

Lesson 10. When the Fan Stops (Scenario: Engine Failure on Departure)

Pre-Flight: 1.5 hr | Flight Time: 1.5 hr | Post-Flight: 0.5 hr

STUDENT		DATE		INSTRUCTOR
AIRCRAFT	N41459 Warrior	N1302B Luscombe		Ground only
FLIGHT TIME		GROUND TIME		

OBJECTIVE

Scenario-based lesson focused on engine failure awareness during departure and traffic pattern operations. Student learns the physics of G-loading and stall speed (at 0G there is no stall speed, so pushing forward is essential), practices the CHORRD departure briefing, and executes multiple simulated engine failures at different positions in the traffic pattern. The impossible turn is addressed directly at altitude: student experiences why turning back below pattern altitude results in a stall/spin. Builds judgment for when landing ahead is the only survivable option.

LESSON STEPS

Check each step as it is completed. Leave anything not done blank. Sign and date once at the bottom.

1. Ground briefing: Pipistrel KSNS video, NTSB case review, CHORRD departure briefing, impossible turn geometry - Ground training

PA.IX.C.K1a PA.IX.C.K1b PA.I.H.K4

2. CHORRD departure briefing practice on the ramp before engine start - Directed performance

PA.I.H.R1 PA.I.H.R3

3. Departure and climb to practice area (minimum 3,000 ft AGL) - Do

PA.IV.A

4. G-loading and stall speed demonstration: instructor demonstrates that reducing G-load (pushing forward) lowers stall speed to near zero. At 0G there is no stall speed. At 2G the stall speed increases by 41%. Student experiences the difference. - Demonstrated

PA.V.A.K2d PA.I.F.K3

5. Impossible turn simulation at altitude: instructor pulls power, student attempts 180-degree turnback with 45-degree bank. Student observes altitude loss required. Repeat with 30-degree bank and compare. Teaching point: you cannot make it back below 500 ft AGL. - Directed performance

PA.IX.C.K1a PA.IX.C.K1b

6. Engine failure on upwind: instructor pulls power after takeoff at pattern altitude. Student pitches for best glide, identifies landing options ahead, executes ABCDE. No turn back. - Directed performance

PA.IX.C.K1a

7. Engine failure on crosswind: instructor pulls power on crosswind leg. Student evaluates options, considers wind, selects landing area. - Directed performance

PA.IX.C.K1a

8. Engine failure on downwind: instructor pulls power abeam the numbers. Student has altitude and options. May attempt modified pattern to runway. Judgment exercise. - Directed performance

PA.IX.C.K1a PA.IX.C.K1b

9. Engine failure on base/final: instructor pulls power on base or final. Student maintains glide speed, adjusts aim point, commits to landing. - Directed performance

PA.IX.C.K1a

10. Postflight ADM debrief: review each engine failure decision, discuss the Pipistrel video, reinforce CHORRD as habit - Do

PA.I.H.R1

ITEMS NEEDED FOR SUCCESS

- CHORRD Departure Briefing card
- Aircraft POH/AFM (glide performance data)
- KSNS airport diagram with surrounding terrain/field options
- Impossible turn altitude calculation worksheet (from Module 5)
- Sectional Chart

COMPLETION STANDARDS

Meet the objective above. Each step is complete when performed to the standard of the lesson.

DEBRIEF AND SIGN-OFF

What went well, what to work on next lesson.

Sign once for the whole lesson. Steps left unchecked above were not completed this session.

INSTRUCTOR SIGNATURE / INITIALS

DATE