

While a brake system parking valve is available, on flat ground the parking brake is provided by the rubber bumper on the nose gear (nose down parking). If it should ever be necessary to hand prop the engine to get it started, it should be done with the aircraft parked nose down and someone tending the throttle.

## TRIM SYSTEM

Cockpit-adjustable trim is provided for pitch and roll only. Electric pitch trim is provided using the Alex Strong system with 'Coolie Hat' switches on each side stick. The actuator (motor) is fitted to the elevator control rod located just forward of the IP on the pilot's fuselage wall.

Roll trim is an electric actuator moving the plans spring system. Adjustable aerodynamic trim tabs are not used. The pilot can safely override any trim setting even if it's stuck in an extreme position. The pitch trim can trim to hands-off flight from minimum to maximum speed.

## LANDING BRAKE

A drag device is used to allow a steeper approach and to provide more deceleration in the flare. This belly-mounted landing-brake is deployed by an electric switch on the lower center IP. It is normally extended on final approach after gear extension and left down until after landing. Maximum allowable speed with the airbrake down is 90 KIAS. The brake does not affect stability, canard stall speed, or canard stall characteristics, and has only a mild effect on pitch trim. The brake significantly interferes with the airflow passing into the engine cooling NACA duct and engine temperatures will likely exceed safe limits if the throttle is set above 1,500 RPM with the brake extended. During touch-and-goes and go-arounds the Landing Brake **MUST** be selected **UP** before the throttle is advanced to full power. Climbs should be avoided with the brake down, as engine cooling and climb performance are reduced.

N83MZ is fitted with a circuit that will retract the landing brake upon >90% throttle application and will latch the landing brake in the up position until the landing brake switch is moved into the

“commanded up” position, at which time it can again be “commanded down” with the switch.

The brake induces a mild buffet when down. During landing and taxi leaving the landing brake down provides some propeller protection from foreign objects kicked up by the nose wheel.

## ELECTRICAL SYSTEM

The following documents define the electrical system in N83MZ.

- [N83MZ Electrical System Bus Maps](#)
- [+12V Power Schematic](#)
- [Stein IP schematic](#)

The system is closely based on Bob Nuckolls' Aeroelectric Connection diagram Z-14, and included dual batteries, dual alternators, dual ATO fuse buses under the front seats, a B&C field of tabs ground bus under the co-pilot's seat, dual master contactors, and a cross tie contactor. The system has two EarthX ETX-680C batteries, a B&C L-60 alternator, a B&C BC462H vacuum pump pad alternator, and B&C voltage regulators for each bus.