SECTION I

INTRODUCTION

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SECTION I

INTRODUCTION

1-1. GENERAL. This manual contains service and maintenance instructions for the Piper Aztec, PA-23-250, PA-23-250 (six place) and Apache PA-23-235 airplanes, designed and manufactured as a versatile aircraft in the Personal, Business and Military aviation field by the Piper Aircraft Corporation, Lock Haven, Pennsylvania.

1-2. SCOPE OF MANUAL. Sections II and III comprise the service part of this manual, whereas Sections IV through XIV comprise the maintenance instructions. The service instructions include ground handling, servicing and inspection. The maintenance instructions for each system include troubleshooting, removal and installation of components, and corrective maintenance and testing; each major system of the airplane is covered in a separate section. Only qualified personnel should perform the operations described in this manual.

The description of the airplane included in this section is limited to general information. Section II gives leading particulars and principal dimensions, while each major system is described in its appropriate section of the manual.

1-3. DESCRIPTION. The Piper PA-23 series airplanes are a five or six place, twin-engine, low-wing monoplane of all-metal construction. The following paragraphs provide descriptions of the major components and systems.

1-4. FUSELAGE. The fuselage, of truss and semi-monocoque type construction, is a combination of four basic units: The nose section, cabin section, tail section and a steel tubular frame, which extends from the tail section, through the cabin section, to the nose wheel.

1-5. WING. The rectangular wing is of all-metal stressed skin, full cantilever, low-wing design, consisting of two wing panels bolted together at the center of the fuselage. The wing tips are removable. The ailerons are cable and push rod controlled and are statically and dynamically balanced. The trailing edge type wing flaps are hydraulically operated.

1-6. EMPENNAGE. The empennage consists of the vertical stabilizer (fin), rudder with trim tab, and a horizontal stabalator. The control surfaces are dynamically and statically balanced.

1-7. FLIGHT CONTROLS. The flight controls are conventional equipment, consisting of a control wheel which operates the ailerons and stabilators and pedals for operating the rudder and brakes. Except for the brakes, duplicate controls are provided for the co-pilot.

1-8. HYDRAULIC SYSTEM. Two separate hydraulic systems are incorporated in the airplane. The main system incorporates a hydraulic Powerpak that operates the landing gear and flaps. The second system operates the airplane's brake system.

1-9. LANDING GEAR. The tricycle landing gear system is hydraulically operated and retractable with doors that cover the gear when retracted. The gear struts are air-oil type units.

1-10. ENGINES AND PROPELLERS. The airplane is powered by two Avco-Lycoming six cylinder, direct drive, wet sump, horizontally opposed, fuel injected engines. The propellers are Hartzell full feathering, constant speed units controlled by a governor mounted on each engine. Each model with its engines and propellers are listed on the next page.

MODEL	ENGINE	PROPELLER	H.P.	OCTANE
PA-23-250 14-Volt Electrical System	O-540-A1B5 or O-540-A1D5	HC-A2XK-2 HC-A2VK-2 or HC-82XK-2C1	250	91/96 See Note 2
PA-23-250 28-Volt Electrical System	O-540-A3D5	HC-A2XK-2 HC-A2VK-2 or HC-82XK-2C1	250	91/96 See Note 2
PA-23-235	O-540-B1A5	HC-A2XK-2 or HC-A2VK-2	235	80/87 See Note 2
PA-23-250 (six place) Ser. Nos. 27-2000 to 27-2504	O-540-A1D5 or IO-540-C1B5	HC-A2XK-2 HC-A2VK-2 or HC-82XK-2C1	250	91/96 See Note 2
PA-23-250 (six place) Ser. Nos. 27-2505 and up (non-Turbo)	IO-540-C4B5	See Note 1 Below	250	91/96 See Note 2
PA-23-250 (six place) Ser. Nos. 27-2505 and up with AiResearch Turbo Charger	IO-540-J4A5	See Note 1 Below	250	100/130 See Note 2
PA-23-250 (six place) Ser. Nos. 27-3944 and up with Lycoming Turbo Charger Installation	TIO-540-C1A	See Note 1 Below	250	100/130 See Note 2

NOTES:

1. Propellers that may be used on these model planes include HC-E2YK-2RB, HC-E2YK-2RBS, HC-E2YR-2RB, HC-E2YR-2RBS, HC-E2YR-2RBF, and HC-E2YR-2RBSF.

2. For alternate fuel grade designations, see latest Avco Lycoming Service Instructions No. 1070.

1-11. FUEL SYSTEM. The fuel system consists of four bladder type fuel cells located in the wings with a total fuel capacity of 144 U.S. gallons. Aircraft with serial nos. 27-7654001 and up may have optional wing tip fuel cells which will increase the total fuel capacity to 184 U.S. gallons. Incorporated in the fuel system are fuel filters, electric auxiliary fuel pumps, engine driven pumps, and a crossfeed system.

1-12. INSTRUMENTS. Provisions for the instrument installation includes panels for engine instruments and advance flight instruments, as well as space for electronics equipment. The panel is shock mounted to minimize vibration to the instruments.

1-13. ELECTRONIC EQUIPMENT. Provision for electronic equipment includes various combinations of radio installations and Autopilot.

1-14. HEATER AND VENTILATING SYSTEM. The airplane's heater provides hot air for the cabin and for windshield defrosting. In conjunction with the heating system is the ventilating system which is used to cool the cabin and to furnish the heater with outside air.