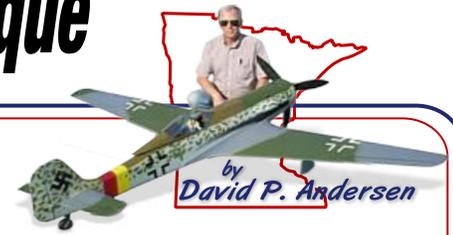


I Learned About Flying From That ... Dick Steine's Engine-Really-Out Technique



Dick Steine flew his veteran B-25 at the 2010 Minnesota IMAA Chapter 46 Big Birds Annual Fly In. He was one of



the few to brave the 15-knot wind that blew straight down the runway from the west. After several dramatic passes, the Zirolti twin-engined bomber passed by the center of the field at a moderate altitude. The throttles

were at full power in order to make progress against the wind. Suddenly and without warning, the left nacelle exploded--a structural failure of one of the three-bladed propellers, possibly caused by a loose cowl; the resulting vibration destroying the engine mount.



The engine dropped straight down while the cowl and other fragments drifted with the wind and were carried into the rough downwind of the runway. Meanwhile, the airplane turned left on its own. In a situation like this, I am told that the pilot must choose one of two strategies - either cut the power and try to glide back to the runway, never to advance the throttle again; or keep full power on and use the airspeed the airplane already has to overcome the offset thrust with rudder and ailerons. Dick's plane was too far upwind and too low to glide thru two 180-degree turns and land on the runway. An off-field downwind touch-down would certainly be catastrophic. But Dick had the right stuff, he chose the power-on option.

The loss of left-engine thrust was only part of Dick's dilemma. The loss of engine weight along with firewall, tank, muffler, servo and cowl made the airplane

dangerously tail-heavy and right-wing heavy. Simultaneous coordination of all four controls was required - level the wing with ailerons, steer with rudder while fighting the left-turn torque while finessing down elevator to keep the nose from rising. He gracefully turned downwind with both ailerons and rudder.

Maintaining full or nearly full power, Dick started a normal traffic pattern approach. He immediately dialed in full rudder trim and steered with rudder, keeping the wing level with aileron. He tried small turns in both directions and found that turning toward the missing engine was much more immediate than turning towards the live engine. But both were controllable because the airplane had plenty of airspeed. His airplane was sufficiently powered so that only one engine could pull the airplane at an airspeed comparable to both engines at cruise power. Thus, despite the yaw caused by the thrust of the remaining engine and the drag of the damaged nacelle, Dick could steer well enough and control pitch due to sufficient airspeed.

All eyes watched and anticipated the death spiral into the ground for which such situations are so notorious.



Warbird Flying Techniques



The less skilled among us asked why Dick did not immediately reduce power. We wondered if the damaged nacelle would be able to lower the landing gear. Were the flaps damaged too?

He began the turn into final approach toward the active engine. Rather than descend by reducing power, Dick forced the plane down with elevator in order to maintain airspeed and, thus, control. We counted the wheels as they appeared. He lowered the flaps too but found that the nose rose too much at that airspeed, so he immediately retracted them. Not until the airplane was safely over the grass runway did Dick cut power and flare for a perfectly normal-looking and graceful landing. The gear held. The wounded bomber didn't even bounce. Dick received thunderous applause and a standing ovation during the rollout. But he didn't notice because he was still focused on the airplane. He even taxied back to the pits as if nothing were amiss. Only the exposed bare wood of the half-gone nacelle looked odd.



Dick Steine's flight was a spectacular demonstration of airmanship; and it was a flying lesson for those fortunate to have been there.

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Photos by Al Schwartz and Dave Andersen