

My Towplane Engine Failure!

By Burt Compton, Trustee of the Soaring Safety Foundation,
author of "The Towpilot Manual" published at Soarbooks.com

In my 54 years since my first solo flight, I've been surprised twice while flying the towplane by a partial power failure, then landing safely. It was 40 percent luck and 60 percent "I can do this." Sadly, I've known two experienced towpilots killed when each attempted a "turn back" to the runway after their towplane engine had a power failure.

Towpilots must expect an engine failure, especially the insidious partial power failure which rarely gets better. Even when considering your options on every takeoff, there will be a "startle factor" of five seconds or more, depending on whether you are actively observing your ever-changing options and implementing your emergency plan.

This is not being paranoid, it is being actively prepared.

- You must have an evolving plan for engine failure on every takeoff (like airline pilots and Navy carrier pilots.)
- When landing downwind versus landing into a headwind be aware of the significant increase in ground speed plus the energy to dissipate.
- Decide if you will signal the glider to release by rocking the wings or release the glider immediately without a signal to increase your options for survival.
- Trim to the best glide speed of your towplane.
- Watch the horizon for pitch (speed) and the "ball" for turn coordination.
- Banking the wings with aileron (the horizontal lift vector) causes airplanes (and gliders) to turn, not the rudder. The cliché is "rudders turn boats!"
- Don't look back to see the runway, you know it is there, until at least halfway around the turn back to prevent a "rudder it around" skidding turn, into a spin.
- Don't look at the ground. Your aircraft is blind. If you try to turn with mostly rudder instead of aileron the aircraft will obey and may enter a spin at low altitude. Turning back to the runway is a very strong human temptation and not always the safest option for your survival. Decide if you are willing to sacrifice the towplane to save yourself by making a landing into the wind, beyond the airport.

Before Takeoff :

Maintain the engine and propeller to high standards to hedge against an engine failure. Towplanes may make six takeoffs and descents to landing in one hour of towing so extra attention to aircraft maintenance and pre-takeoff checks is required.

Dipstick the fuel to confirm you have 30 minutes reserve for VFR flights by FAR 91.51. Compute the Density Altitude and know how less dense air will significantly decrease the performance of your engine, propeller and wing, even near sea level.

Always know the length of the available runway ahead per FAR 91.103(b)

Don't get talked into "convenient" intersection takeoffs on short runways or on hot days.

Conduct the required towpilot / glider pilot briefing before tow per FAR 91.309(5).



Determine if the glider pilot you are about to aerotow is prepared for any launch emergency, will respond correctly to your signals, and will fly in a safe tow position.

Use the SSA Standard Signals simultaneously with the radio. If using radio, confirm that radio communication between the towplane and glider is “loud and clear” before takeoff. Towpilots, glider pilots and wingrunners must regularly review and practice the SSA Standard Signals on the Soaring Safety Foundation (SSF) website:

<http://soaringsafety.org/learning/FTvideos.html#video5>

Every 24 months, log the FAA mandatory experience requirements in your pilot logbook for maintaining your aerotow endorsement by FAR 61.69(a)(6). Be current and proficient.

Just because you consider yourself an “experienced pilot” and you’ve logged hundreds of aerotows may not guarantee you being “in the moment” ready for an engine failure or any other performance compromising issue on your next tow. It’s your next tow that counts.

So, what are the chances of an engine failure on your next takeoff? Let’s say it’s 50/50. You will have a failure, or you will not.

Be prepared to survive by observing your evolving options on every takeoff.

