

Operating Tips . . .

FOR BETTER NAVION FLYING

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ELIMINATION OF WATER FROM FUEL SYSTEM ESPECIALLY IMPORTANT DURING COLD WEATHER.

Water is poison to an airplane's fuel system at any time, but it is particularly detrimental in cold weather and since cold weather is either on its way or has already arrived in many parts of the United States and abroad, we wish to again point out to Navion users the importance of frequent sump tank draining.

If the plane's fuel system is not kept purged of water during cold weather, small deposits of water will collect in the "low spots" of the system where they are apt to freeze causing stoppage or restriction of fuel flow. Water also causes corrosion of lines and other system components in both winter and summer so it is always important to drain the sump tank as a part of each preflight inspection. Having the airplane in as near a level static position as possible during this draining operation is important to insure effective drain-

ing of all accumulated water in the sump tank.

Some cases of hard starting in winter may be caused by ice stoppage in the fuel system, or excessively high fuel pressures during ground operation can be caused by ice stoppage in the loop of the line running from the fuel filter on the firewall to the fuel pressure relief valve on the Adel electric fuel pump manifold.

Keeping the fuel tanks full at all times when the plane is not in use also helps to keep water out of fuel by reducing the amount of condensation inside the tanks. Partially filled fuel tanks sweat internally, resulting in the formation of a considerable amount of condensation during periods of non-use when the temperature of the tanks falls below the dew point of the air within the tanks.

HOW TO OBTAIN MAXIMUM ACCURACY FROM THE FUEL QUANTITY INDICATING SYSTEM ON NAVIONS SERIAL NOS. 1565 AND UP

It is well recognized by experienced pilots that most aircraft fuel quantity gauges are not precision instruments. The degree of error varies with conditions. For that reason it is not considered good practice to rely solely on these instruments for determining fuel quantity in flight. The calculation of remaining fuel, by deducting the rate of fuel consumption, for a specific power setting and aircraft, multiplied by the time in flight, plus a suitable allowance for warm up, take-off and climb from the original supply, is the most sound practice.

The King-Seely Fuel Gage used on Navions Serial No. 1565 and subsequent is considered a good indicator. To obtain maximum accuracy from this instrument, Ryan has developed a procedure for calibrating and setting the tank transmitter designed to reduce to a minimum indicator error. It will be noted that it is considered advisable to have the gauge calibrated to read on the low side as an added safety factor.

The procedure as described below is quite simple and it is recommended that you have the instrument in your Navion recalibrated in the manner described, if

you have any reason to doubt the accuracy of its indications:

1. Level airplane before calibrating fuel quantity gauge.
2. Drain all fuel from the fuel system.
3. Put five (5) gallons of gasoline in the wing tanks.
4. Remove cap from fuel level transmitter located on aft side of left main fuel tank and adjust so that fuel level indicator reads two (2) gallons. Turn transmitter adjusting gear clockwise to increase indicator reading and counter-clockwise to decrease reading.
5. Replace transmitter cap and allow at least three (3) minutes for temperature to stabilize and recheck two (2) gallon reading on the gauge. It is very important to replace the cap on the transmitter securely during this check as when the cap is left off any

slight air movement will affect the gauge reading. If the two (2) gallon reading is in error, remove cap, readjust and recheck as above.

6. Add thirty (30) more gallons of fuel to the tanks, making a total of thirty-five (35) gallons in the tanks.

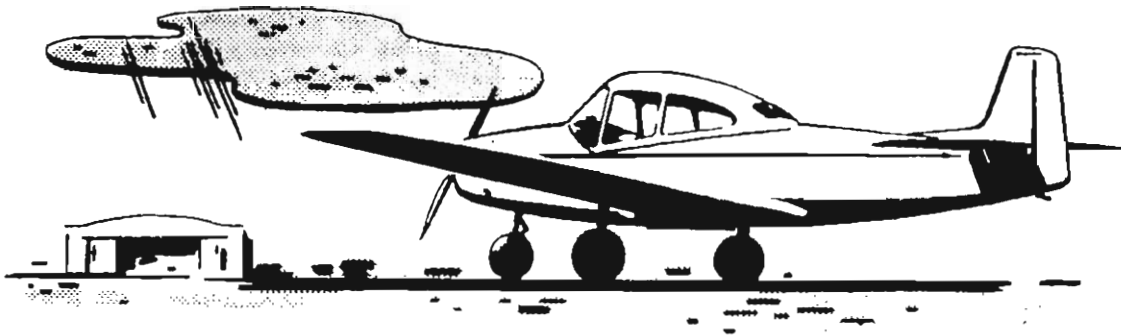
7. Record fuel level before removing any fuel. Remove fuel in five (5) gallon increments and record gauge reading after each five (5) gallon removal. In each instance the gauge reading should be taken after a minimum wait of three (3) minutes.

8. The gauge should indicate three (3) gallons less than actual quantity in the tank for each reading. Tol-

erances on gauge readings are as follows: with five (5) gallons in the tank \pm one (1) gallon, this tolerance can expand linearly to a maximum tolerance of three (3) gallons when there are thirty-five (35) gallons of fuel in the tanks.

9. After this procedure, when there are five (5) gallons remaining in the tank, the fuel gauge should read two (2) gallons \pm one (1) gallon.

NOTE: When flying in rough air, estimate fuel quantity approximately six (6) gallons less than the indicator reads.



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