

Front Electric Sustainer (FES) Powered Gliders

Objective

The advent of gliders incorporating FES propulsion systems introduces the risk of interaction between personnel on the ground and the FES propellor.

This Standard Operating Procedure is designed to ensure that the operation of the FES motor on the ground is conducted in a controlled manner and only in prescribed parts of the airfield thus reducing the risk to those around the glider.

Risk

It is a characteristic of FES propulsion systems that when operated the motor acceleration is high with the propellor deploying rapidly representing a significant risk to anyone in close proximity to the nose.

Two significant periods of risk have been identified:

- During the test running of the FES on the ground.
- During the connection of aerotow or winch cables prior to launch when the ground crew will by necessity be in close proximity to the folded propellor.

Principles of Operation

The typical FES system includes the following control elements:

- A main battery power connector.
- An guarded engine control unit circuit breaker located in the cockpit.
- A micro switch associated with the canopy disabling the FES when the canopy is open.
- A variable power control (throttle).

Test Running on the Ground

Prior to flying FES pilots will usually wish to exercise the FES propulsion system to confirm System continuity.

In order to reduce the risk to others the operation of the FES in the vicinity of the launch point, or whilst in the queue, shall be avoided.

Test running of the FES shall be confined to the vicinity of the parked tug aircraft or another quiet part of the field.

The pilot operating the FES shall ensure that the area in the vicinity of the nose is clear.

Where the pilot wishes to test the FES on the ground, but without intending to fly, the FES may be started in the vicinity of the trailer line. However in general this should be avoided.

During Cable Connection

The engine control shall remain off at all times unless conducting a test in an appropriate area.

Whilst it is standard practice to ensure the canopy is closed and locked prior to attaching the launch cable, in order to protect the person attaching the cable, it is recommended that the canopy remain open as the cable is attached with the canopy being secured afterwards before the wings are levelled.

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