

Cessna A150K, Water Block of Air Intake, ATA 7160

Cessna: A150K; Water Block of Air Intake; ATA 7160

A mechanic provides his analysis of his customer's aircraft problems. "The owner took off for some pattern work. The weather had been cold and clear for several days and he thought it was perfect time for touch-&-goes.

On the downwind leg, the pilot began his normal landing checklist, including checking the carburetor heat. After pulling the heat control 'ON', the engine died. He turned off the carburetor heat and the engine restarted on its own without pilot input. He continued the pattern and gradually reapplied carburetor heat on base and final. On a short final, the engine died and the pilot glided to a safe touchdown just beyond the end of the runway. He was able to restart the engine and taxi back to parking without incident.

The mechanic and pilot looked at the engine and found the Scat hose (model 150 & A150; 1970-77 parts manual; figure 56; sheet 2; item 29) coming from the front baffle down to the front of the exhaust shroud had filled with water. The installed hose is in the form of a 'J', and the bottom of this 'J' was full of water and ice. In the damp climate, they noticed this before and usually ensured each scat hose has a drain hole in any low areas. The team missed this particular aircraft.

They found water and ice in similar installations on other Cessna 150 and 172 series aircraft. Because of their location, the air intake scoops in the front baffle funneled rainwater into the SCAT hose, filling the forward hose. Sometimes the water overflows the front hose and flows along the lower inside of the heater shroud, and attempted to also fill the carburetor heat box to the 'right-shroud Scat hose' (model 150 & A150; 1970-77 parts manual; figure 56; sheet 2; item 19). This resulted in the engine receiving a large slug of water or ice when the carburetor heat is applied.

Whether the water is in a liquid or solid form depends on the duration of the flight and if the heat of the operating engine melted any ice that may have formed during the periods of inactivity.

Potentially dangerous weather conditions may prompt the pilot to turn on the carburetor heat to clear any icing that may have formed through the normal induction system. However, instead of getting warm air as expected, the engine suddenly received small to very large bursts of water or ice into the induction system, which could have instantly refroze and plugged the induction system entirely. The submitter reports this is the first time he has seen this happen.

We normally encounter this problem in warmer months when we receive more rain. Under those conditions, the pilots notice a rough running engine when carburetor heat is applied, and turn the heat off before the water is fully removed or they opt to continue with applying the heat and the resulting engine roughness, until the water clears from the hose.

One way to check for this problem on any aircraft is to examine the scat tube reinforcing wire for rust in the lower areas. The occasional water build-up will cause these reinforcing wires to have more pronounced rust on the lower portions where water would sit on the wire wraps. Any aircraft showing abnormal wire deterioration in those areas should consider installing drain holes. (See Cessna 170B parts manual: figure 50; items 35 & 36. See also Cessna 172A, B, C and 175A, B, C parts manual: figure 59; items 31 & 33.)" (*R/H Air intake hose P/N: S1053E16T.*

Part Total Time: (unknown).