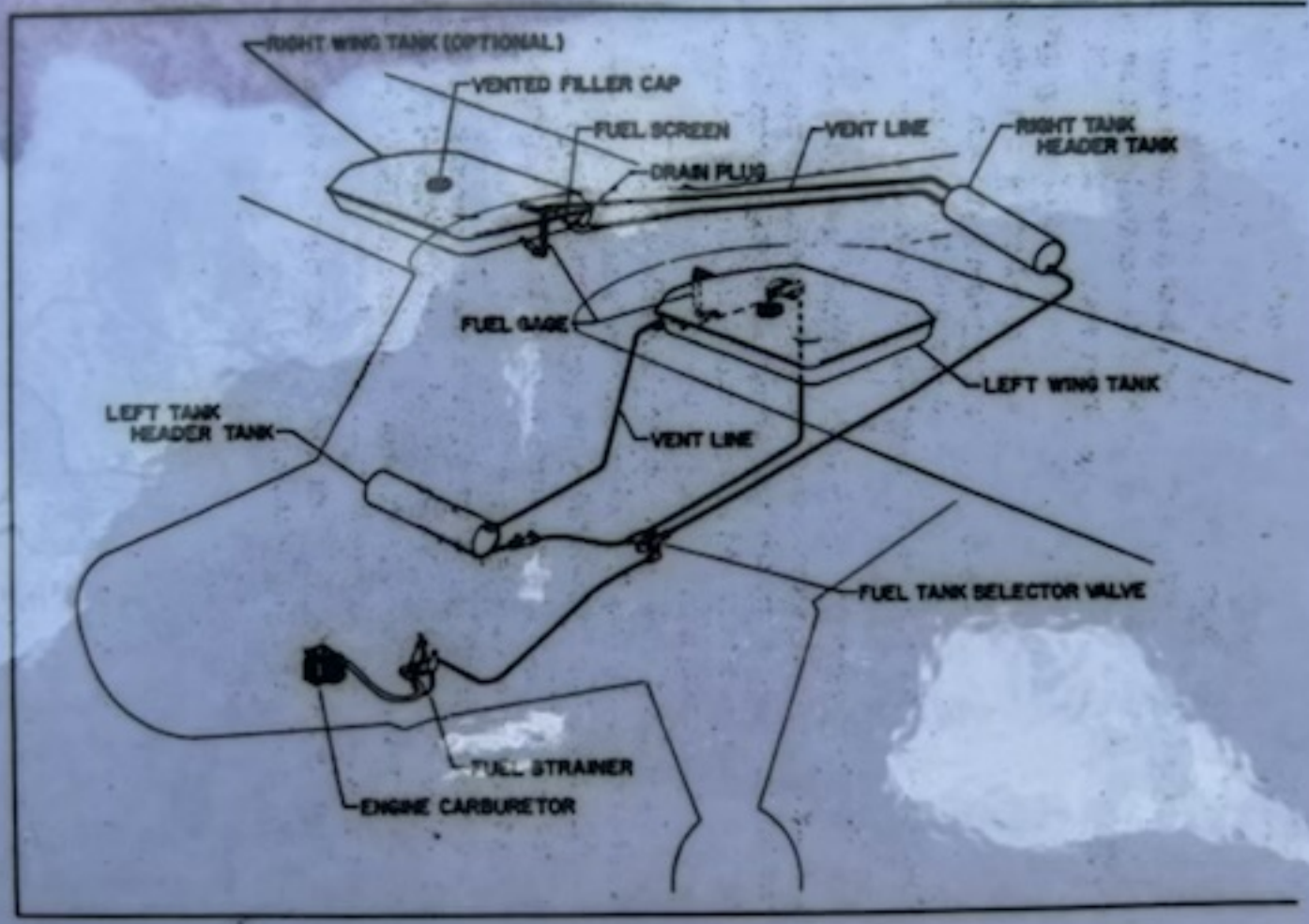
VAN WAGNER FUEL SYSTEM FOR J3



SECTION VII

FUEL SYSTEM

FUEL TANK: The fuel tank is located in the fuselage just behind the firewall, and has a capacity of twelve gallons (U. S.). This fuel tank is supported by flat steel straps lined with felt to prevent chafing. If it becomes necessary to remove the fuel tank, drain fuel, disconnect fuel line and shutoff valve control wire. Remove filler cap and all lines and controls which run under the tank to the instrument panel. Then remove the diagonal fuselage tube running from the upper right longeron to the center of the fuselage cross tube at the floor behind the firewall. This is easily done by removing the bolt in each end of the tube, sliding the tube upward until it clears the lower fitting, and then sliding it downward outside the lower fitting. The tank may then be removed from the cockpit without removing the cowling.

PRIMER: A primer to assist in starting the engine is mounted on the instrument panel. A fuel line runs from the fuel strainer up to the primer pump and a return line runs back to the engine. Always see that the primer plunger seats firmly as irregular operation of the engine may result from a leaking needle valve in the primer pump. It is recommended that the primer be used sparingly; raw gas washes the oil film off the cylinder walls with subsequent excessive wear resulting.

CARBURETOR HEATER: A carburetor heater is installed on the engine and is controlled by a push-pull control on the right side of the cockpit below the door. The pilot can regulate the temperature of the air entering the carburetor by adjusting this control. For most economical and efficient operation, set the heat control to provide just enough heat to result in smooth operation of the engine. Excess heat merely reduces power. It is always advisable to set heat control to "Full On" position during long glides such as an approach for a landing as this will tend to keep the engine warm and reduce the possibility of the engine failing to accelerate when the throttle is opened suddenly. When icing conditions are prevalent it is recommended that heat be applied "Full On" to prevent ice formation. Preventative measures are easier than corrective measures.

Extreme care should be taken in hot weather to see that no carburetor heat is used otherwise overheating of the engine may result.

The points of the fuel system which require regular servicing are:

1. Fuel Strainer.
2. Drain in fuel tank.
3. Strainer in fuel tank.

FUEL STRAINER: The fuel strainer is located in the engine compartment and should be inspected daily for accumulations of water or sediment. It is a good habit to remove bowl and screen from the fuel strainer at least every ten hours and clean both and flush the lines by allowing fuel to flow through with bowl removed.

Always safety nut under bowl after servicing.

TANK DRAIN: A drain is located at the rear of the gasoline tank and is accessible from the cockpit. Remove the drain plug at frequent intervals to allow water and sediment to drain from the tank.

TANK STRAINER: A finger strainer is incorporated in the fuel tank outlet fitting to which the fuel line attaches. This finger strainer is intended to prevent large particles of foreign matter entering the fuel lines. The finger strainer should be removed and cleaned every 100 hours by removing the fuel line and all fittings from the bottom of the tank.

VAN WAGNER COMPANY ADDENDUM TO PIPER J-3 FLIGHT MANUAL

N3666K

ENGINE: LYCOMING O-320-B2B 160HP
ENGINE LIMITS: MAXIMUM 2700RPM

PROPELLER: McCAULEY 1A175/GM
STATIC LIMITS: MAXIMUM 2450RPM
MINIMUM 2350RPM

FUEL: 100LL

OIL: SAE 50 "Aeroshell 100 Plus" (yellow oil stick)
SAE 50 "Aeroshell Oil 100 Straight Mineral" (red oil stick)

OIL SUMP CAPACITY:

MAXIMUM 8 U.S. Quarts
MINIMUM 2 U.S. Quarts
RECOMMENDED RANGE FROM 6 TO 7 U.S. Quarts

OIL TEMPERATURE LIMITATIONS:

MAXIMUM TEMPERATURE 245° F (118° C)
RECOMMENDED RANGE FROM 160° F (71° C) TO 180° F (82° C)

OIL PRESSURE LIMITATIONS:

MAXIMUM OIL PRESSURE 90 PSI
MINIMUM OIL PRESSURE 60 PSI
IDLING PRESSURE 25 PSI

OPERATION	RPM	HP	FUEL CONS. (gal./hr.)	MAX OIL CONS (qts./hr.)
Normal Rated	2700	160	------	.72
Performance Cruise (75% Rated)	2450	120	10.0	.40
Economy Cruise (65% Rated)	2350	104	8.8	.35

FUEL SYSTEM:

THIS FUEL SYSTEM IS THE SAME AS THE STANDARD PA-18 FUEL SYSTEM. THIS FUEL SYSTEM CONSISTS OF TWO 18 GALLON TANKS. THESE TANKS ARE INSTALLED TOWARDS THE ROOT OF EACH WING.

A SMALL (APPROXIMATELY 2 QUARTS) HEADER TANK WHICH SERVES TO MAINTAIN CONSTANT FUEL FLOW TO THE ENGINE REGARDLESS OF THE ATTITUDE OF THE AIRPLANE, IS INCLUDED IN THE INSTALLATION OF EACH FUEL TANK. THE HEADER TANK FOR THE LEFT OF MAIN FUEL TANK IS LOCATED FORWARD OF THE INSTRUMENT PANEL, FOR THE RIGHT TANK IT IS BEHIND THE "REAR SEAT."

FUEL INDICATOR GAUGES ARE INSTALLED IN THE UPPER CABIN PANELS AND ARE EASILY DISCERNIBLE FROM EITHER SEAT. THE FUEL SELECTOR/SHUT-OFF VALVE IS IN THE LEFT CABIN PANEL NEAR THE FRONT SEAT.

THE FUEL STRAINER, ON THE LOWER LEFT SIDE OF THE FIREWALL IN THE ENGINE COMPARTMENT, TRAPS WATER OR SEDIMENT THAT MAY COLLECT IN THE FUEL SYSTEM AND SHOULD BE CHECKED REGULARLY. FUEL SCREENS ARE PROVIDED AT EACH TANK OUTLET, IN THE STRAINER, AND AT THE CARBURETOR.

AN IDLE CUT-OFF IS INCORPORATED IN THE CARBURETOR SO THAT FULL EXTENSION OF THE MIXTURE CONTROL STOPS THE FLOW OF FUEL AT THE CARBURETOR. THE CUT-OFF SHOULD ALWAYS BE USED TO STOP THE ENGINE.
(SEE DIAGRAM)

AIRSPEED LIMITS:

MANEUVERING SPEED VA 78 MPH

FLIGHT LOAD FACTORS:

MAXIMUM POSITIVE 3.2 G AND NOT ABOVE 78 MPH
NO NEGATIVE MANEUVERS APPROVED

AIRPLANE LOADING:

SEE CURRENT WEIGHT AND BALANCE SHEET IN AIRCRAFT.

GROSS WEIGHT 1300 LBS.
NOTE: REFERENCE CAM 8.7 / FIG 7.1 MAXIMUM WEIGHT IS ADJUSTABLE UP TO AN ADDITIONAL 24%

MANEUVERS:

THIS AIRPLANE IS TO BE FLOWN RELATIVE TO THE SPECIFIC FLIGHT INVOLVED IN THE SPECIAL PURPOSE BANNER TOW.
ANY FLIGHT OUTSIDE THE BOUNDARIES OF THIS ARE PROHIBITED.
THIS AIRPLANE MUST BE FLOWN WITHIN THE BOUNDARIES OF THE VAN WAGNER TRAINING MANUAL IN NO OTHER WAY.

PLACARDS INSTALLED RELATIVE TO ALTERATIONS, COMPANY POLICY OR ORIGINAL PIPER:

1) MAXIMUM TAKE OFF WEIGHT 1300 LBS.
2) MAXIMUM LANDING WEIGHT 1220 LBS.
2) LIMIT MANEUVERING LOAD FACTOR 3.2G
3) COMPANY VNE 106 MPH
4) ALL ACROBATICS INCLUDING SPINS ARE PROHIBITED
5) ALL TAKE OFFS AND LANDINGS SHALL BE IN A SOFT FIELD ATTITUDE
6) OPERATE RESTRICTED CATEGORY ONLY
7) NO SMOKING
8) MAXIMUM BAGGAGE 50 LBS
9) DRAIN ALL FUEL SUMPS PRIOR TO FIRST FLIGHT OF DAY
10) MANEUVERING SPEED AT MAXIMUM WEIGHT NOT TO EXCEED 78 MPH
11) TOW HITCH MAXIMUM BANNER LOAD 250 LBS.