Contaminated Fuel

Contaminants (especially water) in fuel have been known to cause engine failures – usually just after the aircraft has become airborne. There have been instances when fuel from jerry cans that had been contaminated with water was used in aircraft operations, with disastrous results. The pilots involved were simply unable to tell by looking at the sample that the fuel was contaminated.

Here are some tips to check for contaminants in fuels:

» After refuelling, allow the fuel to settle for as long as possible. This gives any impurities a chance to settle into the drain sump of each tank. At an intermediate stop, it is a good idea to refuel the aircraft first, before attending to other business – this will normally allow enough time for any water in suspension to settle out.

» Water often collects in wrinkles and low points within fuel bladders. Lateral shaking of the aircraft wing will help to work any trapped water down to the fuel drain sumps. Allow the fuel time to settle after doing this before taking a fuel sample.

» Ensure that the drain vessel is clean before taking a sample. Hold the sample to the light and inspect it for water (normally indicated by small globules sitting on the bottom, or a 'cloudy' appearance), and sediment. Check that it is the correct colour and smell for the intended grade of fuel – this will also confirm that you have not just drained a sample of pure water.

» If the sample is contaminated, empty the vessel and continue draining until a clean sample is obtained.

» Do not tip the sample back into the aircraft tank, even if it is clean – dispose of it in an appropriate manner.

» If there are unusually large quantities of water present in the fuel, consult an aircraft engineer.

» In cold winter conditions, small amounts of water can freeze the drain plug, rendering it inoperative.

Fuel tester, showing water that has settled at the bottom (holding it against the white surface helps to show the fuel colour and any water present).

Flight Instructor Jonathan McKay of the Wellington Aero Club looks at the fuel readings on the aircraft's dipstick.