



U.S. DEPARTMENT  
OF TRANSPORTATION

Federal Aviation  
Administration

DHL

# MEMORANDUM

AIRCRAFT CERTIFICATION OFFICE  
c/o American Embassy  
APO New York 09667-1011

Subject: ACTION: Equivalent Level of Safety Agusta SF600, Date: August 22, 1990  
Air Speed Indicator, Finding No. ACE-90-4

From: Manager, Aircraft Certification Office, AEU-100, Reply To  
Attn. of: CM/2794:90

To: Manager, Small Airplane Directorate,  
Aircraft Certification Service, ACE-100

Background:

Agusta S.p.A., manufacturer of the SF600 airplane, proposes to use an airspeed indicator with a 87 knot single engine best rate of climb airspeed ( $V_{yse}$ ) marked as a radial blue line. The single engine best rate of climb is attained at an airspeed of 88 knots at sea level, which decreases with altitude to 86 knots at 5000 feet; a 2 knot differential. Corresponding altitude labels at the blue line edges will not be incorporated.

Applicable Regulation:

The applicable Federal Aviation Regulation (FAR) paragraph states:

"23.1545 \* \* \* \* \*

(b) \* \* \*

(5) For the one-engine-inoperative best rate of climb speed,  $V_y$ , a blue sector extending from the  $V_y$  speed at sea level to the  $V_y$  speed at-

(i) An altitude of 5,000 feet, if the one-engine-inoperative best rate of climb at that altitude is less than 100 feet per minute, or

(ii) The highest 1,000-foot altitude (at or 5,000 feet) at which the one-engine-inoperative best rate of climb is 100 feet per minute or more.

Each side of the sector must be labeled to show the altitude for the corresponding  $V_y$ ."

Applicant's Position:

Based upon SF600 flight test data, the single engine best rate of climb is attained at an airspeed of 88 knots at sea level, which decreases with altitude to 86 knots at 5,000 feet: a 2 knot differential.

Since the variation of airspeed for attaining single engine best rate of climb with change in altitude is so small, Agusta has selected 87 knots as the optimal value.

Using the Agusta proposed blue line marked  $V_{yse}$  airspeed, a pilot will be "off schedule" by no more than 1 knots at the maximum altitude of 5000 feet.

The Agusta proposed blue radial line is located on the airspeed indicator dial face at the 87 knot mark.

As a backup, Agusta will provide complete charting of rate of climb for variations in airplane weight, altitude and outside air temperature, should the pilot desire more precise information in the SF600 airplane flight manual.

The Agusta SF600 Airplane Flight Manual will include single engine procedures based upon the selected 87 knot airspeed.

The FAA Practical Test Standards for Airline Transport Pilot (ATP) and ATP pilot recurrency flight check requires that the pilot candidate only maintain the airplane airspeed to within plus or minus 5 knots of the target value.

#### FAA's Position:

The selection of a single speed has the beneficial effect in reducing pilot work load.

At 5000 feet the difference in the SF600 best rate of climb between the selected target value of 87 knots is negligible.

The SF600 best  $V_{yse}$  airspeed variation over the altitude range is less than the allowable practical airspeed variation granted to an average ATP pilot candidate. Therefore, attempting to provide for visual subdivision of the 86 to 88 knot range for target airspeed values, by labeling each side of such a sector with altitude values, is impractical.

Deletion of the altitude markings eliminates both unnecessary clutter and extraneous information.

#### Compensating Features:

Based upon:

a. Reduction in pilot workload by Agusta's selection of a specific single engine best rate of climb airspeed, which permits the airplane to meet all applicable requirements; and

b. The supporting data contained in the AFM; and

c. The reduction in clutter on the face of the airspeed indicator, while still providing the essential pilot required information.

