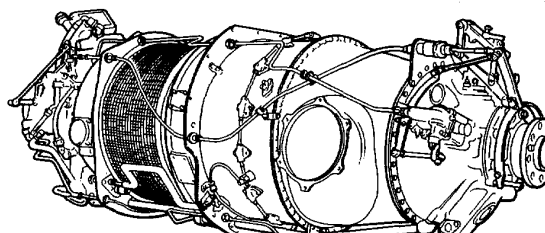


TECHNICAL MANUAL

**AVIATION UNIT
AND
AVIATION INTERMEDIATE
MAINTENANCE MANUAL**

**TURBOPROP
AIRCRAFT ENGINE**



MODEL T74-CP-700
NSN 2840-00-855-6100

This manual supersedes that portion of TM 55-2840-232-24, 2 July 1971, that pertains to Engine Model T74-CP-700.

INTRODUCTION AND ENGINE GENERAL	1-1	
COMPRESSOR SECTION	2-1	
COMBUSTION SECTION	3-1	
POWER SECTION	4-1	
ACCESSORY GEARBOX	5-1	
FUEL CONTROL ASSEMBLY	6-1	
ELECTRICAL SYSTEM	7-1	
OIL SYSTEM	8-1	
PROPELLER GEARBOX	9-1	
MISCELLANEOUS EQUIPMENT	10-1	
REFERENCES	A-1	
MAINTENANCE ALLOCATION CHART	B-1	
EXPENDABLE SUPPLIES AND MATERIALS LIST	C-1	
ILLUSTRATED LIST OF MANUFACTURED ITEMS	D-1	
LOCKING TORQUE VALUES	E-1	
GLOSSARY	G-1	
INDEX	I-1	

Aviation Unit and Aviation Intermediate
Maintenance Manual

TURBOPROP AIRCRAFT ENGINE
(NSN 2840-00-855-6100)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, USAAVSCOM, ATTN: AMSAV-MPSD, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished to you.

TABLE OF CONTENTS

		Page
	HOW TO USE THIS MANUAL	v
CHAPTER 1	INTRODUCTION AND ENGINE GENERAL	
Section I	General Information	1-5
Section II	Equipment Description and Data	1-7
Section III	Principles of Operation	1-11
Section IV	Repair Parts, Special Tools, TMDE, and Support Equipment	1-21
Section V	Service Upon Receipt	1-23
Section VI	Special Inspections	1-31
Section VII	Troubleshooting	1-39
Section VIII	General Maintenance Procedures	1-79
Section IX	Preparation for Storage and Shipment	1-121
Section X	Engine Testing	1-133
CHAPTER 2	COMPRESSOR SECTION	
Section I	Air Inlet Screen	2-3
Section II	Compressor Bleed Valve	2-9
Section III	Compressor Turbine Assembly (AVIM)	2-13
Section IV	Compressor Rotor Blades (First-Stage) Inspection (AVIM)	2-21

TABLE OF CONTENTS (Continued)

	Page
CHAPTER 3	COMBUSTION SECTION (AVIM)
Section I	Liner Assembly (AVIM)3-3
Section II	Inner (Small) Exit Duct, Shroud and Vane Assembly (AVIM)3-11
Section III	Outer (Large) Exit Duct (AVIM)3-27
CHAPTER 4	POWER SECTION (AVIM)
Section I	Power Section (AVIM)4-3
Section II	Power Turbine stator Housing (AVIM)4-11
Section III	Power Turbine Stator Assembly (AVIM)4-15
Section IV	Power Turbine Rotor Assembly (AVIM)4-17
Section V	Power Turbine Blades (AVIM)4-23
Section VI	Power Turbine Shroud (AVIM)4-25
Section VII	Exhaust Duct (AVIM)4-29
Section VIII	Power Turbine Case Sealing Ring(s) (AVIM)4-35
CHAPTER 5	ACCESSORY GEARBOX
Section I	Accessory Gearbox5-3
Section II	Accessory Gearbox Accessory Drive Shaft Seals (AVIM)5-5
Section III	Accessory Gearbox (AVIM)5-9
CHAPTER 6	FUEL CONTROL ASSEMBLY
Section I	Fuel Control Assembly6-3
Section II	Fuel Control Linkage6-9
Section III	Fuel Pump6-11
Section IV	Fuel Pump Filter Element6-15
Section V	Fuel Manifold Assembly6-17
Section VI	Fuel Adapter and Nozzle Assembly (AVIM)6-23
Section VII	Fuel Nozzle (AVIM)6-33
Section VIII	Combustor Drain Valve6-37
Section IX	Temperature Compensator6-41
Section X	Fuel Dump Valve6-47
Section XI	Fuel Lines and Fittings6-49
CHAPTER 7	ELECTRICAL SYSTEM
Section I	Glow Plugs7-3
Section II	Electron Tubes7-5
Section III	Ignition Regulator7-9
Section IV	Ignition Cables7-15
Section V	Thermocouple Harness (AVIM)7-19
Section VI	Thermocouple Busbar (AVIM)7-27
Section VII	Thermocouple Probes (AVIM)7-31

TABLE OF CONTENTS (Continued)

	Page
CHAPTER 8	OIL SYSTEM
Section I	Oil Filter Element8-3
Section II	Oil Lines and Fittings8-7
Section III	Oil-to-Fuel Heater8-23
Section IV	Oil Pressure Relief Valve8-27
CHAPTER 9	PROPELLER GEARBOX
Section I	Propeller Gearbox9-3
Section II	Transfer Housing Transfer Tubes Seals (AVIM)9-7
Section III	Propeller Shaft Seal (AVIM)9-11
Section IV	Nf Tachometer-Generator Drive Shaft Seal (AVIM)9-17
Section V	Power Turbine Governor9-19
CHAPTER 10	MISCELLANEOUS EQUIPMENT
Section I	Nf Tachometer-Generator10-3
Section II	Rotation of Compressor Turbine Rotor by Hand10-5
Section III	Propeller Reversing Gear10-7
Section IV	Air Lines and Fittings10-23
Section V	P3 Filter Element10-35
Section VI	Center Fireseal Mount Ring10-37
Section VII	Rear Fireseal Mount Ring10-41
APPENDIX A.	REFERENCESA-1
APPENDIX B.	MAINTENANCE ALLOCATION CHARTB-1
APPENDIX C.	EXPENDABLE SUPPLIES AND MATERIALS LISTC-1
APPENDIX D.	ILLUSTRATED LIST OF MANUFACTURED ITEMS.....D-1
APPENDIX E.	LOCKING TORQUE VALVESE-1
GLOSSARY	G-1
SUBJECT INDEX.....	I-1

HOW TO USE THIS MANUAL

1. Description of Manual. This manual has ten chapters and five appendices. Chapter 1 is divided into sections, each section in Chapter 1 is divided into paragraphs. The paragraphs have specific information you will need to know. Chapters 2 through 10 are divided into tasks. The tasks tell you what you need and how to do each job. The appendices have general information you will need to know. They list references, maintenance allocation chart, expendable supplies and materials, manufactured items and torque limits.

a. Paragraph Tasks. Paragraphs make up sections in Chapter 1. They contain specific information about the engine. Tasks make up Chapters 2 through 10. It is the tasks that have the information you need to do any job. All paragraphs and tasks are numbered. This helps you find what you need when you need it. **USE THE CHAPTER OVERVIEW AT THE BEGINNING OF EACH CHAPTER OR THE INDEX TO FIND THE PARAGRAPH OR TASK YOU NEED.** Tasks and tables are identified by the number of the chapter in which it appears, followed by a dash and a number indicating the sequence in which it appears in the chapter.

Examples: Table 2-2 is the second table in Chapter 2.

Task 2-4 is the fourth task in Chapter 2.

b. Initial Setup. Initial setup is the first part of every task in the manual. It lists what tools, materials, and parts you will need before you can do the task. The following headings are used when they apply.

(1) Task Title. The task title after the paragraph number describes the job to be done in the task.

(2) Tools. Tools, tool kits, or shop sets needed to do the task are listed here. If tools from your repairman's tool kit are needed, the kit is listed. Tools you need that are not in the kit or set, are listed by name, type, and size. Special tools and test and support equipment are listed by a T-number. Find these items in Appendix B, Section III.

(3) Materials. Expendable items and support materials are listed under this heading. These are things like solvent, rags, grease, lockwire, etc. They are listed by an E-number:

Example: Varsol (E. 9)

Find these items in Appendix C.

(4) Parts. All mandatory replacement parts are listed. These are things like gaskets, packings, cotterpins, lockwashers, etc. They are listed by the Repair Parts and Special Tools List (RPSTL) name.

(5) Personnel Required. The people needed to do the task are listed under this heading. They are identified by their MOS. When more than one of any MOS is needed, the number needed is shown in parentheses. The text will tell you when a helper is needed.

(6) References. TM's you will need to do the task are listed under this heading.

(7) Equipment Condition. All the procedures to be done before you start the task are listed under this heading. The number of the task is given when applicable.

(8) General Safety Instructions. Warnings and Cautions that apply in general to the complete procedure are described here. They are not repeated in the step-by-step procedures. Make sure you understand and comply with them.

c. Locator Illustrations. When needed (for removal, installation and other procedures) a locator illustration is included in initial setup. They show you the area of the engine to be worked on. Parts involved in the task are called out.

d. Procedures. Step-by-step procedures tell you how to do the task. They are arranged in logical sequence to help you get the task done efficiently.

2. How To Prepare For a Task. Read the initial setup carefully before starting. It tells you what you need and what you have to know to start the task. DO NOT START A TASK UNTIL:

You understand the task.
You understand what you are to do.
You know what is needed to do the work.
You have the things you need.

a. If a tool has a T-code after it, go to the Tool and Test Equipment List in Appendix B, Section III. Read down the left-hand column to your T-code. This is the tool you need for your task.

b. If an expendable material has an E-number after it, go to the Expendable Supplies and Materials List in Appendix C. Read down the Item Number column to your E-number. This is the expendable you need for your task.

c. Before you start the task, check and make sure you can get the needed parts; National Stock Numbers (NSN) and part numbers are listed in the RPSTL, TM55-2840-251-23P.

d. Check for personnel required.

e. If preliminary procedures are listed under "Equipment Condition", BE SURE THE LISTED TASKS ARE DONE: then do this task.

3. How To Do The Task. Before starting, read the entire task. Familiarize yourself with the entire procedure before you begin the task. As you read, remember the following:

a. PAY ATTENTION TO WARNINGS, CAUTIONS AND NOTES.

b. When values are underlined or followed by the word INSPECT, an inspector must OK the completed step.

c. A GLOSSARY is provided. It lists the special words and unusual terms used in this manual and gives their meaning. Check it out. It may help you understand the instructions.

d. The following are considered standard maintenance practices. Instructions about these practices will not normally be included in task steps. Task steps will tell you when standard maintenance practices do not apply.

(1) Lines will be tagged before they are disconnected. Tubes and parts will be capped or plugged when they are disconnected.

(2) Used preformed packings, retainers, gaskets, cotterpins, lockwashers, etc. are discarded. New parts shall be installed.

(3) Packings are coated before installation in accordance with the following:

(a) Petrolatum (E. 20) for fuel system packings.

(b) Lubricating Oil (E. 2) or (E. 71) for lubricating system packings.

(4) Tubes and related parts will be tied out of the way with twine, not lockwire.

(5) In disassembly tasks, components are removed and wires disconnected.

(6) Disassembly procedures reflect disassembly needed to support total authorized repair. You may not need to disassemble a part as far as described in the task. Follow the steps to disassemble as far as needed to repair/replace worn or damaged parts.

(7) Before a component or the disassembled parts of a component are inspected, they are to be cleaned as required.

(8) Components and mating surface area will be inspected for serviceable condition before installation.

(9) Guide lines will be used when any item is hoisted overhead.

(10) When a nut is tightened or loosened on a bolt, the bolt head will be held with a wrench.

(11) A special torque will be cited when the words TORQUE TO are used. A standard torque is required when word install is used.

(12) When torquing hardware, observe compliance with drag torque as required. To determine drag torque, thread nut onto screw or bolt until at least two threads protrude. The nut shall not contact the mating part. The torque necessary to begin turning the nut is the drag torque.

(13) If additional setup tools are required, such as crowfoot wrenches, they will be listed in the task INITIAL SETUP.

(14) When cotterpin is required, cotterpin holes will be aligned within allowable torque range.

(15) Following installation, paint will be touched up as required.

(16) Following maintenance, inspect for foreign objects.

e. General maintenance procedures (e. g. , "replace studs and inserts") are not included in the maintenance instructions. A reference is made to General Aircraft Maintenance Manual (TM55-1500-204-25/1) for these procedures.

4. Appendices.

a. Appendix A -References. This appendix lists all referenced publications needed to perform the maintenance procedures in this manual.

b. Appendix B -Maintenance Allocation Chart (MAC). This appendix consists of four sections as follows:

Section I -Introduction. This section is a summary of what is in the MAC.

Section II. This section is the MAC. The MAC assigns maintenance functions in accordance with the Three Levels of Maintenance concept for Army Aviation. The MAC has six columns, containing the following information:

Columns 1 and 2 Functional Groups. These columns identify maintenance significant components, assemblies, subassemblies, and modules.

Column 3 -Maintenance Function. This column lists the maintenance functions to be performed on the items listed in column 2.

Column 4 -Maintenance Categories. The maintenance categories (levels) AVUM, AVIM, and DEPOT are listed with individual columns. These columns identify the maintenance level at which each maintenance function is to be performed. Numbers in parentheses identify the corresponding numbered remarks in Section IV.

Column 5 -Tools and Equipment. This column lists the reference code identifying the tool or test equipment required, as listed in Section III.

Column 6- Remarks. Remarks identified by an alphabetical code, where applicable, are listed in Section IV and identified in column 6.

Section III -Tool and Test Equipment Requirements. This section consists of five columns, containing the following information:

Tool or Test Equipment Reference Code. This column lists the reference code listed in Column 5 Tools and Equipment in the MAC.

Maintenance Category. This column lists the maintenance category (level) authorized to use the tool or test equipment.

Nomenclature. This column lists the nomenclature of the tools and test equipment.

National/Nato Stock Number. This column lists the stock number applicable to each tool or test equipment.

Tool Number. The tool number is listed to aid in identifying the tool or test equipment. Section IV Remarks. This section has two columns, containing the following information.

Reference Code. This column contains alphabetical codes or numbers in parentheses corresponding to the codes appearing in the applicable columns in the MAC.

Remarks/Notes. This column contains the actual notes as referenced by the reference codes to the MAC.

c. Appendix C -Expendable Supplies and Materials List. This appendix consists of two sections as follows:

Section I -Introduction. This section is a summary of what is in the Expendable Supplies and Materials List.

Section II - This Section is the Expendable Supplies and Materials List and has four columns, containing the following information:

Column 1 -Item Number. This is the E-number assigned to the expendable item. It is referred to in the detail procedures.

Example: Lockwire (E. 3)

Column 2 -National Stock Number. This is the National Stock Number (NSN) assigned to item. Use it to request or requisition the item.

Column 3 -Description. This column lists the name and, if required, a description to identify the item. The last line for each item shows the part number followed by the Federal Supply Code for Manufacturer (FSCM) in parentheses, if there is no NSN in Column 2.

Column 4 -U/M. This column lists the measure used in performing the maintenance function, expressed as a two-character alphabetical abbreviation (e.g., ea, in., pr).

d. Appendix D -Manufactured Items List. This appendix lists and illustrates any parts you may have to locally manufacture to do a task.

e. Appendix E -Locking Torque Values. This appendix details standard torque values.

5. Glossary. Definitions of abbreviations and unusual terms you find in the manual are listed here to help you.

6. Index. This appears at the end of the manual and lists all subjects in the manual in alphabetical order, according to Chapter/ Section/Paragraph.

CHAPTER 1

INTRODUCTION AND ENGINE GENERAL

CHAPTER OVERVIEW

This chapter contains standard data and information about forms, records, reports, and general procedures. It also contains descriptions and other data about the engine and its major components. The chapter is divided into the following sections/ paragraphs:

<u>SECTION</u>	<u>PARAGRAPH</u>	<u>TITLE</u>	<u>PAGE</u>
I		General Information	
	1-1	Scope	1-5
	1-2	Maintenance Forms, Records and Reports	1-5
	1-3	Destructions of Army Materiel to Prevent Enemy Use	1-5
	1-4	Preparation for Storage and Shipment	1-5
	1-5	Quality Assurance/Quality Control (QA/QC)	1-5
	1-6	Nomenclature Cross Reference	1-5
	1-7	Reporting Equipment Improve- ment Recommendations	1-6
	1-8	Equipment Characteristics, Capabilities and Features	1-6
II		Equipment Description and Data	
	1-9	Location and Description of Major Components	1-7
	1-10	Equipment Data	1-10
III		Principles of Operation	
	1-11	Fuel System	1-11
	1-12	Lubrication System	1-15
	1-13	Ignition Circuit	1-18
	1-14	Interturbine Temperature Sensing System	1-19
	1-15	Air System	1-20

GO TO NEXT PAGE

CHAPTER 1

INTRODUCTION AND ENGINE GENERAL

CHAPTER OVERVIEW (Cont)

<u>SECTION</u>	<u>PARAGRAPH</u>	<u>TITLE</u>	<u>PAGE</u>
IV		Repair Parts, Special Tools, TMDE and Support Equipment	
	1-16	Common Tools and Equipment	1-21
	1-17	Special Tools, TMDE and Support Equipment	1-21
	1-18	Repair Parts	1-21
V		Service Upon Receipt	
	1-19	Site and Shelter Requirements	1-24
	1-20	Service Upon Receipt of Material	1-24
	1-21	Unpacking	1-25
	1-22	Checking Unpacked Engine	1-29
	1-23	Installation Instructions	1-29
VI		Special Inspections	
	1-24	Overspeed	1-31
	1-25	ITT Overtemperature	1-32
	1-26	Overtorque	1-33
	1-27	Sudden Stoppage	1-33
	1-28	Loss of Oil/Oil Pressure Failure	1-33
	1-29	Lightning Strike	1-33
	1-30	Immersion in Water (Thermal Shock)	1-33
	1-31	Dropped Engine	1-33
	1-32	Exposure to Fire Extinguishing Agents	1-34
	1-33	Hot Section Inspection (AVIM)	1-34
	1-34	Foreign Object Damage	1-37
	1-35	Oil Temperature	1-37
VII		Troubleshooting	
	1-36	Symptom Index	1-40
	1-37 thru 1-69 1-70	Troubleshooting Procedures Specific Symptoms	1-41 1-77

CHAPTER 1

INTRODUCTION AND ENGINE GENERAL

CHAPTER OVERVIEW (Cont)

<u>SECTION</u>	<u>PARAGRAPH</u>	<u>TITLE</u>	<u>PAGE</u>
VIII		General Maintenance Procedures	
	1-71	Servicing	1-81
	1-72	Ground Handling	1-87
	1-73	Installation/Removal of Engine or Power Section in/from Stands	1-88
	1-74	Operational Check	1-94
	1-75	Inspection of Installed Items	1-95
	1-76	Disassembly	1-95
	1-77	Cleaning	1-99
	1-78	Inspection	1-111
	1-79	Repair or Replacement	1-115
	1-80	Testing	1-115
	1-81	Painting	1-116
	1-82	Lubrication	1-116
	1-83	Reassembly	1-116
	1-84	Test Procedures	1-119
	1-85	Installation	1-119
	1-86	Adjustment	1-119
	1-87	Operational Check	1-119
	1-88	Place in Service	1-119
IX		Preparation for Storage and Shipment	
	1-89	Preservation	1-122
	1-90	Installation in Container	1-126
	1-91	Engine Storage Installed in Aircraft	1-132
	1-92	Engine Storage in Container	1-132
X		Engine Testing	
	1-93	General	1-133
	1-94	Ground Testing of Engine Installed in Aircraft	1-138
	1-95	Ground Testing of Engine on Mobile Trailer Assembly (AVIM)	1-163

END OF OVERVIEW
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CHAPTER 1

INTRODUCTION

Section I GENERAL INFORMATION

1-1 SCOPE

Type of Manual: Aviation Unit and Aviation Intermediate Maintenance Manual

Model Number and Equipment Name: T74-CP-700 Turboprop Aircraft Engine

Purpose of Equipment: Powers the U-21A/RU-21A Series Aircraft

1-2 MAINTENANCE FORMS, RECORDS AND REPORTS

Department of the Army forms and procedures will be those prescribed by DA Pamphlet 738-751, Functional Users Manual for the Army Maintenance Management System - Aviation (TAMMS-A).

1-3 DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Refer to TM55-1520-209-23, Chapter 16, TM 750-244-1-5 and TM55-1510-215-23.

1-4 PREPARATION FOR STORAGE AND SHIPMENT

Refer to Chapter 1, Section IX for storage and shipment details.

1-5 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Refer to FM55-411.

1-6 NOMENCLATURE CROSS-REFERENCE

This listing includes nomenclature cross references used in this manual;

COMMON NAME

PROPELLER GEARBOX
IGNITION HARNESS

NOMENCLATURE

DRIVE SYSTEM
ELECTRICAL HARNESS

GO TO NEXT PAGE