

ROTORS FLIGHT CONTROL - DESCRIPTION AND OPERATION

A. GENERAL

The K-MAX has dual counter-rotating rotors which are synchronized by gearing within the single main transmission. Rotor torque is resolved in the gearbox, thereby eliminating the requirement for an anti-torque rotor (tail rotor).

A servo flap is mounted on each blade near the $3/4$ radius and is controlled by push/pull rods which transfer conventional cockpit flight control inputs through the azimuth assemblies to each servo-flap. The servo-flap controls the pitch of the rotor blade and acts as an aerodynamic stabilizer. Because the servo-flap uses energy drawn from the air stream to twist the blade, control forces need only be high enough to deflect the small servo-flap. The control system operating loads are relatively light resulting from the low aerodynamic forces on the flaps compared to blade aerodynamic forces. This eliminates the need for hydraulic boost and artificial stability augmentation systems.