

Training November 2009

During the last couple of months, we've talked about some of the causes of dead-stick landings. There are many potential causes and we will touch on just a few more this time.

Remember that we have already covered fuel line leaks or holes, mixture adjustments, air or fuel vapor in the tank being sucked into the system, dirt of various sorts in the fuel system and the length of your flight as compared to the amount of fuel available in the tank.

This time we will talk about some things that can be going on inside your fuel tank. First, there are at least two and possibly three fuel hoses inside the tank. Pin holes and splits can occur in those lines as well as in the external lines. Also, if someone has already had the tank apart and replaced or changed those lines, that could result in the wrong diameter or length of line or one made of the wrong material being used. The line could be too large (loose on the fitting), it could be split, or could soften or stiffen if made of the wrong material. Remember that the pick-up "clunk" has to be able to move freely around the back end of the tank, and if the line has gotten stiff, it may not be able to do that. Also if the line is too short, or too long, the clunk may not stay in the correct place to completely pick-up all the fuel. Also, occasionally, if the plane is stored in a nose-down attitude, the weight of the clunk may bend the fuel line it is attached to such that the clunk gets stuck in the forward part of the tank with the hose being doubled over. It is also possible for this to happen as the result of a previous crash. Any of these conditions can lead to fuel starvation and a dead-stick landing. It is good practice to check once in a while to assure the clunk is moving properly. If the tank is out of the plane, you can hold it up to the light and watch the clunk move. If the tank is in the plane, you can usually hold the plane nose-up, move the whole plane around and listen for the clunk to hit the sides of the tank. If in doubt, ask an experienced pilot to help you.

The second line in the tank is usually the pressure line from the muffler. That line needs to be clear and with no leaks or kinks so that the pressure from the muffler can help push fuel to the carburetor. If this line has a problem, it will be more difficult to keep the engine running correctly or even running at all... and, it could even stall in the air.

And finally, who would think that a propeller could make an engine stop running? Well, there are at least two ways this can happen! Be careful if you use a prop that has already been in a hard landing or crash. A small crack may not be visible, but if it spreads at high RPM, and one blade breaks off, not only is it a safety hazard, but it can make the propeller so off balance that it will shake your plane apart. And, if you cut the throttle when that happens, you of course wind up with a dead-stick. The second way the prop can cause a dead-stick is if the nut is not sufficiently tightened such that the prop begins to slip between the drive surfaces and fails to provide enough flywheel action when the throttle is cut, as for landing, resulting in the engine stalling right when you need it most. This can also happen with some of the hard plastic props because they fail to have enough friction on the drive surfaces. We had this happen on an OS 91

when using one popular brand of plastic prop, even though we had the nut extremely tight. That problem was finally solved with a 5/16th I.D. by 1" O.D. rubber washer from Lowes right behind the propeller. The rubber provides considerably more friction on both surfaces.

Hopefully this discussion of some of the causes of dead-stick landings over the past three months will be helpful to new pilots and even perhaps to some more-experienced ones. As we have stated in previous columns, it can be helpful to consider each part of your plane, how it works, what it needs to be able to work properly, and what you can do to assure it is able to properly do its job. There is a very helpful article by Don Apostolico (Don's Hobby Shop) with a similar theme in the November 2009 issue of *Model Aviation* magazine. If you get a chance....check it out.

Next month we will move on to another topic. Until then...remember to try something new each time you fly.

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