

# Lesson 15. Performance and limitations

Ground 1.0 hr | Dual 0 hr | ACS AI.II.F

CFI CANDIDATE

DATE

SUPERVISING INSTRUCTOR

AIRCRAFT

N41459 Warrior

Ground only

FLIGHT TIME

GROUND TIME

## OBJECTIVE

The candidate teaches a student to work a performance chart and a weight and balance for the airplane in front of them, from that airplane's own approved material, and to know what the answer does not tell them.

This is the lesson where cross-cutting requirement 5 bites hardest. No number from a POH or AFM appears in any North Aero artifact. Everything comes from the book in the airplane.

## LESSON STEPS: THE ELEMENTS, IN TEACHING ORDER

Check each element as it is taught. Leave anything not done blank. Sign once at the bottom.

- Using charts, tables, and data to determine performance  
AI.II.F.K1 the airplane's approved material
- Factors affecting performance: density altitude, weight, wind, surface, configuration  
AI.II.F.K2
- Weight and balance terms: basic empty weight, maximum gross weight, arm, moment, station, CG  
AI.II.F.K3
- Methods for computing CG  
AI.II.F.K4
- Aerodynamics as it bears on performance and limitations  
AI.II.F.K5
- What a chart answer does not tell you: it assumes a new airplane, a test pilot, and a technique
- Candidate teaches a performance or weight and balance computation to the Simulated Student  
US-4.1

## COMPLETION STANDARDS

- The candidate teaches a performance or weight and balance computation to the Simulated Student, working it live from the airplane's own approved material, for about ten minutes.
- The candidate reproduces no number from memory and directs the Simulated Student to the source for every figure used.
- The candidate states the assumptions behind a chart figure, including that it reflects a demonstrated result under specific conditions and technique.
- The candidate handles a legal but marginal result by saying what they would do, rather than reporting that it is within limits.
- The candidate names two factors that would make the real result worse than the chart figure.
- The candidate delivers a self-critique before hearing the instructor's.

## DEBRIEF AND SIGN-OFF

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Critique: the error, its probable cause, and the correction. Candidate self-critique first.

Sign once for the whole lesson. Elements left unchecked above were not taught this session.

SUPERVISING INSTRUCTOR SIGNATURE / INITIALS

DATE