§ 23.779 Motion and effect of cockpit controls.

Cockpit controls must be designed so that they operate in accordance with the following movement and actuation:

(a) Aerodynamic controls:

Motion and effect

(1) Primary controls:
- Aileron ...... Right (clockwise) for right wing down.
- Elevator ...... Rearward for nose up.
- Rudder ...... Right pedal forward for nose right.

(2) Secondary controls:
- Flaps (or auxiliary lift devices).
  - Forward or up for flaps up or auxiliary device stowed; rearward or down for flaps down or auxiliary device deployed.
  - Trim tabs (or equivalent).
  - Switch motion or mechanical rotation of control to produce similar rotation of the airplane about an axis parallel to the axis control. Axis of roll trim control may be displaced to accommodate comfortable actuation by the pilot. For single-engine airplanes, direction of pilot’s hand movement must be in the same sense as airplane response for rudder trim if only a portion of a rotational element is accessible.

(b) Powerplant and auxiliary controls:

Motion and effect

(1) Powerplant controls:
- Power (thrust) lever.
  - Forward to increase forward thrust and rearward to increase rearward thrust.
- Propellers .. Forward to increase rpm.
- Mixture ...... Forward or upward for rich.

(2) Fuel feed selector control:
- The indication of the selected fuel valve position must be by means of a pointer and must provide positive identification and feel (detent, etc.) of the selected position.
- The position indicator pointer must be located at the part of the handle that is the maximum dimension of the handle measured from the center of rotation.
- For a mechanical fuel selector:
  - The indication of the selected fuel valve position must be by means of a pointer and must provide positive identification and feel (detent, etc.) of the selected position.
  - The position indicator pointer must be located at the part of the handle that is the maximum dimension of the handle measured from the center of rotation.
- For electrical or digital fuel selector:
  - Switch motion or mechanical rotation of control to produce similar rotation of the airplane about an axis parallel to the axis control. Axis of roll trim control may be displaced to accommodate comfortable actuation by the pilot. For single-engine airplanes, direction of pilot’s hand movement must be in the same sense as airplane response for rudder trim if only a portion of a rotational element is accessible.

(3) If the fuel valve selector handle or electrical or digital selection is also a fuel shut-off selector, the off position marking must be colored red. If a separate emergency shut-off means is provided, it also must be colored red.
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Motion and effect

Fuel ........... Forward for open. Forward or upward for cold.
Carburetor, air heat or alternate air.
Supercharger.
Turbosuperchargers.
Rotary controls.
(2) Auxiliary controls:
Fuel tank selector.

Landing gear. Down to extend.
Speed brakes. Aft to extend.

§ 23.781 Cockpit control knob shape.

(a) Flap and landing gear control knobs must conform to the general shapes (but not necessarily the exact sizes or specific proportions) in the following figure: