Fuel Management Option

The fuel management option for the Pro Pilot allows the pilot to view multiple fuel parameters. It provides a means to accurately measure fuel flow (in gallons or liters), fuel remaining and fuel used. It employs the GPS data to compute available range and time remaining. This feature requires the installation of a small pushbutton on the panel or control stick.

The fuel flow in **GPH** (gallons per hour) or **LPH** (liters per hour) is always available in the variable data on the bottom right quadrant of the display. Rotating the encoder knob will cycle through the GPS data screens to bring this data into view.   A small momentary pushbutton, mounted to the instrument panel or control stick allows the pilot to view additional fuel parameters.

Pressing the remote pushbutton, regardless of what is being shown on the autopilot display screen, will bring up the displays as shown below. Each fuel display will remain viewable for a 5 second period before timing out and returning to the normal autopilot display. However, if the button is pressed again during that 5 second period, the screen will advance to the next fuel display. In this manner, all fuel parameters are always available with the press of a button.

Five screens are available when using the remote pushbutton. The first screen presented is the screen that was on the display when last viewed. In the example below this would be the GPH display

The first time the button is pressed the right hand side of the screen will show a larger display of the **FUEL GPH**.

The second press of the button will display the **FUEL REM** (Fuel Remaining) screen.

Pressing again will advance the screen to show the **TIME REM** (Time Remaining) which indicates the time until the tanks are empty.

The next screen presents **USED** (Fuel Used). This parameter will accumulate until the pilot resets it as described below.

FUEL RNG (Fuel Range) to advise the pilot how far the aircraft can fly (at the current speed and fuel consumption) until fuel depletion.

The display will also show a flashing warning if the remaining fuel falls below a quantity that was previously entered in the **CONFIGURATION** menu. When this warning is displayed, it will stay on the screen until the pilot acknowledges it by pressing the remote fuel pushbutton, or any other button on the control head. The button must be pressed while the warning is present on the screen. Once it has been acknowledged it will not appear again.

The fuel **USED** will accumulate until reset by the pilot. If desired, it can be left to accumulate for a multi day cross country flight even though fuel has been added multiple times. The fuel **USED** may be reset to zero by pressing and holding the remote pushbutton for 5 seconds. After one second, the display above will appear, showing a countdown. If the switch is held until the countdown reaches "0", the fuel **USED** display will be reset to "0" when the **FUEL USED = ZERO** display appears.   If the button is released before the display reads **FUEL USED = ZERO**, the fuel **USED** will remain unchanged.

PREFERENCES MENU
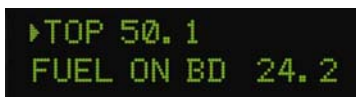
```
ADD  TOP  REM
FUEL ON BD  24.2
```

When fuel is added to the tanks the pilot will enter the **PREFERENCES** menu to enter the appropriate amount. There are three parameters that allow setting the exact amount of fuel on board. **ADD** allows the user to enter the fuel that was added, **TOP** will enter the preset amount for full tanks (see **CONFIGURATION** menu), and **REM** will allow the user to enter the actual amount of fuel that is currently in the tanks.

To use any of these three functions, press the **H MODE** button repeatedly and it will show each function sequentially. Use only one of the functions (the one you prefer) to adjust the fuel remaining quantity.

```
▶ADD 20.0
FUEL ON BD  24.2
```

Pressing the **H MODE** button the first time will show the **ADD** function. Rotating the encoder will allow the user to enter the amount of fuel that was added to the tanks (Rotate the encoder for 0.1 increments. Press and rotate for 1.0 increments). The example screen shows that 20 gallons were added. Pressing the encoder will update the **FUEL ON BD** amount by adding 20 gallons to the total.

```
▶TOP 50.1
FUEL ON BD  24.2
```

Pressing the **H MODE** button again will allow the user to quickly enter the amount for full fuel. Pressing the encoder will immediately enter the amount for full tanks. The amount that is entered for the **TOP** quantity is adjustable in the **CONFIGURATION** menu, and should be initialized for your particular airplane to accurately reflect the amount of fuel when the tanks are full.

```
▶REM 24.2
FUEL ON BD  24.2
```

If the user wishes to adjust the amount of actual fuel on board, pressing the **H MODE** button again bring up the **REM** (Remaining Fuel) display. Rotate the encoder to enter the total amount of fuel on board. Remember to press the encoder button to record the amount into memory and exit the screen.

CONFIGURATION MENU

The fuel management system may be configured and calibrated in the **CONFIGURATION** menu. Enter this menu by pressing the encoder knob and holding it in while turning the power switch "**ON**". Rotate the encoder to bypass all menu items until reaching the screen that displays "**ENTER K FACTOR**". This entry will determine the accuracy of the fuel readings. The fuel flow transducers are characterized at the factory and the Pro Pilot will be set to the calibrated number, as shown here. However, because a number of factors in the fuel system installation can affect this, the **K FACTOR** may be calibrated to a more precise number. The adjustment range of the **K FACTOR** also allows various selected fuel flow transducers to be used.

The calibration may be tested by filling the tanks and flying the aircraft until the remaining fuel is down to 25% or less. This will assure a large enough sample to determine accuracy. If it appears that the fuel remaining is not the correct amount (it will likely be very close) The **K FACTOR** may then be adjusted up or down to improve the accuracy.

```
CAL K FACTOR
FUEL USED = 35.6
```

A more precise method of calibration is presented on the screen that follows the one above. If you need to calibrate the **K FACTOR**, fill the tanks to a known level (full tanks are usually the best). Zero out the **FUEL USED** on the appropriate screen. This will also zero FUEL USED

on the **CAL K FACTOR** screen shown below. Fly the aircraft until most of the fuel has been used. The FUEL USED field on this screen will now show the amount that the computer believes was consumed. Then fill the tanks again and note the exact amount of fuel that was added. If it disagrees with the display, press the **H MODE** button to display the arrow instead of the "**=**" sign and rotate the encoder knob to enter the amount of fuel that was actually used, then press the HMODE button. This process will re-compute the **K FACTOR** and the system will now be accurately calibrated.

OLD K 32000
NEW K 31500

When the **K FACTOR** computation is complete, the display will show the original **K FACTOR** and the new one that was calculated by using the method described above. This value will be retained in non-volatile memory and should never need to be changed again. This screen can be exited by rotating or pressing the encoder, or pressing the HMODE button

TOP OFF SETTING
50 GAL

The **TOP OFF SETTING** requires the user to enter a value that is equal to the amount of fuel when the tanks are completely full. This assures that the Fuel Remaining readings will always be correct when the pilot employs the **TOP OFF** feature after filling the tanks.

LOW FUEL ALARM @
8 GAL

The **LOW FUEL ALARM** sets the fuel level at which the alarm will occur. This should typically be a value that will allow at least 45 minutes of continued flight. Setting this value to "0" will disable the alarm.

GALS OR LITERS
GAL

The **GALS OR LITERS** screen allows the user to set the units of fuel measurement to their preference.