



BMAA Inspectorate Notice: ISSUE 2 - Rotax Sinking Carburettor Floats

UPDATED: 24/06/2016

The BMAA has recently received reports that some replacement Floats (fitted to comply with Rotax Bulletin SB-912-067 UL) have also been sinking, in some cases after minimal hours of operation.

It is therefore highly recommended to undertake regular checks as per the Rotax Bulletin SB-912-065 R3, which states the floats should be inspected every 25hrs. It is also recommend to consider inspecting the floats, before any flight when the engine has not been run in the preceding 30 days, or more.

If you experience any rough running it is highly recommended that an inspection of the floats is undertaken immediately.

Dated: 13/11/2014: Rotax have made a few changes to the SB, please see the link on p2

As you may well be aware Rotax have issued a Service Bulletin relating to the issue of sinking Carburettor floats. It is applicable by delivery date and or serial number of the affected components and engine types.

Adrian Jones of the Technical Office has prepared an article due to be published in the next issue of MF (December 2014).

Please see below:

912 Sinking Floats by Adrian Jones

Readers may have heard recent reports of sinking floats in the Bing carbs fitted to the Rotax 912. This has coincided with a change of supplier of floats to Bing. As a consequence Rotax have issued a service bulletin to address the problem:-

SB-912-065 (UL) / SB-914-046 (UL), October 06, 2014

Periodic Inspection of the float buoyancy for Rotax Engine Type 912 and 914 (series).

Rotax explain that the problem is “Due to a deviation in the manufacturing process”, and affects replacement floats supplied since 1st July 2012. Their service bulletin also lists the serial numbers of engines supplied with possibly defective floats.

It sounds to us like a materials problem. The floats are made from closed cell foam which should not absorb fuel. However, we have had a report from a BMAA member who cut open an affected float, to find that it had indeed absorbed fuel. It looked like the fuel had diffused through the cell walls.

Now you might expect the inspection procedure to be a straight forward removal the float bowl and a visual check that the floats are floating at the right level. Simple! The picture below shows the LH float at the correct level, with the side pin just about at the surface, and the RH one too low.



Well, you would be wrong. The bulletin proceeds to describe a complicated procedure that involves levelling the aircraft, running the engine at idle for 2 minutes, and then injecting fuel into the float chamber using a graduated syringe. The aim is to measure how much fuel can be injected into the float chamber before it starts to overflow from the venting nipple. This then gives an indication of how much fuel the float is displacing, and therefore how high it is floating.

If the amount of fuel injected is below a certain threshold then it can be assumed that the float is sinking and displacing too much fuel. The next obvious step is to remove the float chamber and weigh each float to confirm this.

In addition to the unnecessary complexity of the SB another problem is that the venting nipple is above the top of the float chamber and the throat of the carburettor. This allows fuel to enter the engine and the air filter, which creates a possible fire hazard when the engine is started. It also affects the amount of fuel that can be injected before it overflows from the venting nipple.

Now before you lose the will to live let me quickly say that Skydrive have ridden to the rescue and agreed with Rotax that they can recommend a simpler inspection procedure for non-certified engines, where the carburettor bowls are easily accessible. We have published their guidance on our website under BMAA Technical Office / Inspector Zone / Notices and Alerts.

As you may know, after the 3 December, Skydrive will no longer be the Rotax importer, so you will need to act swiftly if you want to receive free replacement floats from them. After that date the new importer, CFS Aeroproducts, will take over. Let's hope that they hit the ground running.

We will miss you Skydrive.

Here is a link to the Rotax SB:

http://legacy.rotaxowner.com/si_tb_info/serviceb/sb-912-065ul.pdf

Here is a link to the SkyDrive Service Letters:

http://www.bmaa.org/files/skydrive_cover_332_334.pdf

If you have any questions or require any assistance please feel free to contact the BMAA Tech Office.

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