

ENGINE

The Seabee is equipped with a Franklin "500" engine which is a six cylinder, 500 cu. in. displacement, direct drive, horizontally opposed engine.

The engine is mounted to rigid structure by three shock mounts, two at the front and one at the rear.

Detailed specifications are:

Rated HP	215
Rated Speed	2500 RPM
Idle Speed	500 to 600 RPM
Fuel-Min Octane	80 Nonleaded Aviation
Compression Ratio	7.0:1
Displacement	500 cu. in.
Bore	5 cu. in.
Stroke	4.25
Fuel Pump	Dual AC Diaphragm Type
Carburetor	Marvel MA4-5
Ignition	Dual Eismann Magneto
	Model LA-6
Magneto Point Clearance	.019"021"
Ignition Timing	32° Adv. Left and Right
Firing Order	1-4-5-2-3-6
Oil Capacity	13 quarts
Oil Temp (Max)	230° F
Oil Press (Max)	50 psi
Spark Plugs	Auto Lite AH4A
Spark Plug Gap	.014" to .018"
Valve clearance	.040"
(with lifters bled down)	
Starter	12 volt

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Juel System

FUEL SYSTEM

Fuel for the Seabee is contained in a plio-cell bag of 75 U.S. gallons capacity located in the hull under the baggage compartment. The fuel is piped to the carburetor through a strainer and pumped by two AC diaphragm type engine driven pumps. Either pump can supply sufficient fuel to the engine.

The fuel level quantity gage is electrically operated from a float in the fuel tank. A fuel pressure gage indicates pressure for either the left or right fuel pump as selected by a fuel pump switch on the instrument panel.

Normally the fuel is shut off by pulling the mixture control to the idle cut-off position; in emergencies fuel may be stopped by pulling on the fuel-flow shut-off control located under the pilot's seat.



FUEL SYSTEM DIAGRAM



ENGINE CONTROLS.

The Seabee engine controls are flexible shafts of the push-pull type. Controls are provided for the throttle, mixture, carburetor heat and propeller and are designed so that they are pushed forward against the instrument panel for the take-off condition. The propeller reverse control is directly overhead and is designed so that a positive lock must be disengaged before reversing the propeller.

Before reversing propeller make certain that engine is idling and that doors are closed. Maximum RPM in reverse is 1750 RPM.



ENGINE CONTROLS DIAGRAM

Surface Controls



SURFACE CONTROLS

The control surfaces of the Seabee are actuated by the rudder pedals and the control wheel through a series of flexible cables housed under the cabin floor and lead through a series of pulleys to the control surfaces. The dual rudder pedals are synchronized with the pilot's pedals by mating gears on the connecting torque tubes between the two sets of pedals and the dual control wheel is synchronized with the pilot's wheel by engaging a split sprocket in the dual control column to a mating sprocket in the pilot's control wheel column. The dual column is removable and may be stowed under the front seat in the bracket provided.

The water rudder cables are spliced to the air rudder cables so that operation of both surfaces is synchronized and made by the same pedals.

The elevator trim tabs are controlled through sprockets and chains at the control and the surfaces. The control is by crank located overhead of the pilot. Fixed tabs are provided on the aileron and rudder.



SURFACE CONTROL DIAGRAM



LANDING GEAR

The hydraulically controlled landing gear is maintained in the up or down position by the geometry of the linkage. As noted on the landing gear diagram on the facing page, the linkage is designed so as to "break" during the transition phase of the gear operation and to "remake" at the up or down position, so that the center pivots of the linkage are past dead center travel. In this manner, positive lock is maintained until hydraulic pressure is applied to the cylinder permitting a "break" in the linkage.

Note that the tail wheel is rotated to the up and down position and that the main gear is retracted and extended.







HYDRAULIC SYSTEM

The flaps, main landing gear and the tail wheel are extended and retracted hydraulically. A single, manually-operated hydraulic pressure system activates both the landing gear and the flaps.

A lever, extending upward from beneath the floor between the two front seats activates the pump with which hydraulic pressure is built up. Two other arms extending from this unit control the action of the fluid. The right lever directs the section of the landing gear while the one located on the left side determines the position of the flaps. The hydraulic power pack incorporates a series of check valves which prevent the temporary dropping off of pressure when transferring the hydraulic action from wheels to flaps or reverse.

The system has a three and one-half pint capacity and uses a petroleum oil base hydraulic fluid, Specification 3580D or equivalent.



HYDRAULIC DIAGRAM



Brakes and Wheels



BRAKE AND WHEELS

The main wheels of the Seabee 7.00 x 8 and the tail wheel is a 10" smooth contour type.

Each main wheel is equipped with bladder-type brake which is fed from its own master brake cylinder at each of the rudder pedals. A brake adjuster and a parking valve are installed in each of the lines between the master brake cylinder and the wheel. The positions of these parking valves are controlled at the instrument panel by a single parking control lever.

A control is provided in the cockpit to engage or disengage a tail wheel lock thus permitting the tail wheel to be locked in the centered position or to be unlocked in order to swivel.



BRAKE DIAGRAM