Operating Tips . . .

FOR BETTER NAVION FLYING

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PREVENTIVE RADIO MAINTENANCE

Those Navion owners who have read their operators manual on the RCA 116 Transceiver are perhaps familiar with the function of the small neon indicator located at the bottom of the control panel, but for those who aren't familiar with this item, the following will help explain its operation. This little indicator can tell you a great deal about the operation of your radio; in fact, it is a very effective "trouble shooter" if you know what to look for. When you first turn your radio "on" this neon bulb will glow red when the receiver has "warmed up", (about ten seconds is normal). When the mike button is depressed to transmit, the color will change to purple. This change in color is a positive indication that the transmitter is radiating. The indicator will increase in brilliance when the microphone is spoken into; this in conjunction with hearing your voice in the phones is positive indication your transmitter is being "modulated"; that is, your voice is being impressed on your transmitter carrier. You can double check this operation for yourself; by turning your transmitter frequency selector to an unused crystal position, the absence of this purple glow, and the lack of increase in brilliance when the microphone is spoken into will demonstrate the reaction when the transmitter is not working. Therefore, if you can't raise a station, look at your indicator before blaming the equipment: it will tell you at a glance if your transmitter is operating.

A few words may be in order here on the care of radio vibrators. Vibrator failure is the most common cause of radio trouble, and a few simple precautions will prevent most of these failures. The receiver should always be "off" when starting the engine. Due to the large amount of current drawn by the engine starter, the battery voltage may drop low enough momentarily for the vibrator to "stall", thus allowing the points to burn, and in extreme cases may actually cause the vibrator points to freeze. The output of the generator should be checked occasionally to make certain the charging voltage does not exceed 14.2 volts at cruising RPM; an excessive charging rate will cause premature vibrator failure in most cases. Another cause of short vibrator life is excessive use of the transmitter. It must be remembered that the transmitter "loads" the vibrator more than the receiver, and therefore short transmissions will help lengthen it's life. Don't expect your vibrator to last the life of your airplane; all vibrators, irrespective of what types of radios they are used in, should be replaced after 500 hours of radio operation for best results. If your vibrator should fail, it is best to check with a radio technician before replacing it; as in some cases failure of certain component parts of the radio will cause the vibrator to quit, in which event the basic cause of the trouble must be located. A new vibrator would be damaged immediately if the original trouble was not remedied.

WINTER BATTERY MAINTENANCE

The freezing point of the battery electrolyte depends upon its specific gravity.

The table below shows how this varies.

Specific Gravity	Freezing Point
1.275	−85°F.
1.250	−62°F.
1.225	−35°F.
1.200	−16°F.
1.175	− 4°F.
1.150	+ 5°F.
1.125	+13°F.
1.100	+19°F.

From this table it can be seen that there is little danger of freezing in a temperate climate zone except with a discharged battery.

The time of adding water is important in the winter time if the airplane is not stored in a heated hangar. When it is cold, add water just before charging the battery in order to mix the water with the electrolyte by the charging current. If water is added and the battery left standing in freezing temperatures, the water will remain on top and freeze just the same as though it was outside the battery.

MISCELLANEOUS COLD WEATHER TIPS

Particular attention should be paid to the following items if your Navion is to operate at best efficiency this winter. This is not represented as a complete list of all cold weather precautions, but is rather a reminder of items that might be overlooked.

1. Don't steam clean or wash your airplane or engine with water diluted solvents during very cold weather as water or vapor may collect in some of the controls and freeze, causing them to sieze and become inoperable when the airplane is exposed to the cold.

2. Replace smooth tires with ones having sufficient tread to provide the necessary non-skid properties needed for safety on icy or snowy runways.

3. Protect the top surfaces of wings and tail surfaces on airplanes left outdoors or carefully clean these surfaces of all ice, snow, frost or moisture before take-off.

4. Make certain that your engine is serviced with the proper weight oil for the prevailing temperatures.

The following are both Continental's and Lycoming's oil recommendations.

Continental E-185-3

Oil Grade	Oil Operating Temperature
SAE 40	Below 120° F
SAE 50	Above 130° F

Lycoming GO-435-C2

Oil Grade	Outside Air Temperature
SAE 30	Below 40° F
SAE 50	Above 40° F

SAFETY BELT CONSERVATION

To increase the life of safety belts in the Navion and maintain their good appearance, readjust the belts from time to time so that a different part of the webbing takes the wear from the belt loops on the seat frames.