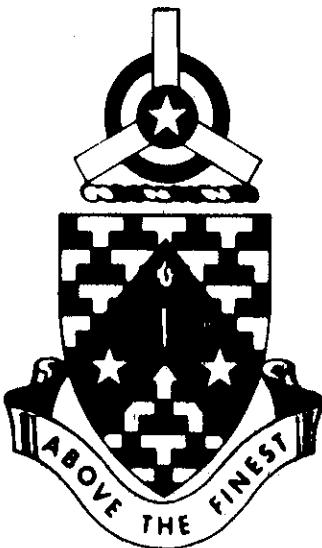


# PROGRAMMED TEXT

AIRCRAFT MAINTENANCE STRUCTURE

AM-86



FEBRUARY 1969

UNITED STATES ARMY  
PRIMARY HELICOPTER SCHOOL  
FORT WOLTERS, TEXAS

# PROGRAMMED TEXT

**PROGRAM TEXT****FILE NO:**

AM-86

**PROGRAM TITLE**

Aircraft Maintenance Structure

**POI SCOPE:**

Maintenance capabilities and responsibilities of the four categories of maintenance.

**INSTRUCTOR REFERENCES:**

AR 750-1

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# TABLE OF CONTENTS

**PROGRAMED CONFERENCE****FILE NO:** AM-86**PROGRAM TITLE:**

Aircraft Maintenance Structure

	<b>CONTENTS</b>	<b>PAGE NUMBER</b>
<b>1. PREFACE</b>		iii
<b>2. PERFORMANCE OBJECTIVES</b>		iv
<b>3. PROGRAM</b>		1
a.		
b.	Annex "A" Annex "B" Annex "C" Annex "D"	11 12 13 14
c.		
d.		
e.		
<b>4. SELF EVALUATION EXERCISE</b>		8
<b>5. ANSWERS TO SELF EVALUATION EXERCISE</b>		15
<b>6. ITEMS TO BE ISSUED WITH PROGRAM</b>		
7.		
8.		
9.		
10.		

## PREFACE

As an Army Aviator you must be able to identify the Maintenance capabilities of the Army Maintenance System. Why? Because YOU, may be put in the position of Maintenance Officer or Assistant Maintenance Officer at any time in your career. Knowing what your unit's capabilities are and where to get technical assistance when needed, will enable you to perform your job with a high degree of professionalism.

Start with frame 1 and work each frame in sequence. Each frame will usually ask you a question. The correct answer is printed on the top of the next frame. If your answer was incorrect, turn back and restudy the frame before continuing on to the next frame. When you have finished the text, complete the Self Evaluation Exercise.

## **PERFORMANCE OBJECTIVES**

With the use of the attached Maintenance Allocation Charts (Annex A thru Annex D) you will identify the maintenance capabilities at the following maintenance levels:

1. Organizational
2. Direct Support
3. General Support
4. Depot

NOTE: For Frames 1 thru 6 use the attached Maintenance Allocation Charts (MAC) found on pages 11-14. These are extracted from the TM 55-1520-206-20.

There are four categories of maintenance. These categories consist of the following:

Organizational Maintenance. That maintenance normally authorized for, performed by, and the responsibility of a using organization for equipment in its possession.

Direct Support Maintenance. That maintenance normally authorized and performed by designated maintenance activities in direct support of using organizations.

General Support Maintenance. Maintenance authorized and performed by designated TOE and TD organizations in support of the Army Supply System (see note below).

Depot Maintenance. Units through overhaul of economically repairable material, support the supply system in satisfying overall Army requirements.

As an Army Aviator assigned as Assistant Maintenance Officer in an Aviation Company, which of the four categories mentioned above would you be primarily interested?

- a. Depot and Direct Support
- b. General Support and Organizational
- c. Organizational and Direct Support
- d. Direct Support and General Support

NOTE: TOE - A table of organization and equipment prescribes the normal mission, capabilities, organizational structure, and personnel and equipment for a unit.

TD - A table of distribution prescribes the organizational structure and personnel of a military unit to perform a specific mission for which there is no appropriate table of organization and equipment.

TURN TO PAGE 3 FOR FRAME 2.

ANSWER: a. repair the assembly in your own maintenance shop.

FRAME 5

The General Support Maintenance Unit is characterized by its capability, through possession of requisite maintenance skills, tools, and supplies to repair and overhaul unserviceable equipment for return to the local Army area supply system; and to back up Direct Support maintenance units as required through repair and return of equipment to the user. The General Support Maintenance unit stocks repair parts for its own use; it is not given a repair parts supply mission.

You are the General Support Maintenance Officer and the Maintenance Officer from an aviation company comes to you and asks for a part to repair the cylinder and piston assembly of an engine his mechanics are working on. The part he needs is a new piston. Using the above information and attached chart you would tell him

- a. we do not stock the part.
- b. you will have to get your supplies from Depot.
- c. your Direct Support Unit will have the part needed.
- d. sure I have the part, its part of my mission to resupply.

As a Maintenance Officer of an aviation company, should you have gone to a General Support Maintenance Unit with a request for parts?

Yes        No   V  

Why?   Depot  

TURN TO PAGE 4 FOR FRAME 6

ANSWER: c. Organizational and Direct Support

---

FRAME 2

The Maintenance Allocation Chart assigns maintenance functions to the lowest available maintenance category based on past experience and the following considerations:

1. Skills available.
2. Time required.
3. Tools and test equipment authorized.

Only the lowest category of maintenance authorized to be performed is indicated.

A maintenance function assigned at one level, will automatically be authorized to be performed at any higher level.

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With the information given above and using the attached chart, would you as a Maintenance Officer assigned to a General Support engine repair shop be authorized to overhaul a carburetor assembly?

- a. No, this is only a Depot function.
- b. Yes, because the Direct Support unit can repair it.
- c. Yes, this function is part of our assigned mission.
- d. No, Organizational Maintenance has written permission to perform this task.

ANSWER: c. your Direct Support Unit will have the part needed.

No, the General Support Maintenance Unit has repair and overhaul capabilities on some units, but is not given the repair parts supply mission. Your source of supply parts is your Direct Support Unit.

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FRAME 6

Depot Maintenance: Depot Maintenance repairs material which is beyond the capability of General Support Maintenance (major overhaul). This augments the Army procurement program by returning items capable of being economically repairable to the Supply System.

Using the Maintenance Allocation Charts, what is the lowest maintenance level that has the requirement of overhauling a cylinder.

- a. General Support
- b. Direct Support
- c. Depot

ANSWER: c. Yes, this function is part of our assigned mission.

FRAME 3

Organizational Maintenance: Organizational maintenance is that maintenance normally authorized for, performed by, and the responsibility of a using organization on equipment in its possession. This maintenance consists of functions and repairs within the capabilities of authorized personnel, skills, tools, and test equipment as prescribed in appropriate Department of the Army TOE's or TD's. Maintenance exceeding the authorized scope may be performed when authorized in writing by the next higher maintenance support commander.

Using the above definition of Organizational Maintenance, would you as a Maintenance Officer of an Aviation Company be able to repair a "cylinder and piston assembly"? (Use attached chart.)

- a. No, we do not have the capability.
- b. Yes, I have the capability and equipment.
- c. No, it's the responsibility of Direct Support Maintenance.
- d. Yes, if I have written approval from our Direct Support Unit.

ANSWER: c. Depot (The cylinder would be removed by the Direct Support Maintenance Unit and shipped thru supply channels for depot rebuild.

NOTE: You would definitely not send the engine to a Direct Support Unit or even a General Support Unit even though on some components they have this capability. Even though you may have the skilled mechanics and tools and parts, you would not do the overhaul job on the engine, it is not part of your mission.

Depot not only augments the procurement program in overall Army requirements. It also forecasts parts requirements, prepares cost estimates for those overhauls, repairs, and any modification that may be needed on your aircraft.

Depot maintenance also coordinates with Depot Storage activities to ensure an orderly flow of end items, like overhauled or rebuilt engines, repair parts and tools to all Army facilities.

CONTINUE TO THE SELF EVALUATION EXERCISE

ANSWER: d. Yes, if I have written approval from our Direct Support Unit.

---

FRAME 4

Direct Support Maintenance: Direct support maintenance is that maintenance normally authorized and performed by designated maintenance activities in direct support of using organizations. This category of maintenance is limited to the repair of end items or unserviceable assemblies in support of using organizations on a return to user basis.

As Maintenance Officer in a Direct Support Company, you have inspected the engine on an aircraft that was written up on the 2408-13 (Inspection and Maintenance Record), as having no indicated oil pressure. Further checks indicate that the oil pressure gauge does operate in other aircraft. You need this aircraft flyable as soon as possible. Your mechanics removed the oil pump from the engine. You would (Use attached chart)

- a. repair the assembly at your unit maintenance shop.
- b. order a new component from Depot and repair the assembly in your maintenance shop.
- c. take the assembly to a General Support unit to be repaired.
- d. take the assembly to a Direct Support unit telling them that you need this as soon as possible in support of your mission.

STOP! RETURN TO PAGE 2, FRAME 5

**AIRCRAFT MAINTENANCE STRUCTURE**  
**SELF EVALUATION EXERCISE**

1. What are the four levels of maintenance?

- a. 1-2, 3, 4, 5
- b. Organizational, 1-2 Direct, General
- c. Depot, Direct, Organizational, General
- d. Depot, Direct, General, 5th

2. Where can you find what maintenance level is assigned a specific maintenance function?

- a. Table of Contents
- b. TM 55-1520-206-10
- c. Appendix V
- d. Maintenance Allocation Chart

3. What levels of maintenance are authorized to inspect?

- a. Organizational, Direct, General
- b. General, Depot, Direct
- c. Depot, Direct, Organizational
- d. All categories

4. What is Organizational Maintenance?

- a. It is that maintenance normally performed by activities in direct support of a using organization
- b. The maintenance technique known as IROAN developed to eliminate unnecessary maintenance cost
- c. It is that maintenance performed by the using organization on its own equipment
- d. Organizations that repair or overhaul material to required maintenance standards

5. What is a Maintenance Allocation Chart?

- a. A Maintenance Allocation Chart is used to determine serviceability of an item by comparing its physical, mechanical, and electrical characteristics with established standards
- b. Checks accomplished maintenance on the ground to insure satisfactory operation of an item that has been replaced or adjusted
- c. Maintenance Allocation Chart assigns maintenance function to the lowest available maintenance category based on their capabilities
- d. Provides lists of those items of installed or loose equipment required by and authorized for using organizations to accomplish their primary or alternate mission

6. What is the 3rd level of maintenance?

- a. Individual
- b. General support
- c. Direct support
- d. Organizational

~~X~~ 7. What are the maintenance capabilities of a Direct Support Unit?

- a. Repairs and overhauls unserviceable equipment for return to local Army area
- b. Provides direct and general support maintenance
- c. Eliminates unnecessary maintenance cost while still achieving published maintenance standards in accordance with serviceability standards after determining the need for and performing the minimum essential maintenance required
- d. To provide close support on a repair and return-to-user basis, including the performance of on-site repair, technical assistance, to enhance and sustain the operational readiness of supported units

8. How does the General Support Category fall into the maintenance structure?

- a. It supplies close support on repair and return-to-user basis, which includes on-site repair, stockage and issue of maintenance and repair items
- b. The General Support Maintenance Unit stocks repair parts for its own use, it is not given a repair parts supply mission. This maintenance unit is characterized by its capability, through possession of required maintenance skills, tools, and supplies to repair and overhaul unserviceable equipment for return to local Army supply system
- c. It is characterized by the presence of fixed industrial type facilities operating under TDA with a mission of repairing, overhauling or rebuilding equipment
- d. Normally General Support Maintenance units will be designated to provide support to units in a specified area, except those administratively self sufficient military organizations such as divisions, which have an organic Direct Support capability

9. In the attached Maintenance Allocation Chart, what is the lowest category of maintenance authorized to repair the "Baffles, Deflectors, and Rocker Box Covers"?

- a. Depot
- b. Direct Support
- c. Organizational
- d. General Support

10. Utilizing the attached Maintenance Allocation Chart, which category of maintenance has the capability of overhaul on the "magneton and starting vibrator"?

- a. Direct and General Support
- b. Direct Support
- c. Depot
- d. General Support

11. Using the Maintenance Allocation Chart provided, which category(s) can replace the oil cooler?

- a. Organizational with prior approval
- b. Direct Support
- c. Depot only
- d. Direct Support and Organizational with prior approval

12. Maintenance characterized by the presence of fixed industrial-type facilities operating under a TDA with a mission of repairing, overhauling or rebuilding equipment to meet overall Department of Army need for serviceable material assets, would be classified as

- a. General Support
- b. Direct Support
- c. General and Direct Support
- d. Depot Maintenance

(1) Group No.	(2) Component and Related Operations	(3)	(4) O	(5) DS	(6) GS	(7) D	(8)	(9) Remarks
02 (cont)	Skids, Cross Tubes and Shoes Inspect Replace Repair		X X		X			
03	Engine and Related Systems Engine Assembly, Internal Combustion Inspect Operational Test Replace Repair Overhaul Baffles, Deflectors and Rocker Box Covers Inspect Replace Repair		X X	X X		X X		X
	Rocker Arm Shafts, Supports, Push Rods and Housings, Seals, Hydraulic Lifters, Inserts, Studs and Breather Tubes Inspect Replace							
	Valves Adjust					X		
	Cylinder and Piston Assembly Inspect Replace Repair Overhaul		X	%%	X	X		X
	Magneto Drive Assembly Inspect* Replace Repair Overhaul		X		X	X		X
	Tachometer Drive Assembly Inspect Replace		X		X			

\*Organization authorized to replace Magneto Drive Cushion.

%%= Indicates that the particular maintenance function may be performed  
provided it is specifically authorized by the Direct Support  
Maintenance Office.

(1) Group No.	(2) Component and Related Operations	(3)	(4) O	(5) DS	(6) GS	(7) D	(8)	(9) Remarks
03 (cont)	Starter Drive Assembly Inspect Replace		X		X			
	Intake Pipes Inspect Replace		X	X				
	Oil Tank Assembly Inspect Replace Repair		X	X		X		
	Oil Sump Assembly Inspect Replace		X		X			
	Oil Pump Assembly Inspect Replace Repair Overhaul		X		X		X	
	Oil Screens Inspect Service Replace		X	X	X			
	Filters Inspect Service Replace		X	X	X			
	Pressure Relief Valve Inspect Adjust Replace		X	X	X			
	Primer Lines Inspect Replace		X	X				
	Carburetor Assemblies Inspect Test Adjust Replace Repair Overhaul		X	X	X	X	X	

(1) Group No.	(2) Component and Related Operations	(3)	(4)	(5)	(6)	(7)	(8)	(9) Remarks
			O	DS	GS	D		
03 (cont)	Primer Solenoid							
	Inspect		X					
	Test		X					
	Replace		X					
	Repair				X			
	Oil Cooler							
	Inspect		X					
	Service		X					
	Replace			X				
	Repair			X				
	Overhaul					X		
	Valves and Regulators							
	Inspect		X					
	Adjust		X					
	Replace			X				
	Repair			X				
	Pipe, Tubing, Fittings, Brackets, Drains, Screens, Filters, Supports and Clamps							
	Inspect		X					
	Service		X					
	Replace		X					
	Magneto and Starting Vibrator							
	Inspect		X					
	Adjust		X					
	Replace		X					
	Repair			X				
	Overhaul				X			
	Magneto Breaker Points							
	Inspect		X					
	Replace		X					
	Harnesses							
	Inspect		X					
	Test		X					
	Replace		X					
	Repair			X				
	Switches							
	Inspect		X					
	Replace		X					

**ANNEX D****TM 55-1520-206-20**

(1) Group No.	(2) Component and Related Operations	(3)	(4) O	(5) DS	(6) GS	(7) D	(8)	(9) Remarks
03 (cont)	Spark Plugs Inspect Replace Recondition		X	X	X			
	Air Induction System							
	Cowling, Ducts, Shrouds, Cables, Filters, Elbows, Lines and Screens		X	X	X	X		
	Inspect Service Replace Repair		X	X	X	X		
	Exhaust System		X	X	X	X		
	Inspect Replace Repair		X	X	X	X		
	Engine Mounts and Snubber Assy		X	X	X	X		
	Inspect Replace Repair		X	X	X	X		
	Engine Controls		X	X	X	X		
	Inspect Adjust Replace Repair		X	X	X	X		
	Cooling System		X	X	X	X		
	Cowling, Ducts, Shrouds		X	X	X	X		
	Inspect Replace Repair		X	X	X	X		
	Fan		X	X	X	X		
	Inspect Adjust Replace Repair		X	X	X	X		
	Tubing Fittings		X	X	X	X		
	Inspect Replace Repair		X	X	X	X		

AIRCRAFT MAINTENANCE STRUCTURES

ANSWERS TO SELF EVALUATION EXERCISE

1. c
2. d
3. d
4. c
5. c
6. b
7. d
8. b
9. c
10. d
11. d
12. d

1. organization
2. David support
3. General support
4. Depot maintenance

1. - 20 Maint allocation charts

2. write T.O. ~~850~~

3. Local Policies