X	N
A1-700PA-290-000	I	5	A1-860PA-110-000	I	5	00-25-400	X	N	00-110AA4-7	X	N
A1-700VB-OEC-000	I	3	A1-860PA-110-200	I	5	00-25-401	X	N	00-110AA4-9	X	N
A1-720CA-MDB-300	I	5	A1-860PA-150-100	I	5	00-25-402	O	N	00-110AA6-2	X	N
A1-725AA-MDB-300	I	7	A1-860PA-150-200	I	5	00-25-513	X	N	00-110AA6-3	I	N
A1-750VB-MIB-000	I	3	A1-860PA-150-300	I	5	00-25-524A	X	N	00-110AA6-5	X	N
A1-752AA-MDB-300	I	6	A1-860PA-150-400	I	5	00-25-552	X	N	00-110AA6-6	O	N
A1-760AA-MDB-300	I	6	A1-860PA-150-500	I	5	00-25-560-1	X	N	00-110AA7-1	X	N
A1-760AB-MDB-300	I	6	A1-860QA-150-000	I	5	00-25-601	X	8	00-110AA7-2	X	N
A1-760PA-290-000	I	5	A1-860QA-150-100	I	5	00-25-602	X	N	00-110AA7-3	X	N
A1-760PA-290-100	I	5	A1-860QA-150-200	I	5	00-25-700	X	N	00-110AA7-4	X	N
A1-760VB-MDB-000	I	3	A1-860QA-260-000	I	5	00-25DRT-1	X	8	00-110AC130-7	X	N
A1-761AA-IPB-400	I	6	A1-861PA-150-000	I	5	00-350H-2	X	5	00-110AF4-1	X	N
A1-761AA-MMD-300	J	6	A1-861PA-150-100	I	5	00-350H-2-4	X	5	00-110AF4-2	X	N
A1-761AB-IPB-400	I	6	A1-861PA-150-200	I	5	00-350L-22	X	5	00-110AF4-3	X	N
A1-761AB-MMD-300	I	6	A1-861QA-150-000	I	5	00-35T-37-4	X	2	00-110AF4-4	O	N
A1-761AC-290-000	I	6	A1-862PA-150-000	I	5	00-35T-38-1	X	2	00-110AF8-7	X	N
A1-761AC-290-010	I	6	A1-862PA-150-300	I	5	00-80T-67-1	O	2	00-110AF9-3	X	N
A1-761AC-290-020	I	6	A1-862PA-260-000	I	5	00-80T-80	X	N	00-110AF9-7	X	N
A1-761AC-290-030	I	6	A1-862PA-260-100	I	5	00-80T-88	X	N	00-110AGM-1	O	N
A1-761PA-460-000	I	5	A1-862PA-260-600	I	5	00-80T-96	X	E	00-110AH1-1	X	N
A1-761VB-MIB-000	I	3	A1-864PA-260-000	I	5	00-80T-97	X	N	00-110AH1-2	X	N
A1-761VB-MIB-010	I	3	A1-866PA-260-000	I	5	00-80T-99	X	N	00-110AH1-3	X	N
A1-762AA-MDB-300	I	6	A1-866PA-260-200	I	5	00-80T-101	I	N	00-110AH1-4	X	N
A1-762AB-MDB-300	J	6	A1-867QA-150-100	I	5	00-80T-102	X	N	00-110AH1-5	I	N
A1-764VB-MIB-000	I	3	A1-868PA-150-000	I	5	00-80T-103	O	Z	00-110AH2-6	X	N
A1-765AC-290-000	I	6	A1-868QA-150-000	I	5	00-80T-104	O	Z	00-110AH2-7	X	N
A1-768PA-290-000	I	5	A1-868QA-150-100	I	5	00-80T-105	O	E	00-110AH2-8	X	N
A1-768VB-MIB-000	I	3	A1-869PA-150-000	I	5	00-80T-106	X	Z	00-110AH3-1	X	N
A1-769AA-IPB-400	I	3	A1-870PA-490-100	I	5	00-80T-109	O	Z	00-110AH3-3	X	N
A1-769PA-460-000	I	5				00-80T-112	O	Z	00-110AH46-2	X	N
A1-771AC-290-000	I	6	A6-000A0-MEB-000	O	E	00-80U-24-1	X	N	00-110AH46-3	X	N
A1-771AC-290-010	I	6	A6-332A0-GYD-000	O	N	00-80V-49	X	5	00-110AH53-1	O	N

Figure 1-1. Technical Manual Cognizant Field Activity Assignments

d. When a choice has to be made among several DRP's and TMCFA's the manual is assigned to the activity having maintenance engineering cognizance of the weapons system/equipment having the most distant scheduled retirement date.

1-18. Field activity comments on additions, corrections or deletions to this listing should be forwarded to NAVAIR-TECHSERVFAC Code 22-02A. Updates to this listing will be distributed by NAVAIRTECHSERVFAC to all TMCFA's on a quarterly basis.

CODE	COGNIZANT FIELD ACTIVITY
1.	NAVAL OCEANOGRAPHY COMMAND, ST LOUIS, MO
2.	NAVAL AIR REWORK FACILITY, NORFOLK, NORFOLK, VA
3.	NAVAL AIR REWORK FACILITY, CHERRY POINT, CHERRY POINT, NC
4.	NAVAL AIR REWORK FACILITY, JACKSONVILLE, JACKSONVILLE, FL
5.	NAVAL AIR REWORK FACILITY, PENSACOLA, PENSACOLA, FL
6.	NAVAL AIR REWORK FACILITY, NORTH ISLAND, SAN DIEGO, CA
7.	NAVAL AIR REWORK FACILITY, ALAMEDA, ALAMEDA, CA
8.	NAVAL AIR TECHNICAL SERVICES FACILITY, PHILADELPHIA, PA
9.	NAVY SHIPS PARTS CONTROL CENTER MECHANICSBURG, PA
A.	NAVAL AVIONICS CENTER, INDIANAPOLIS, IN
B.	NAVAL WEAPONS STATION, SEAL BEACH, CA
C.	NAVAL AVIATION LOGISTICS CENTER, PATUXENT RIVER, MD
D.	UNASSIGNED
E.	NAVAL AIR ENGINEERING CENTER, LAKEHURST, NJ
F.	NAVAL SECURITY GROUP COMMAND, WASHINGTON, DC
G.	PACIFIC MISSILE TEST CENTER, POINT MUGU, CA
H.	NAVAL ORDNANCE STATION, INDIAN HEAD, MD
J.	NAVAL WEAPONS SUPPORT CENTER, CRANE, IN
K.	NAVAL SURFACE WEAPONS CENTER, WHITE OAK LABORATORY, SILVER SPRING, MD
L.	NAVAL WEAPONS CENTER, CHINA LAKE, CA
M.	NAVAL ORDNANCE STATION, MCALESTER, OK
N.	NAVAL AIR SYSTEMS COMMAND, WASHINGTON, DC
P.	METROLOGY ENGINEERING CENTER, POMONA CITY, CA
Q.	NAVAL TRAINING EQUIPMENT CENTER, ORLANDO, FL
R.	U. S. AIR FORCE
S.	AVIATION SUPPLY OFFICE, PHILADELPHIA, PA
T.	NAVAL COASTAL SYSTEMS CENTER, PANAMA CITY, FL
U.	NAVAL WEAPONS STATION, YORKTOWN, VA
V.	NAVAL WEAPONS EVALUATION FACILITY, ALBUQUERQUE, NM
W.	NAVAL AIR DEVELOPMENT CENTER, WARMINSTER, PA
X.	NAVAL WEAPONS HANDLING LABORATORY, NWS EARLE, COLTS NECK, NJ
Y.	U. S. ARMY
Z.	NAVAL TACTICAL SUPPORT ACTIVITY, WASHINGTON, DC

Figure 1-2. Cognizant Field Activity Codes

SECTION II

RESPONSIBILITIES

2-1. ORGANIZATIONAL RESPONSIBILITIES.

2-2. Major management and update responsibilities of specific activities are described in the following paragraphs.

2-3. The NAVAIRSYSCOM Technical Manual Program Management Function is assigned to the Technical Documentation Officer who is responsible for the following:

a. Interpret, define and promulgate out-of-production technical manual policy and direction.

b. Development and maintenance of policy to ensure distribution of technical manuals that effectively support weapon system and equipments in the hands of the fleet.

c. Maintain and publish NAVAIR 00-25-601.

d. Chair the annual out-of-production technical manual review conference.

e. Develop the out-of-production update priorities, approve the spending plan and recommend changes thereto.

f. Develop and approve requirements in the regional support contracts.

g. Provide representation at the NESO board and address technical manual impact on weapon systems and equipments proposed for transition.

2-4. NAVAIRTECHSERVFAC as the TMA has been assigned detailed responsibilities in administering the Technical Manual Program. NAVAIRTECHSERVFAC shall ensure that the intent of instructions issued by higher authority as pertaining to technical manual policy and management are adhered to. NAVAIRTECHSERVFAC shall perform the following tasks:

a. Identify to the Technical Documentation Officer, the total impact on technical manual programs which are proposed for transition to TMCFA.

b. Provide liaison to NAVAIRSYSCOM Configuration Control Board (CCB) to support technical requirements affected by design change actions.

c. Compile budget estimates for manuals as submitted by TMCFA's and/or developed internally. Review and consolidate budgets. Provide support to NAVAIRSYSCOM in the budget justification as required.

d. Maintain financial status. Allot funds as required in accordance with approved priorities. Maintain continuing records of technical manual procurement costs and printing costs for support of reporting requirements imposed by higher authority [i.e., Naval Air Systems Command Headquarters (NAVAIR)]. Use cost proposal information to monitor original TMCFA budgets and future budget backup.

e. Assist the TMCFA's by expediting processing of work statements and placing orders through proper contractual channels. Work statements will be processed by NAVAIRTECHSERVFAC within two working days for emergency changes and ten working days for normal changes. Ensure that Technical Manual Contract Requirements (TMCR's), air tasks, job orders, etc., identify the appropriate TMCFA's as the cognizant technical in-service engineering authority. Provide the TMCFA with all task orders (work statements) and TMCR's that turn on contractors for technical manual tasks under their cognizance.

f. Establish funding procedures for printing and distribution of TMCFA-generated material under contracts administered by Navy Publication and Printing Service Offices (NPPSO's). Administer inventory management and distribution functions.

g. Provide TMCFA's with two separate lists of technical manual numbers. One list of manual numbers is peculiar to the assigned TMCFA while the second list reflects all manuals applicable to designated weapons systems. The listing will include the following types:

- (1) Operational and Tactical Manuals.
- (2) Maintenance Instruction Manuals.
- (3) Structural Repair Manuals.
- (4) Illustrated Parts Break-downs.
- (5) Periodic Maintenance Requirements Manuals (PMRM's), cards and checklists.
- (6) Component Manuals.
- (7) Support Equipment Manuals.

h. Discontinue joint management of out-of-production joint service manuals. NAVAIRTECHSERVFAC data managers will ensure that the following guidelines are implemented:

(1) TMCFA coordination requirements will be accomplished as follows:

(a) Complete Part 1 of NATSF 5600/217 (10-82) Form as shown in figure 2-1.

(b) Send NATSF 5600/217 (10-82) Form to the TMCFA.

(c) Establish a follow-up cycle to ensure TMCFA response within 45 days.

(d) When NATSF 5600/217 (10-82) Form is received from the TMCFA, accomplish the following:

1. If the TMCFA has acknowledged responsibility and has a set of current negatives/reproducible copy, proceed with step (2) of Coordination of other DOD Agency/Service requirements.

2. If the TMCFA acknowledges assignment but does not have a set of current negatives/reproducibles, request that a set of negatives/reproducibles be forwarded in the following manner:

A. If the negatives/reproducibles are at NAVAIRTECHSERVFAC, complete and forward the manuscript copy request as illustrated in figure 2-2 to NAVAIRTECHSERVFAC Code 32.

B. If the negatives/reproducibles are at a contractor's plant or another Naval Facility, forward a letter requesting their transmittal with a copy to the TMCFA. A sample letter is shown in figure 2-3.

TMCF A REQUIREMENT FOR OUT-OF-PRODUCTION JOINT MANUALS						
In Reply Refer To _____						
PREPARE IN ACCORDANCE WITH NAVAIRTECHSERVFACINST 5600.9 NATSF intends to discontinue joint management of manual cited below. Request TMCF A identify technical manual requirements.						
PART I - TO BE FILLED OUT BY NATSF DATA MANAGER (Prepare Original and Two Copies. Send Original and One Copy to TMCF A. Keep One Copy for Files.)						
1. NAVAIR NO.			2. EQUIPMENT MODEL/PART NO.			
3. JOINT PUBLICATION NOs.			4. LEAD SERVICE CONTROL AGENCY			
5. BASIC/LATEST REVISION DATE			6. LATEST CHANGE DATE		7. APPLICATION (ACFT, MISSILE, ENGINE, ETC.)	
8. PAPER (CHECK) <input type="checkbox"/>		9. FILM (CHECK) <input type="checkbox"/>		10. MPA	11. CARTRIDGE NO.	12. SECURITY CLASSIFICATION
13. TMCF A		14. DATA MGR CODE				
NAME (Please Print)				CODE	TELEPHONE (A V) and (COM'L)	
					DATE	
PART II - TO BE FILLED OUT BY TMCF A (Return Original to NATSF Data Manager Cited Above by _____ (45 Days) Keep One Copy for Your Files.)						
CHECK APPROPRIATE BLOCK						
<input type="checkbox"/> ACCEPTS (This facility has a set of current negatives/reproducible copy and accepts full technical manual cognizance for the above manual. All references to other DoD services will be removed in future updates. This facility acknowledges responsibility for establishing automatic distribution with the lead activity for subject manual if receiving future updates is desired.)						
<input type="checkbox"/> CANNOT ACCEPT (Check Applicable Reason)						
_____Negatives/reproducible copy not available. However, upon receipt of repro/negs, this facility will accept full technical manual cognizance. All references to other DoD Services will be removed in future updates. This facility acknowledges responsibility for establishing automatic distribution with the lead activity for subject manual if receiving future updates is desired.						
_____Equipment/hardware engineering cognizance not at this facility. Recommend assigning to						
_____Other (please explain)						
NAME (Please Print)				CODE	TELEPHONE (A V) and (COM'L)	
					DATE	

NATS F 5600/217 (10-82)

Figure 2-1. Sample of TMCF A Requirement for Out-of-Production Joint Manuals Form

MANUSCRIPT COPY REQUEST 4WD-NATSF-5600/16 (REV. 10-67)	
TITLE <i>Technical Manual Identification Numbering System (TMINS)</i>	
CODE NUMBER <i>M0000-00-IDX-000/TMINS</i>	DATED <i>14 May 1980</i>
MATERIAL COMPLETE <input checked="" type="checkbox"/> MS <input checked="" type="checkbox"/> ART <input checked="" type="checkbox"/> NEGS	AS ITEMIZED <input type="checkbox"/> MS <input type="checkbox"/> ART <input type="checkbox"/> NEGS
OTHER	
FOR TM <i>Note: Please forward copy of transmittal to Code 243-14</i>	
ITEMIZED MATERIAL	REMARKS <i>Forward to: Commanding Officer Naval Air Rework Facility (NESO 35) Naval Air Station Pensacola, FL 32508</i>
REQUESTED BY: <i>Jane Doe</i>	DATE <i>19 Jan 1985</i>
ORDER FILLED BY	DATE
RECEIVED BY	DATE
PLATE NO. 18712	

Figure 2-2. Sample of Manuscript Copy Request Form
 (4WD-NATSF-5600/16 (REV 10-67))



DEPARTMENT OF THE NAVY

NAVAL AIR TECHNICAL SERVICES FACILITY
700 ROBBINS AVENUE
PHILADELPHIA, PENNSYLVANIA 19111

AREA CODE 215-697 & EXTENSION
AUTOVON 442 & EXTENSION
EXTENSION 2033
IN REPLY REFER TO

22-13:SSB:mm/913
21 Dec 1982

From: Commanding Officer, Naval Air Technical Services Facility
To: Sundstrand Aviation Operations, Rockford, Illinois (Attn: Pierre
Outzen, Technical Publications Unit Manage, Dept 768, Plant 2)

Subj: A-4F Technical Manual NAVAIR 03-5FB-83; request concerning

1. It is requested that negatives, artwork, reproducible copies and all available source data for NAVAIR 03-5FB-83 be forwarded to the following address:

Commanding Officer
Naval Air Rework Facility
Code 351
Naval Air Station
Pensacola FL 32508

2. It is also requested that a copy of the transmittal letter be forwarded to this facility (Code 22-13)

D. KLAZMER
By direction

Copy to:
DCASPRO Sundstrand (R. Stahn)

Figure 2-3. Sample Letter of Transmittal Request

C. If the negatives/reproducibles are at another DOD Service/Agency complete Part 1 of NATSF 5600/219 (10-82) Form as shown in figure 2-4 and forward the form to the custodian of the negatives/reproducibles.

3. If the TMCFA was assigned incorrectly, the following applies.

A. Investigate and correct the TMCFA assignment.

B. Complete NATSF 5600/218 (6-82) Form as shown in figure 2-5 and forward to NAVAIRTECHSERVFAC Code 321 if the NAVAIRTECHSERVFAC TMCFA Listing requires updating.

C. Initiate new and completed NATSF 5600/217 (10-82) (see Figure 2-1) and repeat steps (1) (d), but with a correct TMCFA.

(2) Other DOD Agency/Service coordination requirements will be accomplished as follows.

(a) Notify the other service(s) of NAVAIRTECHSERVFAC's intent to discontinue joint management of the manual in the following manner:

1. Complete Part 1 of NATSF 5600/219 (10-82) Form (see figure 2-1) and forward the form to the agency control office of each service which jointly uses the manual.

2. Establish a follow-up cycle to ensure that all other services respond within 60 days.

(b) Upon receipt of the annotated NATSF 5600/219 (10-82) Form from each agency, provide a set of current negatives/photographic copy in accordance with steps (1) (d) 1A or (1) (d) 1B.

(3) Joint Interest List (JIL). To request that a NAVAIR manual number be removed from NAVAIR 00-25-566, forward NATSF 5600/219 (10-82) Form (see figure 2-4) to NAVAIRTECHSERVFAC Code 32. When completed, NAVAIRTECHSERVFAC Code 32 will return this annotated form to the sender.

(4) Data Management Records. Upon receipt of the completed NATSF 5600/219 (10-82) Form (see figure 2-4) from NAVAIRTECHSERVFAC Code 323, annotate the history card so that the manual is no longer listed as a joint manual.

(5) Deviations to the procedures outlined in paragraphs (1) thru (4) shall require written approval. A request for a deviation to these procedures must be submitted to NAVAIRTECHSERVFAC Code 20. The request will be coordinated with all concerned and a formal response to the request will be provided by NAVAIRTECHSERVFAC Code 20.

i. Distribute materials that constitute source data for technical manual update as action correspondence in a continuous flow to the assigned update activity.

j. Provide training for data managers and other personnel contributing to the technical manual program on varied subjects such as cost analysis, development of work statements, contracting procedures, specification interpretation and usage, and new methods and procedures requiring standardized operation. Training will be scheduled when requested by a requiring activity or when determined by NAVAIRTECHSERVFAC that a field activity requires training.

k. Upon request from TMCFA's, NAVAIRTECHSERVFAC will provide reproducible copy, negatives, and artwork.

JOINT SERVICE OUT-OF PRODUCTION TECHNICAL MANUAL COORDINATION REQUEST			
In Reply Refer To: _____			
FORWARDED TO INITIATE THE EXCHANGE OF REPRODUCIBLE MATERIAL NECESSARY FOR EFFECTIVE SEPARATE TECHNICAL MANUAL MANAGEMENT.			
PART I. TO BE FILLED OUT BY NATSF DATA MANAGER/PROJECT COORDINATOR (Prepare original and three copies. Send original and two copies to DoD Address. Keep one copy for files.)			
1. TO: (DoD Agency and Address)		2. FROM: Commanding Officer Naval Air Technical Services Facility Attn: Code _____ 700 Robbins Avenue Philadelphia, PA 19111	
3. SUBJECT (Include Joint Pub Nos.)	3a. BASIC/ LATEST REV. DATE	3b. LATEST CHANGE DATE	4. EQUIPMENT/MODEL PART NO.
5. CHECK APPROPRIATE BLOCK AND PROVIDE INFORMATION WHERE REQUIRED			
<input type="checkbox"/> NATSF is lead activity for subject manual. If required, a duplicate set of negatives can be provided.			
<input type="checkbox"/> Addressee is the lead activity for subject manual. It is requested that one set of ___ negatives ___ photographic copy be forwarded to: (Complete Block 6)			
6. COMPLETE DoD SHIPPING/MAILING ADDRESS		7. REMARKS	
8. NAME (please print)	8a. CODE	8b. TELEPHONE (AV and Com'l)	8c. DATE
PART II TO BE FILLED OUT BY ADDRESSEE (Return original and one copy to originator within 60 days of receipt. Keep one copy for files.)			
9. CHECK APPROPRIATE BLOCK AND PROVIDE INFORMATION WHERE REQUIRED			
<input type="checkbox"/> This facility is the lead activity for subject manual and will forward one set of ___ negatives ___ photographic copy to address in Block 6.			
<input type="checkbox"/> Neither negatives nor a photographic copy is required.			
<input type="checkbox"/> This facility requests one set of ___ negatives ___ photographic copy be forwarded to: (Complete Block 10)			
10. COMPLETE DoD SHIPPING/MAILING ADDRESS		11. REMARKS	
12. THIS FACILITY/AGENCY ACKNOWLEDGES NATSF'S INTENT TO DISCONTINUE JOINT MANAGEMENT OF SUBJECT MANUAL AND WILL TAKE THE NECESSARY STEPS TO DELETE THE NAVAIR PUBLICATION FROM OUR MANUAL AND ESTABLISH SEPARATE MANAGEMENT OF SUBJECT PUBLICATION.			
13. NAME	13a. CODE	13b. TELEPHONE (AV and Com'l)	13c. DATE
PART III. TO BE FILLED OUT BY NATSF CUSTOMER INFORMATION AND INDEXING BRANCH. (Return original to Data Manager/Project Coordinator in Block 8 within 10 days of receipt.)			
14. CHECK BLOCK WHEN ACTION HAS BEEN COMPLETED			
<input type="checkbox"/> Subject NAVAIR Manual has been removed from NAVAIR 00-25-566 (Joint Interest List)			
15. NAME	15a. CODE	15b. EXTENSION	15c. DATE
NATSF 5600/219 (10-82)			

Figure 2-4. Sample of Joint Service Out-of-Production Technical Manual Coordination Request Form

1. NAVAIRTECHSERVFAC data managers will ensure that two different agencies are not updating the same technical manual simultaneously unless these updates are completely and thoroughly coordinated so that an accurate and complete manual emerges. Procedures to be followed by TMCFA's when updating a technical manual under cognizance of a prime contractor or another TMCFA are contained in Section IV.

m. NAVAIRTECHSERVFAC Code 22-02A will be the point of contact for NAVAIRSYSCOM out-of-production technical manuals.

2-5. NAVAVNLOGCEN responsibilities in the technical manual update program are described in NAVAIRINST 5420.xx. (Not finalized nor dated.)

2-6. The TMCFA's will establish and maintain systems, procedures and capabilities to effect timely and efficient maintenance of assigned technical manuals. Such capabilities may include both in-house and commercial resources for work accomplishment. To ensure program continuity, centralized control shall be assigned to a data manager at the TMCFA.

2-7. The TMCFA's responsibilities include:

a. Issuance of Rapid Action Changes (RAC's) in accordance with MIL-M-81748 and NAVAIR Instruction 5600.19.

b. Accumulation and maintenance of MDP's.

c. Identification and establishment of individual manual baseline configurations.

d. Effecting formal technical manual changes and revisions.

e. Monitoring contractor's efforts.

f. Support quality control as required.

2-8. The MPA responsibilities include:

a. Establishing internal procedures for the management of MIARS MDP's for which the MPA is responsible. MIARS MDP's consist of all camera-ready copy (usually printed pages) of manuals to be microfilmed for storage in one individual cartridge. An individual cartridge may contain data for several manuals, each of which may be under the cognizance of a different field activity.

b. Obtaining from NAVAIRTECHSERVFAC a list of MIARS cartridge numbers containing current basic and change dates for all technical manuals in the MIARS MDP. Obtaining from the NAVPUBFORMCEN required paper copies of all technical manuals to be included in the MIARS MDP.

c. Preparing suitable records indicating disposition of all documents that may affect each MIARS MDP assigned. A system shall be developed to visually indicate the status of the MIARS MDP: "Up to date;" "Possible Update Required;" "Update Under Way." When the MDP is updated, the records shall be changed to indicate the new cartridge filming date and disposition of previously outstanding update requirements. The recording cycle of update requirements, as oriented to the changed or revised MIARS MDP, shall start again.

d. Ensuring that only officially approved technical manual changes are incorporated in the MIARS MDP.

e. Ensuring that the MIARS data package conforms to the MIARS microfilm specification MIL-M-81930. Variations in format must be approved by the MIARS program manager prior to the preparation of the MDP.

f. Recommending appropriate changes in MIARS specifications when required.

g. Coordinating the MIARS MDP through the cognizant NPPSO and NAVAIR-TECHSERVFAC in order to obtain both master and duplicate microfilm.

h. Arranging for the proper retention and storage of the MDP.

i. Providing input for the preparation of accurate, justifiable operating budgets, and realistic cost estimates for all update requirements.

2-9. Activities designated as TMCFA are responsible for maintaining the MDP for all assigned manuals. This shall apply also to a regional contractor when designated by a TMCFA to maintain the MDP. Under this task, the TMCFA or the regional contractor designated to support the TMCFA must satisfy the following requirements:

a. MDP's.

(1) Obtain, transport, inventory and store all out-of-production technical manual MDP's assigned and transitioned to the TMCFA, i.e., reproducible copy, negatives, microfilm master, magnetic tapes, etc. Assemble complete package for each manual in technical manual number order by means of purging superseded pages and/or merging all available data changes into the master reproducible copy. If necessary, missing reproducible copy pages shall be replaced through utilization of printed copies of the manuals obtained from NAVAIRTECHSERVFAC; missing negatives shall not be replaced until needed for update actions. File/store the master data and provide TMCFA/NAVAIRTECHSERVFAC with a complete list of master data on file. Establish a "master locator file" which shall be arranged and maintained in technical manual numerical order citing the technical manual number, location (file/drawer number or rack number), basic date and change number/date.

b. Maintenance of MDP's.

(1) After updating of manuals and TMCFA acceptance of final copy, incorporate reproducible copy into master file and update master locator card file with new change/revision date. Upon completion of printing and receipt of negatives from NPPSO, inspect negatives for completeness or damage, prepare listing of missing/damaged negatives and notify TMCFA/NPPSO/NAVAIRTECHSERVFAC. Merge negatives into master file. Maintain inventory listing on an as required basis. Prepare quarterly update of MDP listing and forward to TMCFA/NAVAIRTECHSERVFAC.

c. Maintenance of Source Data Packages.

(1) Obtain all source data pertaining to out-of-production technical manuals. Assemble source data into files by technical manual number. Prepare status report listing source data applicable to each technical manual and provide to the TMCFA/NAVAIRTECHSERVFAC on a monthly or as required basis.

NOTE

Status report shall contain technical manual number, type of source data (i.e. Technical Publication Deficiency Reports (TPDR's), Airframe Changes (AFC's), etc.), date of source data and date received by contractor.

(2) Establish the frequency; every two, three, or four weeks, or as required, in which source data is to be picked up by the contractor.

(3) Pick up/coordinate source data with TMCFA, log source data into status report and file source data into the respective technical manual files.

d. Storage Space.

(1) Material must be properly stored on adequate shelving in accordance with good commercial practices. Artwork shall be properly stored, not folded or rolled, and properly packaged to avoid damage by excessive humidity and/or heat.

e. Retention of Master and Source Data Packages.

(1) The reproducible copies for all technical manuals for which the contractor furnishes negatives, direct image copies or negatives, master microfilm, and/or magnetic storage medium under the contract shall be retained by the contractor during the life of the contract as part of the MDP, unless called for earlier by the Government.

(2) The direct image copies or negatives, microfilm and/or magnetic tape for all technical manuals which the contractor furnishes to the NPPSO under the contract shall be returned to the contractor by the NPPSO upon accomplishment of printing or reproduction for retention by the contractor during the life of the contract as part of the MDP, unless called for earlier by the Government.

(3) Upon completion of the contract, direct image copies or the reproducible copies, negatives, micro-

film masters and/or magnetic/paper tape of technical manuals shall consist only of the latest issue of the published technical manuals in existence on the date the material is delivered. The reproducible copies, direct image copies, or negatives, or microfilm masters of superseded or replaced pages resulting from the change program determined to be required in accordance with the provisions of the contract shall be disposed of by the contractor at the time of such supersedure or replacement in accordance with current security regulations for such disposition.

(4) Upon completion of the contract all source data maintained by the contractor which has not been incorporated into the latest published issue of the manual shall be retained by the contractor and included as part of the MDP which is submitted to the government.

(5) The master and source data packages shall be packed in accordance with the applicable specifications MIL-M-81927, MIL-M-38784, MIL-P-38790 and MIL-M-81930 and shall be prepared and inventoried for delivery to the government at the completion of the contract. The Government will arrange for transportation to a NAVAIRTECHSERVFAC designated location.

SECTION III

TECHNICAL DOCUMENTATION DATA MANAGEMENT

3-1. GENERAL POLICY.

3-2. In the out-of-production technical manual update program, the TMCFA assumes the role previously held by aircraft/equipment contractor's data manager. The major difference, however, is that the TMCFA's are less likely to prepare basic or initial issue publications. Instead, TMCFA efforts will be programmed into the constant update of assigned technical manuals through RAC's, routine changes, or revisions. Update priorities shall be determined by the need of using activities.

3-3. When technical manual update responsibility is assigned, the TMCFA will assign management responsibility to a Data Manager. The first task of the Data Manager is to determine the level of update management based on the type of task and the individual activity's production and resource capacity.

3-4. TMCFA data management consists of three separate management categories:

a. Prime Contractor Monitoring. Under this requirement, TMCFA's shall be responsible for:

(1) Providing and/or ensuring that the prime contractor has all outstanding and valid source data as applicable to the assigned technical manuals for the required update.

(2) Requesting and obtaining contractor prepared technical manual update statement of work and price proposals.

(3) Analyzing contractor work statements and price proposals to identify and establish priorities for tasks to be performed.

(4) Forwarding analyzed contractor price proposals and work statements to NAVAIRTECHSERVFAC Code 114 for preparation of TMCR's and placement of orders.

(5) Monitoring contractor performance during the work phase.

b. Regional Contractor Support. Management Under this category requires that the TMCFA be responsible for:

(1) Establishment of the MDP and the maintenance of the package through the development and update of an adequate source data package.

(2) Preparation of task work statements that properly define the depth and scope of the proposed effort to be performed.

NOTE

Paragraph 3-4b(1) and (2) requirements maybe accomplished with the assistance of the contractor.

(3) Preparation of an independent government estimate of anticipated cost of the task as described in paragraph 4-19.

(4) Reviewing the work statement with the regional contractor if necessary or forwarding the work statement to the contractor for preparation of a cost estimate in accordance with paragraph 4-22 and forwarding by the contractor to NAVAIRTECHSERVFAC Code 114.

(5) Forwarding statements of work and independent government estimates to NAVAIRTECHSERVFAC Code 114 for NAVAIRTECHSERVFAC coordination, approval, funding, and preparation of DD 1155 order. Follow up and assurance of order placement in a timely manner.

(6) Technical monitoring of contractor task performance.

(7) Certifying contractor invoices/vouchers.

(8) Technically reviewing and accepting data upon completion.

(9) Advising the cognizant NAVAIRTECHSERVFAC QA Division when material is ready for in-process reviews and verification, as required.

(10) Performing functions of preparing activity as defined in the applicable technical manual quality assurance program specification.

(11) Advising NAVAIRTECHSERVFAC of printing and shipping label requirements and coordinating printing with NPPSO's.

c. In-House Preparation. The TMCFA's shall be responsible for:

(1) Assembling and reviewing source data to be incorporated in manuals and insuring that all technically validated source data is incorporated in the manuals.

(2) Preparation of task work statements that properly define the depth, scope and cost of effort to be

performed as described in paragraphs 4-1 and 4-2.

(3) Insuring that the task work statements include a complete and definitive listing of all source data to be included in the manuals.

(4) Forwarding statement of work together with cost estimates to the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager for approval and preparation of the work request to fund the effort.

(5) Performing necessary technical writing, technical editing and illustrating required for change development and the release of corrective material.

(6) Advising cognizant NAVAIRTECHSERVFAC QA Division when material is ready for in-process reviews and verification, as required.

(7) Validating to assure technical accuracy.

(8) Performing the tasks of contractor's data manager as defined in the technical manual quality assurance program guide AL-855 TM-GYD-000.

(9) Preparing final reproducible copy for microfilming and/or preparation of negatives.

(10) Advising NAVAIRTECHSERVFAC of printing shipping label requirements and coordinate printing with cognizant NPPSO.

3-5. TMCFA DATA MANAGEMENT.

3-6. In compliance with NAVAIR policy instructions and the procedures as outlined in this document, technical manual management responsibilities of the TMCFA Data Manager shall include:

a. Obtaining a listing by code number, title, current basic and change dates for all manuals under the cognizance of the TMCFA. Also, obtain information which provides the present location of all source data, reproducible copy, and negatives for these manuals. This listing and status information shall be obtained by contacting the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager.

b. Establishing internal policy and procedures for the management, update, and storage of all data pertinent to manuals in the TMCFA's area of responsibility. Collect, analyze, and develop update packages for affected technical manuals.

c. Expediting establishment of a capability to manage and maintain the MDP's for assigned technical manuals. Notify the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager when capable of conducting a formal transition of the MDP from the contractor to the TMCFA.

d. Until such time as the transition is complete, obtaining from the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager information that identifies all active or pending proposals, their status, the proposed action to update the technical manuals involved and any updates that have been or will be contractually authorized.

e. Arranging with the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager for review of all future prime contractor work statements when calling for technical verification of the task requirement and determination of task priorities.

f. Preparing or maintaining a MDP oriented to the end item. For example, if an assignment consists of all technical manuals that are peculiar to a given weapons system, the MDP will be established at the weapons system level. If the technical manual assignment pertains to a system or component, the MDP shall be established at the system or component level as applicable.

g. For each technical manual assigned, preparing suitable records indicating disposition of all documents which may affect the technical manual. A system should be developed to distinctively flag the records to visually indicate the status of the technical manual. Typical status may indicate "up-to-date," "possible update required," "routine," "non-essential," "valid," "updating pending," and "update under way." A distinctive flagging system shall be established for RAC's. When the technical manual is updated, the records will be changed to indicate the new publication date, disposition of previously outstanding update requirements, and so forth. The recording cycle of update requirements as oriented to the changed or revised technical manual will start over again.

h. Maintaining an effective RAC system which ensures Interim Rapid Action Changes (IRAC's) meet the criteria established in NAVAIRINST 5600.19 and the mandatory turn around time of 60 days for issuance of the Type II RAC and/or formal change after the IRAC is released. Any deviation from this requirement, including request for schedule change, must be coordinated through the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager. When the MDP for affected manuals has not transitioned, the TMCFA must coordinate with the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager to determine current update status. If there is no update schedule or the schedule goes beyond the 60 day requirement, the TMCFA must take action locally to issue a Type II RAC and/or formal change. Preparation of update utilizing a copy of the affected manual as source data is authorized. Once the update is ready for printing, the TMCFA must notify the NPPSO of a need for priority printing. The NPPSO should complete the printing within seven (7) working days after receipt of the mailing labels. After printing, the TMCFA should ensure that an updated copy and

applicable source data is provided to the organization maintaining the MDP.

i. Establishing a system for cross-checking technical manuals and records to ensure that all technical manuals affected by a change requirement are actually flagged for update, although the basic change requirement may identify only one manual. For example, a valid TPDR may be received requiring the change of a torque value in an Intermediate Maintenance Manual which is the TPDR subject. However, this same change may also be required in the depot manual or Periodic Maintenance Requirements Manuals (PMRM's). Appropriate action must be taken to ensure that the three technical manuals are updated although only one was reported defective. If the cross-checking system interfaces with technical manuals that are not the responsibility of the TMCFA, such as Naval Air Training and Operating Procedures Standardization (NATOPS) or Weapons Loading Manuals, the appropriate TMCFA shall be notified that corrective source data or manuscript copy will be provided.

j. Recording or collecting source data which impacts operational manuals (NATOPS/Tactical), and coordinating the requirement with the Naval Tactical Support Activity (NAVTA CSUPPACT) to establish the type of manuscript or art work required to support the update.

k. Ensuring that all update actions are compatible with the approved maintenance plan and provisioning actions for the equipment involved.

l. Ensuring tasks involving the preparation of new manuals, such as the preparation of a work package manual from an existing conventional format or incorporation of complex engineering change proposals, i.e., Service Life Extension Program (SLEP) are discussed with NAVAIRTECHSERVFAC Codes 20 and 40 in order to schedule and conduct required quality assurance elements such

as in-process reviews, validation, verification, etc.

m. Ensuring that source data update change packages generally conform to the same specifications as the basic technical manuals with respect to writing style, format, sheet size, hole punch, and organization. (Refer to paragraph 3-16.) Variations in type face and blank spaces are acceptable.

NOTE

Physical alteration of the technical content in NAVAIR technical manuals is not permitted. Pen and ink changes to the technical content of NAVAIR manuals are not authorized.

n. Ensure that reprint action correspondence based on stock status advice from the NAVPUBFORMCEN is expedited by holders of reproducible copy/negatives for transmittal to NPPSO's. Facilitating this requirement regardless of whether revisions are in process or not will accomplish technical manual reprint and improve supply material availability of NAVAIR technical manual shelf stock at the NAVPUBFORMCEN. NAVAIRTECHSERVFAC Code 32 must be apprised of any problems associated with implementation of this requirement or of any suggestions intended to improve the technical manual reprint and shelf stock supply material availability systems.

o. Coordinating the preparation of negatives, microfilm, printing, and distribution of update packages with the cognizant NPPSO and NAVAIRTECHSERVFAC Code 20 project coordinator or data manager as required or requested.

p. Arranging for the proper retention and storage of reproducible copy and board art.

q. Maintaining a complete historical record of task performance that reflects all aspects of update actions such as task description, schedules, costs, etc..

r. Providing input for the preparation of accurate, justifiable operating budgets, and realistic price proposals for all update requirements.

s. Ensure work statement and cost proposals include a provision for delivering a listing of all source data which has been incorporated into a particular manual as a result of a specific update action.

3-7. SPECIFICATIONS.

3-8. Each Data Manager must be familiar with the specifications governing the manuals under his cognizance. As a general rule, RAC's and changes should conform to the format and specifications used in the preparation of the basic manual. Revisions and new manuals, however, should conform to the current work package or conventional specifications as applicable.

3-9. MDP.

3-10. The MDP is a generic term intended to include all data and documentation from which technical manuals are written, changed, or revised. The fundamental source and authority for data in the technical manual is the engineering documentation, maintenance plan, and equipment specification. The extent of coverage to reflect this information is governed by the applicable technical manual content specification. From these are developed the text for instructions, the illustrations for diagrams, and other forms of art used in the manual. The engineering documentation is also a source of information for the Illustrated Parts Breakdown (IPB). The most important element of data in the MDP is currency and accuracy. Essential elements of the MDP are:

- a. Logistics Support Analysis Records (LSAR's).
- b. Approved Maintenance Plan.
- c. Engineering drawings.
- d. Master Copy of the Technical Manual.
- e. Reproducible masters or a record as to location of the reproducible master.
- f. Master negatives or microfilm, or a record as to location of same.
- g. Board art or a record as to location of same.
- h. Copy of all technically validated data to be incorporated into a particular publication. Data in this category will include:
 - (1) Airframe Changes (AFC's), Powerplant Changes (PPC's), Support Equipment Changes (SEC's), etc..
 - (2) Approved Engineering Change Proposals (ECP's)
 - (3) TPDR's.
 - (4) Design Change Notices (DCN's)
 - (5) RAC's.
 - (6) Manual Change Releases (MCR's)
 - (7) Equipment Photographs (authorized modifications incorporated).
 - (8) Miscellaneous related correspondence.
- i. Provisioning Parts Breakdowns (PPB's).
- j. Approved Support Equipment Lists (SEL's).

k. Maintenance Engineering Analysis Records (MEAR's) when applicable.

3-11. User activities are the best source of information for determining adequacy, accuracy, and usability of technical manuals. To assure maximum technical manual compatibility with user environment and operating conditions, TMCFA's should continually screen user personnel in order to obtain corrective information as input for incorporation into the MDP. Therefore, it is recommended that TMCFA's (after determining manuals require major update) conduct periodic or annual fleet reviews. After coordinating with the cognizant NAVAIR-TECHSERVFAC Code 20 project coordinator or data manager and NAVWPNEVALFAC for weapons loading for scheduling action. When a review is scheduled, participating user activities should be provided with copies of the proposed agenda defining objectives and listing technical manuals that will undergo review. Knowing this information in advance will enable attendees to effectively prepare for the review. Care should be taken to screen out inputs which are personal preferences or nice to have but which in fact do not contribute to the actual accuracy or improvement of the data being reviewed.

3-12. the TMCFA is responsible for updating the MDP to retain its currency. Change requirements entered into the MDP file therefore constitute the source data package required to initiate the manual update.

3-13. SOURCE DATA PACKAGE.

3-14. The source data package is made up from the MDP. It is an accumulation of validated data pertinent to the contemplated update of a particular technical manual. Update may range from a rapid action change to a complete revision. In instances where update will be performed by a contractor, the source data package could be supplemented by copies of required engineering drawings.

3-15. INSTRUCTIONS FOR PREPARATION OF SOURCE DATA PACKAGE.

3-16. The following instructions are provided to assist the TMCFA Data Manager in developing a source data package which can be given to either in-house personnel or the contractor in order to update technical manuals. The existence of an MDP containing all data pertaining to aircraft or equipment under the TMCFA's cognizance is therefore essential.

3-17. ESTABLISHING A SOURCE DATA PACKAGE.

3-18. The MDP contains technically validated source data as defined in paragraph 3-10. The data may cover all technical aspects of the total weapon system. Source data packages should be established for each technical manual or group of related manuals with data pertinent to any required update.

3-19. The source data package should contain a copy of each manual with all revisions, changes, and RAC's incorporated. A list of all source data which could affect the content of the manuals shall be maintained.

3-20. SOURCE DATA PACKAGE TO CONTRACTOR. The TMCFA Data Manager should give the following source data package to the contractor for estimating purposes.

a. Copy of the manual(s) and all published changes.

b. All source data (MCR's, TD's, TPDR's, etc.) which could affect the contents of the manual(s).

c. All drawings, manuals, letters, etc. which are referenced in the source data.

d. Logistics data, including copies of approved support equipment requirement sheets, maintenance plans and documents reflecting Source, Maintenance and Recoverability (SM&R) code changes.

3-21. The contractor will examine the source data and manual(s) and will prepare a price proposal in accordance with paragraph 4-22. The price proposal will indicate the number of pages to be changed. The number of pages will be used to determine whether a complete revision is required. A listing of source data should accompany each manual.

3-22. **SOURCE DATA PACKAGE FOR IN-HOUSE CHANGE.** When the manual(s) are to be changed in-house, the manuals should be annotated on a continuing basis as to where the text is affected by the source data (MCR's, TD's, TPDR's, etc.) A listing of the source data should accompany each manual.

3-23. The source data should be reflected by notations in the manual. These notations should indicate precisely where data will be inserted. Mark up the manual and source data as follows:

a. To mark up a page in the manual, indicate point of insertion and identifying number of TPDR, MCR, SEC or other source document (see figure 3-1). Reflect equipment application, manual references, and strike out all superfluous or deleted information.

b. In the source data document, circle portions of data that are pertinent to a manual-update (see figure 3-2). Annotate with manual number, page and paragraph numbers or "info" (information for the technical writer). The manual should be immediately marked to reflect these actions.

3-24. **DOCUMENTATION REQUIREMENTS.**

3-25. The TMCFA Data Manager shall maintain a source data worksheet on a continuing basis. (See figure 3-3 for a typical worksheet.) It shall be prepared in conjunction with maintaining the marked-up copy of various manuals. The worksheet will be used as a barometer to determine when to initiate a

technical manual update and the type of the update.

3-26. The TMCFA Data Manager shall enter each document that has an effect on technical manuals into the source data worksheet master copy. A determination will be made as to the urgency of updating the affected publications. In addition, all other update requirements that have accumulated since the latest change or revision shall be considered. If the nature of the proposed change does not require that an update be started, it will be placed with other changes that are in the same category. If the proposed change requires that an update be started, all other changes that have accumulated must be considered for concurrent incorporation with the update.

3-27. When the TMCFA Data Manager is planning to initiate a manual update, a data cutoff date should be established and a summary of the source data file conducted at that point in time. The marked-up technical manual and source data worksheet will be used to prepare a work summary form (see figure 3-4). This requirement will be applicable to in-house and contracted preparation efforts.

3-28. **TECHNICAL MANUAL UPDATE METHODS.**

3-29. RAC's. RAC's shall be used to expedite the issuance of urgent operation and maintenance change information. RAC's are applicable to all Out-of-Production NAVAIR weapon system maintenance instruction manuals, component/equipment manuals, maintenance requirement cards, illustrated parts breakdown, support equipment, weapons handling and loading manuals, calibration manuals, and other related procedural manuals. NATOPS flight manuals and tactical manuals are excluded from this program. The technical information in a RAC must be related to the following:

Section VI

NAVAIR 19-105B-13

Paragraphs 6-55 to 6-58

6-55. SHAFT. Inspect shaft (63, figure 4-6) as follows.

- a. Inspect shaft for nicked, cracked, or broken splines.
- b. Inspect splines for wear; spline wear shall not exceed 10 percent of spline.

c. If steps a and b do not disclose any defects other than minor nicks or burrs, perform magnetic particle inspection in accordance with paragraph 6-16.

6-56. PIPE ASSEMBLY. Inspect pipe assembly (1, figure 4-16) as follows.

- a. Inspect pipe assembly for cracks, broken welds, and stripped, crossed, or worn threads in tapped holes in mounting flange. Inspect silver plating on threads that mate with threads on nozzle (10) for wear through the bare metal.
- b. Dimensionally inspect pipe assembly for warpage. Face of flange that mates with nozzle (10) must be flat within 0.001 inch per inch. Face of flange with tapped holes must be flat within 0.005 inch per inch not to exceed 0.020 inch total indicator reading.

6-57. TORUS ASSEMBLY. Inspect inner flange (which mates with nozzle (10, figure 4-16) of torus assembly (5) to limits as follows.

- a. Normal heat, stress relief, surface type cracks or checks, no limit.
- b. Cracks as shown in view A, figure 6-12, which include surface E and outer portion of surface F are allowed as long as cracks are separated by a minimum of 1/8 inch of metal.
- c. Cracks as shown in view B which indicates a definite possibility of a piece of metal becoming shelled or broken off is reason for condemnation of torus.
- d. View C shows allowable crack if crack does not exceed 1/2 inch.
- e. Erosion of surface F, view D, is allowed up to a maximum of 0.030 inch in depth. Surface F may be re-surfaced removing a maximum of 0.015 inch to regain normality of surfaces. Should leakage exist after re-surfacing surface F to a maximum of 0.015 inch, torus will be condemned.

f. Cracks of less than 1/2 inch in length is allowable in surface D when separated by a minimum of 1/8 inch of metal.

6-58. TURBINE NOZZLE. Inspect nozzle (10, figure 4-16), as follows.

- a. Prior to fluorescent penetrant inspection (paragraph 6-16), visually inspect nozzle for cracks and damage in accordance with figure 6-13, and as follows.
- b. Two shroud cracks less than one-fourth inch apart on same side of vane which could intersect and break off a segment of shroud is not permissible. (See example 1 in figure 6-13.)

c. Maximum permissible cracks on individual trailing edge of vanes are two cracks, one of which may be one-half inch in length. The other shall be less than one-fourth inch long, separated by one-fourth inch minimum or three cracks, one of which may be one-half inch in length. The other shall be less than one-eighth inch long separated by one-eighth inch minimum. (See examples 2 and 6 in figure 6-13.)

d. Maximum permissible cracks on individual leading edge of vanes are two cracks less than one-fourth inch long, separated by one-fourth inch minimum or three cracks less than one-eighth inch long separated by one-eighth inch minimum. (See examples 2 and 6 in figure 6-13.)

e. Any cracks on a nozzle vane in excess of one-half inch length are not permissible.

f. Cracks of one-fourth inch to one-half inch length occurring on more than six adjacent vanes are not permissible.

g. Cracks of one-fourth inch to one-half inch length occurring on more than ten non-adjacent vanes are not permissible.

h. Cracks under one-fourth inch in length from trailing edge of vane to shroud are permissible. (See example 4 in figure 6-13.)

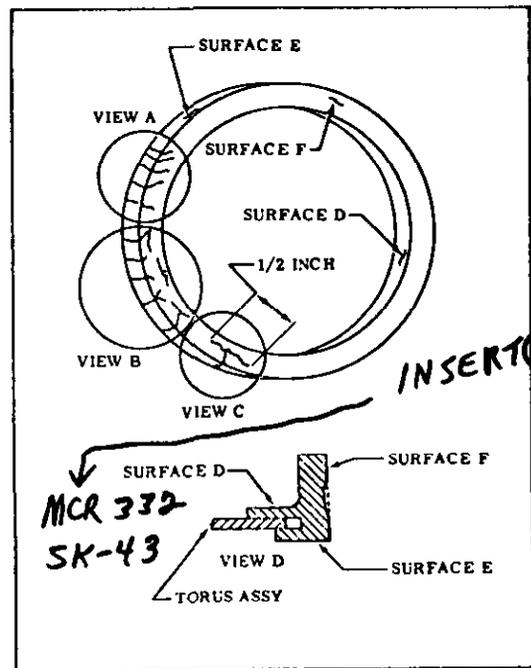


Figure 6-12. Inspection of Torus Assembly Inner Flange

Figure 3-1. Typical Marked-Up Page

7/0 MCR 332

Page 2 of 3

INFO

Manual Change Release, NA 19-105B-13/CP 29-4-A-339

4. Application: AiResearch Pneumatic Power Gas Turbine Engines, Model No. GTC 85-72 which have torus assemblies, P/N 376654-50/-56, with inner flanges cracked beyond the limits specified in the affected publication at the time of overhaul.

5. Special Tools and Test Equipment:

~~Buy~~ **NOTE** Manufacture a suitable copper plate to serve as a heat sink when welding the inner flange.

Add below Para 8.1.1, Step 2.

6. Special Materials: None

7. Effective Date: 8 November 1968

8. Instructions:

8.1 Add to paragraph 6-57, page 73, section VI of the affected publication, the following:

~~8.1.1~~ g. Flanges which exhibit cracks exceeding the limits specified in subparagraphs b, c, d, and f may be repaired as follows:

1. Remove the cracks by grinding.
2. Vapor blast the area to be welded.
3. Electric arc or inert gas weld per MIL-W-8611 using inert or consumable electrode - filler metal per MIL-R-5031, Class 8A (Inconel) welding rod or MIL-E-6844 Class 8 (Inconel).
4. Remachine the flange to the finish and dimensional requirements shown in figure 6-12.
5. Dye penetrant inspect for cracks in accordance with MIL-I-6866, type I. No cracks allowed.

INSERT (A)

Add to N.A. 19-105B-13, Paragraph 6-57, Page 76.

Figure 3-2. Typical Data Input (Sheet 1 of 2)

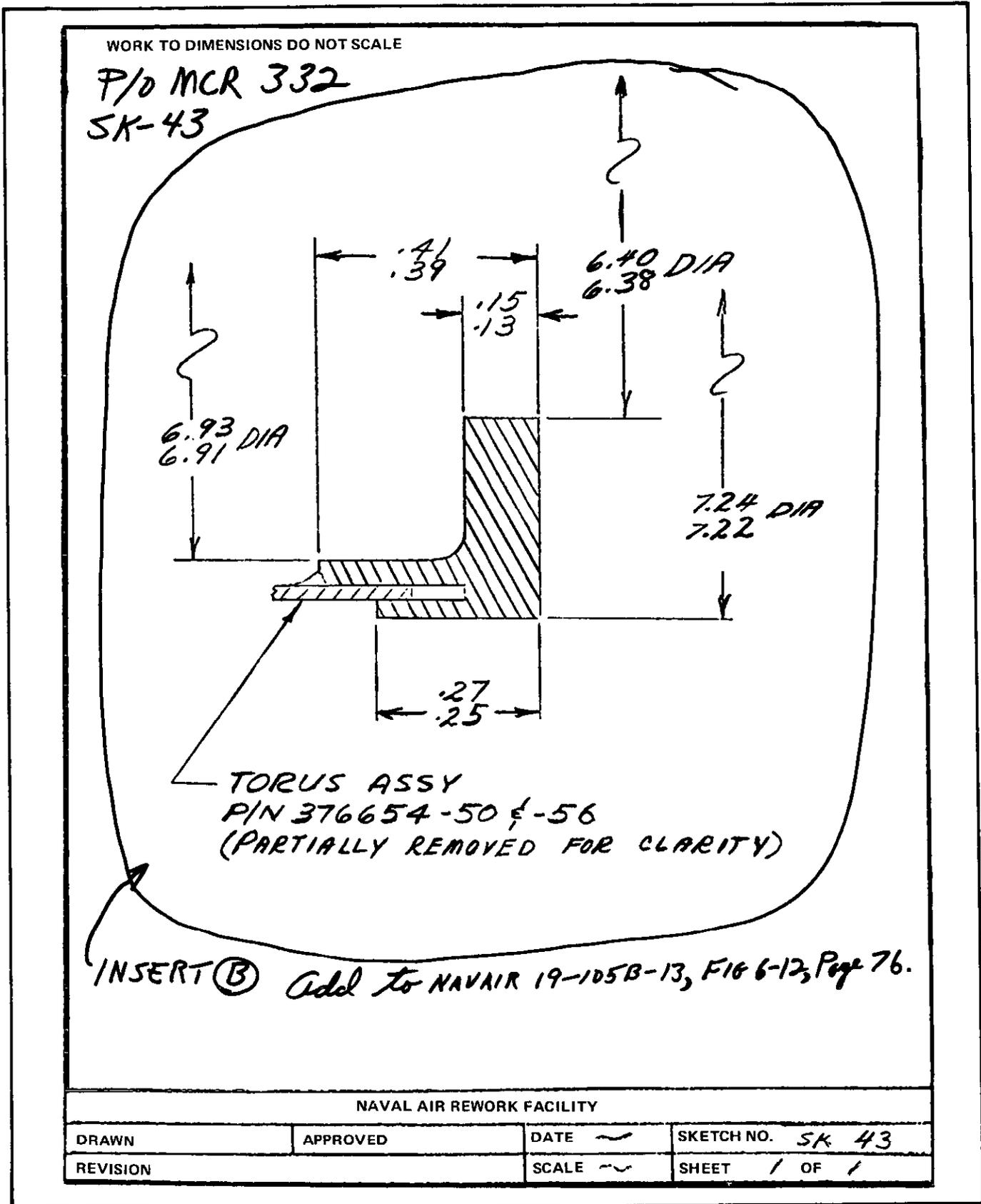


Figure 3-2. Typical Data Input (Sheet 2 of 2)

SOURCE DATA WORKSHEET			
TITLE	P-XX Patrol Aircraft		
NAVAIR	03-XXXXX-XX		
TYPE OF MANUAL	Overhaul		
Item No.	Ref.	Description of Material	Affected Pages/Drawings
1	Page 5-31, Para 5-18	MCR CP - 103 - Revise Assembly procedures to reflect dimension between housing and support assy.	2 Rev Pages 1 Rev Line Dwg 1 Photo
2	Page 6-50, Para 6-23	TPDR-078(CVA-43) - Revise clearance of yaw open loop spring assembly	1 Rev Page
3	Page 7-24, Para 7-15	AFB 203 - Add detailed inspection procedures for hinge pins and wear limits for thrust washers	2 Rev Pages
4	Page 7-58, Para 7-34	ECP 4443 & AFC-494 - Update landing gear assembly repair instructions	3 Rev Pages 1 New Line Dwg

Figure 3-3. Typical Source Data Worksheet

WORK SUMMARY FORM	
Type of Work	Total Pages
1. TEXT PAGES	
a. New	_____
b. Revised	_____
2. TABLES (Tabular)	
a. New	_____
b. Revised	_____
3. TITLE PAGES	_____
4. A PAGES	_____
5. SECTIONAL VIEWS	
a. New (Simple _____ Medium _____ Complex _____)	_____
b. Revised (Simple _____ Medium _____ Complex _____)	_____
6. CUTAWAY VIEWS	
a. New (Simple _____ Medium _____ Complex _____)	_____
b. Revised (Simple _____ Medium _____ Complex _____)	_____
7. EXPLODED VIEWS	
a. New (Simple _____ Medium _____ Complex _____)	_____
b. Revised (Simple _____ Medium _____ Complex _____)	_____
8. LINE ART	
a. New (Simple _____ Medium _____ Complex _____)	_____
b. Revised (Simple _____ Medium _____ Complex _____)	_____
9. SCHEMATIC DRAWINGS	
a. New (Simple _____ Medium _____ Complex _____)	_____
b. Revised (Simple _____ Medium _____ Complex _____)	_____
10. WIRING DIAGRAMS	
a. New (Simple _____ Medium _____ Complex _____)	_____
b. Revised (Simple _____ Medium _____ Complex _____)	_____
11. BLOCK DIAGRAMS	
a. New (Simple _____ Medium _____ Complex _____)	_____
b. Revised (Simple _____ Medium _____ Complex _____)	_____
12. TEST SETUP DIAGRAMS	
a. New (Simple _____ Medium _____ Complex _____)	_____
b. Revised (Simple _____ Medium _____ Complex _____)	_____

Figure 3-4. Typical Work Summary Form

- a. Hazards to safety or personnel.
- b. Impairment of safety of flight.
- c. Aircraft grounding.
- d. Mission capability.
- e. Equipment damage.

3-30. RAC's shall not be prepared to update data pertaining to hardware familiarization, such as: theory of operation, description of an existing unit or control other than that required for installation, assembly, disassembly or maintenance. Nor should RAC's be issued for:

- a. Format changes.
- b. Grammatical changes (unless safety, equipment damage, flight limitation, etc., are involved).
- c. Typographical errors.
- d. Production methods.
- e. General nonprocedural information.

3-31. There are three (3) types of RAC's. The Type IA Interim RAC is prepared as a message applicable to printed and microfilm manuals. A Type IB Interim RAC is prepared as a speed letter applicable to printed and microfilm manuals to cover changes to illustrations and wiring diagrams that cannot be adequately covered in the text of a message. The Type II Formal RAC is prepared as a replacement for a Type IA and Type IB Interim RAC and shall be issued as insert change pages prepared to the same style and format of the technical manual being changed. A Type II RAC is applicable to printed manuals only. Security classification of the RAC shall be determined from its contents. The security classification of the RAC can be lower but not higher than the securi-

ty classification of the technical manual being changed.

3-32. RAC's shall be numbered consecutively throughout the life of the manual regardless of revisions to the subject manual. The initial RAC number will begin with 1. These RAC numbers are independent of and not affected by numbers issued for normal publication changes. When a RAC is issued with incorrect or incomplete data, the RAC is to be cancelled and superseded by a new RAC. The new RAC shall be issued with a new number. The cancelled RAC number will not be reused.

3-33. RAC INCORPORATION IN THE TECHNICAL MANUAL. All RAC's shall be incorporated in technical manuals as follows:

a. Paper Copy. Insert a copy of the Type IA or IB Interim RAC directly behind the title page and note its existence on the manual page to which it applies. Mark the specific change area affected in the margin of the text with a vertical line and include the interim RAC number as shown in figure 3-5. Maintain the copy until receipt of formal change. Physical alteration of the technical content in NAVAIR manuals is not permitted. Pen ink changes to the technical content of NAVAIR manuals are not authorized.

b. Microfilm Copy. File the Type IA or IB Interim RAC in a RAC folder and annotate the Type IA or IB Interim RAC number on the microfilm cartridge side label. Maintain the Type IA or IB Interim RAC on file until receipt of superseding film cartridge. The conversion from Type I to a Type II RAC is not required for microfilm manuals.

c. Formal RAC Copy. A Type II Formal RAC applicable to a printed manual shall be collated into the affected manual immediately upon receipt. Type I RAC's shall be incorporated into the

SECTION XVI
TUBE ASSEMBLY CLEANING

16-1 Cleaning of Tubing.

16-2 Cleaning Solvents. It is imperative that all tubing shall be appropriately cleaned after fabrication to preclude contamination of the particular system in which it will be installed. Cleaning should be accomplished using a suitable compound, preferable Dry Cleaning Solvent, Federal Specification P-D-680 Type II. Should the preferred solvent be unavailable, the following alternates may be used:

- a. O-T-634 Trichloroethylene
- b. O-T-236 Tetrachloroethylene (perchloroethylene)
- c. MIL-T-81533A 1.1.1. Trichloroethane
- d. MIL-C-81302 Trichlorotrifluoroethane

WARNING

The preceding instructions do not apply to tubing assemblies intended for use in oxygen systems. Oxygen tube assemblies shall be cleaned in accordance with the following procedure.

16-3 Cleaning Oxygen System Tubing Assemblies. After the tubing is formed and the ends flared, all oil, grease, and foreign material should be removed from the tubing by following the instructions of paragraph 16-4.

CAUTION

It is dangerous to omit any of the steps specified. The cleaning materials to complete all of the steps should be available before starting the cleaning procedure.

16-4 Removing Oil and Grease From Oxygen System Tubing Assemblies. A vapor degreasing method with stabilized trichloroethylene, Federal Specification O-T-634, Type 2, should be used. Proper cleaning is assured by allowing tubing and fittings to remain in the vapor degreaser until the temperature specified in the manufacturer's instructions is reached. Tubing is blown clean and dried with a stream of clean, dry, water-pumped air. Every precaution should be taken to determine if the tubing and fittings are clean. Oil-pumped air should not be used as a substitute for water-pumped air because oil would be deposited in the tubing. Oxygen, Federal Specification BB-O-925, or clean, dry water-pumped nitrogen, Federal Specification BB-N-411, may be used in place of water-pumped air. After cleaning, aluminum tubing should be treated with a brush coat of chemical film, Military Specification MIL-C-5541.

See IRAC NO. 2
dated 9 Sept 83

Figure 3-5. Typical Paper Copy Interim RAC Identification Method

microfilm cartridge within 60 days after the release of the IRAC.

d. The Title and "A" pages of changed manuals shall list all incorporated RAC's from previous changes/revisions. The "A" pages of all subsequent changes to manuals shall list the cumulative status of all RAC's incorporated. To maintain continuity of all issued RAC numbers, cancelled RAC numbers are to included in the cumulative status of RAC's incorporated.

3-34. TECHNICAL PUBLICATION DEFICIENCY REPORTING. A publication deficiency is defined as a manual lacking some form of quality, faculty, or characteristic necessary for completeness. Some of the more prevalent deficiencies are:

- a. Incomplete information.
- b. Technically inaccurate.
- c. Erroneous information.
- d. Incorrect artwork.
- e. Missing details.
- f. Incorrect/lacking part numbers.
- g. Format errors affecting maintenance.
- h. Warning/Cautions not identified.
- i. Incorrect operating procedures.
- j. Incomplete troubleshooting.
- k. Inaccuracies of any other kind.

3-35. Manuals in use to support Naval aviation utilize two different methods in reporting deficiencies. The most predominant method of reporting technical manual deficiencies is the Technical Publications Deficiency Report (TPDR), OPNAV Form 4790/66 (figure 3-6). NATOPS and tactical manual deficiencies are reported on NATOPS/Tactical Change

Recommendation, OPNAV Form 3500/22. In the event a deficiency affects safety of flight, personnel safety, damage to equipment, etc., a message will be prepared reporting the manual defect. OPNAVINST 4790.2 contains detailed information on the preparation and transmittal of the proper report or safety message. Deficiencies discovered in the NAVAIR technical directive system shall be reported on the TPDR.

3-36. Detailed instructions for preparation of the TPDR are contained on the back side of the form. This form may be reproduced locally. Reports will be submitted to Commanding Officer, Naval Air Technical Services Facility, 700 Robbins Avenue, Philadelphia, PA 19111 (Attn: Code 40).

3-37. TPDR FOLLOWUP ACTION. Upon receipt of the TPDR, NAVAIRTECHSERVFAC Code 40 enters the pertinent data on a computer for future tracking. A copy of the TPDR is forwarded to the cognizant engineering activity (a contractor, the CFA or NAVAIR) for evaluation and corrective action. Simultaneously, a copy of the transmittal letter is forwarded to the originator. Upon receipt of a safety deficiency message report, NAVAIRTECHSERVFAC readdresses it to the cognizant action activity with an information copy to the originator.

3-38. Subsequently, the action activity will advise NAVAIRTECHSERVFAC and the originator of actions taken to correct the deficiency or their findings as to the validity of the TPDR. Corrective action is through the issue of a RAC, formal manual change or revision. Under any circumstances, a valid TPDR shall not be used to make a pen and ink change to a NAVAIR manual. Physical alteration of the technical content in NAVAIR manuals is not permitted. Pen and ink changes to the technical content of NAVAIR manuals are not authorized.

TECHNICAL PUBLICATIONS DEFICIENCY REPORT		INSTRUCTIONS ON REVERSE					
OPNAV 4790/66 (Rev 11/78)		a. QA SEQUENCE NO	b. DATA MANAGER CODE	c. CFA/PRIME CODE			
NAVAIRTECHSERVFAC USE ONLY:							
1. REPORTING ACTIVITY		2. ORIGINATOR'S NUMBER	3. REPORT DATE (YR/MO/DA)	4. WEAPON SYSTEM APPLICATION	5. DISCREPANCY CODE		
		6. TECHNICAL MANUAL NUMBER			7. TECH. MAN. DATE		
8. CHG NO DATE	9. WP NO	10. SEC/PG NO	11. PARA NO	12. FIG/TBL NO	13. CART NO	14. CART DATE	15. FRAME NO
16. DEFICIENCY							
17. RECOMMENDATION							
18. IMPACT							
19. MEDIA EVALUATED (Only one check block is required per item.)							
<input type="checkbox"/> FILM <input type="checkbox"/> PAPER <input type="checkbox"/> PAPER & FILM							
REMARKS							
20. REPORTED BY (Name, rank, rate)				21. RELEASED BY (Name, rank, rate)			
AUTOVON				AUTOVON			
MAIL ORIGINAL AND 1 COPY TO Commanding Officer, Naval Air Technical Services Facility, Quality Assurance Dept (04) 700 Robbins Ave., Phila., PA 19111							
COPY TO COGNIZANT FIELD ACTIVITY							

Figure 3-6. Sample Technical Publications Deficiency Report (TPDR) (OPNAV Form 4790/66) (REV 11-78)

3-39. MANUAL CHANGE RELEASE (MCR).

The MCR shall be used for processing or identifying technical manual change requirements. LES's were previously used for this purpose, but the form has been cancelled. The MCR is the only locally prepared document at the depot level which permits alteration, clarification, addition or amendment to NAVAIR technical manuals by the TMCFA's. A typical format of the MCR shall be as shown in figure 3-7.

3-40. Engineering data required by the NAVAIWORKFAC, but which does not involve new rework policy, introduction of new rework procedures, manufacture of support parts or procurement of support materials shall be implemented by an MCR for the affected publication when the data lends itself to the publication arrangement and format and the data concerns a product covered by a publication. The MCR shall be issued for those items which are essentially concerned with correction, clarification, amplification and addition to publications.

3-41. The MCR is a type of engineering directive used to convey information and/or instructions as publication update information from the cognizant engineering department to all departments of the TMCFA including publication microfilming and updating.

3-42. Guidelines for use of the MCR as follows:

a. When no hardware configuration change (Class I and II) is involved and only the content of the manual is changed.

b. When correction, clarification or amendment to rework or test data in a governing publication will solve the problem and no procurement or manufacture of material is concerned.

c. When the rework changes do not require new drawings to describe manufacture of material and when there is an

existent publication for the product that can logically be revised to include the rework instructions.

d. A temporary Engineering Instruction (TEI) shall not be used to provide rework changes or requirements for problems which can be solved by issuance of an MCR. Since the TEI and MCR can be entirely developed within the TMCFA and since the MCR does not require a planning release, the MCR is the preferred method of release unless the TEI system is required due to the subject covered, material requirements or lack of applicable publication(s) on the equipment.

3-43. Primary uses of the MCR are as follows:

a. For on-line, in-house maintenance support until a manual change can be effected.

b. For providing recommended manual change data to another TMCFA, using official correspondence as the transmitting vehicle.

c. The MCR shall be used for implementing local change, corrections, additions, clarifications, etc., to technical manuals. The MCR should be incorporated at the next update to the technical manual.

d. Direct publication updating procedures shall be used where the data being inserted will involve changes, corrections, amendments, or clarification of the rework procedure described in the publication. The MCR shall assume the same security classification as the page of the manual being changed. MCR's to classified manuals shall be identified with a (c) following the serial number.

e. The MCR shall be worded in the same form as the data to be inserted into the publication.

MCR (MANUAL CHANGE RELEASE)					
REQUESTING ACTIVITY			MCR/TCI NUMBER		
			CODE		
			DATE		
PUBLICATION NUMBER	BASIC DATE	REVISION	SECTION WORK PACKAGE	FIGURE/PARAGRAPH	
SYSTEM/ITEM NAME			PART NUMBER		COGNIZANT CFA
REFERENCE(S)					
JUSTIFICATION/REASON FOR CHANGE					
INSTRUCTIONS					
ENGINEER/TECHNICIAN			BRANCH	PHONE	SIGNATURE OF BRANCH HEAD

Figure 3-7. Typical MCR Form

f. Obvious conflicts between a given MCR and any other data received, such as a new publication change, shall be brought to the immediate attention of the MCR originator. The necessary adjustments shall be made to the data or insertion location to preserve the format of the publication and to provide the optimum data presentation.

g. The MCR may be amended by formal issue of an amendment substituting corrected information in lieu of that which has been found to be erroneous. The amendment must be traceable to the MCR being amended. If the omission or error is considered to be major, then the MCR including all amendments shall be cancelled and a new MCR issued.

3-44. The MCR shall not be distributed to fleet activities. However, TMCFA's shall prepare and issue change pages as expeditiously as economics and workload permit. An update shall be issued as a RAC if criteria for a RAC is satisfied. Otherwise an update may be issued as a normal change or as an MCR change page for local use. MCR change pages shall be prepared in the format of figure 3-8, retaining the current manual change identity, but with added MCR identification as shown, and shall be disseminated using the change page release format of figure 3-9. These MCR change pages shall be used in-house and shall be entered into the MIARS microfilm for filming at the next scheduled update but not later than 60 days after release. The TMCFA shall ensure that the MCR change page data, as promulgated in the figure 3-8 format, is included as normal change data at the next change or revision to the manual.

3-45. MCR cancellation notices shall be issued to cancel MCR's which have been incorporated so that library, user, and microfilm station files may be effectively purged.

3-46. CHANGES TO A CONVENTIONAL MANUAL. A routine manual change is the official release of correction pages to a part or portion of an existing document. A change consists of replacement change pages for that area of the manual affected by the change. This approach provides both an economical and expedient method of issuing new or corrected material to the user.

3-47. Upon issue of the change, it is necessary for the recipient to remove the superseded information and insert the new material. This is required for paper manuals only. When a change is issued, existing page numbers, paragraph numbers, figure numbers, and table numbers are not changed. Supplemental numbers are assigned to new pages, paragraphs, figures, and tables. Except when a number is added at the end of a sequence (in which case the next consecutive number is used), added paragraphs, illustrations, and tables are numbered by utilizing the preceding paragraph, illustration, or table number and adding an alphabetical suffix to it (i.e., A, B, C). The same applies to added pages except that such pages shall not be added between a right-hand (odd numbered) and a left-hand (even numbered) page. When new material is to be added to a right-hand page; any overrun shall be carried to the left-hand page and the overrun from this shall be placed on an added page. Therefore, such added pages shall always be assigned even numbers such as 2A, 2B, 2C, 4A, 4B, and 4C.

3-48. Each page containing changed or added material bears the word "Change..." placed at the bottom of the page in the same corner and on the same line with the page number. For foldout pages, the change number is placed in the lower outer corner of the page beneath the figure title. This change number requirement is applicable to all added pages, including those placed at the end of a manual.

6-80. INSPECTION OF COMPRESSOR CASINGS. (Cont)

Inspect	Usable Limits	Max Repairable Limits	Corrective Action
(2) Nicks and scratches on:			
(a) Nonmating surfaces.	Any number, 1/16 inch deep with no high metal.	Same with high metal.	Remove high metal.
(b) Mating surfaces.	Any number, 1/64 inch deep, and at least 1/4 inch of flange width is undamaged.	Same with high metal.	Remove high metal.
Note			
Inspect body - bound bolt holes, tagged at disassembly, for loose-fitting bolts. Hole size can be determined with tool, (829B) (FSN 5210 - 293 - 1875), or equivalent manufactured by LS Starrett Company, Athol, Massachusetts 01331.			
(3) Wear in bodybound bolt holes.	Diameter not to be over 0.2505 inch. Holes marked with an "O" may be worn up to 0.2666 inch dia.	Diameter not to be over 0.2655 inch.	Repair as described in paragraph 6-80A.
(4) Wear on body-bound bolts.	0.2489 inch min. dia. on standard size bolts (PN 37C302377P101 or P102), and 0.2650 inch min. dia. on oversized bolts (PN 37C302377P103 or P104).	Not repairable.	Replace bodybound bolts.
c. Variable vane actuator mounting pad for:			
(1) Nicks, dents and scratches.	Any number, 0.030 inch deep, with no high metal.	Same as usable limits with high metal.	Remove high metal.
d. Rotor blade rubs			
(1) In plasma sprayed areas.	Not over 0.020 inch deep.	Any number if remaining parent casing metal at first five inlet stages is 0.040 inch minimum. Rotor blade rubs in fixed vane support rails cannot be over 0.040 inch maximum.	Repair plasma sprayed coating as described in PPC-17. Original plasma spray coating must be removed down to parent metal to assure a good bond.
e. Sermetel or Solaramic coating missing in blade path.	None allowed.	Any amount.	Repair as described in paragraph 6-52.
f. Missing plasma coating.	None allowed.	Any amount.	Repair using plasma spray fill procedure. (Reference NAVAIR 02-1-20 SP8, PSC14).
g. Rotor blade rubs			
(1) In steel casings.	Not over 0.005 inch.	Not repairable.	Replace casings.

MANUAL CHANGE RELEASE

DATE 19 MAY 1984

MCR NO. 360149-78

TECHNICAL MANUAL
DEPOT MAINTENANCE MANUAL
TURBOSHAFT ENGINE
MODELS
T64-GE-6B

PUBLISHED BY
NAVAL AIR REWORK FACILITY (LOCATION)

Reproduction for nonmilitary use of the information or illustrations contained in this publication is not permitted without specific approval of the issuing service (Naval Air Rework Facility).

CONTAINS VITAL INFORMATION OF PARAMOUNT INTEREST TO ALL AFFECTED PERSONNEL FILE AND RETAIN THIS PAGE AFTER THE LIST OF EFFECTIVE PAGES OF:
NAVAIR _____ DATED _____

PAGES AFFECTED BY THIS CHANGE

<u>Page No.</u>	<u>Page No.</u>	<u>Page No.</u>	<u>Page No.</u>
Replace 6-65			

Figure 3-9. Manual Change Release Title Page Format

3-49. CONVENTIONAL MANUAL CHANGE SYMBOL-OGY. Except as stated below, text and table changes, including new material on added pages, are identified by a vertical line or change symbol in the outer margin for double-columned material and margin opposite binding edge for single-columned material which extends the entire length of the material affected. Pages with emergency markings (black diagonal lines around three edges) are an exception and may have the vertical lines or change symbols placed along the inner margin. Previous change symbols on a page are deleted when a page is subsequently changed. Symbols show current changes only. The vertical line change symbol shall be 3/32 inch in width. It may be 3/64 inch for pages showing emergency markings, if the symbol is not placed at the inner margin. When a change symbol, such as a number sign "#", plus mark "+", black circle, black square, the letter "C", "R", or "X" is used, its meaning is explained in the introductory portion of the manual.

3-50. Change symbols will not be used for the following:

- a. Introductory material.
- b. Indexes and tabular data where the change cannot be identified.
- c. Blank space resulting from the deletion of text, an illustration, part of an illustration or a table.
- d. Corrections of minor inaccuracies such as spelling, punctuation, relocation of material, renumbering of paragraphs, etc., unless such correction changes the meaning of instructive information and procedures.
- e. Replacement or addition of a complete part, chapter, or section.

3-51. With the exception of diagrams and schematics, illustrations, line drawings and photographic changes are normally identified by a miniature

pointing hand. The hand points to the general area of change information. Shading and screening are used for diagrams and schematics to highlight the area containing the changed information. Extensively changed presentations are indicated by a screen border around the affected area.

3-52. REVISION OF A CONVENTIONAL MANUAL. A revision is a second or subsequent edition of a manual which supersedes the previous edition. In comparison to the change, a revision constitutes a complete reissue of a replacement manual with all change information incorporated. Issue of a revision will normally take place when the cumulative total of previously changed pages and pages affected by the current change exceed 60 percent of the total pages of the manual. All new information incorporated will be marked in the same manner as a change to keep the user informed concerning the relationship of the data being revised or superseded. The revision will carry an appropriate supersedure notice on the title page. Revisions to a manual will not be numbered. Identification of a revision is made by the supersedure notice on the cover/title page and a later issue date.

3-53. CONVENTIONAL MANUAL DIFFERENCE DATA SHEETS. Difference data sheets were designed as an economic method of disseminating configuration change information at reduced cost. Difference data sheets are not applicable to work package manuals. They provide the capability of adding or changing technical manual data without making a direct impact on the existing information. These sheets are issued against a manual to show minor changes in basic design. A separate sheet is prepared and issued for each additional configuration or model covered.

3-54. The format of difference data sheets is as follows:

a. Sheets are identified with the title "DIFFERENCE DATA SHEET" centered at the top of each page.

b. The first page of each sheet (for a specific model) has a heading in upper case type consisting of the nomenclature and the model, type, or part number of the item covered. The heading is followed by a statement to this effect: "THE INSTRUCTIONS CONTAINED IN THE PRECEDING SECTIONS OF THIS TECHNICAL MANUAL ARE APPLICABLE TO THIS MODEL EXCEPT FOR THE DIFFERENCES CITED IN THIS DIFFERENCE DATA SHEET."

c. Sheets for each model start on a right-hand page. Page numbers, figure numbers, and table numbers run consecutively throughout the section. Sheets are added as required. Paragraphs need not be numbered, but if numbering is used, single Arabic numerals beginning with "1" for each added model may be used.

3-55. CHANGE TO WORK PACKAGE (WP) MANUAL. A WP may be changed when one or more pages have been affected by the current change to the WP manual, or when a WP must have a RAC issued against it. A changed WP shall consist of a changed WP title page and those pages affected by the change to the WP, including unchanged backup pages (printed copy), if applicable. When a change is prepared to a WP manual or volume the change may consist of one or more added, or changed WP's. When required, WP's may be deleted from the manual during a change cycle. Since WP's are assigned permanent numbers, deleted WP numbers shall not be reassigned to add WP's. The Numerical Index of Effective Work Packages (A Page) shall account for all added, changed, or deleted WP's affected by the change as well as previous changes to the manual, if applicable. If one or more individual WP's have been changed, the change shall be listed on the A Page. Additionally, all changed WP pages shall be accounted for on their respective WP title page.

3-56. The first change following the basic issue to the manual shall be numbered "Change 1." Subsequent changes issued shall be numbered consecutively. When a WP identified by a Technical Manual Identification Numbering System (TMINS) number is changed or revised, a change identification number assigned by the requiring activity shall appear in parentheses immediately following the change number and date. The change number and date shall be placed below the publication number on all pages effected by the change. If a page has been previously changed, the previous change number and date shall be removed and replaced by the current change number and date.

3-57. A changed WP shall incorporate changed or added material and delete material no longer applicable to the subject of the WP. Paragraphs, illustrations, tables, pages, and index numbers on illustrations added between existing ones shall be assigned the preceding number plus consecutive capital letter suffixes; for example, 3A and 3B might be added between existing numerals 3 and 4. Added pages for manuals on microfilm may be 3A and 3B added between existing pages 3 and 4, or 4A and 4B added between existing pages 4 and 5. However, added pages for manuals on paper shall always be assigned even numbers such as 2A and 2B or 4A and 4B in order to maintain continuity when printing. When microfilmed manuals are transitioned to paper, care must be taken to ensure correct sequential order of material is maintained. Suffix letters I and O shall not be used. Other than the addition of suffix letters, existing identification numbers and suffixes shall not be renumbered.

3-58. The change number and date shall be the same on a changed WP title page as the manual change number and date. The change number and date shall be placed in the upper left corner, below the publication date. When a technical

manual identified by a TMINS number is changed, a change identification number assigned by the requiring activity shall appear in parentheses immediately following the change number and date. In addition, the changed WP title page shall account for all the pages of the WP. Changed WP pages shall not be listed in the numerical index of effective work package. A list of effective WP pages shall be prepared and placed on the WP title page as follows:

a. A tabular listing of all pages contained in the WP shall appear below the title block.

b. The title "List of Effective Work Package Page" shall be centered below the title block and the column heads "Page No." and "Chg. No." shall be placed below the title. The column heads shall be underlined.

c. A numerical listing of all pages assigned to the WP shall appear under the "Page No." heading with the applicable change number in the "Chg. No." column. Original pages shall be indicated by the numeral "0" in the "Chg. No." column. Deleted pages shall be indicated by the word "Deleted" following the page number and the applicable change number in the "Chg. No." column. The listing shall be held to a minimum by grouping numbers where applicable.

3-59. Added or deleted material in a changed WP shall be prepared as follows:

a. Except when a number is added at the end of a sequence (in which case the next consecutive number is used), added paragraphs, illustrations, and tables are numbered by utilizing the preceding paragraph, illustration, or table number and adding an alphabetical suffix to it (i.e., A, B, C). The same applies to added pages except that such pages shall not be added between a right-hand (odd numbered) and left-hand (even numbered) page. When new material is to be added to a right-hand page any overrun shall be carried to the left-hand page and the overrun from this shall be placed on

an added page. Therefore, such added pages shall always be assigned even numbers such as 2A, 2B, 2C, 4A, 4B, and 4C.

b. Added material shall be placed in proper sequential order within the WP. If this causes an overrun, the material that will not fit on the existing page shall be placed on an added page. If blank space is available on either the preceding or following page of the one affected, this space may be used for overrun material; however, correct sequential order of material must be maintained.

c. Deleted paragraphs, procedural steps, or callouts following index numbers on illustrations shall be indicated by placing the word "Deleted" after the affected item; for example, "r. Deleted." or "2. Deleted."

d. Deleted pages shall be accounted for by placement of a note at the bottom of the preceding page or at the top of the succeeding page; for example, "Page 7 Deleted." The note shall be placed within the required image area (with marginal copy).

3-60. Changes to text, tables, and illustrations including new material on added pages shall be indicated by change symbols. All existing change symbols shall be eliminated from pages affected by the current change. After removal of previous change symbols, new change symbols shall be inserted, highlighting material changed or added during the change to the WP.

3-61. WP MANUAL CHANGE SYMBOLOGY. The text and tabular data affected by the change to a manual is indicated by the "R" or a change bar in the left margin for left column changed material and in the right margin for right column changed material (double-column format) or in the right margin for single format.

3-62. Change symbols for illustrations are in accordance with the following:

a. IPB illustrations do not require change symbols.

b. On line drawings (other than diagrams), a miniature pointing hand is used to highlight the area containing the changed information.

c. When several changes are made at once in the same area of an illustration, a change bar may be used to indicate a general area.

d. A vertical line next to changed text and callouts on illustrations is used in lieu of a pointing hand.

e. A change bar may also be used on a graph to indicate a change.

f. When an illustration has been extensively changed, a change bar is placed across the top of the reproduction area (full page illustrations) or in the left or right margin as applicable (partial page illustrations).

g. On diagrams, bordering or pointing hands are used to indicate the area containing the changed or added information.

h. Extensively changed or added areas are indicated by a change bar around the affected presentation, or a change bar across the top of the image area affected.

3-63. REVISION TO WP MANUAL. A WP shall be revised when the cumulative total of existing changed pages and pages affected by the current change exceed 60 percent of the total WP pages. A WP consisting of 10 pages or less will always be revised. WP manuals containing 16 pages or less or consisting of only one technical content WP shall be revised. When a WP manual is revised, a supersedure notice shall be placed below the end item nomenclature, designator

(if applicable), and part number(s) in 10-point bolt type. To avoid the loss of usable technical information, the supersedure notice shall be specific, particularly when the manual only supersedes a part of the technical manual. For example, "This manual supersedes WP's 001 00 thru 009 00 of AE-172AA-720-100 dated 15 November 1982 and does not supersede the entire manual. Retain AE-172AA-720-100 dated 15 November 1982 in its entirety. The notice shall always include the publication number and date and if applicable, the change number and date of the superseded manual. If a classified manual is being revised, the supersedure notice shall include the following statement: "This manual supersedes (publication number) (dated), which should be destroyed in accordance with applicable security regulations."

3-64. A revised WP shall incorporate changed or added material and delete material no longer applicable to the subject of the WP. If a WP has been previously changed, all pages, paragraphs, illustrations, and tables shall be renumbered, as necessary, to eliminate suffixes and to establish correct sequence. All previous change numbers and change dates shall be removed. The current change number and the date of the change to the WP manual shall be placed on the WP title page and subsequent pages.

3-65. All existing change symbols shall be removed. After removal, new change symbols shall be inserted, highlighting material changed or added during the revision. Change symbols shall not be required for IPB illustrations. If the revised WP manual has been renumbered, the former publication number will appear on the revised WP manual title page below the new number and shall be preceded by the word "Formerly." At the next revision, only the new number shall appear. On the revised WP manual title page, the publication date or revision date shall be placed in the upper left

corner, below the publication number, joint usage number, former publication number, or all three.

3-66. REVISION TO WP MANUAL CHANGE SYMBOLOGY. The text and tabular data affected by a revision to a WP shall be indicated by the letter "R" or a change bar in the outer margin of double column format material and in the right margin of single column format material.

3-67. Change symbols for illustrations shall be as follows:

a. Change symbols shall not be required for IPB illustrations.

b. On other line drawings, except schematic diagrams and wiring diagrams, a miniature pointing hand shall be used to highlight the area containing the changed material. When several changes are made in one area, or the area is congested, a change bar may be used to indicate a general area. The change bar shall also be used on graphs to indicate a change. The change bar shall be placed in such a manner as to clearly indicate "Change" without confusing the reader. If an illustration has been extensively changed, a change bar may be placed across the top of the illustration (full page illustration) or in the applicable margin (partial page illustration). An acceptable alternate method for use with extensively changed full page illustrations is the use of the words "Major Change" with a miniature pointing hand adjacent to the words. The symbol and the words shall be placed in a clear space of the reproduction area.

c. On schematic diagrams and wiring diagrams, a miniature pointing hand shall be used to indicate the changed or added material. If the use of this symbol will not be effective due to the material illustrated, or if extensive changes have been made, the same techniques used for extensively changed line drawings may be used. Changes to wiring diagrams (printed copy) may also be

indicated by the use of bordering the changed area. Care shall be used in the selection of material and its placement when this alternate method is used. Shading of a changed area shall not be used.

d. Change symbols shall not be required when an illustration is added to a WP.

e. "Deleted" illustrations shall be shown by a note near the original location of the illustration; for example, "Figure 6 Deleted." If the illustration has been deleted and replaced by a new illustration, the note shall not be required.

3-68. NAVAIR TECHNICAL MANUAL (TM) NOTICES. NAVAIR TM NOTICE is the method of correcting minor errors in NAVAIR technical publications that do not require the issuance of a formal change. It shall apply only to unclassified TM's, including periodic maintenance requirements manuals issued as cards, and checklists. Issuance of the NAVAIR TM NOTICE is to be limited and shall be utilized only for omissions/corrections to title and "A" pages, replacement/missing pages and dates. Replacement text pages shall be issued only to correct typographical errors or to be replace illegible copy. Replacement pages shall be prepared in the same font and format and shall not exceed five pages. If the problem is more extensive, other action shall be taken such as a formal change or a reprint.

NOTE

NAVAIR TM NOTICE shall not be used to correct and/or change the technical content in NAVAIR manuals.

3-69. The NAVAIR TM NOTICE may be prepared by prime contractors, regional contractors, cognizant field activities, and NAVAIRTECHSERVFAC. Camera ready copy shall be prepared for the NAVAIR

TM NOTICE utilizing the format shown in figure 3-10. The NAVAIR TM NOTICE shall contain the publication number, a date that is one day later than the basic, change, or revision date of the manual, card(s), or checklist to be corrected and include a clear, concise reason for the NOTICE. The identifier, NOTICE, shall be in boldface type and placed on the four corners. Reproducible copy of the NAVAIR TM NOTICE and when applicable, negatives for missing or replacement pages shall be submitted to the cognizant NPPSO for printing and distribution. A Publications Order Sheet (POS) shall be prepared for each notice to be issued. Preparation of the POS shall be in accordance with NAVAIRTECHSERVFACINST 5600.4A and the following qualifications.

- a. Block 3 shall indicate NOTICE.
- b. Block 4 shall indicate the date of the NOTICE.
- c. Block 18 shall provide a brief summary of reason for the NOTICE.

3-70. The NAVAIR TM NOTICE shall be processed by following established procedures for issuing technical manual changes. All NAVAIR TM NOTICE actions must be coordinated with the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager.

3-71. ANNUAL DETERMINATION OF UPDATE REQUIREMENTS, PRIORITIES, AND FUNDING REQUIREMENTS.

3-72. A major management responsibility is the annual analysis of MDP status and pending update requirements. A compilation of update determinations should be made for each weapon system or equipment under the reporting TMCFA's cognizance. All proposed updates should be listed in their order of importance or possible urgency regardless of weapon system application. This action simplifies the NAVAIRTECHSERVFAC/NAVAIR review process and the determination of priorities.

3-73. When the TMCFA enters a proposed update requirement to the listing, the type of action (i.e., change or revision) should be identified and the approximate number of pages affected. To facilitate review and funding action, TMCFA preparation costs, anticipated contractor support, and technical manual production estimates shall be identified. Also, TMCFA and/or contractor support of in-process review and/or verification shall be included. Figures 3-11, 3-12, and 3-13 are the required formats. Figure 3-11 is to be completed in accordance with Appendix A.

3-74. The submitted requirements review should cover all known or anticipated update actions for the fiscal year including MIARS program MDP maintenance. It should be an accurate portrayal of the total workload rather than being based on anticipated funding action or workload capabilities. Accuracy is required because the consolidation of all TMCFA requirements becomes the justification for out-of-production technical publication budget submissions. Responses which are incomplete will be returned to the TMCFA for correction.

3-75. The requirements submission will also be used by NAVAIRTECHSERVFAC to determine technical manual update priorities and the allocation of funding for the fiscal year. To ensure timely review by NAVAIRTECHSERVFAC and approval by NAVAIR, all requirements should be submitted to NAVAIRTECHSERVFAC Code 22-02A prior to 31 March of each year or as specified in the NAVAIRTECHSERVFAC budget call.

3-76. The basic proposal, once submitted and subsequently funded, should not be considered a static document. Requirements and priorities are subject to change. Therefore, the TM program must be flexible to permit revision or modification of the requirements. However, proposed TMCFA changes should be coordinated with the NAVAIRTECHSERVFAC Code 22-02A prior to proceeding. Under no circumstances should work progress if

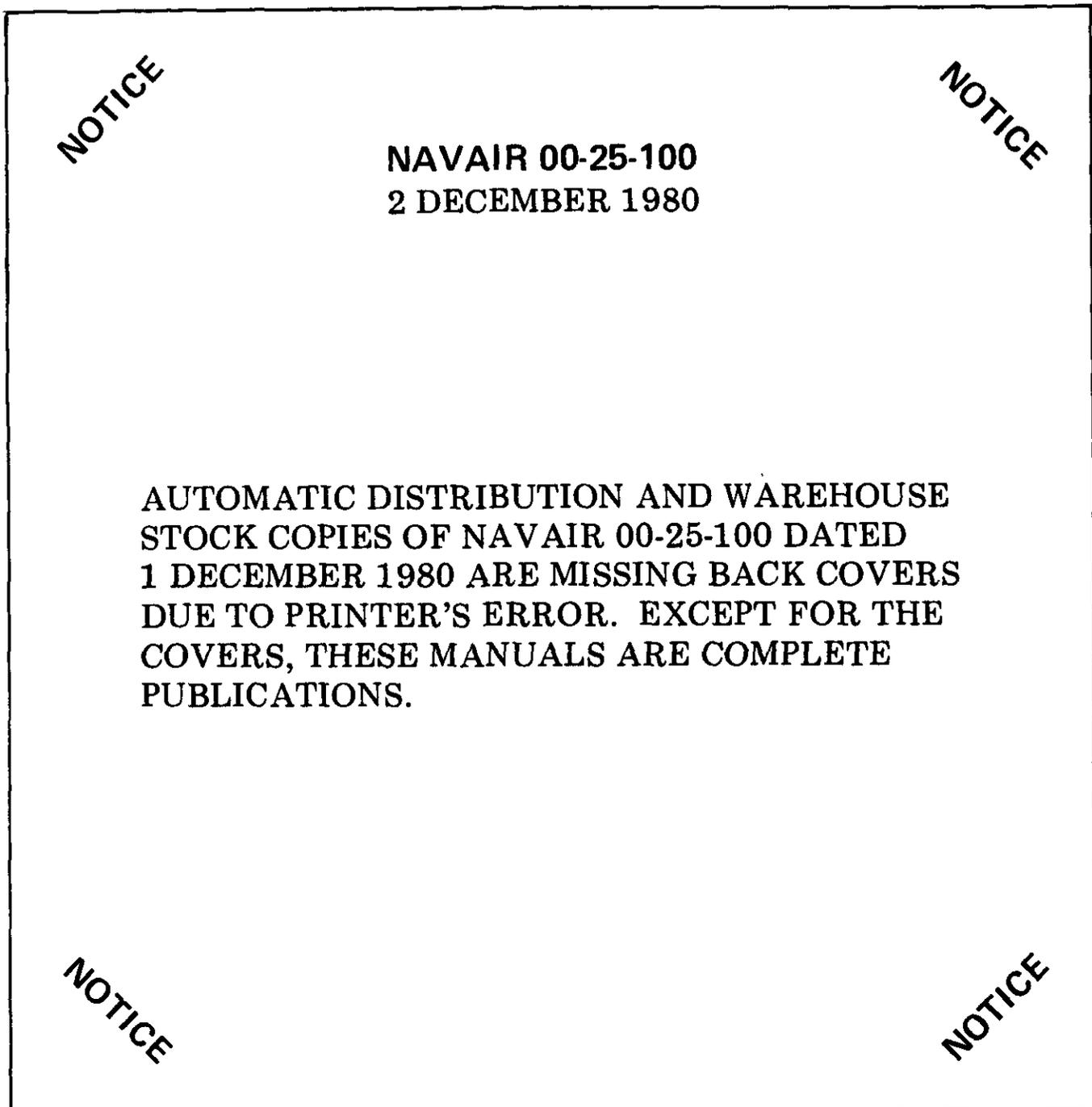


Figure 3-10. NAVAIR TM NOTICE

TECHNICAL MANUAL PROGRAM
COGNIZANT FIELD ACTIVITY IDENTIFICATION
OF FIRM UPDATE WORKLOAD AND PRIORITIES

			(1) _____ COGNIZANT FIELD ACTIVITY					(2) _____ Date		
								(3) _____ Weapon Syst		
(4) Prop. Pri.	(5) Manual Number and Title	(6) Weapon System (T/M/S) Peculiar Common	(7) Requirement for Update	(8) Level of Update (O/I/D)	(9) Proposed Update Action	(10) Number of Pages Impacted	(11) In-House Cost	(12) Regional Cost	(13) Prime Cost	(14) Total Cost
(15)										

Figure 3-11. CFA Identification Form of Firm Update Workload and Priorities

MIARS PROGRAM MASTER DATA PACKAGE
BUDGET FORM FY-1985

COGNIZANT FIELD ACTIVITY

DATE

TOTAL DATA PACKAGES	ANTICIPATED NUMBER OF UPDATES	ESTIMATED COSTS

Figure 3-13. MIARS Program MDP Budget Form

the change would exceed authorized funding limitations. Authorized changes in priorities should be recorded by change action to the basic requirements list, the central NAVAIRTECHSERVFAC Code 11 financial record, and the fiscal year spending plan. In those instances where NAVAIRTECHSERVFAC Code 22-02A changes requirements or priorities NAVAIRTECHSERVFAC shall coordinate with the TMCFA's or contractors involved.

3-77. TECHNICAL MANUAL TRANSITIONING ACTIONS.

3-78. As weapons systems associated hardware, and technical documentation mature, weapons system management/engineering/and logistics responsibilities are transitioned from the Program Management Office at NAVAIRSYSCOM to selected field activities known as Weapon Systems Support Departments (WSSD's). The WSSD's are organizational entities of, and located within the NAVAIREWORKFAC's. Tasking of the WSSD's is accomplished only through the decision package process whereby decision packages are submitted to and either approved or rejected by the WSSD Board. Based on WSSD Board approval of the decision package and NAVAIR notification NAVAIRTECHSERVFAC and TMCFA should coordinate the transition meeting with the original manufacturer. All coordination should be accomplished through the cognizant Contract Administration Office (CAO), i.e., Naval Plant Representative Office (NAVPRO), or Defense Contract Administration Service Office (DCASO).

3-79. The primary objective of transition meeting is to review the status of the contractor's TM program and establish a plan of action and milestones for transition and shipment to the TMCFA.

3-80. To properly complete this task it will be necessary to develop an accurate list of the manuals under the contractor's cognizance. The list should identify manuals by NAVAIR number and title.

It should identify any work that may be in process, the type of effort (i.e., RAC, ECP action, change, etc.) and the schedule for task completion.

3-81. The conference will be conducted at the contractor's facility and chaired by the NAVAIRTECHSERVFAC representative. The following activities should be in attendance.

- a. NAVAIRSYSCOM (as required).
- b. TMCFA as the WSSD technical manual department management representative.
- c. Appropriate CAO/NAVPRO/DCASO.
- d. NAVAIRSYSCOM/WSM.
- e. Contractor technical manual personnel.

3-82. One of the first requirements of the conference is to develop a mutually agreed to definition of the TM MDP. In addition to copies of original drawings, the MDP will contain a set of reproducible copy, negatives, and update source information consisting of a writer's master manual and a file of change requirements, i.e., TPDR's, MCR's, field representatives publication reports, technical directives, and other applicable data affecting or impacting manual changes. A contractor/government mutually concurred-in definition of the MDP as described in paragraph 3-10 shall be entered into the conference minutes.

3-83. The meeting will result in the preparation of a TM transition shipping schedule in accordance with priorities established by the Navy team. Technical manuals identified as requiring immediate update should be assigned the highest transition priority. Technical manual MDP packaging and shipping requirements should be progressively programmed to avoid workload hardships on either the contractor or TMCFA personnel.

Those manuals identified as being in-work should be scheduled for shipment after task completion and delivery acceptance.

3-84. The minutes of the conference will be utilized by the cognizant NAV-AIRTECHSERVFAC Code 20 project coordinator or data manager for release of official transitioning instructions to the contractor.

3-85. The contractor may indicate a charge requirement for packaging and shipping. However, the cost incurred for storage, maintenance, packaging, and shipping of the artwork, reproducible copy, tapes, negatives and microfilm are a normal part of the contractor's overhead otherwise provided for from the outset of the contract and should not be the subject of a proposal from the contractor for additional funding.

3-86. The TMCFA shall provide followup compliance with the established transition schedule and furnish assistance as required in action associated with the completion of the transition.

3-87. MANAGEMENT OF TECHNICAL MANUAL QUALITY.

3-88. Maintenance capability is directly related to the quality and usability of the technical manual provided for performance of troubleshooting and repair tasks. To guarantee the quality of data prepared for technical manual incorporation, TMCFA's shall establish a quality assurance program in accordance with the requirements described in paragraph 5-6. As determined by the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager, technical manuals shall be subject to fleet review, in-process review, validation, and verification requirements contained in Section V.

3-89. PROCEDURES FOR DELETION OF TECHNICAL DATA SUPPORT FOR AN AIRCRAFT SCHEDULED FOR RETIREMENT FROM THE NAVY INVENTORY.

3-90. The cognizant TMCFA shall confirm dates the weapon system is scheduled to be retired. Coordination with TMMA/APML/PMA will be accomplished to establish dates and other requirements; for example, Foreign Military Sales (FMS) non-government application, etc., and to ensure the U.S. Naval Aircraft Program Inventory has been changed to indicate removal of the aircraft from the inventory of naval aircraft. All manuals which are unique to aircraft must be identified. This will be accomplished by utilizing the IOL and NAVAIR 00-500B to ensure the aircraft manual list is complete. Coordination with TMMA shall be accomplished to ensure archival files are complete with all manuals identified as unique to the aircraft.

3-91. After completing the paragraph 3-90 requirement, the cognizant TMCFA shall coordinate with the TMMA to determine the quantity of each manual, either paper or microfilm, to be retained in stock at the NAVPUBFORMCEN. This will identify if there are FMS requirements; for example, number of aircraft and demand for projected years. The TMCFA shall annotate appropriate records to indicate that these manuals should not be reprinted after the period of FMS support is completed unless a definite requirement is identified either by NAVAIR or the TMMA. After the period of FMS support is satisfied the TMCFA shall retire these records from the system. Negatives, microfilm as applicable, reproducible copy and artwork shall be removed from the active files and retired in accordance with established local procedures.

NOTE

When applicable, reclamation action on material containing precious material is mandatory.

3-92. After the paragraph 3-90 and 3-91 actions have been completed, all requests for copies of manuals should be referred to the TMMA utilizing archival film. Technical directive records should be handled in the same manner as technical manuals. Drawings in support of the aircraft should be removed from files. Refer requests to NAVAIRTECHSERVFAC Code 31 who will maintain active files on all drawings.

3-93. These directions also apply to regional contractors when maintaining files.

3-94. Material with a classification of Confidential or higher should be disposed of in accordance with the provisions of OPNAVINST 5510.1F, Manual for Handling Classified Material.

3-95. ANNUAL MANAGEMENT MEETING.

3-96. An annual meeting will be conducted for the purpose of discussion and resolution of program problem areas. The objective of this meeting is to implement standard improvement procedures and techniques that will enhance program management, guarantee state-of-the-art advancement, and provide for rational and intelligent use of program funding.

3-97. The meeting shall be conducted at a selected location during the fourth quarter of each fiscal year. All concerned activities should submit proposed agenda items to the NAVAIR Technical Documentation Officer prior to June of each year. NAVAIRTECHSERVFAC will issue official invitations, announce the host site and the consolidated agenda.

3-98. The host activity will provide meeting spaces, visual aids, and a conference recorder knowledgeable with the program. A draft of conference actions is to be provided to NAVAIRTECHSERVFAC within four weeks of conference conclusions for review, analysis, and official NAVAIRTECHSERVFAC release.

3-99. Conference discussion and actions should be limited to program rather than individual problems. Solutions should be rendered in the best interest of the program through the development and implementation of standard operational procedures. Attendees should be prepared to:

a. Report on their cognizant program particularly as it applies to funding expenditures.

b. Discuss follow-on fiscal year workload and funding requirements.

SECTION IV

TECHNICAL MANUAL UPDATE PROCEDURES

4-1. NAVY MANAGED UPDATE PROCEDURES.

4-2. In accordance with established policy and previously stated management responsibilities, there are four ways for the TMCFA to perform assigned technical manual management and continuing update functions.

a. Under the concept discussed herein, the most difficult update procedure is the monitoring of technical manual writing and production by the original equipment manufacturer. However, this is essential during the time when the MDP is under the contract cognizance of the prime contractor or when modification to production equipment circumstances warrant.

b. When the MDP has been transitioned for maintenance and capability has been established, the TMCFA can then program and milestone the complete MDP maintenance and update effort independently.

c. Since TMCFA overhead rates and resource requirements make it impractical to develop and maintain in-house capability, it is more practical and less costly to the Navy to contract low-overhead documentation companies for technical manual production support. Furthermore, the Federal Acquisition Regulation (FAR) specifically states that tasks shall not be accomplished internally if these efforts can be performed commercially at reduced cost to government.

d. Any combination of the above as agreed to by NAVAIR, NAVAIRTECHSERVFAC, and the TMCFA.

4-3. UPDATE PROCEDURES WHEN DEALING WITH THE PRIME CONTRACTOR.

4-4. The main objective of the out-of-production technical manual program is to reduce cost and to ensure positive, timely, and effective actions for the expended funding. Therefore, the desired goal is for the TMCFA to perform all engineering requirements and to assume management and technical control of the assigned technical manual MDP's. However until such time as this internal capability can be established, a possible cost savings may be achieved through direct management of prime contractor efforts.

4-5. BASIC ORDERING AGREEMENT (BOA) WITH ORIGINAL EQUIPMENT CONTRACTORS.

4-6. NAVAIR BOA's are negotiated with original equipment manufacturers for the primary purpose of supporting procurement of engineering change requirements against delivered weapon systems or equipment. BOA's contain a provision to list a line item for procurement of firm changes or revisions to technical manuals for non ECP related modifications. With the development of an out-of-production TMCFA Technical Manual Management Program, a capability is established to implement tighter technical control of BOA produced manuals and to reduce contractor effort wherever possible to a technical writing and production function. It is expected that an original equipment manufacturer's BOA will be used only during the period the TMCFA is developing internal MDP maintenance capability. During this transition period, the TMCFA will be required to coordinate with the cognizant NAVAIR-TECHSERVFAC Code 20 project coordinator or data manager and the prime contractor for technical manual update tasks.

4-7. Availability of out-of-production funding is limited. Consequently, the amount of out-of-production publication maintenance work that can be performed by the use of original equipment manufacturers is restricted. Because of this restriction, an analysis of the proposed or required task must be conducted in order to establish priorities and a plan of action.

4-8. The TMCFA, by way of correspondence or through meetings, should coordinate with the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager and the contractor via the cognizant Administrative Contract Officer (ACO) to determine manual change requirements and priorities. Preferably, the meeting is the most desirable procedure because it permits all parties to review and discuss proposed change actions and establish a mutual position prior to preparation of the work statement and proposal. The contractor should then be directed to prepare a work statement and proposal based on the mutually concurred-in task definition. The document should then be forwarded by the contractor via the ACO to the TMCFA and the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager for review and comment.

4-9. Task release shall be made by NAVAIRTECHSERVFAC in accordance with the BOA procedures. The NAVAIRTECHSERVFAC TMCR should identify the TMCFA as the cognizant authority for technical decisions. Final acceptance of the technical manual will remain the responsibility of NAVAIRTECHSERVFAC and the ACO.

4-10. MDP CONTROL AND OUT-OF-PRODUCTION TECHNICAL MANUAL PROGRAM PLAN INTENT.

4-11. The ideal situation for ensuring effective management and update of assigned technical manuals is to have direct technical management control of the MDP. It is imperative that the NAVAIRTECHSERVFAC and TMCFA's coordinate

transition of MDP's as soon as transition is authorized, and TMCFA's establish an MDP maintenance capability. '

4-12. Management capability has been developed which allows for in-house effort when required, and low cost production support through orders placed under the low overhead competitively awarded regional documentation contract(s). The major responsibility retained by the government under this concept is to properly monitor performance so that acceptable products are delivered to the Navy.

4-13. CONTRACTOR ASSISTANCE THROUGH REGIONAL DOCUMENTATION CONTRACTS.

4-14. Only NAVAIR approved contracts will be used to secure assistance.

4-15. Technical documentation support services contract(s), resulting from competition, are awarded approximately every three years for the use of TMCFA's in development of the technical manuals, changes/revisions under their cognizance. The contract(s) encompass four geographic regions to service the TMCFA's located within these regions: Mid-Atlantic, Eastern, Gulf, and Western. Cost Plus Fixed Fee (CPFF) indefinite delivery contract(s) have been determined by the Naval Regional Contracting Center (NRCC) Procuring Contracting Officer (PCO) to be the best type of contract for obtaining quality of products/performance. The pertinent contract administration plan for the regional contract and NAVSUPINST 4330.6 describe in detail the responsibilities of the Contracting Officer's Technical Representatives (COTR's) and Ordering Officers. The cognizant COTR at the TMCFA shall submit requests for orders under these contract(s) to the NAVAIRTECHSERVFAC Ordering Officer for preparation of the delivery orders (DD Form 1155).

4-16. The authorized Principal COTR's as designated by the TMCFA's are cited in the contract(s) and their duties are described in figure 4-1. By completing the "Designation of Associate COTR" document as shown in figure 4-2 when submitting requests for orders, TMCFA's may designate associate COTR's for particular tasks. Only those individuals who have received COTR training and possess the technical skills to effectively monitor technical manual preparation/update services can be appointed COTR's. If personnel designated to be COTR's have not had formal training in COTR duties, they shall request training through the cognizant NRCC located in their geographical area. When principal COTR changes become necessary, names of new nominees shall be forwarded to the NAVAIRTECHSERVFAC Ordering Officer for initiation of request for contract amendment.

4-17. PREPARATION OF TECHNICAL MANUAL CONTRACT REQUIREMENT WORK STATEMENT (TMCROWS) AND GOVERNMENT COST ESTIMATE.

4-18. A definitive TMCROWS shall be prepared by the TMCFA. It describes the services to be performed (defines the "what, how, when and where" contractual specifics) and also provides a comprehensive listing of the source data to be furnished to the contractor. Figure 4-3 illustrates the required format for a TMCROWS which must be completed in accordance with Appendix B.

4-19. The cognizant COTR shall also prepare an independent government cost estimate of the task. The COTR's personal knowledge of the information contained in the source data package should be used as the basis for determining complexity of the task. This estimate shall include a breakdown of proposed labor categories, number of hours for each category, material and travel required, number of pages (new, revised, or changed), and deliverable products to be furnished. Refer to figure 4-4 for

the format required to prepare the government estimate of cost.

4-20. The TMCROWS together with the COTR's independent government cost estimate shall be forwarded to the NAVAIRTECHSERVFAC Ordering Officer. Refer to figure 4-5 for the required forwarding correspondence format.

4-21. If the government's estimate of the services to be furnished is \$25,000.00 or less, the NAVAIRTECHSERVFAC Ordering Officer may issue the order utilizing the government's estimated manhours, labor mix, etc. The order will state that the estimate is a "not-to-exceed" (NTE) amount which cannot be exceeded by the contractor unless the total estimated amount of the order is increased in writing by the NAVAIRTECHSERVFAC Ordering Officer pursuant to the applicable payments clause of the contract.

4-22. If the government's independent estimate of cost exceeds \$25,000.00 or a contractor cost estimate is otherwise determined to be necessary due to unusual requirements or complexity of task, the TMCROWS together with a full description of the task and the required source data package shall be provided to the contractor for preparation of cost estimate.

4-23. Upon receipt of the government's request for a cost estimate and the other information as cited above, the contractor shall prepare an estimate of costs. This estimate shall include the following; labor categories to be utilized, estimated hours, material and other related performance costs such as travel chargeable to the order in accordance with the contract pricing provisions. The contractor shall forward this cost estimate to the NAVAIRTECHSERVFAC Ordering Officer. In addition,

1. Assure that specific technical instructions necessary to perform the work specified in the contract and/or individual delivery orders are furnished to the contractor. The COTR shall be responsible for all Government technical interface concerning the contract.
2. Do not issue any instructions which would constitute a contractual change. Do not tell the contractor how to perform, but what is required of a technical nature. Do not provide the contractor with guidance, direction, or supervision. You are then transforming the contract into one for personal services. This must be scrupulously avoided. You may provide technical clarification.
3. Assure that the prepared Technical Manual Contract Requirement Work Statement (TMCROWS) under individual delivery orders are specific, completely detailed and within the scope of the basic contract. Assure that milestones stated in the delivery orders are consistent with the terms of the contract. If doubt exists as to whether the task falls within the contract scope of work, contact NAVAIRTECHSERVFAC (114), who will perform all coordinating functions with the PCO. (For purposes of the COTR function, the PCO will be the individual named in block 20 of STD Form 26 of the basic contract.)
4. Assure that Government estimates for contractor services are prepared. Review and evaluate the contractor's estimates of labor hours, material and travel to perform work under delivery orders, change orders or modifications. Furnish documentation including independent government estimates, and TMCROWS to NAVAIRTECHSERVFAC (114).
5. Review contractor invoices/vouchers and Certificates of Performance to determine that the labor categories, extent of effort, travel and materials are consistent with the delivery order and reflect the work accomplished. Document technical acceptance of significant variances between estimated hours per labor categories and actual hours per labor categories. Sign the certification portion of the Certificate of Performance (ATTACHMENT A) and forward, along with the contractor invoices/vouchers, to the cognizant Defense Contract Audit Agency (DCAA), NAVAIRTECHSERVFAC (114) and the PCO. In the case of partial concurrence by you of invoices/vouchers, you shall advise DCAA in your transmittal letter and applicable Certificate of Performance of that portion with which you take exception. A copy of the letter, invoice/voucher and Certificate of Performance detailing the exceptions shall be sent to the contractor, NAVAIRTECHSERVFAC (114) and PCO. The contractor will be required to resolve the billing discrepancy with the COTR and to submit to the COTR a separate invoice/voucher with an appropriate Certificate of Performance covering the disputed portion only. If the COTR concurs with this separate invoice/voucher, the COTR will sign the Certificate of Performance and forward by letter to the DCAA with a copy to the Contracting Officer and NAVAIRTECHSERVFAC (114). Do not approve invoices/vouchers and Certificate of Performance which reflect commencement of work prior to award of the delivery order or performance of work after the completion date of the delivery order, whichever is earlier. Document disallowance and notify the contractor by letter with a copy to the Contracting Officer, NAVAIRTECHSERVFAC (114) and to the cognizant DCAA. Maintain copies of all transactions for your files.

Figure 4-1. Listing of Principal COTR's Duties
(Sheet 1 of 3)

6. If the Certificate of Performance is unsatisfactory or insufficient to determine that proper charging of time is taking place, request via the PCO/NAVAIRTECHSERVFAC the assistance of DCAA, to review the contractor's timecards/sheets or labor distribution schedules. This includes any verification required for completion of question 4 of Attachment B.
7. Alert the PCO via NAVAIRTECHSERVFAC (114) of any unusual performance problems and technically monitor the agreed upon recovery plan. If situations arise that create a question, obtain advice from the PCO via NAVAIRTECHSERVFAC (114).
8. Upon contractor execution of the final acceptance document, DD Form 250, certify receipt and acceptance of deliverables by signing Block 22 and ensure that the principal or associate COTR (if assigned) certifies satisfactory completion and acceptance by signing Block 21 B. Forward to the cognizant paying office for final payment, maintain a copy for your files and forward a copy to the cognizant DCASMA and NAVAIRTECHSERVFAC (114).
9. Assure that appropriate action is taken on technical correspondence pertaining to the contract. This includes the timely submission to the PCO or ACO, via NAVAIRTECHSERVFAC (114) of any requests for change (including delivery schedules), deviation or waiver and supporting documentation for such request.
10. Maintain files on each Delivery Order. This includes all modifications, government cost estimates, contractor invoices/vouchers, Certificates of Performance, DD 250 Forms. In addition, maintain files on all correspondence relating to contractor performance, whether satisfactory or unsatisfactory. Assure that a trip report is prepared and retained on file if government personnel travel in connection with the contract/order. Include in your files a copy of the basic contract and the names of the key personnel by labor category.
11. When contract performance is taking place on-site, (such as for verification support efforts) monitor whenever feasible, the actual contractor employees performing under the contract with regard to kind, number and hours worked. Keep a record of your observations and compare your record with charges invoiced by the contractor for that task and timeframe. Use this information as a tool in evaluating contractor Certificates of Performance.
12. When government property is to be furnished to the contractor, take the necessary steps to ensure that it is furnished in a timely fashion and in proper condition for use. Maintain adequate records to ensure that property furnished is returned, stored by the contractor under the Accountability/Maintainability portion of the contract, or that furnished material has been consumed in the performance of work.
13. Submit to the PCO with a copy to NAVAIRTECHSERVFAC (114), a report (ATTACHMENT B), detailing required data by Delivery Order and covering all open and completed orders. This report shall be made annually and a final report shall be made within 60 days after completion of final delivery under all orders.

Figure 4-1. Listing of Principal COTR's Duties
(Sheet 2 of 3)

14. Notwithstanding the duties listed above, the COTR does not possess the authority of a Contracting Officer and, therefore, shall not alter the terms and conditions of the basic contract in any way.

15. Above all, the COTR's relationship with the contractor must be beyond reproach. Accordingly, strict compliance with DOD Directive 5500 and SECNAVINST 5370.2G regarding standards of conduct and conflict of interest is required. As the COTR, you are requested to read these instructions immediately. Your command should have copies of them; if not, the Contracting Officer will provide copies for your use.

COTR ACKNOWLEDGEMENT

I have reviewed and understand my assigned duties and responsibilities in connection with Requisition Number N62767-83-RQ-08138.

	CODE	
PRINCIPAL COTR -		DATE
TITLE/POSITION	PHONE NO.	

Figure 4-1. Listing of Principal COTR's Duties
(Sheet 3 of 3)

Designation of Associate COTR and list of duties to be performed by Associate COTR's under Plan No. N00140-83-RQ-0364

1. _____ is hereby designated as Associate COTR for Delivery Order _____ under Contract _____. The associate COTR shall be responsible to the principal COTR, _____ for the following duties:

a. Assure that a government estimate for the task is prepared and evaluate the contractor's estimate of labor hours, material and travel to perform the work under the delivery order and all modifications thereto.

b. Review contractor invoices/vouchers and Certificates of Performance to determine that the labor categories, extent of effort, travel and materials are consistent with the delivery order and reflect the work accomplished. Sign the certification portion of the Certificate of Performance and forward to the principal COTR. Advise the principal COTR in the case of only partial concurrence and assist him in the appropriate action to be taken.

c. Alert the principal COTR of any unusual performance problems and technically monitor the agreed upon recovery plan.

d. Any requests for change (including delivery schedule) deviation or waiver shall be forwarded to NAVAIRTECHSERVFAC (114) via the Principal COTR.

e. Forward copies of all correspondence with the contractor to the principal COTR and NAVAIRTECHSERVFAC (114) for their central file.

f. Upon contractor execution of the final acceptance document, DD Form 250, certify satisfactory completion and acceptance by signing Block 21B and forward to the principal COTR.

ASSOCIATE COTR ACKNOWLEDGEMENT

I have reviewed and understand my above assigned duties and responsibilities.

ASSOCIATE COTR-

CODE

DATE

PHONE NUMBER

Figure 4-2. Typical List of Associate COTR Duties

Technical Manual Contract Requirement Work Statement
(*)

JANAinc. Contract N00140-85-D-E260

Order No.: _____

Date: _____

TASK DESCRIPTION: (Brief description)

Preparation of change pages to the following S-3A technical manuals to incorporate outstanding source data itemized in Paragraph E:

NAVAIR 03-5-XXX, Intermediate Maintenance Manual w/IPB
 NAVAIR 16-45-XXX, Intermediate Maintenance Manual w/IPB
 NAVAIR 05-1451-XXX, Depot Maintenance Manual w/IPB

A. TO BE FURNISHED: (Cite deliverable products) - Example:

1. Two (2) facsimile copies of reproducible camera ready copy of manual change pages.
2. One (1) set of reproducible camera ready copy of manual change pages.
3. One (1) set of photolithographic negatives of manual change pages.
4. Printer sequence sheet.
5. Validation certificate.
6. Original and two (2) copies of Record of Source Data Incorporation Form.
7. Original and three (3) copies of DD Form 250.

B. DESCRIPTION AND SPECIFICATIONS: (Cite specifications as applicable. following are examples only)

1. Task will be performed for NAVAIWORKFAC, Alameda, Code 305.
2. The reproducible camera ready copy (Item A.2) furnished hereunder shall be prepared in accordance with format Specification MIL-M-38784A with Amendment 6 and the following deviations: Deviation of 5 Jan 1980 (Revised 24 May 1982); 82-3 of 26 Apr 1982; 82-4 of 1 Jun 1982; 84-2 of 28 Sep 1984; 84-3 of 26 Oct 1984; and 84-4 of 14 Nov 1984. The same technical content specifications as manuals being changed apply to this effort.
3. All new illustrations will be prepared in accordance with MIL-M-81927A(AS); affected halftone art will be converted to line art.
4. Photolithographic negatives (Item A.3) shall be prepared in accordance with MIL-P-38790A and deviation 82-1 of 24 May 1982.

*TMCFAs task identification number

Figure 4-3. Typical Technical Manual Contract Requirement
Work Statement (Sheet 1 of 4)

Technical Manual Contract Requirement Work Statement
(*)

B. DESCRIPTION AND SPECIFICATIONS: (Continued)

5. Validation, validation certificate and quality assurance shall be completed/performed in accordance with Specification MIL-M-85337 and the contractor's approved Quality Assurance Program Plan.
6. All other specifications not called out above will be in accordance with the specifications of the basic contract.
7. Questions which arise in relation to technical manual content shall be presented to the cognizant COTR.
8. Requests for clarification, deviation, and/or waiver of specification requirements will be referred to NAVAIRTECHSERVFAC (Code 20) for resolution.
9. Citation of JCP Authority: Production of composition and/or lithographic negatives procured under this contract is granted by JCP Authorization 23383.
10. The record of source data incorporation will cite the items of source data included in the manual(s), with the paragraph number and page number location of incorporation, in accordance with the requirements of the contract and Attachment I thereto.

C. DELIVERY AND PACKING: (Cite delivery schedule(s) on an "after date of order" basis; include destinations and all government review time frames.)

1. Delivery of items to be furnished shall be as follows:

<u>ITEM</u>	<u>SCHEDULE/DESTINATION</u>
A.1	90 days after date of order to NAVAIWORKFAC, Alameda (Code 305). Code 305 shall return review copy to contractor within 30 days after receipt.
A.2, A.3, A.4 A.5 and A.7	30 days after receipt of approved copy of Item A.1; these items (with the exception of A.2) shall be forwarded to NAVAIWORKFAC, Alameda (Code 305).
A.6	Concurrent with delivery of the printing media (A.3), as follows: Original to NAVAIRTECHSERVFAC, Code 20 One (1) copy to NAVAIRTECHSERVFAC, Code 40 One (1) copy to NAVAIWORKFAC, Alameda (Code 305)

*TMCFA's task identification number

Figure 4-3. Typical Technical Manual Contract Requirement
Work Statement (Sheet 2 of 4)

Technical Manual Contract Requirement Work Statement
(*)

C. DELIVERY AND PACKING: (Continued)

2. Packing: Item A.3 shall be packed in accordance with Specification MIL-P-38790A; all other items (not being retained by the contractor) shall be packed in accordance with best commercial practices.
3. Completion date of all items - 150 days after date of order (December 1985).
4. Item A.2, and Item A.3 (upon return after completion of printing and distribution) shall be retained by the contractor in accordance with the Accountability/Maintainability/Storage clause of the contract, until completion of the contract or until such time as delivery is requested by the government.

D. INSPECTION AND ACCEPTANCE:

Inspection and acceptance of deliverable items will be performed by NAVAIROWORK-FAC, Alameda (Code 305). Receipt and acceptance will be documented by completion of DD Form 250.

E. SOURCE DATE: (List all source data furnished to the contractor.)

The following source data has been furnished to the contractor:

1. One (1) each copy of NAVAIR 03-5-XXX; NAVAIR 16-45-XXX; and NAVAIR 05-1451-XXX.
2. One (1) each set of negatives of above manuals.
3. One (1) each set of reproducible copy of above manuals.
4. One (1) each of marked up copy incorporating Support Equipment Change 3150.
5. One (1) each copy of the following TPDR's:
 - (1) NAVAIRTECHSERVFAC Sequence No. 43555
 - (2) NAVAIRTECHSERVFAC Sequence No. 41634

F. GENERAL PROVISIONS:

1. This task is unclassified.
2. Contractor travel is not required. (If travel is required - cite destination, duration and number of travelers.)

*TMCFA's task identification number

Figure 4-3. Typical Technical Manual Contract Requirement
Work Statement (Sheet 3 of 4)

Technical Manual Contract Requirement Work Statement
(*)

F. GENERAL PROVISIONS: (Continued)

3. Contractor shall return all source data packages that were provided for the changed manual(s) with the exception of the reproducible copy/negatives which shall be retained under the Accountability/Maintainability/Storage clause of the contract.

G. COGNIZANT FIELD ACTIVITY:

NAVAIREWORKFAC, Alameda has been assigned engineering cognizance of the technical manual(s) covered under this effort. (NAVAIRINST 5400.15 applies).

*TMCFA's task identification number

Figure 4-3. Typical Technical Manual Contract Requirement
Work Statement (Sheet 4 of 4)

GOVERNMENT ESTIMATE OF COST

COST EST. NO.: _____

COGNIZANT FIELD ACTIVITY: _____

CONTRACT: N00140-85-D-E260 LOT: _____ REGION _____

Brief Description of Task: _____

(A) DIRECT LABOR:

<u>LABOR CATEGORY</u>	<u>ESTIMATED DIRECT MANHOURS</u>	<u>HOURLY RATE</u>	<u>TOTAL</u>
Documentation Project Manager	_____	_____	\$ _____
Technical Publications Writer (Senior)	_____	_____	_____
Technical Publications Writer (Junior)	_____	_____	_____
Technical Publications Researcher	_____	_____	_____
Illustrator (Senior)	_____	_____	_____
Illustrator (Junior)	_____	_____	_____
Reproduction Typist	_____	_____	_____
Layout Technician	_____	_____	_____
TOTAL ESTIMATED DIRECT MANHOURS:	_____		\$ _____
Estimated Labor Overhead (NTE 45.0%)			\$ _____

TOTAL ESTIMATED DIRECT LABOR (A) \$ _____

(B) MATERIALS: (Deliverable product materials, such as: photo-lithographic negatives, photocopies, reproducible copies, facsimile copies - from Page 2)

	TOTAL	\$ _____
Vendor Source Data (from Page 2)		\$ _____
Special Materials (from Page 2)		\$ _____

TOTAL ESTIMATED MATERIALS (B) \$ _____

(C) TRAVEL

TOTAL (C) (from Page 2) \$ _____

SUBTOTAL (A), (B) & (C) \$ _____
 Estimated G&A _____ % (NTE 10.0%) \$ _____

TOTAL ESTIMATED COST \$ _____

Fixed Fee (_____ Labor Hrs. X \$ _____ per Hr.) \$ _____

TOTAL ESTIMATED COST PLUS FIXED FEE \$ _____

CODE: _____ DATE: _____

(Signature Cognizant COTR)

Figure 4-4. Sample of Government Estimate of Cost Form (Sheet 1 of 2)

COGNIZANT FIELD ACTIVITY: _____

Cost Estimate No.: _____ (Continued)

(B) MATERIALS:	<u>Quantity</u>	<u>Cost</u>	<u>Total</u>
Reproducible Copy	<u>Pgs</u>	_____	\$ _____
Photolithographic negatives	<u>Pgs</u>	_____	_____
Photocopies	<u>Pgs</u>	_____	_____
Facsimile Copies	<u>Pgs</u>	_____	_____
Vendor Source Data	_____	_____	_____
Special Materials:	_____	_____	_____
Flexible Discs	_____	_____	_____
Other (Cite Specifics):	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(B) Total Estimated Materials \$ _____

Estimated No. of Pages: New _____ Revised _____ Changed _____ Total _____

(C) TRAVEL:

DESTINATION: _____

NO. of TRIPS: _____ DURATION: _____

NO. of PERSONS: _____

Transportation: _____
(AIR/POV etc.)

Estimated Travel Cost: \$ _____

Estimated Per Diem, Car Rental, etc. \$ _____

(C) Total Estimated Travel \$ _____

(If additional space is needed for any of above items, use separate sheet.)

Figure 4-4. Sample of Government Estimate of Cost Form (Sheet 2 of 2)



SAMPLE - SUGGESTED CFA FORWARDING CORRESPONDENCE

DEPARTMENT OF THE NAVY

From: Cognizant Field Activity
 To: Commanding Officer, Naval Air Technical Services Facility (Code 114)

Subj: REQUEST FOR PLACEMENT OF ORDER FOR TECHNICAL MANUALS

Ref: (a) Contract Administration Plan No. N00140-83-RQ-0364
 (b) JANAINC. Contract N00140-85-D-E260

Encl: (1) Technical Manual Contract Requirement Work Statement (No. ----)
 (4 copies)
 (2) Independent Government Cost Estimate

1. In accordance with reference (a), enclosure (1), TMCR Work Statement for preparation of
 (...brief description of technical manual effort...),
 is forwarded for order placement under reference (b) contract. Enclosure (2) provides this activity's independent government estimate of costs. Cognizant Contracting Officer's Technical Representative for this effort is (cite name of Principal or Associate COTR) .

2. *(If over \$25,000.00). This TMCR Work Statement, together with a full description of the task and pertinent source data required to perform the task, have been furnished to the contractor for use in preparation of his cost estimate and forwarding of same directly to NAVAIRTECHSERVFAC (Code 114).

(If under \$25,000.00). (State whether source data has been furnished to contractor or anticipated date it will be furnished.)

3. (Any other pertinent details).

Copy to:
 JANAINC. w/o enclosures

*(or, if an under \$25,000.00 task is of an unusual nature or unique complexity, and a contractor's cost estimate is determined by the CFA to be necessary).

Figure 4-5. Typical TMCRWS and Cost Estimate Forwarding Correspondence Format

the contractor shall forward the estimated labor hours, the material and travel portion of the cost estimate under separate cover to the cognizant COTR.

4-24. NAVAIRTECHSERVFAC ORDERING OFFICER.

4-25. The NAVAIRTECHSERVFAC Ordering Officer will review the TMCRWs, the COTR's independent cost estimate, and when applicable the contractor's cost estimate. This will ensure that cost estimates are consistent with the basic contract. That they reflect allowable overhead, General and Administrative (G&A), and fixed fee rates, and that estimated manhour, labor category, material, and travel costs are in line with the task(s) to be performed.

4-26. Complete understanding of the TMCRWs task by all parties concerned is essential in order to arrive at a realistic NTE cost of the order. Therefore, the NAVAIRTECHSERVFAC Ordering Officer will rely upon COTR's input into doubtful areas and/or to clarify discrepancies in either the TMCRWs or cost estimate(s) or both in addition to discussing the requirement with the COTR to ensure that the proposed estimate is realistic in relation to the work statement. The NAVAIRTECHSERVFAC Ordering Officer will also obtain contractor rationale when necessary and ensure that the contractor's understanding of the task is the same as the government's. All information will then be analyzed in order to arrive at a realistic negotiation of the NTE cost.

4-27. The cost proposal submitted by the COTR and the contractor should be the best, most reasonable, and realistic estimate of quantity and type of labor categories, quantity of standard item deliverable materials such as reproducible copy, negatives, photocopies, facsimile copies, etc., and vendor source data, special material, and trav-

el costs. When negotiated, the summary cost of all these items in addition to allowable overhead, G&A, and fixed fee rates make up the bottom line. This bottom line is the NTE ceiling price of the "issued order" that shall not be exceeded unless authorized in writing by an amended order as issued by the NAVAIRTECHSERVFAC Ordering Officer.

4-28. Circumstances may occur whereby funds are not available to authorize an order amendment. As a result, an incomplete task would be held in abeyance pending allocation of new funds or the order may have to be amended to call for incomplete delivery. Therefore, it is important that cost estimate(s) be prepared as accurately as possible and negotiations conducted to achieve realistic NTE's. This will preclude the contractor from exceeding the cost ceiling of the task.

4-29. EVALUATION OF REGIONAL CONTRACTOR PERFORMANCE.

4-30. TMCFA's shall monitor the contractor's performance. Conditions of non-compliance or problem areas from previous orders should be reviewed in detail with the contractor prior to release of additional order requests. At the time of detection, a statement of condition of non-compliance should be provided in writing to the contractor with a copy to NAVAIRTECHSERVFAC Code 114 and the contracting officer.

4-31. The Report on Contractor Performance shall be submitted annually to the Procuring Contracting Officer (PCO) with a copy to NAVAIRTECHSERVFAC Code 114. The report shall provide data on open delivery orders as well as completed orders and address all the elements shown in figure 4-6.

REPORT ON CONTRACTOR PERFORMANCE UNDER

CONTRACT _____

CONTRACTOR _____

REPORT PERIOD _____ to _____

Questions 1 through 7

1. Were the total dollars expended consistent with efficient and cost effective performance?
2. Were the number of hours expended and the mix of labor categories used consistent with efficient and cost effective performance?
3. Was the task completed in a timely manner?

Delivery Order Number	Question 1	Question 2	Question 3
	YES NO	YES NO	YES NO

4. Complete the following concerning usage of key employees identified in the technical proposal or subsequently approved as substitutes:

<u>Labor Category (i)</u>	<u>Key Personnel Hours (ii)</u>	<u>Cummulative Hours (i)</u>
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COTR SUMMARY (Narrative Statements - consider data provided above)

5. Acceptability of Performance
6. Acceptability of Deliverables
7. Use of Deliverables

COTR Signature	Date
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- (i) Source - Final Invoice/Voucher (SF 1035) for each delivery order
- (ii) Source - DCAA per COTR Duty number 6.

Figure 4-6. Sample of Report on Contractor Performance

4-32. CRITERIA FOR DETERMINING REQUIREMENTS.

4-33. GENERAL CHANGE PROCEDURES. Due to funding and other resource considerations a logical and practical approach must be taken in task selection, methods, and procedures for accomplishing the required result. Adequate and effective preparation or review or work statements should ensure delivery of the most usable product for minimum cost to the Navy. The following areas can impact technical manual cost and therefore should be considered in the development of any effort.

a. It is economically impractical to update technical manuals for the sole purpose of correcting typographical errors, spelling, and other clerical-type mistakes unless these errors directly affect technical accuracy. Typing errors will be corrected when the page is changed for technical reasons. Similarly, update shall not be accomplished for the sole purpose of format compliance.

b. The primary reasons for updating a technical manual in order of priority are as follows:

- (1) Incorporation of outstanding IRAC's.
- (2) Incorporation of approved ECP's.
- (3) Correct an existing error in technical content and incorporation of all other technically validated source data.
- (4) Microfilm compatibility requirements.

c. A detailed analysis of all change requirements must be conducted. Specific priorities must be assigned to permit easy determination and selection of most urgent technical manual tasks such as TPDR's, MCR's, etc..

d. Normally once a technical manual is opened for update all technical errors and omissions regardless of their nature shall be corrected.

e. Strict attempts to duplicate changes in the same style or format as the original issue are not necessary. Adherence to existing typefaces, type sizes, graphic styles, hot type, and justified right-hand margins can lead to unnecessary increases in change cost. The following conditions apply:

(1) The matching of original composition methods does not apply. All material should be prepared by cold type composition. No attempt should be made to match typeface and size if such matching will result in increased cost. Mixing of type in the same page is authorized provided that legibility is not compromised.

(2) Matching justified right-hand margins is not required. Unjustified change information may appear on the same page with justified margins.

(3) In the event material is deleted, mark the paragraph(s) "Deleted" and leave blank white spaces to avoid correction to more than one page and the renumbering of paragraphs.

(4) Make use of the supplemental "A" and "B" page approach to avoid "squeezing" or the retyping of numerous reproducible pages that may be required to accommodate expanded text or illustrations.

(5) TMCFA's should ensure that all available cost saving devices, procedures or production methods are utilized that do not seriously detract from technical manual usability.

(6) The microfilm manual program and use of MIARS should be considered during change or revision preparation. Provisions of MIL-M-85401 shall

be applied to conventional manuals scheduled for microfilm. An effort should be made to convert from halftone to line art. However, this transition is most economically accomplished when the art or the page is affected by a change action requirement. Diagrams and foldouts cannot be economically redrawn, but when change is required these documents can be effectively reworked to more properly fit the framing requirements of MIARS.

4-34. Periodic Maintenance Requirements Manuals (PMRM's) were developed to support the Planned Maintenance System (PMS). Under the out-of-production program, upkeep of these manuals is a priority TMCFA task based on the assigned aircraft engineering cognizance program.

4-35. Continuous review and updating of PMRM's is of the utmost importance. A majority of the efforts will consist of the issue of RAC's or changes to individual manuals. Normally, implementation, manual development, and update responsibilities have been assigned through special correspondence.

4-36. All out-of-production PMRM update actions, new or old, shall be performed by the assigned TMCFA. The management responsibility for these documents is placed with NAVAIRTECHSERVFAC. Update schedules and milestone actions should be coordinated with all concerned, and sufficient time be allowed to permit participating activities to adequately plan for the required workloads.

4-37. PMRM fleet reviews, in-process reviews, validations, and verifications will be coordinated between NAVAIRTECHSERVFAC Code 40 and the TMCFA. NAVAIRTECHSERVFAC Code 40 is responsible for preparation and issue of the minutes and the record of recommended change actions. The original correspondence recommending corrective action should be processed to the TMCFA with copies to all concerned activities. Any disagreements between the TMCFA and NAVAIRTECHSERVFAC Code 40 should be discussed and

a mutually concurred-in decision rendered.

4-38. In accordance with existing management directives, the TMCFA and NAVAIRTECHSERVFAC should coordinate printing requirements and issue of distribution labels.

4-39. Weapons Loading Manuals/Checklists are developed for support actions related to aircraft weapons/stores handling. Whenever requirements to update these documents are recognized all efforts shall be fully coordinated with the Naval Weapons Evaluation Facility (NAVWPNEVALFAC), Albuquerque, New Mexico.

4-40. RAPID ACTION CHANGE (RAC) PROCEDURES. The RAC program was specifically designed to permit expediting the issue of urgently required information to the fleet. However, the possibility of the inadvertent issue of concurrent changes that could affect the same RAC pages is a major concern. This situation could cause confusion at the user level because of duplication and conflict of information. To prevent such occurrences, technical manual policy allows only one preparing activity at a time to work the technical manual MDP.

4-41. Under the out-of-production program the TMCFA is assigned cognizance of technical manual content. However, if NAVAIRTECHSERVFAC and TMCFA have determined to use the services of the prime contractor under the BOA, and TMCFA has requested the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager to place an active order, the TMCFA then cannot issue a RAC. The TMCFA Data Manager must first submit a recommendation to the contractor via the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager for incorporation. Only when the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager advises the TMCFA that the prime contractor is unable to satisfy the requirements established for issuance and subsequent incorporation into the affected manuals

can the TMCFA prepare and issue an IRAC. TMCFA's must ensure then IRAC's meet the criteria and mandatory turn around time requirements as described in paragraphs 3-6.h, 3-29 through 3-33. When the MDP for affected manuals has not transitioned, the TMCFA must coordinate with the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager to determine current update status. If there is no update schedule or the schedule goes beyond the 60 day requirement, the TMCFA must take action locally to issue a Type II RAC and/or formal change. Preparation of an update utilizing a copy of the affected manual as source data is authorized. Once the update is ready for printing, the TMCFA must notify the NPPSO of a need for priority printing. The NPPSO should complete the printing within seven (7) working days after receipt of the mailing labels. After printing, the TMCFA should ensure that an updated copy and applicable source data is provided to the organization maintaining the MDP. During the period that the manual again becomes inactive the TMCFA can prepare and release RAC's, provided full coordination is conducted with both the contractor and the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager.

4-42. Also, when a TMCFA is preparing a RAC against an out-of-production manual which is still under the preparation cognizance of the prime contractor or when a TMCFA is preparing a RAC against an out-of-production manual that has application to an in-production manual, the change must be coordinated with the contractor to eliminate possible duplication of effort and conflict of information, prior to issuance of the RAC. The TMCFA Data Manager must first submit a recommendation to the contractor via the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager for incorporation. Only when the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager advises the TMCFA that the prime contractor is un-

able to satisfy the requirements established for issuance and subsequent incorporation into the affected manuals can the TMCFA prepare and issue an IRAC. TMCFA's must ensure that IRAC's meet the criteria and mandatory turn around time requirements as described in paragraphs 3-6.h, 3-29 through 3-33. When the MDP for affected manuals has not transitioned, the TMCFA must coordinate with the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager to determine current update status. If there is no update schedule or the schedule goes beyond the 60 day requirement, the TMCFA must take action locally to issue a Type II RAC and/or formal change. Preparation of an update utilizing a copy of the affected manual as source data is authorized. Once the update is ready for printing, the TMCFA must notify the NPPSO of a need for priority printing. The NPPSO should complete the printing within seven (7) working days after receipt of the mailing labels. After printing, the TMCFA should ensure that an updated copy and applicable source data is provided to the organization maintaining the MDP.

4-43. When the TMCFA takes over technical control of the MDP the conditions cited in paragraphs 4-41 and 4-42 are resolved. The TMCFA then becomes the preparing activity and has authority for RAC release after coordination with the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager. Preparation can be accomplished internally or through use of the supporting regional contractor.

4-44. IRAC usage shall be strictly controlled. Use of the IRAC as an expedient means to issue any type technical information tends to degrade the intent of the RAC system. Physical alteration of the technical content of NAVAIR manuals is not permitted. Pen and ink changes to the technical content of NAVAIR manuals are not authorized. TMCFA's shall ensure that IRAC's are in compliance with the criteria and mandatory

turn around time requirements as described in paragraphs 3-6.h, and 3-20 through 3-33. All other data outside of the paragraph 3-29 definition of an IRAC shall become an element of source data to be incorporated during a routine change or revision.

4-45. **ROUTINE CHANGES AND REVISIONS.** Review and analysis of the MDP for a manual or series of manuals will factually determine the requirement for changes or revisions. Collection and tabulation of the source data through use of management records such as described in paragraph 3-19 will ensure that the Data Manager is current with the requirement for each manual under TMCFA cognizance. A priority record, based on the approved budget, should also be maintained accordingly to permit rapid decisions concerning turn-ons as funding is allocated. Rapid obligation of allocated funding through the initiation of tasks indicates that the Data Manager is knowledgeable and is properly managing the program.

4-46. **DETERMINING A CHANGE OR REVISION.** Normally the decision whether to issue a change or revision is a judgment that must be determined by the TMCFA Data Manager. Minor changes affecting a small number of pages are judged to be a change. However, when numerous pages and illustrations are affected, a revision decision should be rendered. A general rule of thumb has been to always issue a revision if in excess of 60 percent of the pages are affected (refer to paragraph 3-52) or if proliferation of previously issued changes degrades usability of the publication. This criteria is not all encompassing because change requirements of a lesser magnitude may result in the Data Manager making a decision for a revision if substantial format changes or excessive use of supplemental pages is involved. Therefore, the Data Manager must review the MDP, analyze the requirement, and by use of sound judgement make a decision that best fits the individual situation.

4-47. When the change or revision decision is made, the work statement must be specifically written to the requirement and its supporting source data. Once agreed to by the government and the contractor, the task must be adhered to during preparation and in-process reviews. Subsequent changes in criteria or individual preferences will normally result in the increase of contractor scope and contractor cost. It must be remembered that a necessary change in scope is justifiable if supported with sufficient backup. The cognizant NAVAIR-TECHSERFAC code 20 project coordinator or data manager must be advised by the TMCFA in all instances when increase in scope is proposed so that funding can be identified and approved prior to the contractor being directed to proceed.

4-48. **MANUAL CHANGE RELEASE (MCR).** Occasionally a specific requirement exists for expediting internal processing and use of test, troubleshooting, or procedural repair data to TMCFA production lines, i.e., tolerance or torque value changes. When such requirements are the result of hardware actions, the data should be processed in accordance with existing NAVAIR instructions. However, when the change action is for sole purpose of executing a change to a technical manual, the correction shall be prepared in accordance with the guidelines described in paragraph 3-39.

4-49. PROCESSING OF CHANGE DATA FOR TECHNICAL MANUALS UNDER COGNIZANCE OF ANOTHER TMCFA.

4-50. It is likely that a TMCFA could detect an error and resolve it by developing corrective information for a procedure contained in a manual which is not under its cognizance. In the event a condition such as described in paragraph 3-39 should arise, the following guidelines shall be complied with:

- a. Take appropriate action depending on the nature of the change to advise the cognizant TMCFA of the problem.

Identify the manual by number, title, and specific deficiency as it exists. Also, advise briefly the resolving corrective action and give a scheduled date for delivery of same to the cognizant TMCFA.

b. Prepare the necessary MCR and other related instructions required for local implementation.

c. Forward the completed MCR covering the required corrective action to the cognizant TMCFA with a copy to the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager. Use official correspondence as the transmitting vehicle when providing recommended manual change data to another TMCFA.

d. Immediately upon receipt, the TMCFA should review the recommendation and determine the proper procedure for handling the proposed corrective action. All appropriate activities should be advised concerning the planned action and its scheduling.

e. In the event the TMCFA does not concur with the originator's proposed change, or develops a more usable procedure, the originator should be advised immediately so that internal actions may be modified.

f. Local cancellation of the MCR following its incorporation into the affected technical manual is the responsibility of the originating TMCFA.

4-51. CHANGES AFFECTING OPERATIONAL TECHNICAL MANUALS.

4-52. NAVTACSUPPACT personnel are responsible to the Chief of Naval Operations (CNO) for the accuracy and timely dissemination of NATOPS data, and coordination of tactical data for the Commander, Operational Test and Evaluation Force (COMOPTEVFOR). As NATOPS coordinators, NAVTACSUPPACT serves as liaison for model managers, NAVAIRSYSCOM, NAVAIRTECHSERVFAC, and TMCFA's. NAVTACSUPPACT is the designated TMCFA for coordinating final release of NATOPS manual updates.

4-53. A TMCFA preparing data for a NATOPS or tactical manual change must have the required source data and associated artwork, including illustrations, in a condition suitable for NAVTACSUPPACT to incorporate with minimal effort. When review of the source data is required by operators prior to incorporation, the preparing TMCFA shall seek assistance from the model manager and NAVAIRSYSCOM class desk. NAVTACSUPPACT will assist in coordinating the required reviews. In the case of ECP's, the originating TMCFA must provide the required source data to NAVTACSUPPACT in a timely manner and consistent with hardware milestones. When flight characteristics or performances are modified in NATOPS manuals as a result of ECP impact, the model manager should be requested to review or provide the required operational information. The required source data copy and artwork, including illustrations, for NATOPS manuals impacted by ECP's must be developed by the same sources, i.e., CFA, prime or regional contractor, as that used for all other manuals impacted by the ECP.

4-54. In most cases the data product will be finished reproducible copy and artwork. When mutually agreed, the data product may be a source data package consisting of new smooth draft manuscript or marked up draft manuscript and new art. Validity of the delivered data product is a TMCFA responsibility.

4-55. Once coordination, including development of publication milestones and state of completion of the data product, has been completed and mutual agreement reached, the TMCFA shall be responsible for identification of new or changed pages, and the development of change material. New pages of text shall be prepared as smooth draft manuscript and new art as original board art. Existing text can be corrected by direct mark-up or through preparation of supplemental insert data. For economy reasons, the TMCFA should use the services of the regional contractor to assist in the development of the source

data package. When completed, the package shall be forwarded to NAVTAC-SUPPACT for final action.

4-56. When the requiring TMCFA requires existing reproducible copy, the reproducible copy shall be requested from NAVTACSUPPACT. When the reproducible copy is not available, NAVTACSUPPACT shall provide special directions as to how the requirement will be met. This direction shall normally be provided during initial coordination discussion with the preparing activity. All data is to be reviewed in rough draft form and concurred in by NAVTACSUPPACT and the model manager prior to final preparation of the reproducible copy. Finished copy and back-up source data shall be provided to NAVTACSUPPACT for acceptance.

4-57. Operational manual change requirements developed as the result of ECP action should be itemized and costed out in the ECP as part of the requirement for identifying all technical manual impact. After approval, the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager shall disperse funds as may be required for support of the technical manual change.

4-58. The cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager will fund TMCFA/contractor prepared work statements, cost proposals, and establish funds at NPPSO's for preparation of negatives, reproduction, and distribution of the finished product as required.

4-59. ECP'S AFFECTING OUT-OF-PRODUCTION WEAPON SYSTEM OR EQUIPMENT TM'S.

4-60. During a weapon system production phase, ECP development, preparation, and determination of technical manual impact is normally the responsibility of the original equipment manufacturer. However, once the system or equipment transitions to the out-of-production

category possible differences could exist. Primary responsibility differences are outlined in the following examples:

a. The first possibility is that procedures could remain the same if the original contractor is tasked to develop the ECP and is still custodian of the technical manual reproducible copy and negatives.

b. A TMCFA could be tasked to perform all or a portion of the ECP effort. Under this circumstance, the selected activity will usually be the TMCFA assigned design and/or in-service engineering cognizance vice the original equipment manufacturer.

c. The TMCFA could be awarded the engineering design task while the original equipment manufacturer is designated to prepare all or part of the change kits, technical manuals, source data, and other related support information.

d. The design function could be assigned to the equipment manufacturer with a designated TMCFA tasked to manufacture kits and prepare source data, technical manuals, and other support requirement information.

e. Or, the TMCFA could be assigned total responsibility for ECP design, manufacture of kits, and preparation of supporting requirements including source data and technical manuals.

4-61. Design responsibility for much of the out-of-production material remains with the contractor long after the last contracted item is delivered. In these instances, NAVAIR establishes and maintains an annual BOA or product support contract with the principal airframe, engine, and avionics equipment supplier. Under these agreements and contracts, the original equipment manufacturer submits ECP's and when ECP's are approved performs the required tasks.

4-62. All proposed Class 1 changes are submitted by ECP in accordance with DOD-STD-480/MIL-STD-481. This standard defines the ECP Program, change classes, and the requirements which apply to all ECP submitters, both government and contractor, regardless of hardware production status.

4-63. All ECP's are submitted to NAV-AIRSYSCOM with a copy for processing. Each ECP should identify and evaluate all technical manual impact. All change costs for technical manuals shall be identified in accordance with the requirements of paragraph 9-8.

4-64. ECP's will be reviewed and approved in NAVAIRSYSCOM by one of the change control boards, i.e., airframe/missile, support equipment, and component. Implementing action takes place immediately following CCB approval. If Technical Directives (TD's) are involved, numbers are assigned and TD detail data sheets are prepared and forwarded to CFA's as designated by NAV-AIRSYSCOM.

4-65. Usually the TD is prepared, reviewed, and signed at the direction of NAVAIRSYSCOM and then submitted to NAVAIRTECHSERVFAC Code 33 for coordination of final printing by NPPSO and distribution in accordance with NAVAIRTECHSERVFAC Code 32 direction.

4-66. Technical manual changes resulting from ECP action are normally prepared by the organization that has cognizance of the technical manual reproducible copy regardless of who submits the ECP and performs engineering. When the manual change is incorporated by an activity/contractor other than the one initiating the ECP and performing engineering, the designer of the change (contractor or TMCFA) is required to furnish a source data package to the organization that will support preparation of the technical manual change. NAVAIRTECHSERVFAC is charged with the responsibility to ensure correct NAVAIRSYSCOM CCB input as to who should prepare the technical manual change and

whether a source data package is required. The cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager shall direct and/or coordinate the effort of getting the manual change prepared, verified, reproduced and distributed.

4-67. OUT-OF-PRODUCTION ECP/RAMEC FUNDING AND PREPARATION FLOW.

4-68. Publication funding administration for all out-of-production ECP effort, both Operational Safety and Improvement Program (OSIP) and Non-OSIP changes, is the responsibility of the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager.

4-69. The following traces ECP flow from submittal through reproduction and distribution of the technical manual change which may occur under four different circumstances:

a. When the equipment contractor is the ECP submitter and the preparer of the technical manual. During the ECP review cycle, the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager inputs are obtained through direct liaison with NAVAIRSYSCOM. When approved by the NAVAIRSYSCOM CCB, the hardware change is ordered and the accompanying funding requisition is issued by the appropriate Administrative Contracting Office (ACO). Publication funding is forwarded by NAVAIRSYSCOM to NAVAIRTECHSERVFAC when requested by the cognizant Code 20 project coordinator or data manager. Following ECP approval and forwarding of funds by the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager the ACO issues the contract modification authorizing the contractor to proceed. As prescribed by the order, the contractor develops the required technical manual change pages in accordance with the order and ECP direction. The in-service engineering TMCFA is responsible for review of the developed source data to ensure its accuracy and completeness. The cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager will

fund the technical manual update effort as required, and coordinate the effort to provide shipping labels and control distribution.

b. When the TMCFA is the ECP/RAMEC submitter and the equipment contractor is the preparer of the technical manual. The procedural flow is similar except that three authorizations and funding requisitions are necessary; one from NAVAIRSYSCOM for engineering kit manufacture and TD preparation, and two from the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager, one to the TMCFA for preparation of the source data package to be forwarded to the equipment contractor, and the other to the equipment contractor for utilization of source data package to prepare reproducible copy for the technical manual change.

c. When the equipment contractor is the ECP submitter and the TMCFA/regional contractor is the preparer of the technical manual. Similar to step (b) except that the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager funds the equipment contractor for the source data package effort to be delivered to the TMCFA and at the appropriate time funds the TMCFA/regional contractor for formal technical manual preparation.

d. When the TMCFA is the ECP submitter and a TMCFA/regional contractor is the preparer of the manual. The cognizant NAVAIRTECHSERVFAC Code 20 project coordinator funds the TMCFA for the source data package effort and the regional contractor for the formal technical manual preparation.

4-70. RESPONSIBILITIES FOR OUT-OF-PRODUCTION ECP's.

4-71. To insure prompt delivery of technical manual changes as a result of ECP's and timely obligation and expenditure of allotted ECP publication funds, specific activity responsibilities for

out-of-production ECP actions are as follows:

a. ECP submitter. When an ECP is prepared by a TMCFA, detailed information on the affected technical manuals must be submitted to the NAVAIRSYSCOM CCB so that the most accurate funding evaluation can be made. The costs for technical manual effort is a major factor. When quoting on these costs, include the following information if it is possible to identify separately:

(1) List of all technical manuals affected by the ECP, e.g., NATOPS flight manuals, tactical manuals, maintenance instruction manuals, PMRM's, weapons loading manuals, accessories/component/equipment manuals, peculiar and common support equipment manuals.

(2) List of the number of pages of all manuals affected including title, "A" page and index pages.

(3) Indication of proposed method of achieving change for each manual, i.e., in-house and contractor, and anticipated costs for each.

(4) If program tapes for Automatic Test Equipment (ATE) are involved in the change, estimates of the costs for generation and reproduction of the tapes. This information is required only if these tapes are cited in the statement of work and are recognized as a technical manual requirement.

(5) Computation of the technical manual and TD reproduction and distribution costs. Coordinate with the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager to determine current percentage to be used in computing these costs.

(6) The name and telephone number of the engineer responsible for the ECP and the Data Manager responsible for preparation of technical manual data.

(7) Provide copy of ECP at time of release to NAVAIRSYSCOM and other Naval activities that will be involved in the technical manual update.

b. Cognizant NAVAIRTECHSERVFAC Code 20 Project Coordinator or Data Manager. Monitor status of MDP's and insure availability of funds when required for order placement with equipment contractor, TMCFA, or regional contractor. Coordinate funding as appropriate between equipment contractor, TMCFA, and/or regional contractor.

c. TMCFA. When submitting TMCFA work statement/cost estimates to incorporate approved ECP's into manuals, the cost of such effort shall be separately identified to permit funding of the effort by cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager. If the task involves more than one ECP, the cost associated with each ECP must be separately identified. The TMCR transmittal letter (see figure 4-7) submitted to cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager shall identify the ECP number, the approving CCB number, and associated cost for each ECP. If the ECP and CCB number are not available on old changes or identified as a reference on the TD, it is permissible to list the airframe, support equipment, power plant, avionics, component, etc., change number and associated cost.

(1) During work statement preparation, the TMCFA shall identify the applicable ECP and/or type of changes, i.e., airframe, support equipment, power plant, avionics, component, etc., and notify cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager. Notification should be accomplished by fonecon and must be followed up by a letter as shown in figure 4-8, so that the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager can initiate action to acquire the funds

prior to receipt of work statement and cost proposal from the TMCFA.

(2) Ensure availability of adequate tracking procedures for ECP technical manual MDP's produced in-house. This will ensure that funds established to support the ECP's are utilized in the time frame in which these funds are available and to guarantee meeting approved ECP milestone schedules for delivery of ECP incorporated data to government plant representatives offices for submittal to the equipment contractor, TMCFA/regional contractor, or for completion of in-house publication update. It is essential that technical manual ECP incorporation efforts be completed in compliance with planned milestones to support fleet introduction of the modified equipment.

4-72. Comprehensive ECP processing procedures are furnished in NAVAIRINST 4130.1.

4-73. **RAPID ACTION MINOR ENGINEERING CHANGES (RAMEC's).**

4-74. Policies, procedures and responsibilities for the development, submission, and processing of RAMEC's are contained in NAVAIRINST 5215.10. Provisions to update affected drawings must be considered in conjunction with the action to update affected technical manuals. Any costs associated with contractor update of the drawings must be identified in accordance with the requirements of NAVAIRINST 5215.10.

4-75. When ECP's and RAMEC's are proposed under one work statement, each should be separately identified in accordance with the provisions of paragraph 4-71 step c.



DEPARTMENT OF THE NAVY

NAVAL AIR REWORK FACILITY

ALAMEDA, CALIFORNIA 94501

IN REPLY REFER TO:
5600
Ser 312/
17 Jan 1985

From: Commanding Officer, Naval Air Rework Facility, Alameda
To: Commanding Officer, Naval Air Technical Services Facility (Code 114)

Subj: REQUEST FOR REGIONAL DOCUMENTATION CONTRACT SERVICE ORDER

Ref: (a) Contract No. N00140-85-D-E260
(b) NAVAIREWORKFAC Alameda ltr, Ser 312/2101, dtd 27 Jun 84; Harry Kahn
Cost Proposal No. 0454-261

Encl: (1) Technical Manual Contract Requirement Work Statement
(2) Contractor Cost Estimate No. E260-W001
(3) NAVAIREWORKFAC Alameda Technical Manual Contracts Requirement Cost Estimate

1. Enclosure (1), (2), and (3) are forwarded for issuance of a service order under reference (a).

2. This effort, previously submitted under reference (b), has been quoted and is resubmitted under the new regional contract.

3. This effort is required to incorporate the effects of CALAC Engineering Change Proposal (ECP) 380C2 Increased Capacity APU, into S-3A NAVAIR technical manuals. Total cost includes a revision to three technical manuals; NA 01-S3AAA-2-2.6.1, 01-S3AAA-2-3.6.1, and 01-S3AAA-2-4.6.1.

4. The number of facsimile copies for this effort quoted on enclosure (2) appears to be in error. Enclosure (3) more adequately estimates this amount.

5. The following (ECP) effort is included in enclosure (1), associated contractor labor hours are included in enclosure (2), and the Government cost estimates included in enclosure (3):

<u>ECP No.</u>	<u>ACCB No.</u>	<u>Cost Estimate</u>
CALAC ECP 380C2	821-178	\$240,048.25

6. Request Data Management funds in the amount of \$24,721.77 (338 labor hours) be provided in support of this effort.

C. E. LAWLER
By direction

Copy to:
NAVAIRTECHSERVFAC (Code 23-14)
JANA Inc., San Antonio, TX (w/o encl)
JANA Inc., Concord, CA (w/o encl)

AFFIRMATIVE ACTION IS GOOD BUSINESS

Figure 4-7. Typical TMCR Transmittal Letter Identifying ECP's

From:
 To: Commanding Officer, Naval Air Technical Services Facility (Code 112)

Subj: Engineering Change Proposals; information concerning

Ref: (a) NAVAIRTECHSERVFAC ltr 112:JOS:rs/319 of 12 Apr 1983

1. In accordance with reference (a), work statement preparation has been initiated for the following:

ECP	ACCB/CCCB No.	Aircraft/Equipment	Regional Contractor	Cost
-----	---------------	--------------------	---------------------	------

2. It is requested that action be taken to ensure that funds are available at NAVAIRTECHSERVFAC upon receipt of the Technical Manual Contract Requirement Work Statement from this facility.

Copy to:
 NAVAIRTECHSERVFAC (22-02A)

Figure 4-8. Typical TMCFA Preparation of Work Statement
 Form Letter Identifying Applicable ECP's

SECTION V**TECHNICAL MANUAL QUALITY ASSURANCE****5-1. GENERAL.**

5-2. The Technical Manual Quality Assurance Program described in technical manual specification MIL-M-85337 and guide AL-855TM-GYD-000 was developed to ensure the adequacy, accuracy, and usability of maintenance instructions, parts listings, and PMS' in support of Naval aircraft maintenance activities. The emphasis on technical quality has previously been devoted to in-production aircraft, systems, and equipment. Fleet maintenance activities in their role of supporting flight operations and repair of repairables recognize no distinction between in-or-out-of-production equipment. The role of fleet activities is the support of the air arm of the Naval service. In recognition of this, the same QA requirements formerly associated with in-production efforts will now extend to all technical manual efforts.

5-3. To more effectively guarantee the quality of out-of-production technical manuals, this section has been developed to define the scope of the technical manual quality assurance program specification MIL-M-85337 and technical manual quality assurance program guide AL-855TM-GYD-000 and their application to out-of-production technical documentation.

5-4. RESPONSIBILITIES.

5-5. To properly assign responsibilities, the definition of the position of the TMCFA must be clear and concise. For the purposes of this guide, the TMCFA is considered a contractor and responsible for all applicable actions imposed on a civilian contractor as they apply to technical documentation quality assurance.

5-6. Fleet maintenance capability and readiness are directly related to the accuracy, adequacy, and readiness usability of the technical manual provided in support of the equipment. To guarantee the quality of data prepared for technical manual incorporation. TMCFA's shall establish and maintain a technical manual quality assurance program. This program shall consist of periodic audits of the preparing activity, (in-house or contractor) milestone progress, technical accuracy, and adherence to contract specifications. Performance of the TMCFA quality assurance procedures does not supersede the quality assurance function of the NAVAIRTECHSERVFAC QA Divisions as prescribed in MIL-M-85337 and AL-855TM-GYD-000. These documents shall be utilized for more definitive guidelines in the overall use of the NAVAIRTECHSERVFAC QA Divisions in the NAVAIR Technical Manual Quality Assurance Program.

5-7. QUALITY ASSURANCE PROCEDURES.

5-8. Other than those procedures established in-house for the quality assurance of technical documentation/manuals, the following milestone occurrences are described to indicate the TMCFA and NAVAIRTECHSERVFAC QA Division involvement in each formal quality assurance procedure.

5-9. The most effective method of determining whether technical manuals are being prepared to the desired requirement is through in-process review procedures. Manuals being developed, changed, or revised by the TMCFA shall be subject to review during the preparation cycle. These reviews will determine if the preparing activity is

responding properly, shows full understanding of the government's requirements, and is incorporating the update source data correctly and in a timely manner. Such reviews are beneficial to both contractor and government because they expedite the building of a joint learning curve that can enhance the finished product. All meetings are called and conducted by the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager in accordance with the guidelines defined in MIL-M-85337 and AL-855TM-GYD-000.

5-10. TMCFA's engaged in maintenance of MDP's, assembly of update source data packages and/or direct technical manual preparation shall establish and maintain a validation program to test the quality and accuracy of data. The validation program shall adhere to the requirements of MIL-M-85337. All source information that is collected for incorporation into the MDP shall be quality controlled through a validation to eliminate technical errors. All procedural data will be validated by actual demonstration using correctly configured hardware. Non procedural data such as IPB's, wiring diagrams, schematics, etc. will be validated against applicable engineering source data.

5-11. TMCFA Data Managers engaged in assembling MDP source information into a technical manual update source data package shall ensure that the assembled data has been validated, is complete, and ready for release.

5-12. Contractors preparing manual changes or revisions using these source packages shall conduct a similar review upon receipt of the data. The contractor should determine that the data received is as represented in the work statement or TMCR. Possible errors or misunderstandings should be immediately identified and brought to the attention of the TMCFA COTR. In the event that engineering assistance is required, it

should be requested through and provided by the TMCFA.

5-13. Contractors shall maintain an internal quality control program defined by a government approved quality control manual. The manual shall define the contractor's technical manual validation procedures. In the performance of technical manual tasks, the contractor must validate any in-house developed manual data as required by MIL-M-85337, or validate his prepared information against the government furnished source data, whichever is appropriate.

5-14. Verification provides a means of testing the adequacy, accuracy, and usability of technical manual information in the actual maintenance environment. Verification is the master link in the management system for assuring manual usability. However, due to a time and resource problem, fleet verification of out-of-production technical manuals is limited to situations similar to those described in Appendix B paragraph B-1 d.(6) note (2). If formal in-process review/validation is required by contract, the TMCFA should coordinate with NAVAIRTECHSERVFAC Codes 20 and 40, and NAVWPNEVALFAC for weapons loading to determine the verification requirements.

5-15. When it is determined that verification is required the cognizant NAVAIRTECHSERVFAC QA Division and NAVWPNEVALFAC for weapons loading will be requested to schedule, coordinate, and conduct it in accordance with MIL-M-85337 and AL-855TM-GYD-000.

5-16. In the interest of economy, routine changes incorporating technically validated source data will be checked whenever possible for technical accuracy by engineering review conducted by the TMCFA. In the event that a verification waiver is recommended by the TMCFA, it will be approved by the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager with the concurrence of the NAVAIRTECHSERVFAC Code 40 Depart-

ment and NAVWPNEVALFAC for weapons loading. Subsequent to verification, follow-up quality assurance procedures will be performed as required.

5-17. Fleet reviews are an important step in determining the adequacy/accuracy of existing technical manuals and PMRM's by providing a means of testing the adequacy, accuracy, and usability of technical documentation information in the actual maintenance environment. It is a formal procedure scheduled by the cognizant TMCFA after coordinating with NAVAIRTECHSERVFAC Code 40 in ac-

cordance with the guidelines defined in MIL-M-85337 and AL-855 TM-GYD-000.

5-18. Contingent upon fleet commentary on technical manuals or PMRM's, a fleet review may be requested by the TMCFA with the cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager and NAVAIRTECHSERVFAC Code 40 for PMRM's. Subsequent to the performance of the fleet review, the cognizant TMCFA will provide recommendations to the Cognizant NAVAIRTECHSERVFAC Code 20 project coordinator or data manager for updating the manual.

SECTION VI

MICROFILM PREPARATION ACTIVITY (MPA)

6-1. MIARS MASTER DATA PACKAGE.

6-2. The essential element in the microfilm updating of manual information is the MIARS Master Data Package (MDP). This package consists of technical manuals with all update information, including changes inserted and revisions completed, in printed form just as they would be distributed in hard copy to users, except that the pages are not bound together. These pages are microfilmed and copies of this master microfilm are stored in MIARS cartridges for use by maintenance and repair personnel. One cartridge may contain several manuals, the number depending on the size of the manuals microfilmed, each of which may be under the cognizance of a different TMCFA. One MIARS MDP is assembled and updated for each cartridge. The following is a list of requirements each MIARS MDP must satisfy prior to microfilming:

a. Have two (2) printed copies of the current edition of each manual to be microfilmed. These copies shall be assembled and the changes collated so as to produce a single one sided document. Each page of the one sided document that is not microfilmed shall be marked with a diagonal line across the page. Each page shall be trimmed to a width of eight (8) inches. The trimming shall be from the binding side of the page. If the manuals have never been printed previously, MPA should have a photo (camera ready) copy in the MDP.

b. On non-work package manuals the table of contents, list of illustrations, tables, and alphabetical index shall be evaluated to determine if space is available for inclusion of search

numbers. If the layout is single column, the page number column shall be moved to the left to permit insertion of the search number column within the image area as displayed in figure 6-1.

c. If adequate space is available in an existing two column format to permit insertion of the search number column, insert the search number.

d. When adequate space is not available to add a search number column, the two column format shall be split. The page shall be cut and each column placed on a separate layout sheet. The left column of each page shall be identified with its original page number. The right column of each split page shall be identified with the original page number and a small letter "a" e.g. ia, iia etc. as displayed in figure 6-2. The right hand column of each split page shall also include the technical manual number and the subject of the page, ie., Table of Contents, List of Illustrations, etc.

e. Search numbers shall be assigned to each page and split page of the technical manual. Search numbers shall be assigned to the second page or the right hand column of the first page (split page) of the table of contents in non-work package manuals and the second page of the alphabetical index in work package manuals. Search numbers shall be placed in the search number column adjacent to the headings, on subjects in tables, lists, and indexes, as displayed in figures 6-1 and 6-2. The first page or the left hand of the first page of the table of contents in non-work package manuals and the alphabetical index in work package manuals shall be identi-

ZERO PAGE

TABLE OF CONTENTS

Section	Page	Search Number
LIST OF ILLUSTRATIONS	v	4
I INTRODUCTION	1-1	7
1-1. Scope	1-1	
1-4. Unsatisfactory Material/Condition Report	1-1	
1-6. Difference Data Sheets	1-1	
1-7. Safety	1-1	
1-11. Reference Publications	1-1	
1-12. Technical Directives	1-1	
II DESCRIPTION	2-1	9
2-1. General	2-1	
2-3. Physical and Functional Description	2-1	
2-4. 20MM Automatic Gun	2-1	
2-5. Muzzle Clamp Assembly	2-1	
2-6. Mid-Barrel Clamp Assembly	2-3	11
2-7. Barrels	2-3	
2-8. Recoil Adapters	2-3	
2-9. Firing Contact Assembly	2-3	
2-10. Clearing Solenoid Assembly	2-3	
2-11. Clearing Sector Assembly	2-3	
2-12. Guide Bar	2-3	
2-13. Beech Bolt Assembly	2-5	13
2-15. Rotor Assembly	2-5	
2-19. Housing Assembly and Associated Parts	2-6	14
2-21. Operation	2-6	
2-23. Firing Cycle	2-6	
2-29. Clearing Cycle	2-8	16
III SPECIAL SUPPORT EQUIPMENT	3-1	19
3-2. Maintenance Concept	3-1	

SEARCH INSTRUCTIONS

Auto Reader — Printer: Push "O", push "RESET", enter Search Number, push "SRCH".

Portable Reader: Add Search Number to Frame Number of this page and advance.

Figure 6-1. Example of a Single Column Table of Contents

NAVAIR 11-95M61A1-1

LIST OF ILLUSTRATIONS (Cont)

Number	Title	Page	Search Number
3-7.	Cradle MK 19 Mod 0	3-4	31
3-8.	Adapter, Drawing 1445442 or SK232441	3-6	33
3-9.	Typical Power Supply Console	3-6	33
3-10.	Typical Bench Test Installation	3-6	
3-11.	Typical Installation for Functional Test Firing	3-6	
5-1.	Gas Mechanism-Exploded View	5-2	39
5-2.	Recoil Mechanism-Exploded View	5-8	45
5-3.	Buffer-Exploded View	5-9	46
5-4.	Inserting Breechblock Unlocking Tool	5-10	47
5-5.	Unlocking Breechblock	5-11	48
5-6.	Pulling Breechblock Rearward Using Breechblock Removal Tool	5-12	49
5-7.	Retracting Breechblock Slides Using Breechblock Unlocking Tool	5-12	
5-8.	Breechblock-Exploded View	5-13	50
5-9.	Removing Firing Pin Assembly Contact	5-13	
5-10.	Receiver-Exploded View	5-14	51
5-11.	Charger-Exploded View	5-15	52
5-12.	Barrel Locking Pin Removal	5-16	53
5-13.	Removing Barrel From Receiver	5-16	
5-14.	Recoil Mechanism Ring Spring Distortion	5-30	67
5-15.	Points of Wear or Damage-Breechblock	5-30	
5-16.	Points of Wear or Damage-Receiver	5-31	68
7-1.	Recoil Housing Assembly-Exploded View	7-2	76
7-2.	Checking Continuity of MK 12 Gun Firing Circuit	7-14	88
7-3.	Testing Firing Circuit Insulation Breakdown	7-15	89
7-4.	Firing Circuit Voltage Test	7-16	90
8-1.	MK 12 Gun Shipping Container	8-2	94
9-1.	20-mm Aircraft Gun MK 12 Mod 4	9-3	98
9-2.	Gas Mechanism	9-4	99
9-3.	Recoil Mechanism	9-5	100
9-4.	Buffer Assembly	9-6	101
9-5.	Breechblock Assembly	9-8	103

SEARCH INSTRUCTIONS

Auto Reader - Printer: Return to page i of table of contents, push "O", push "RESET", enter Search Number, push "SRCH".
 Portable Reader: Add Search Number to Frame Number of page 1 of table of contents and advance.

iiia

Figure 6-2. Example of a Right Hand Column Split Page

fied as the "zero page" of the technical manual.

f. Foldout illustrations shall be marked and identified. After marking, the foldouts shall be cut into eight (8) inch increments with seven and one half (7½) inch width centered within the increment. When the last increment of the foldout is less than eight (8) inches, a piece of white paper shall be added to increase the increment width to eight (8) inches to permit technical manual number, page and part number identification.

g. Cartridge index listing all technical manuals contained in cartridge MDP.

h. A cartridge filming sequence sheet as shown in figure 6-3 shall be prepared. It will identify all technical manuals contained in each MIARS cartridge MDP in the order of presentation. The sequence sheet shall list those frames that do not require frame numbers and document marks, i.e., test targets, security classification, and cartridge number. Each frame containing a document mark shall be identified by its frame number and search number.

i. The MDP for each MIARS cartridge shall be assembled as follows:

- (1) An instruction sheet (see figure 6-4) for the camera operator.
- (2) Security classification frames (when applicable).
- (3) Cartridge number frames.
- (4) Security warning frame.
- (5) Cartridge index frame.
- (6) Six spares frames.
- (7) First technical manual.

(8) Additional technical manuals with six spares frames between manual.

(9) End of roll frame following the last frame of the last page of the last manual to be filmed.

(10) Cartridge number frames.

(11) Security classification frames (when applicable).

6-3. ARRANGEMENT OF MANUALS IN MIARS MDP. To form MIARS MDP's, NAVAIR manuals are arranged as they appear in the MIARS microfilm cartridge load list issued by NAVAIRTECHSERVFAC.

6-4. MIARS MDP MANAGEMENT.

6-5. MIARS MDP ASSIGNMENT. When NAVAIRTECHSERVFAC assigns a MIARS MDP to an MPA, one of the prime tasks is to maintain on a specified cycle as described in paragraphs 6-11 and 6-12, all changes that are recorded for all manuals in that MIARS MDP. This cycle is subject to change based on weapons system priorities, funds availability, and in-house management capability.

6-6. MIARS MDP ESTABLISHMENT. NAVAIR manuals listed in the MIARS microfilm cartridge load list, including the basic paper manuals and all approved changes and/or revisions to the basic manuals, shall be assembled by the assigned MPA to form the MIARS MDP. Unapproved changes in their original format, such as MCR's, shall not be included in a MIARS MDP. These changed data, when approved, will be incorporated into the manuals as formal changes during the next scheduled update. The collection of paper pages in the MDP is used, after proper preparation, as a camera-ready copy to be microfilmed.

CARTRIDGE FILMING SEQUENCE SHEET

CARTRIDGE No. XX. 13

7 Oct 84

SEQ	MANUAL NUMBER
1	01-XXXXX-2-3
2	01-XXXXX-2-4
3	01-XXXXX-2-4.1
4	01-XXXXX-2-5
5	01-XXXXX-2-6
6	01-XXXXX-2-6.1
7	01-XXXXX-2-6.2
8	01-XXXXX-2-7

... CAMERA OPERATOR ...

1. Frame number and document marks are not required on frames containing the test targets and cartridge numbers.
2. Commence frame numbers and document marks with the ZERO FRAME.
3. Film one side of each Sheet; Manuals are collated into a one-sided document.
4. Frame numbers of pages appearing on film must be the same as indicated on this filming sequence sheet.

KEY TO ABBREVIATIONS

CI	CARTRIDGE INDEX
FILB	FRAMES INTENTIONALLY LEFT BLANK
IMS	INCOMPLETE MANUAL STATEMENT
S	SPACER FRAME
SEQ	SEQUENCE
SN	SEARCH NUMBER
SWN	SECURITY WARNING NOTICE
T/P	TITLE PAGE
1/4	PART 1 OF 4 PARTS

Figure 6-3. Example of a Cartridge Filming Sequence Sheet (Sheet 1 of 2)

CARTRIDGE FILMING SEQUENCE SHEET (Cont)

CARTRIDGE No. XX. 13

7 Oct 84

FRAME	PAGE	SN	FRAME	PAGE	SN
0	ZERO FRAME	0	41	2-14	30
1	CI	0	42	2-15	31
2	S	0	43	2-16	32
3	S	0	44	2-17	33
4	S	0	45	2-18	34
5	S	0	46	2-19 1/3	35
6	S	0	47	2/3	36
7	T/P	0	48	3/3	37
8	A	0	49	2-20	38
9	B	0	50	2-21	39
10	C	0	51	2-22	40
11	i ZERO PAGE	0	52	2-23	41
12	ii	1	53	2-24	42
13	iii	2	54	2-25	43
14	iv	3	55	2-26 1/2	44
15	v	4	56	2/2	45
16	vi	5	57	2-27	46
17	vii	6	58	2-28	47
18	viii	7	59	2-29	48
19	ix	8	60	2-30	49
20	INDEX 1	9	61	2-31	50
21	INDEX 2	10	62	2-32	51
22	INDEX 3	11	63	2-33 1/2	52
23	INDEX 4	12	64	2/2	53
24	1-1	13	65	2-34	54
25	1-2	14	66	2-35 1/4	55
26	1-3	15	67	2/4	56
27	1-4/1-5	16	68	3/4	57
28	2-1	17	69	4/4	58
29	2-2	18	70	2-36 1/4	59
30	2-3	19	71	2/4	60
31	2-4	20	72	3/4	61
32	2-5	21	73	4/4	62
33	2-6	22	74	2-37	63
34	2-7	23	75	2-38 1/2	64
35	2-8	24	76	2/2	65
36	2-9	25	77	2-39	66
37	2-10	26	78	2-40	67
38	2-11	27	79	2-41	68
39	2-12	28	80	2-42 1/2	69
40	2-13	29	81	2/2	70

Figure 6-3. Example of a Cartridge Filming Sequence Sheet (Sheet 2 of 2)

CAMERA OPERATOR: (DO NOT FILM THIS SHEET)

1. Film the security classification frames (when applicable), Test Target frames, and cartridge number frames in sequence scheduled by the cartridge filming sequence sheet before filming the ZERO FRAME.
2. Complete the ZERO FRAME.
 - a. Enter the date filmed.
 - b. Sign name in the appropriate space.
 - c. Enter contract number and contractor's name and address in accordance with MIL-M-81930.
3. Film the ZERO FRAME (Reset frame counter to zero) as the first document marked frame in the film.

Documents and corresponding frame numbers appearing on the film must be the same as indicated on the cartridge filming sequence sheet.

Figure 6-4. Example of Camera Operator Instructions

6-7. All non work package NAVAIR manuals listed to be maintained in microfilm as part of a MIARS MDP should be reviewed in accordance with the requirements in MIL-M-85401 to determine if the manuals are microfilm capable. After review, a recommended listing of manuals to remain in paper should be submitted to NAVAIRTECHSERVFAC for approval by Code 32A.

6-8. MPA COGNIZANCE.

6-9. When a new MIARS MDP is assigned to an MPA as a result of introducing a new weapon system into the MIARS program, the following actions shall be taken:

a. The MPA shall request NAVAIRTECHSERVFAC Code 32A for an initial outfitting list consisting of two copies of each of the technical manuals to be included in the MIARS MDP.

b. NAVAIRTECHSERVFAC shall supply the list requested and add the MPA to which the MIARS MDP is assigned to the automatic distribution list.

c. When new assignments cause changes to the makeup of previously assigned MDP's and one or more manuals must be transferred from one MDP to another MDP, both or all MDP's involved must be microfilmed and issued concurrently.

d. When changes in MDP makeup also involve changes in MPA cognizance, such as when manuals in the MDP are transferred to different cognizant activities:

(1) NAVAIRTECHSERVFAC shall coordinate the transfer, including the refilming of the MDP's, and provide the necessary authorization and funds for the applicable MDP.

(2) The MPA losing a manual (or manuals) from the MDP will forward all

photocopy material pertaining to that manual (or manuals) to the MPA(s) acquiring the transferred manual(s). A copy of the transmittal correspondence shall be forwarded to NAVAIRTECHSERVFAC Code 32A for record purposes.

6-10. DETERMINATION OF UPDATE REQUIREMENTS AND PRIORITIES.

6-11. UPDATING. A major MIARS data management responsibility is the review and analysis of the MIARS MDP and its current status. Update determinations shall be made for each MIARS MDP under the MPA's cognizance. All proposed MDP updates shall be listed in their order of importance or urgency. When the MPA updates a MIARS MDP, the type of action (change or revision) and the number of page units and/or frames affected shall be coordinated with NAVAIRTECHSERVFAC Code 32A to insure all manuals within a given cartridge scheduled for update by other TMCFA's are released concurrently. This will facilitate subsequent review of funding citations and ordering requirements.

6-12. FILMING CYCLE. MIARS MDP impacted by IRAC's must be updated and refilmed within sixty (60) days of the IRAC release date. Newly assigned MIARS MDP and routine technical manual changes or revisions which impact on MIARS MDP should be released for filming as soon as possible but no later than sixty (60) days after completion of camera ready copy of the manual change/revision.

6-13. FILM SCHEDULING. MPA's shall schedule their filming requirements in advance in order to allow NAVAIRTECHSERVFAC sufficient time to coordinate filming requests with cartridge ordering requirements as follows:

a. To coordinate microfilm production with MIARS equipment distribution.

b. To assure, prior to filming, the greatest degree possible of MDP completeness.

c. To allow sufficient time to identify, process, and distribute mailing labels.

d. To permit coordination of funding requirements.

e. To assure availability of cartridges and other supporting items.

6-14. CARTRIDGE ORDER SHEET (COS). The COS provides information for ordering mailing labels and identifying management information. The COS will be processed as follows:

a. The MPA shall forward a COS (see figure 6-5) to NAVAIRTECHSERVFAC Code 32A fifteen (15) working days prior to the data freeze date which is to appear on the cartridge index. A copy of the COS shall be forwarded by the MPA to the cognizant NPPSO for the purpose of scheduling.

b. NAVAIRTECHSERVFAC will process the COS and forward it, along with the mailing labels, to the cognizant NPPSO as soon as possible to coincide with arrival of the MDP from the MPA.

c. NPPSO should receive the MDP, COS, and mailing labels concurrently and forward all to the regional microfilm contractor for timely response.

6-15. MIARS MDP QUALITY CONTROL. MPA shall assure MIARS MDP quality control as follows:

a. Completeness. Assure that all assigned MDP's are kept complete and current with update data. All new manuals, changes, and revisions to the MDP's shall be incorporated as quickly as possible or sixty (60) days after completion of camera ready copy. Copies of manuals required to assure completeness can be obtained from NAVPUBFORMCEN

by utilizing the requisitioning procedure information contained in NAVAIR 00-25-100.

b. Validation. Assure that the final photocopy of the MDP is validated as complete before it is released for microfilming.

c. Readability. Assure readability of the microfilm update before the final copy is released for microfilming. All photocopy of the technical manual pages shall be scanned for visible defects such as pale print, smudges, finger marks, and tears that may adversely affect the quality of the processed film. All poor quality pages shall be retyped or touched up to make them microfilm compatible during the next scheduled update of the manual(s). Poor quality pages that are not scheduled to be changed as part of the normal engineering effort will be reviewed and restored to readable quality for microfilming within current work load and funding limitations.

d. Storage Security. MDP's shall be stored in folders or filing bins in a safe area free of dirt, grease, or other surface contaminants that could adversely affect the filmability of the pages. They shall not be constrained by rubber bands, paper clips, or other holding devices that might damage the pages.

6-16. MPA MANAGEMENT CATEGORIES.

6-17. MPA data management covers in-housing updating of the MDP's and monitoring of contractor updating efforts.

a. During in-house MDP updating, MPA's are responsible for:

(1) Obtaining the source data necessary for the MIARS MDP.

(2) Preparation, assembly, and review of the MIARS MDP.

CARTRIDGE ORDER SHEET 4ND-NATSF-5600/171 (REV. 4-78)																	
1. CARTRIDGE NUMBER <div style="text-align: center; font-size: 1.2em; font-weight: bold;">MPA</div>	2. SUPERSEDES CARTRIDGE NO. <div style="text-align: center; font-size: 1.2em; font-weight: bold;">MPA</div>	3. NAVAIRTECHSERVFAC LOG DESK <div style="text-align: center; font-size: 1.2em; font-weight: bold;">NATSF</div>															
4. CARTRIDGE PLANNING DATE <div style="text-align: center; font-size: 1.2em; font-weight: bold;">MPA</div>	5. SUPERSEDES CART. FILM DATE <div style="text-align: center; font-size: 1.2em; font-weight: bold;">MPA</div>	6. CONTRACTOR/NARF COGNIZANCE <div style="text-align: center; font-size: 1.2em; font-weight: bold;">MPA</div>															
7. CARTRIDGE CODE <div style="text-align: center; font-size: 1.2em; font-weight: bold;">NATSF</div>	8. CONTRACT NUMBER <div style="text-align: center; font-size: 1.2em; font-weight: bold;">CONTRACTOR(MPA)</div>																
9. FILMING FUND <div style="text-align: center; font-size: 1.2em; font-weight: bold;">N/A</div>	10. REPRODUCTION FUND <div style="text-align: center; font-size: 1.2em; font-weight: bold;">NATSF</div>	11. MEDIA MPA NO. OF FRAMES _____															
12. CARTRIDGE TITLE <div style="text-align: center; font-size: 1.2em; font-weight: bold;">NATSF</div>		13. EDITION MPA <input type="checkbox"/> BASIC <input type="checkbox"/> REVISION <input type="checkbox"/> REMAKE	14. DSAF/FMS NATSF OUT-OF-PROD. \$ 48.00 CLASSIFIED 60.00 IN-PROD. 128.00 CLASSIFIED 140.00														
15. PUBLIC INFORMATION MPA <input type="checkbox"/> RELEASE TO PUBLIC <input type="checkbox"/> DO NOT RELEASE TO PUBLIC - CLASSIFIED		16. APPLICATION (Complete aircraft, missile, target, or engine designation) <div style="text-align: center; font-size: 1.2em; font-weight: bold;">NATSF</div>															
18. PUBLICATIONS MPA <table border="1" style="float: right; border-collapse: collapse; margin-left: 10px;"> <thead> <tr> <th style="width: 50px;">ADD</th> <th style="width: 50px;">DEL.</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>		ADD	DEL.									17. LABELS REQ'D. BY DATE _____ SEND TO: <div style="text-align: center; font-size: 1.2em; font-weight: bold;">MPA</div>					
ADD	DEL.																
20. SPECIAL INSTRUCTIONS/NOTES <div style="text-align: center; font-size: 1.2em; font-weight: bold;">MPA/NATSF</div>		19. QUANTITY CONTROL <div style="text-align: center; font-size: 1.2em; font-weight: bold;">NATSF</div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"> </th> <th style="width: 20%;">DIAZO</th> <th style="width: 20%;">SILVER</th> </tr> </thead> <tbody> <tr> <td>DISTRIB. QTY.</td> <td> </td> <td> </td> </tr> <tr> <td>STOCK QTY.</td> <td> </td> <td> </td> </tr> <tr> <td>TOTAL QTY.</td> <td> </td> <td> </td> </tr> </tbody> </table>			DIAZO	SILVER	DISTRIB. QTY.			STOCK QTY.			TOTAL QTY.				
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	DATE																
NATSF																	
27. BULK SHIPMENT DATE <div style="text-align: center; font-size: 1.2em; font-weight: bold;">NPPSO</div>		28. NPPSO SIGNATURE <div style="text-align: center; font-size: 1.2em; font-weight: bold;">NPPSO</div>															

U.S. Government Printing Office: 1978-763-173/2869 2-1

Figure 6-5. Typical Cartridge Order Sheet (COS) (4ND-NATSF-5600/171)

(3) Advising NAVAIRTECHSERVFAC of microfilm cartridge distribution requirements.

(4) Coordination of the MDP's through the NPPSO's for microfilming.

(5) Quality Assurance of MDP's for microfilming.

b. When monitoring contractor updating, MPA's are responsible for:

(1) Providing and/or assuring that the contractor has all source data necessary for preparing the MDP.

(2) Preparation of task or work statements that properly define the depth and scope of the proposed effort in accordance with MIL-M-81930, MIL-M-

81931, MIL-M-85401 and the procedures described in paragraph 6-1 through 6-3.

6-18. CONTRACTOR ASSISTANCE THROUGH REGIONAL MICROFILM CONTRACTS.

6-19. A series of indefinite quantity, time, and material contracts, in which labor and material rates are fixed, are provided through NPPSO for microfilming MIARS MDP's by regional contractors. This type of contract simplifies the task identification and price-out between the MPA, NPPSO, and the contractor, thus assuring timely release of individual orders, job completion, and delivery of microfilm updates to user activities. During the course of all such contracts, it shall be the responsibility of NPPSO to monitor contractor performance, expenditure of hours, and acceptance of delivered products.

SECTION VII

PRINTING AND FILMING, REPRINTS AND REMAKES

7-1. PRINTING AND FILMING. Data that is not available cannot support the fleet. Printing and filming and replenishment of paper or microfilm stock is of major importance. All established schedules for required action by the parties involved shall be adhered to.

7-2. NAVAIRTECHSERVFAC RESPONSIBILITIES. Provide necessary funds to NPPSO to cover printing and distribution costs of preparing activity initiated out-of-production technical manual change or revision actions, as well as subsequent reprint/remake (stock replenishment) actions during the time reproducibles and direct image copies or negatives, and/or microfilm are in the TMCFA's or MPA's custody for updating action.

7-3. Review Stock Status of Family Items (SSFI) listing and determine by phone with the TMCFA appropriate action to be initiated. If a reprint action is to be initiated, then a minimum of three copies of the Technical Publications Reprint Action Request Form NATSF 5600/126B (Rev 8-79) (figure 7-1) shall be forwarded to the cognizant TMCFA authorizing and identifying the technical manual to be reprinted and the quantity thereof. Block 20 shall be annotated if a cover is required.

7-4. PREPARING ACTIVITY RESPONSIBILITIES. Notify NAVAIRTECHSERVFAC of technical manual changes or revisions proposed for printing and distribution. This requirement is necessary so that NAVAIRTECHSERVFAC can determine printing quantities. This information should be submitted to NAVAIRTECHSERVFAC via the Publication Order Sheet (POS) twenty (20) working days prior to any change/revision scheduled for release to

cognizant NPPSO for printing and distribution action.

7-5. Prepare a Printing Sequence and Collation Record, Form GEN-PHILA 5603/2 (REV 5-83) or similar acceptable form. (See figure 7-2.) This Record shall accompany each change/revision/reprint covering reproducible copy/artwork/direct image copy of negatives being submitted to NPPSO for printing and distribution action.

7-6. Prepare Requisition for Local Duplicating Service, Form DD 844, (see figure 7-3) (at option of designated NPPSO), to accompany each change/revision/reprint reproducibles and/or direct image copies or negatives being submitted to the cognizant NPPSO for printing and distribution.

7-7. NPPSO RESPONSIBILITIES. Assure that necessary printing production contracts are available for the printing and distribution requirements and perform the following:

a. Assure that applicable Government Printing Office (GPO) contracts specify a delivery schedule of seventeen (17) working days or less from the date the mailing labels are received by NPPSO for routine printing and distribution requirements.

b. Process RAC's seven (7) working days or less from the date the mailing labels are received by NPPSO.

c. Ensure that when justified, priority requests are processed seven (7) working days or less from the date the mailing labels are received by NPPSO.

d. Closely monitor delivery performance and maintain printing quality control over commercial printing contractors.

e. Establish printing and distribution schedules for each print order in consonance with a production timetable schedule required by each TMCFA.

f. Provide liaison to each TMCFA to assist in resolving any problems associated with printing and distribution.

g. Report monthly, on Printing Control Log No. 5604/2, the funds obligated or expended for printing or reprints. Reports are required by the fifth working day of each month.

h. Ensure that government printing contractors treat each volume of multiple volume manuals as separate jobs and when shipping bulk stock to NAVPUBFORMCEN Philadelphia, Pa., pack each volume in a separate container with a separate publication code.

i. Review printing errors reported on validated TPDR responses from TMCFA's and ensure that appropriate action is taken as required.

j. Ensure that government printing contractors mark "FOR NAVAIR STOCK" on bulk stock shipments of NAVAIR technical manuals to NAVPUBFORMCEN Philadelphia, Pa..

7-8. Upon request by the TMCFA, assist in the inspection of reproducible copy/artwork/direct image copies or negatives which may be prepared by a commercial contractor under contract to TMCFA/NAV-AIRTECHSERVFAC for the final preparation of such material. Such inspection should include the following:

a. Quality of reproducible copy/artwork prior to preparation of direct image copies or offset negatives and the finished negatives.

b. Adherence to format of the Printing Sequence and Collation Record, Form GEN-PHILA 5603/2 (REV 5-83), or other similar form for listing proper printing sequence and clarification of any unusual printing and binding specifications.

c. Conduct an inspection of negatives upon completion of printing for acceptable reusability purposes. Ensure that the reproducibles/negatives are returned to the TMCFA after completion of printing and distribution action. Establish necessary inspection procedures with printing contractors. Inspection is to be accomplished either by personal visit or by the contractor forwarding the material to NPPSO by way of traceable means such as certified or registered mail or commercial parcel services.

NOTE

TMCFA's are authorized to use certified or registered mail or commercial parcel services for transfer of technical documentation material when deemed essential due to value, one-of-a-kind material, etc.

7-9. MIARS MDP FILMING AND REMAKE.

7-10. NAVAIRTECHSERVFAC RESPONSIBILITIES are as follows:

a. Provide necessary funds to NPPSO to cover initial filming, and duplication costs of all MIARS MDP's.

b. Review SSFI listing and determine cartridge stock replenishment requirements. If no changes are required in an existing cartridge at the time of a stock replenishment request, NAVAIRTECHSERVFAC will take local action to replenish the stock. If the MDP is undergoing a change, NAVAIRTECHSERVFAC Code 32A will determine by fonecon with the cognizant MPA, the action to be

TECHNICAL PUBLICATIONS REPRINT ACTION REQUEST
NATSF 5600/126B (REV. 8-79)

NAVAL AIR TECHNICAL SERVICES FACILITY
700 ROBBINS AVENUE
PHILADELPHIA, PENNSYLVANIA 19111

AREA CODE 215-697- & EXTENSION
 AUTOVON 442 & EXTENSION
 EXTENSION
 IN REPLY REFER TO

From: Commanding Officer, Naval Air Technical Services Facility
To:

Subj: Technical Manual Reprint Action: request for

1. A requirement exists for reprint action on the manual shown below. If the requirement is for a basic and all outstanding changes, the following statement shall be included on the title page: "BASIC AND ALL CHANGES HAVE BEEN COLLATED TO MAKE THIS A COMPLETE PUBLICATION." Title page shall not contain change notice banner.

1. PUBLICATION NUMBER		2. CLASS	3. TYPE OF ISSUE REPRINT	4. BASIC/REV. DATE	5. CHANGE DATE
6. ARMY/AIRFORCE NUMBER		7. PUBLICATION TITLE			8. NATSF COG.
9. CONTRACTOR NAME AND CODE		10. EQUIPMENT COVERED/APPLICATION			11. PRINTING FUND
					12. NO. NEGS
13. P.O.I APPROVAL YES <input type="checkbox"/> NO <input type="checkbox"/>	14. FMS UNIT PRICE	15. NATSF CONTROL NO.		16. PRINT QTY.	
17. F.P. NUMBER				18. CFA	19. ECD

20. SPECIAL INSTRUCTIONS

NPPSO USE ONLY – Fill out and return one (1) copy to NATSF within 7 days after shipment

PRINT ORDER NO.	DATE SHIPPED	TOTAL QTY.	NPPSO SIGNATURE
-----------------	--------------	------------	-----------------

2. GOVERNMENT REPRESENTATIVE: Obtain the printing media for this action.

3. NPPSO: It is requested that the reprint action be accomplished by the established completion date (ECD). If the ECD cannot be met, furnish reason and new ECD in special instructions, and return one copy to this facility.

Upon completion of reprint action, forward all copies to: Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Ave., Philadelphia, PA 19120. MARK FOR NAVAIR STOCK. To facilitate receipt by Naval Publications and Forms Center, the FP number cited above should be imprinted on all outside mailing labels.

☆U.S. GOVERNMENT PRINTING OFFICE:1981--703-100/7416 2-1

Figure 7-1. Technical Publications Reprint Action Request Form (NATSF 5600/126B) (REV 8-79)

PRINTING SEQUENCE AND COLLATION RECORD						CODES (For use in "Code or Remarks" blocks L/A - Additional line art F/O - Foldout page H/T - Halftone/photograph N/F - Negative furnished			SHEET OF		
FACE PAGES			BACK PAGES			FACE PAGES			BACK PAGES		
LINE	PAGE NUMBER <i>(odd)</i>	CODE OR REMARKS	LINE	PAGE NUMBER <i>(even)</i>	CODE OR REMARKS	LINE	PAGE NUMBER <i>(odd)</i>	CODE OR REMARKS	LINE	PAGE NUMBER <i>(even)</i>	CODE OR REMARKS
1			2			51			52		
3			4			53			54		
5			6			55			56		
7			8			57			58		
9			10			59			60		
11			12			61			62		
13			14			63			64		
15			16			65			66		
17			18			67			68		
19			20			69			70		
21			22			71			72		
23			24			73			74		
25			26			75			76		
27			28			77			78		
29			30			79			80		
31			32			81			82		
33			34			83			84		
35			36			85			86		
37			38			87			88		
39			40			89			90		
41			42			91			92		
43			44			93			94		
45			46			95			96		
47			48			97			98		
49			50			99			100		
SEPARATE COVER						DIVIDERS					
FRONT	OUTSIDE (1)	INSIDE (2)	BACK	INSIDE (3)	OUTSIDE (4)	BEFORE ODD PAGE NUMBERS (LIST)					
COVER PAPER STOCK (Grade, weight, color)						DIVIDER PAPER STOCK (Grade, weight, color)					
SUMMARY	TOTAL PAGES	BLANK PAGES	PRINTED PAGES	DIVIDERS	CAMERA COPY	HALFTONES	LINE ART	NEGS. FURN			
	FOLDOUTS										
	17	22	25	34	42	45	50	54	OVER 54		
REMARKS											

GEN-PHILA 5603/2 (REV 5-83)

Figure 7-2. Printing Sequence and Collation Record
(GEN-PHILA 5603/2) (REV 5-83)

REQUISITION FOR LOCAL DUPLICATING SERVICE			DATE OF REQUEST	DATE REQUIRED	JOB NUMBER
TO:			FROM: (Organization and room number)		
1 FOR REFERENCE CONSULT (Name and Phone No.)			3a DELIVER TO		
2 DESCRIPTION (Title, form number, etc.)			b NAME AND PHONE NUMBER OF PERSON TO CALL IF TO BE PICKED UP		
4 NO OF ORIGINALS	5 NO COPIES EACH	6 TYPE OF REPRODUCTION <input type="checkbox"/> OFF-SET <input type="checkbox"/> MIMED <input type="checkbox"/> OTHER (Specify)	7 SECURITY CLASSIFICATION <input type="checkbox"/> UNCLASSIFIED <input type="checkbox"/> OTHER	8 DISPOSITION OF ORIGINALS <input type="checkbox"/> RETURN <input type="checkbox"/> DESTROY	
9 PAPER SPECIFICATIONS <input type="checkbox"/> OFFSET DUPLICATION <input type="checkbox"/> SPIRIT DUPLICATION <input type="checkbox"/> OTHER (Specify) <input type="checkbox"/> 8 x 10% <input type="checkbox"/> 8 x 12% <input type="checkbox"/> 8 1/2 x 14 <input type="checkbox"/> OTHER (Specify) <input type="checkbox"/> WHITE <input type="checkbox"/> OTHER (Specify)			11 PRINT <input type="checkbox"/> 1 SIDE <input type="checkbox"/> H TO H <input type="checkbox"/> H TO F <input type="checkbox"/> HEAD TO <input type="checkbox"/> L <input type="checkbox"/> R	12 COLLATE <input type="checkbox"/> YES <input type="checkbox"/> NO STAPLE <input type="checkbox"/> YES <input type="checkbox"/> NO	
10 COLOR INK <input type="checkbox"/> BLACK <input type="checkbox"/> OTHER	13 ADDITIONAL SPECIFICATIONS (including distribution, punching, padding, location of staples, etc.)			14 SIGNATURE OF REQUESTER (This requisition contains no copyrighted material other than that indicated on attached copy right release)	
15 SIGNATURE OF APPROVING OFFICIAL					
FOR REPRODUCTION UNIT USE ONLY					
16 DATE RECEIVED	17 PRIORITY	18 OPERATOR		22 DATE REQUESTER NOTIFIED JOB IS COMPLETE	
19 NO OF COPIES REPRODUCED	20 DATE DELIVERED	21 JOB RECEIVED BY			

DD FORM 1 OCT 78 **844** PREVIOUS EDITION WILL BE USED ★ U.S. Government Printing Office: 1983-605-010/8650 2-1 S/N 0102-LF-000-8440

Figure 7-3. Requisition for Local Duplicating Service (DD Form 844)

initiated. If a remake action is required, NAVAIRTECHSERVFAC will authorize MPA filming requirements by forwarding a COS (see figure 6-5) to the cognizant NPPSO with a copy to the MPA.

7-11. MPA RESPONSIBILITIES are as follows:

a. Prepare the MIARS MDP for microfilming.

b. Prepare a cartridge filming sequence sheet (figure 6-3) to accompany the MIARS MDP via the NPPSO to the contractor who will microfilm the MDP.

c. Prepare the requisition for local duplicating service (DD Form 844), (Figure 7-3), to accompany the MIARS MDP to the cognizant NPPSO who will send the MDP to the contractor for microfilming.

7-12. NPPSO RESPONSIBILITIES. Assure that the microfilm production contracts are available for the initial filming and duplication requirements as follows:

a. Assure that the applicable microfilm contracts specify a microfilm delivery schedule of five (5) working days within the quantity requirements to be specified in the contract.

b. Process priority requests on an individual basis where less than five (5) working day deliveries are required.

c. Establish initial filming, duplication, and distribution schedules for each order in consonance with the production requirements specified in the contracts.

d. Closely monitor contractor's delivery performance and microfilm quality. Establish necessary microfilm inspection procedures with NAVAIRTECHSERVFAC filming contractors. These inspection procedures will be in accordance with MIL-M-81930 and MIL-M-81931. Inspection is to be accomplished either by personal visit to the contractor or by the contractor's forwarding material to the NPPSO by means of certified or registered mail or commercial parcel services.

e. Ensure preparation of master microfilm by ascertaining that all contractors adhere to the prescribed microfilming format provided with all MDP's to assure proper filming sequence of the microfilm frames.

f. Ensure that all MIARS MDP's and camera master microfilm are returned to the MPA immediately after the production and inspection of all direct-image silver microfilm reels (Type I, Class II) are accomplished.

g. Report monthly, on Printing Control Log No. 5604/2, the funds obligated or expended for MIARS microfilming and duplication. Reports are required by the fifth working day of each month.

h. Provide liaison to each MPA to assist in resolving problems associated with the microfilming effort.

SECTION VIII**DISTRIBUTION****8-1. PRINTED TECHNICAL MANUAL DISTRIBUTION.**

8-2. The Publication Order Sheet (POS) is used as the order form for printed technical manual distribution. The POS, as shown in figure 8-1, is a multipurpose document that initiates the reproduction of technical manuals and technical directives, serves as a request for distribution labels, organizes and transmits required data for the establishment and updating of records pertinent to printing, distribution, funding, stocking and indexing. The instructions for completing the POS are contained in NAVAIRTECHSERVFACINST 5600.4.

8-3. TMCFA PRINTED MANUAL DISTRIBUTION RESPONSIBILITIES.

8-4. The TMCFA is responsible for notifying NAVAIRTECHSERVFAC by means of the POS and the cognizant NPPSO via the DD Form 844 (refer to figure 7-3) that a technical manual change or revision has been prepared in reproducible copy and is being submitted for printing and distribution. Five (5) copies of the POS will be forwarded to NAVAIRTECHSERVFAC Code 321 at least twenty (20) working days prior to need for labels. Naval message or fonecon may be used when an urgent requirement exists.

8-5. NPPSO PRINTED MANUAL DISTRIBUTION RESPONSIBILITIES.

8-6. The cognizant NPPSO, upon proper notification from the TMCFA, as indicated in paragraph 8-4, will coordinate requirements for mailing labels with NAVAIRTECHSERVFAC Code 321. After receipt of mailing labels from NAVAIRTECHSERVFAC, as indicated in paragraph

8-8, the NPPSO will process the labels to the contractor responsible for printing and distribution of the technical manual(s). After distribution, the cognizant NPPSO will complete the applicable portion of the POS for which it is responsible and return a copy of the POS to NAVAIRTECHSERVFAC Code 321.

8-7. NAVAIRTECHSERVFAC PRINTED MANUAL DISTRIBUTION RESPONSIBILITIES.

8-8. NAVAIRTECHSERVFAC, upon proper notification from the cognizant TMCFA/NPPSO, as indicated in paragraph 8-6 will:

a. Forward preaddressed mailing labels, with the applicable POS, to the cognizant NPPSO designated to print and distribute the technical manual(s).

b. Forward a quantity of blank mailing labels to the cognizant NPPSO, for use in multiple mailings.

c. Furnish a "Picking Slip" to the cognizant NPPSO, indicating the total number of copies and addresses for each manual to be distributed. One "Picking Slip" accompanies (wrapped around) each package of preaddressed franked mailing labels. A sample of a "Picking slip" is shown in figure 8-2.

d. Promptly prepare POS's for RAC's and other printed requirements immediately upon receipt of a Naval message or fonecon from the cognizant NPPSO.

8-9. MICROFILM DISTRIBUTION.

8-10. The Cartridge Order Sheet (COS) 4ND-NATSF-5600/171 (REV 4-78) is used as the order form for microfilm distribu-

PUBLICATIONS ORDER SHEET					Name	Office	Date
1. PUBLICATION NUMBER		2. CLASS.	3. TYPE OF ISSUE		NO.	4. DATE OF ISSUE	
5. DATE OF BASIC OR LAST REV.		6. SUPERSEDES PUB. NO. <input type="checkbox"/> SAME		DATE OF BASIC OR LAST REV.		DATE OF LAST CHANGE	
7. PUBLICATION TITLE				8. MAINT. LEV.	9. ARMY/AIR FORCE NUMBER		
10. CONTRACTOR NAME AND CODE		11. CONTRACT NUMBER		12. ITEM NO.	13. NATSF COG.		
14. ECP/RAC/INTERIM CHANGE INFORMATION					14A. CFA CODE (2 Digits)		
15. EQUIPMENT COVERED					16. WUC (2 Digits)		
17. APPLICATION (Complete Aircraft, Missile, Target, or Engine Designations)							
18. SPECIAL INSTRUCTIONS/NOTES				19. LABELS REQUIRED BY			
				SEND TO: _____ DATE _____			
18A. FOI APPROVAL				YES <input type="checkbox"/> NO <input type="checkbox"/>			
20. CONFIRMING FONECON				21. FMS UNIT PRICE		22. PUB. CODE	
23. NO. OF NEGS.	24. NO. OF REPOS	25. OTHER PRINT MEDIA (Specify Type & Qty.)			26. CONTROL NO.		
27. PRINT QTY.	28. DISTR. QTY.	29. STOCK QTY.	30. CONTR. QTY.	31. PRINTING FUND			
32. DATA RECORDS		DATE	33. DISTR. LABELS		ORDER	SENT	34. IOL
							DATE
35. MPN		DATE	36. PUB. SUPPORT		DATE	37. DATA MANAGER	
						DATE	
38. DISTRIBUTION DATE				39. NPPSO SIGNATURE			

NATSF 5600/126A (REV. 7-83)

U.S. Government Printing Office: 1984-808-012/17647 2-1

Figure 8-1. Publication Order Sheet (POS)
(NATSF 5600/126A) (REV 7-83)

REC NO	QTY	NO LABLS	TCT QTY	TYPE H
30321	001	30	30	
30321	002	10	20	
30321	003	5	15	
30321	004	1	4	
30321	005	3	15	
30321	006	1	6	
30321	010	2	20	
30321	011	2	22	
30321	012	1	12	
30321	014	2	28	
30321	015	4	60	
30321	018	1	18	
30321	019	1	19	
30321	020	4	80	
30321	025	2	50	
30321	035	1	35	
30321	040	1	40	
30321	050	1	50	
		72	524 **	

Figure 8-2. Picking Slip

tion. The COS, shown in Figure 6-5 is a multi-purpose document that initiates the reproduction of technical manuals and technical directives via the MIARS microfilm program, but otherwise serves the same purpose as the POS cited in paragraph 8-2. Instruction for completing the COS are contained in NAVAIRTECHSERVFACINST 5600.7.

8-11. MPA MICROFILM DISTRIBUTION RESPONSIBILITIES.

8-12. The MPA is responsible for forwarding the COS to the NAVAIRTECHSERVFAC MIARS Program Coordinator, Code 32A, fifteen (15) days prior to the data freeze date which will appear on the cartridge index. The MPA will also furnish a copy of the COS to the cognizant NPPSO for scheduling purposes. The MPA must utilize DD Form 844 (see figure 7-3) and provide the MIARS MDP to the cognizant NPPSO for purposes of reproduction and distribution.

8-13. NPPSO MICROFILM DISTRIBUTION RESPONSIBILITIES.

8-14. After receipt of mailing labels from NAVAIRTECHSERVFAC, as indicated in

paragraph 8-16, the NPPSO will process them to the contractor responsible for reproduction and distribution of the microfilm cartridge(s). After distribution, the cognizant NPPSO will complete the applicable portion of the COS for which it is responsible and return a copy to NAVAIRTECHSERVFAC Code 321.

8-15. NAVAIRTECHSERVFAC MICROFILM DISTRIBUTION RESPONSIBILITIES.

8-16. NAVAIRTECHSERVFAC, upon proper notification from the MPA, as indicated in paragraph 8-12, will furnish the cognizant NPPSO:

- a. Preaddressed mailing labels with the applicable COS to accomplish initial filming and duplication.
- b. A quantity of blank mailing labels, for use in multiple mailings.
- c. A "Picking Slip", indicating the total number of cartridges and addresses for each cartridge to be distributed. One "Picking Slip" should accompany each package of preaddressed franked mailing labels.

SECTION IX**BUDGETING AND FUNDING****9-1. GENERAL.**

9-2. Progress and improvement of the status and configuration of the out-of-production Technical Manual Program can only be accomplished through proper substantiation of budgets and approval and establishment of funding appropriations in support of identified update tasks.

9-3. Budget and funding for technical manuals constitute an integral part of the major network of financial actions which establishes NAVAIRSYSCOM's portion of the Navy's Five Year Defense Plan (FYDP) Budget requirements which are established through official budget calls and planning drills. The calls are transmitted by memoranda covering individual weapon system or equipment price-out requests. These memoranda are processed to the NAVAIR Technical Documentation Officer for transmission to NAVAIRTECHSERVFAC. Each request defines its purpose, provides preliminary procurement planning, delivery schedule, known milestones, preliminary configuration, baseloading, QA, and maintenance support information pertinent to the development of budget estimates. The completeness of this planning data has a direct bearing on the adequacy of the technical manual budget estimates.

9-4. EVALUATION OF BUDGET CALLS.

9-5. Due to short turnaround requirements for budget calls, NAVAIRTECHSERVFAC must conduct an expedited evaluation in order to develop and provide the technical manual cost figure and the estimating rationale or methodology used. The subject data is provided to NAVAIRSYSCOM with copies to the appropriate TMCFA when required.

9-6. OUT-OF-PRODUCTION BUDGETING.

9-7. Once a weapon system or equipment completes its procurement cycle, it transfers to the out-of-production category. At that time technical manual funding responsibility is transferred from the project office to the NAVAIR Technical Documentation Officer. Central coordination and consolidation of out-of-production budget requirements is assigned to the NAVAIRTECHSERVFAC as defined in Section II, RESPONSIBILITIES.

9-8. Out-of-Production hardware remains in the in-service inventory for many years and must be supported with qualitative technical manuals as long as it is operational. To improve its Fleet utility and make safety improvements, hardware changes and modifications normally continue. These changes and modifications are covered by aircraft procurement (APN-5/ECP funds), funding action are under the control and jurisdiction of the NAVAIRSYSCOM CCB's. NAVAIRSYSCOM policy requires that technical manual impact resulting from these modifications be borne by the same funding appropriation that supports the hardware modification. TMCFA's developing modifications must consider the technical manual impact. Estimates for development and implementation of manual change actions must accompany the TMCFA's ECP submissions to NAVAIRSYSCOM for all manuals, including NATOPS flight manuals. CFA engineering and technical publications departments having engineering cognizance and TMCFA responsibilities when ECP's are submitted must communicate and cooperate with each other. This will ensure timely utilization of funds approved by applicable NAVAIRSYSCOM CCB actions.

9-9. Maintenance and update changes to out-of-production technical manuals other than those associated with hardware changes and modification are also required. These requirements include normal technical manual maintenance, incorporation of new or improved operational or maintenance procedures, TPDR's, hardware LES's, MCR's, and other user feedback. These efforts are budgeted and funded under the O&MN appropriation and assigned for overall management control to the NAVAIR Technical Documentation Officer.

9-10. RELATED TECHNICAL MANUAL BUDGETS.

9-11. When an ECP is prepared by a TMCFA detailed information on the affected publications must be submitted to the NAVAIRSYSCOM CCB so that an accurate evaluation can be made. The cost of the publications effort is an important factor. When quoting on these costs, include the information outlined in paragraph 4-71a.

9-12. As previously stated, ECP actions are normally funded through separate APN authorizations, and should not be identified or duplicated in the out-of-production O&MN budget call response.

9-13. OTHER THAN ECP RELATED TECHNICAL MANUAL BUDGETS.

9-14. Other than ECP technical manual support under the technical direction of NAVAIRTECHSERVFAC is funded under the O&MN appropriation, and evolves around three points:

a. TMCFA preparation of proposed workload priority lists and submission of work plans and budgetary estimates of funding required for all phases of technical manual update support.

b. NAVAIRTECHSERVFAC consolidation of requirements, including consolidation of Type Commander (TYCOM) input, and recommended program funding.

c. NAVAIRSYSCOM Technical Documentation Officer review and analysis of NAVAIRTECHSERVFAC recommendations on Navy weapon and equipment system priorities.

9-15. Out-of-production budget estimates provided by NAVAIRTECHSERVFAC and approved by NAVAIRSYSCOM are used not only for establishment of funding requirements but also to provide the historical basis for support of the technical publications portion of the O&MN portion of the FYDP.

9-16. Funds from the O&MN appropriation are used exclusively for changes (other than ECP) to out-of-production technical manuals. Once funding allocations are approved by NAVAIRSYSCOM, NAVAIRTECHSERVFAC will take the necessary action to advise the TMCFA's of the authorized funding for each CFA, subject to subsequent adjustment resulting from revised technical manual update priorities and budget allocations.

9-17. Priorities will be established based on priorities identified by the respective TMCFA's in their budget call responses. Consideration will also be given to first line aircraft, mission, equipment, armament, aircraft population, service life, and manual condition.

9-18. Separate review schedules covering NATOPS flight and tactical manuals are provided by NAVTACSUPPACT.

9-19. TMCFA FUNDING SUPPORT.

9-20. Support of the TMCFA Technical Manual Program is sponsored as follows:

a. By the Primary Support Office for the NESO's. The manpower and labor resources required to support all of the data management functions carried out by the NESO should be addressed to NAVAIRSYSCOM, with a copy to NAVAVNLOGCEN, for inclusion in the WSSD budget formulated by NAVAIRSYSCOM (AIR-411).

b. For non WSSD activities by the appropriate NAVAIR hardware sponsor. The manpower and labor resources required to support all the data management functions should be addressed through the appropriate Primary Support Office.

9-21. O&MN APPROPRIATIONS FOR TECHNICAL MANUAL UPDATE SUPPORT.

9-22. The O&MN funds provided to NAV-AIRTECHSERVFAC are allocated to the TMCFA based on yearly Technical Manual Program objectives.

9-23. O&MN funds provided from the Technical Manual Program account shall be utilized in support of approved proposals for updating and printing of technical manuals. The WSSD and non WSSD activities supported engineering cognizance program as defined in paragraph 9-20 will provide the resources necessary to accomplish the following technical manual maintenance.

a. Development of technical manual source data and changes thereto. This includes the preparation of new technical manual source information, changes to current information, and the annotation of source information on existing technical manual pages. It also includes the preparation of new art and illustrations, and changes to existing art and illustrations that result from engineering investigations and correction of defects. It does not include the funding of formal changes resulting from ECP action.

b. The engineering effort associated with the development of data for changes and revisions to technical manuals, including IRAC's, RAC's, and RAMEC's.

c. Engineering review of TPDR's as required.

d. Labor required for the preparation of technical manual inputs to an ECP prior to submission to the NAVAIR-SYSCOM CCB. This applies to both in-production and out-of-production weapon systems and equipment.

e. Operations analysis effort associated with PMRM's.

f. Maintenance of the MDP (except for engineering input).

g. Review and evaluation of contractor work statements and cost proposals for technical manual tasks.

h. Assembly of technical manual source data packages.

9-24. CHARGING TO OTHER APPROPRIATIONS. Charging against Weapons Procurement Navy (WPN), Aircraft Procurement Navy (APN) and Other Procurement, Navy (OPN) funds requires proper fund identification by TMCFA management for work to be accomplished under any of these appropriations. Allowable charges are:

a. Labor required to make technical manual changes resulting from approved engineering changes for both in-production and out-of-production weapon systems, equipments, and support equipment. It includes the preparation of new drawings, art and illustrations, and changes to existing drawings, art and illustrations. Normally the ECP funding will be allocated to NAVAIRTECHSERVFAC. Funds required for direct TMCFA ECP technical manual effort will be forwarded to the TMCFA by NAVAIRTECHSERVFAC.

9-25. UPDATE OF MIARS DATA PACKAGES. Costs incident to update of MIARS data packages preparation, due to changes to NAVAIR series manuals resulting from an approved ECP, shall be supported by the same funds which approved the hardware change. Costs incident to updates resulting from routine changes shall be supported by appropriate out-of-production funds.

9-26. FINANCIAL REPORTING.

9-27. Each TMCFA is required to report to NAVAIRTECHSERVFAC the funds expended for technical manual efforts. The method of reporting should be such that NAVAIRTECHSERVFAC receives sufficient data on all work completed and chargeable to Technical Manual Program Account O&MN Funds.

9-28. CONTRACTOR TASK FUNDING.

9-29. Funds in support of contractor tasks will be retained by NAVAIRTECHSERVFAC. Allocation will be made and tasks authorized based on TMCFA submission and approval of specific work statements. NAVAIRTECHSERVFAC will ensure sufficient funding availability and expedite preparation of the proper financial documents to exercise initiation of the desired task.

APPENDIX A

INSTRUCTIONS FOR COMPLETION OF THE FIRM
UPDATE WORKLOAD AND PRIORITIES FORM

- Block No. 1: Enter the submitting GFA.
- Block No. 2: Enter the submittal data.
- Block No. 3: Enter Aircraft, Missile, Engines, Components, Support Equipment, ATE, or other appropriate descriptor.
- Block No. 4: Enter the sequential number of priority recommended for update approval.
- Block No. 5: Enter the manual number and title. Use the series where appropriate.
- Block No. 6: Enter the peculiar weapon system (A-7E, AV8-A, TF-41, etc.) or indicate "common", as applicable.
- Block No. 7: Enter the requirement for update if brief; if not, refer to item 15.
- Block No. 8: Enter the level of maintenance (Organization/Intermediate/Depot).
- Block No. 9: Enter the proposed update action, such as "CHANGE" or "REVISION".
- Block No. 10: Enter the estimated number of pages impacted by this update action.
- Block No. 11: Enter the funds required to perform the update action in-house, if it is proposed to perform work in-house; otherwise, leave blank.
- NOTE: Do not include data management duties encompassing technical manual MDP maintenance; update source data gathering, evaluation, and validation; preparation of contractor work statements, RAC's, and changes to MCR's; review and approval of contractor proposals/cost estimates; in-process and final reviews of contractor prepared manual changes/revisions; travel associated with technical manual management functions including regional contractor interface; NPPSO interface for printing purposes.
- Block No. 12: Enter the funds required to perform update action by a regional contractor, if it is proposed to perform work at a regional; otherwise, leave blank.
- Block No. 13: Enter the funds required to perform update action by a prime contractor, if it is proposed to perform work at a prime; otherwise, leave blank.

NOTE: In cases where the update action is to be shared by more than one update activity (CFA/Regional/Prime), enter required funds in the appropriate blocks.

Block No. 14: Enter the sum of Columns 11 through 13.

Block No. 15: Attach a separate sheet if necessary, for a narrative assessment of technical manual requirements for the weapon system/equipment. Factors to be considered in making this assessment should include, but are not limited to, transition to an in/out-of-production status, availability of source data, etc. If applicable, also enter the life expectancy of the equipment in increment of years and the number of units presently in operation. The requirement for update should be based primarily on source data impact and where possible, an assessment of the manuals by the user. Where appropriate, the narrative should be specific; relate to on hand or anticipated documentation; assess long range status, problems, and resolutions required to bring each technical manual to an optimum state of readiness; assess the impact of unsatisfied requirements; and lastly, identify those requirements that could be spread over several years due to availability of source data or size of effort. Configuration changes are normally funded by a different appropriation and should not be included unless the nonavailability of those funds is anticipated due to expiration of obligational authority. The following categories are suggested for technical assessment:

- a. Accuracy. Relates to technical accuracy and adequacy of manual; when so categorized, reflects deficiency in technical content (error/omission).
- b. Maintenance Improvements. Data that clarifies and enhances existing procedures or implements new procedures for fleet users.
- c. Data Obsolescence. When so categorized, indicates that obsolete configuration data of a magnitude detrimental to usability/comprehensibility is contained in the manual, and/or that maintenance data is incompatible with current maintenance plan/provisioning data.
- d. Urgency. When so categorized, indicates user community (responsible level) and TMCFA agreement of urgent need. (This category always used in conjunction with another category.)
- e. Conflict. When so categorized, indicates that manual conflicts with other manuals considered more authoritative, i.e., general series manual.
- f. User Assessment. When so categorized, indicates substantial evidence (TPDR, message, ILSMT/TMMT comment, fleet review, etc.) that publication is not satisfactory to user community.

- g. Format/Media. When so categorized, indicates that format of manual is unsatisfactory for the media in which presented, i.e., microfilm incompatibility. Manual or media should be changed.

APPENDIX B

INSTRUCTIONS FOR PREPARATION OF TECHNICAL MANUAL
CONTRACT REQUIREMENT WORK STATEMENTS (TMCRWS)

BLOCK-HEADING. The heading shall include the contract number, name of contractor, and the CFA's task identification number; order number and date blocks shall be provided, but left blank for completion by NAVAIRTECHSERVFAC at the time of order placement.

BLOCK-TASK DESCRIPTION. The task description shall state briefly the scope of the task i.e., whether new manual, change pages or revisions, technical manual number(s) and titles, weapon system/equipment applicability, and what is to be accomplished (ECP incorporation, source data inclusion, etc.). If the change is for ECP incorporation the ECP number with pertinent NAVAIR/CCB approval shall be cited.

1. More than one manual change or revision action may be covered in a single work statement as long as they apply to the same weapon system or equipment; however, discretion must be exercised so that the task does not become too unwieldy. An unusually large task should be broken down into several TMCR work statements by like manuals or similar delivery schedules.

2. All manuals impacted by an ECP, including NATOPS manuals, shall be included in the same work statement. The extent and nature of the required effort on NATOPS manuals shall be coordinated with NAVTACSUPPACT.

BLOCK A TO BE FURNISHED. The deliverable products to be furnished shall be called out in the order of delivery and will encompass only those deliverable items cited in the contract or listed herein.

1. Manual outline - only required for a new basic manual and/or a revision entailing a style and format change e.g. from MIL-M-38784 to MIL-M-81927.

2. Facsimile copy of completed reproducible copy - delivered for TMCFA review and/or verification. This copy is annotated with required corrections and/or comments and returned to the contractor for correction of reproducible copy prior to final delivery. Normally, no other facsimile copies are required.

3. Reproducible copy - required on all orders involving manual update actions.

4. Photolithographic negatives - required only for manuals to be distributed in paper copy (not ordered for manuals distributed in MIARS only).

NOTE: New contract amendment will include direct image copy as a deliverable product, which shall be called for in lieu of negatives whenever practicable.

5. Photographic copies - required only for manuals to be distributed in MIARS microfilm (these are made from reproducible copy).

NOTE: Photocopies may be replaced by direct image copy.

6. Microfilm - required only in those orders involving manual action on all the manuals contained in a MIARS cartridge.

7. Digital data tape (magnetic) - to be specified only in special cases after review and approval by NAVAIRTECHSERVFAC Code 12.

NOTE: Separate correspondence with details concerning conditions that justify ordering of magnetic tape/diskettes and the required standardized format must be provided for review.

8. Requirement for a record of source data incorporated - to be included in every work statement covering manual update actions such as changes or revisions.

9. Validation certificate - to be included on every work statement.

10. Printer sequence sheets - to be included as applicable.

11. DD Form 250 - to be included on every work statement. The DD 250 must identify each item of delivery specified in the work statement.

NOTE: Normally, the work statement should not specify the delivery of a product prior to a facsimile of the reproducible copy. Interim copy, partial copy, or copy for in-process reviews shall not be required. The contractor's task is to provide a change or revision and to proceed to completion of the reproducible copy, which shall be facsimiled for CFA review. In-process reviews may be conducted at the contractor's facility to the degree specified in the order utilizing draft material in the preparation stage to the degree necessary to assure completion of a technically accurate and quality product. No break in production should occur, or be required, to provide in-process review copy. In those cases where the TMCFA considers the need for such products, these requirements shall be discussed and approved by NAVAIRTECHSERVFAC Codes 20 and 40 prior to inclusion in the work statement.

BLOCK B DESCRIPTION AND SPECIFICATIONS. The work statement must specify the appropriate specifications, with amendments and approved deviations, applicable to format and technical content of the change or revision action of each manual covered. In addition, the specification for photolithographic negatives or direct image copy with appropriate deviations must be cited. Approved deviations shall be included by citing the applicable deviation number and date and need not be attached as enclosures to the TMCROWS.

1. Change and/or revision actions which are to employ "same style and format" due to basic specifications being unknown must include pertinent instructions gleaned from standard deviations to format specifications. Examples of such pertinent instructions are the requirement for a distribution statement on the cover/ title page or the hazardous materials requirements.

2. Special deviations and/or waivers to specification requirements shall be documented by the TMCFA and submitted to the NAVAIRTECHSERVFAC Code 20 project coordinator or data manager for NAVAIRTECHSERVFAC Code 12 review and approval prior to inclusion in the TMCRWS.

3. The work statement may be used to highlight certain conditions. However, restatement of specification paragraphs should not be included.

4. Whenever procuring reproducible camera ready copy or negatives, the following citation should be included in each work statement:

"Citation of Joint Committee on Printing (JCP) authorization. Production of composition and/or lithographic negatives procured under this order is granted by JCP Authorization 23383."

5. Each work statement shall indicate the security classification of the task and identify the classification guide/DD Form 254 to be used, if applicable.

6. Each work statement must include applicable quality assurance requirements as follows:

"Validation, validation certificate, and quality assurance shall be completed/performed in accordance with Specification MIL-M-85337A(AS) and the contractor's approved Quality Assurance Program Plan." If verification support is required of the contractor, it shall be included in the foregoing statement.

NOTE: (1) The scope and complexity of the task should dictate the number and degree of in-process review, type of validation, and the need for verification. Guidance and direction concerning these quality assurance elements should be obtained from the NAVAIRTECHSERVFAC Code 40 Department. Tasks considered within the scope of regional contractors, such as preparing changes or revisions to incorporate technically validated source data, do not normally require formal in-process reviews, validation plans, or verification plans.

NOTE: (2) In those circumstances where tasks involving the preparation of a new basic manual, the preparation of a work package manual from existing conventional manual, or the incorporation of large and complex ECP's such as SLEP actions are considered, these requirements should be discussed in detail with NAVAIRTECHSERVFAC Codes 20 and 40 prior to preparation of the work statement. When such tasks are authorized, NAVAIRTECHSERVFAC Code 40 shall be requested to establish and conduct required quality assurance elements, such as in-process reviews, validation plan approvals, and verifications.

7. In the area of questions related to technical content or manual format, the work statement should read as follows:

a. Questions which may arise in relation to technical content shall be presented to the cognizant TMCFA for resolution.

b. Questions which may arise in relation to technical manual format and/or deviation to specifications shall be presented to NAVAIRTECHSERVFAC Code 20 via TMCFA for resolution.

8. The record of source data incorporation shall be described as follows:

"The record of source data incorporation will cite the items of source data included in the manual(s), with paragraph number and page number location of incorporation, in accordance with the requirements of the contract and Attachment I thereto."

BLOCK C DELIVERY AND PACKAGING. Delivery and packaging requirements shall be specified for each deliverable product as follows:

1. Delivery shall be expressed in terms of "X" days after date of order (ADO) with allowance included for "days awaiting source data," "days awaiting Navy review and acceptance," "days involved in verification action" where applicable (the work statement shall include a statement that commits the CFA to accomplish such actions and these shall be expressed in terms of "X" calendar days). Delivery instructions shall also specify destination, precisely where (facility and code) material is to be delivered.

2. Delivery of the record of source data incorporated shall be called out as follows:

• "Concurrent with the delivery of the printing media, as follows:

Original to NAVAIRTECHSERVFAC (Code 20)
One (1) copy to NAVAIRTECHSERVFAC (Code 40)
One (1) copy to cognizant TMCFA (Code ___)"

3. Packaging for each deliverable product, including return of provided source data, shall be specified as:

a. Package in accordance with MIL-XXX (the appropriate specification).

or

b. Package in accordance with best commercial practices.

or

c. Include any special packaging requirements other than above, as appropriate.

4. Include an estimated completion date which makes allowances for the built-in government reviews. For example:

"Estimated completion date of all items - one hundred fifty (150) days after date of order (December 1985)."

5. In those cases where the reproducible copy and/or other deliverables are to be retained by the contractor for further use or storage, an appropriate statement shall be included such as:

"The reproducible copy, and negatives (upon return from printing) shall be retained by the contractor under the Accountability/Maintainability/Storage clause of the contract, until completion of the contract, or until such time as delivery is requested by the government."

BLOCK D INSPECTION AND ACCEPTANCE. The TMCROWS will state that inspection and acceptance will be performed by the cognizant COTR and documented by completion of DD Form 250.

BLOCK E SOURCE DATA. A complete listing of source data which is being furnished to the contractor for inclusion in the manual(s) shall be cited. This listing should be specific, definitive, and as complete as possible.

1. The source data package shall consist of "all of the technically validated" data to be utilized by the contractor in providing the manual, change, or revision. The accuracy and completeness of the source data package affects the outcome of a successful manual change update action more than any other element in the update cycle.

2. The package should include all outstanding data affecting the manual. Each item of the data shall be "technically validated" by the CFA prior to submittal to the contractor. No engineering services have been contracted for or are expected from the contractor(s).

3. TMCFA's shall assure completeness of the source data through telephone contacts with the appropriate NAVAIRTECHSERVFAC Code 20 project coordinators or data managers and with NAVAIRTECHSERVFAC Code 40 personnel for outstanding TPDR status.

4. The source data package must be accurately assembled and itemized in detail prior to submittal to the contractor. Any source data submitted to the contractor for inclusion in the task after issuance of the order is subject to a "change of scope" and must be handled accordingly (supplemental WS should be submitted to the contractor for cost impact). An order amendment must be initiated via the NAVAIRTECHSERVFAC Ordering Officer for inclusion of the additional source data in the TMCROWS whether or not there is a cost impact.

5. Assurance of the accuracy, completeness, technical validity, and itemization and timeliness of delivery of the source data package to the contractor is the responsibility of the TMCFA. The source data package shall be delivered to the contractor immediately upon order turn-on and in no case later than thirty (30) days after the date of order. No order shall be requested if complete source data is not available within the thirty (30) day timeframe.

BLOCK F GENERAL PROVISIONS. General provisions of the task shall include the following:

1. The TMCROWS shall indicate the security classification of the task.

2. The TMCROWS shall indicate whether or not travel is required; number of travelers, destination (from/to) and duration of trip.

3. The TMCROWS shall indicate the return of all source data packages that were provided for the changed manual (s) except for the reproducible copy/negatives which shall be retained under the Accountability/Maintainability/Storage clause of the contract.

4. Any other general instructions pertaining to the proposed task.

BLOCK G COGNIZANT FIELD ACTIVITY. The TMCROWS shall indicate the CFA assigned engineering cognizance of the technical manual (s) covered under the task.

GLOSSARY PART I

GLOSSARY OF TERMS

A

APPROPRIATION - Congressional authorization to spend from the Treasury for specified purposes (O&MN, WPN, APN, OPN).

B

BASIC ORDERING AGREEMENT - A contractual agreement that includes a description, as specific as possible, of supplies to be furnished or services to be performed when ordered and a description of the method for determination of prices. It lists the activity(ies) authorized to order and is used by NAVAIRSYSCOM to procure change kits, technical manuals, etc.

BUDGET CALL - For purposes of this guide, request to the operating groups by the NAVAIRSYSCOM Financial Management Division (AIR 804), in response to direction by higher authority, to prepare and submit basic budget estimates.

C

Cartridge - A container that holds a roll of 16mm microfilmed data, distributed to users in the MIARS program.

CHANGE - A modification of information in an existing manual.

COMMITMENT - An amount administratively earmarked for future obligation against available funds based upon requisitions, procurement directive, orders, purchase requests, written evidences on acceptable forms of intention to incur obligations. It authorizes the creation of an obligation without further recourse to

to the official responsible for certifying the availability of funds.

COMPOSITION - Typesetting (hot type) or final copy prepared by any method used as a substitute (cold type) for typesetting when such material is to be used in the production of a printing plate.

CONFIGURATION CONTROL - A committee established within NAVAIRSYSCOM to ensure the necessary evaluation and coordination of changes to weapons systems and equipment (aircraft and components) and PSE.

COGNIZANT FIELD ACTIVITY - The Naval Activity having prime engineering cognizance over the aircraft, weapon, system or equipment for which a technical manual is being prepared. The CFA may or may not be the Preparing Activity, depending on whether or not it holds the TMCR for preparation and delivery of the manual.

CONTRACT ADMINISTRATION - Management of all facets of a contract to make certain that both government and contractor fulfill all contractual agreements.

COPY FREEZE DATE - Date that the contractor and procuring activity decides no more additions, deletions and changes will be accepted to the publications material. Additions, deletions and changes after that date will be accumulated for preparation of a subsequent change or revision of the publication.

D

DATA MANAGER - An individual responsible for maintaining the Master Data Package and Source Data Package. Responsible

for all facets of technical manual management within his jurisdiction.

DIRECTED FUNDS - Amounts provided by Project Managers through the issuance of Program Directives (Part II) which authorize the obligation of funds under designated program accounts within deposit accounts of a specified fiscal year appropriation.

DOD COMPONENT - Military service or Agency including Army, Air Force, Navy, Marine Corps and Defense Supply Agency.

E

ENGINEERING CHANGE PROPOSAL- A proposal submitted by the contractor to the procuring activity in accordance with contractual specifications (ANA Bulletin 390a, 391a, or 445, as applicable) or by in-house NAVAIRSYSCOM or its field activities. The purpose of the ECP is to furnish information relative to proposed engineering change in order to permit a preliminary evaluation of the change. Changes meriting further formal consideration are submitted to the ACCB/CCCB.

F

FLEET REVIEW - Reviews conducted periodically with user activities to assure maximum technical manual accuracy and compatibility with user environmental operational conditions. When scheduling such a review, selected participating activities should be provided with advance copies of the proposed agenda defining the review objectives and list of technical manuals that will be subject for review.

G

GOVERNMENT-FURNISHED EQUIPMENT - Components of systems furnished by the government on the basis of a mutually agreed-upon interface. The government is normally responsible for data support of GFE components.

I

IN-PROCESS REVIEW - A review of technical manuals in the process of preparation. In-Process Reviews are held primarily for the purpose of providing guidance to the contractor or cognizant preparing activity to assure that manuals are being developed in accordance with the contract requirement and the approved maintenance and support philosophy.

INTEGRATED LOGISTIC SUPPORT - A composite of the elements necessary to assure the effective and economical support of a system or equipment at all levels of maintenance for its programmed life cycle.

J

JOINT-USE MANUALS - Manuals of interest to and used by the Navy and other DOD components. Also referred to as joint-interest manuals.

M

MAINTENANCE INFORMATION AUTOMATIC RETRIEVAL SYSTEM - A NAVAIR system for maintaining, updating, and distributing technical manuals on microfilm.

MASTER DATA PACKAGE - The Master Data Package is an accumulation of valid information relating to a specific aircraft/equipment group. The accumulation will include documentation, drawings and photographs.

MIARS MASTER DATA PACKAGE - A data package consisting of printed manual pages, including all changes and revisions, that is microfilmed on one microfilm roll contained in one cartridge. One MIARS MDP may contain the complete data from several manuals or from several aeronautical systems.

MICROFILM PREPARATION ACTIVITY - The Navy Activity having prime cognizance over the technical manual elements (the

MIARS Master Data Package) to be micro-filmed. The microfilming may be done in-house or by contractors.

MILESTONES - Recognizable points in time at which specific tasks or activities (major and minor) start or end (MEI, BIS, FIP/CRAW, NSD, etc.).

MILESTONE CHART - A project Management Plan for identifying all support actions required for a Weapon System's milestones.

MONITOR - For the purpose of this guide, the process of observing a procedure to ascertain that the procedure is following a previously agreed-to-plan.

O

OBLIGATED FUNDS - The amount of an order placed, contract awarded, a service received, and similar transactions which require a future payment of money.

OPERATIONAL AND SAFETY IMPROVEMENT PROGRAM - A program that provides an orderly, planned method of programming and budgeting the modification and modernization of in-service aircraft by controlling the submission, review, evaluation, approval, and budgeting of prospective items.

P

PLANNING DIRECTIVE - An official NAVAIR-SYSCOM instrument which establishes a project and, on a continuing basis, provides specific guidance throughout the project life.

PREPARING ACTIVITY - The organization, whether a commercial contractor or Cognizant Field Activity (CFA), holding a Technical Manual Contract Requirement (TMCR) or equivalent document issued by Procuring Agency for the preparation and delivery of a technical manual or manuals is the Preparing Activity (PA). In this connection, a subcontractor, vendor, or government activity writing a

manual for the PA, or preparing manuscript data or input for the PA, is not to be considered as the Preparing Activity.

PRINTING - The processes of composition, platemaking (including offset negatives and microfilm), presswork and binding.

PROCUREMENT REQUEST - The document that initiates procurement action. Contains basic information of the procurement plan which consists of a description of items to be procured, delivery dates, specifications, and proposed contract terms.

PROCURING ACTIVITY - The Naval Air Systems Command (and joint Service if applicable) as represented by the Technical Manual Management Agency, Cognizant Verification Coordinating Activity, Cognizant Field Activity and/or the cognizant Contract Administration Services Component.

PROGRAM ACCOUNT - An administrative subdivision of a deposit account reflecting the subsidiary breakdown of manageable segments, e.g., material items and functional area of effort. (FY 80 for CH-53D-P/A 3102 Airframe Publications.) Program Accounts are synonymous with "Budget Project" in the Navywide accounting.

PROJECT DIRECTIVE - An official NAVAIR-SYSCOM instrument by which the direction and authority for execution of planned project effort is provided for weapons system equipment. It is made up of two parts: Part I - Management Direction; Part II - Funding and Quantity Direction.

PROJECT - Within NAVAIRSYSCOM, The total integrated effort necessary to accomplish an operational or material objective from inception of the requirement, through Fleet employment, to termination or disposal.

PROJECT COORDINATOR - The person directly and continuously responsible for coordinating all phases of management of a single project at NAVAIRTECHSERVFAC.

PROVISIONING PARTS BREAKDOWN - A document listing the assemblies, subassemblies, and detail parts of an equipment together with assigned Source, Maintenance and Recoverability (SMR) codes and related data useful in selecting and programming spare parts support. Also referred to in some documents as a Provisioning Parts List.

R

RAPID ACTION CHANGE - A technical manual change covering urgent and essential operation and maintenance change information.

RAPID ACTION MINOR ENGINEERING CHANGE - Expeditious actions on minor changes which offer significant advantages to the operating forces. It is limited to minor engineering changes.

REPRINT - A reprint is a second of subsequent printing of a manual, including all changes. Normally, all changes are merged with the basic manual and a note to that effect is added to the cover/title page.

REQUEST FOR PROPOSALS - A solicitation document used in negotiated procurements.

REVISION - A revision is a second or subsequent edition of a manual which supersedes the preceding edition.

S

SHOPPING LIST - A list identifying and indicating the quantities of weapons systems and equipment planned for procurement during a specified Fiscal Year.

SOURCE DATA PACKAGE - The source data package is an accumulation of valid information relating to a specific techni-

cal publication. This data is part of that identified under the MDP.

SPECIAL SUPPORT EQUIPMENT (Now PECULIAR SUPPORT EQUIPMENT) - Support equipment applicable to only one end article. Designed and developed in conjunction with the article.

SPECIFICATION - Defines the technical content and format of a manual.

SPECIFICATION DEVIATION - Authorized inclusion of data not required by the specification and/or omission of data required by the specification with or without substitution therefore of additional data.

SUPPLEMENT - A supplement is a subsidiary document which complements information in a manual.

T

TECHNICAL MANUAL (or Manual) - All types and forms of technical publications procured by TMCR (or equivalent) for issue under the cognizance of the Naval Air Systems Command.

TECHNICAL MANUAL CONTRACT REQUIREMENT - The document which specifies the technical manuals required for support of an equipment or system and also specifies related contractual requirements.

TECHNICAL MANUAL MANAGEMENT AGENCY - The Naval Air Technical Services Facility (Philadelphia) is the TMMA for the Naval Air Systems Command.

TECHNICAL MANUAL PLAN - A formal document required by contract and generated early in the program to define proposed manual coverage and outline the method for providing the technical manuals.

TECHNICAL MANUAL (or Manual) PREPARATION - The development of a manuscript or other text or illustrative material, or both, in final form for production, exclusive of composition.

TYPE COMMANDERS - For the purpose of this guide, COMNAVAIRPAC and COMNAVAIRLANT.

U

USING ACTIVITIES - Organizational, intermediate or depot activities who will actually use the technical manuals.

V

VALIDATION - The process by which the contractor or cognizant preparing activity tests a manual for technical adequacy and accuracy.

VERIFICATION - A proofing process by which the Navy assures adequacy, accuracy and usability of the technical manuals in the users' environment. Verification is conducted at the operational site, utilizing approved operational units and Navy support equipment, under the coordination responsibility of NAV-AIRTECHSERVFAC Code 40.

GLOSSARY PART II

GLOSSARY OF ABBREVIATED TITLES AND PHRASES

A

ACC - Aircraft Controlling Custodian
 ADO - After Date of Order
 AFC - Airframe Change
 APN - Aircraft Procurement, Navy
 ASO - Aviation Supply Office
 ATE - Automatic Test Equipment

B

BOA - Basic Ordering Agreement

C

CAO - Contract Administration Office
 CCB - Configuration (Change) Control Board
 CFA - Cognizant Field Activity
 CNO - Chief of Naval Operations
 CPFF - Cost Plus Fixed Fee
 COMOPTEVFOR - Commander, Test and Evaluation Force
 COS - Cartridge Order Sheet
 COTR - Contracting Officer's Technical Representative

D

DCAA - Defense Contract Audit Agency
 DCASO - Defense Contract Administrative Service Office
 DCN - Design Change Notice
 DRP - Designated Rework Point

E

ECP - Engineering Change Proposal

F

FAR - Federal Acquisition Regulation
 FYDP - Five year Defense Plan

G

G&A - General and Administrative

GPO - Government Printing Office

I

IOL - Initial Outfitting List
 IPB - Illustrated Parts Breakdown
 IRAC - Interim Rapid Action Change

J

JCP - Joint Committee on Printing
 JIL - Joint Interest List (of Technical Manuals)

L

LES - Local Engineering Specification
 LSA - Logistics Support Analysis
 LSAR - Logistics Support Analysis Record

M

MCR - Manual Change Release
 MDP - Master Data Package
 MEAR - Maintenance Engineering Analysis Records
 MIARS - Maintenance Information Automated Retrieval System
 MIM - Maintenance Instruction Manual
 MPA - Microfilm Preparing Activity
 MRL - Master Repair List

N

NAMP - Naval Aviation Maintenance Program
 NATOPS - Naval Air Training and Operating Procedures Standardization
 NAVAIR - Naval Air Systems Command
 NAVAIREWORKFAC - Naval Air Rework Facility
 NAVAIRSYSCOM - Naval Air System Command
 NAVAIRTECHSERVFAC - Naval Air Technical Services Facility
 NAVAVNLOGCEN - Naval Aviation Logistics Center
 NAVPRO - Naval Plant Representative Office

NAVPUBFORMCEN - Naval Publications and
Forms Center
NAVTACSUPPACT - Naval Tactical Support
Activity
NAVWPNEVALFAC - Naval Weapons Evaluation
Facility
NESO - Naval Engineering Support Office
NPPSO - Navy Publications and Printing
Service Office
NRCC - Naval Regional Contracting Center
NTE - Not-To-Exceed

O

O&MN - Operation and Maintenance, Navy
OOP - Out-of-Production
OPN - Other Procurement, Navy
OSIP - Operational Safety and Improve-
ment Program

P

PAMN - Procurement of Aircraft and
Missiles, Navy
PCO - Procuring Contracting Officer
PMRM - Periodic Maintenance Requirements
Manual
PMS - Planned Maintenance System
POS - Publication Order Sheet
PPB - Provisioning Parts Breakdown
PPC - Power Plant Change
PSE - Powerline Support Equipment

Q

QA - Quality Assurance

R

RAC - Rapid Action Change

RAMEC - Rapid Action Minor Engineering
Change

S

SCC - Sequence Control Chart
SEC - Support Equipment Change
SEL - Support Equipment List
SLEP - Service Life Extension Program
SM&R - Source, Maintenance and Recover-
ability
SSFI - Stock Status of Family Items

T

TD - Technical Directive
TEI - Temporary Engineering Instruction
TM - Technical Manual
TMCFA - Technical Manual Cognizant Field
Activity
TMCR - Technical Manual Contract Re-
quirement
TMCRWS - Technical Manual Contract Re-
quirement Work Statement
TMINS - Technical Manual Identification
Numbering System
TMMA - Technical Manual Management
Agency
TPDR - Technical Publication Deficiency
Report
TYCOM - Type Commander

W

WP - Work Package
WPN - Weapons Procurement, Navy
WSSD - Weapon Systems Support Detachment

