Maneuvering Speed

6c

Lesson Objective

The candidate will learn the meaning of Maneuvering Speed (V_A) and what hazards are associated with this speed. The instructor and student will fly together in dual practice, and accelerate to V_A, for at least a few moments, to get a feel for the stick sensitivity at this speed.

Regulatory Requirement

- Pre-Solo: §61.87(i)(8)
- Private Pilot: PTS - V

Completion Standards

The student must be able to perform

- successful demonstration of flight to the V_A speed, appropriate for the conditions and the glider

The student must be able to:

- recite the maneuvering speed for the club gliders that they fly
- explain the differences between Maximum Structural Cruising Speed and Maneuvering Speed
- explain the hazards with rapid, excessive control movement below V_A
- explain the hazards associated with rapid control movement above V_A
- Explain the influence of aircraft loading on the speed of V_A

Homework for Pre-Solo

- “Glider Flight Training Manual” by Thomas Knauff pages 217-221

Homework for Solo to Private

- Glider Flying Handbook (2013) -- "Maneuvering Speed", page 4-6, Ch 5
- Accident Analysis of AA587 regarding maneuvering speed
  - Video (1:00 minute) Animation of the accident
  - Video (1:18 minutes) Animation of the control inputs
- § 1.2 Abbreviations and symbols.
- Maneuvering Speed -- Wikipedia article
- FAA Special Airworthiness Bulletin 2011 clarification on the meaning of V_A
- PowerPoint 03D(a) Performance & Limitations, 03D(b) VG Diagrams

Further Reading

- FAA Pilot's Handbook of Aeronautical Knowledge, Ch 10
- CFIG Lesson Plan Notes see 6C, 6D, 6E Perf & Limitations

Next Lesson: 6d -- Maximum Structural Cruising Speed
Previous Lesson: 6b -- Aerotow Emergency Procedures
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