



EAA VMC Club

Question of the Month

This Month's Question and Answer:

Question: How do airplane flight characteristics change as the CG is moved from a forward position to an aft position, and why?

Answer: As the CG is moved from a forward to an aft position, less downward force is required on the tail in level flight, and therefore less lift is required. This means the aircraft can cruise at a lower angle of attack and lower power setting, and thus fuel efficiency is improved. However, the longitudinal stability decreases as the CG moves aft, which decreases the ability of the aircraft to right itself after maneuvering or turbulence. An aft CG means less control force is needed to effect pitch changes (light control forces), making it more difficult to control pitch. An aft CG may also result in more abrupt stall characteristics.

Source: FAA-H-8083-25C, Pilot's Handbook of Aeronautical Knowledge, Chapter 10