



European Aviation  
Safety Agency

# Equivalent Level of Safety

## Position and shape of Engine Controls

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**ELOS-CS23.777/781**

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**SUBJECT** : **Position and shape of Engine Controls**

**REQUIREMENTS** : CS 23.777(d), 23.781(b)

**ADVISORY / GUIDANCE MATERIAL** : -

**POLICY REFERENCE** : -

**PRIMARY GROUP / PANEL** : 1 (Flight)

**SECONDARY GROUPE / PANEL** : 12 (Human Factors)

### EQUIVALENT LEVEL OF SAFETY

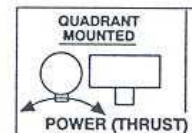
#### Position and shape of Engine Controls

Certification Specification CS.23.777(d) require

*(d) The control location order from left to right must be power (thrust) lever, propeller (rpm control) and mixture control (condition lever and fuel cut-off for turbine-powered aeroplanes). Power (thrust) levers must be at least 25 mm (one inch) higher or longer to make them more prominent than propeller (rpm control) or mixture controls. ... Aeroplanes with tandem seating or single-place aeroplanes may utilise control locations on the left side of the cabin compartment; however, location order from left to right must be power (thrust) lever, propeller (rpm control) and mixture control.*

Certification Specification CS 23.781(b) requires:

*(b) Powerplant control knobs must conform to the general shapes (but not necessarily the exact sizes of specific proportions) in the following figures:*



The intention of these requirements in 23.777 and 23.781 are to ensure standardisation of control elements within the cockpits of different aircraft types. Confusion to operate the engine which could lead to unexpected control inputs shall be avoided.

Specific cockpit designs and special operations may cause different arrangements.

In high performance aerobatic aircraft configured as tandem seating airplane the engine controls may be located on the left side of the cabin.

If the order from left to right (from aft to front) and the shape of thrust lever is different from CS-23 the applicant must demonstrate that:

- Those controls are positioned for optimised ergonomics and safe operation, primarily during aerobatic flight.
- The practicality of the engine controls arrangement has been demonstrated and substantiated during test flights
- Confusion of the controls is avoided, and the arrangement has been found logical considering the special aircraft operations.