



U.S. DEPARTMENT
OF TRANSPORTATION

Federal Aviation
Administration

MEMORANDUM

AIRCRAFT CERTIFICATION OFFICE
c/o American Embassy, Brussels
APO NEW YORK 09667-1011

Subject: Action: Equivalent Level of Safety Grob G520,
Relocation of Wing Flap Selector Switch,
Finding No. ACE-92-1

Date: April 1, 1992

From: Manager, Aircraft Certification
Office, AEU-100

Reply To
Attn. of: EC/vk/G520

To: Manager, Aircraft Certification Service, ACE-100

Background

Grob proposes to move the flap selector switch from its current location on the left console to a position on the left side of the front instrument panel above the landing gear switch. The relocation is necessary because at altitudes above 25,000 feet the pilot wears a pressure suit and helmet which restricts his field of view of the area where the switch is currently located. Also, when pressurized, the suit restricts the pilot's mobility.

Applicable Regulations:

The applicable Federal Aviation Regulations (FAR) paragraphs state:

"23.777 *****

- b) The controls must be located and arranged so that the pilot, when seated, has full and unrestricted movement of each control without interference from ... his clothing ...
- f) Wing flap and auxiliary lift device controls must be located -
 - 1) Centrally, or to the right of the pedestal or power plant throttle control center line; and
 - 2) Far enough away from the landing gear control to avoid confusion.

Applicant's Position:

By relocating the wing flap selector switch to the proposed position on the left instrument panel (above the landing gear control) the flap selector switch will be within the immediate field of view for a pilot wearing a pressure suit and is easily accessible even when the suit is inflated.

Confusion with the landing gear control is not possible because:

- a) it reflects common logic in locating the flap control and position indicator above the landing gear control;
- b) besides having a different shaped handle, the landing gear control lever is protected against inadvertent operation by a lockout feature which requires that it be pulled out before being moved to a new position.

FAA Position

The Grob G520 is a high altitude airplane which requires the use of a pressure suit above 25,000 feet. During an emergency situation it is essential for the pilot to be able to utilize all the controls, including the flap position selector. When operating above 25,000 feet the pilot's suit is pressurized and limits his movements. With the helmet on, the pilot has a limited field of view of the instrument panel.

By repositioning the flap selector from behind the power plant throttle quadrant to a location on the left side of the main instrument panel ahead of the quadrant, provides the pilot with an unrestricted view of the flap position control, and permits easy manipulation of the control while wearing a pressurized pressure suit.

The flap position control is located an adequate distance above the landing gear position selection control to avoid confusion, and several compensating safety features are incorporated in the installation.

Compensating Features

The location of the flap position selector control on the left side of the main instrument panel ahead of the power plant control quadrant incorporates the following safety features:

- 1) The landing gear position indicator location directly above the landing gear selector control and below the flap position selector control; and,
- 2) The flap position indicator location directly above the flap position selector control; and,
- 3) The different shaped selector knobs as specified by FAR Section 23.781; and,

4) The landing gear position selector lockout feature which requires the lever to be pulled before it can be repositioned; and,

5) The pilot's unrestricted field of view encompassing the flap position selector; and,

6) The improved pilot access while wearing a pressurized pressure suit.

Recommendation

We concur that the Grob G520 proposed flap switch relocation is considered as providing an equivalent level of safety as envisioned in the regulations and thus meets the requirements of paragraph 23.777(b), (f)(1) and (f)(2) of the FAR.

Concurred by:

for 

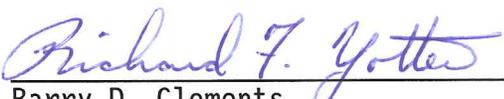
Everett W. Pittman
Manager, Aircraft Certification Office,
AEU-100

4-1-92
Date

for 

Joseph A. Smithoff
Manager, Standards Office, ACE-110

4-14-92
Date

for 

Barry D. Clements
Small Airplane Directorate,
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4/15/92
Date

Attachments