



U.S. Department  
of Transportation

**Federal Aviation  
Administration**

# Memorandum

Date: NOV 28 1994

Subject: ACTION: Equivalent Level of Safety,  
Diamond DA20-A1, FAR 23.903(a)(1), Engine  
Type Certificate; Finding ACE-95-1

Reply to

From: Manager, Chicago Aircraft  
Certification Office, CHI-ACO

Attn. of: Michalik  
(708) 294-7135

To: Manager, Small Airplane Directorate,  
Aircraft Certification Service ACE-100  
ATTN: R. Alpiser

This memorandum requests your office to review and provide concurrence to the proposed finding of equivalent level of safety to the engine type certificate requirements of 14 CFR part 23.903(a)(1).

## BACKGROUND:

The Diamond DA20-A1 has received Canadian Type Approval A-191, using JAR-VLA and has received a Provisional Type Certificate TA4CH under FARs 21.29 and 21.17(b). This aircraft was certificated with the Rotax 912 A3 engine (certificated under JAR 22, Subpart H). Diamond had intended to use the Rotax 912 F3 engine which is currently undergoing FAR 33 certification. The Rotax 912 F3 certification program has been delayed and is not expected to be completed until early 1995. This situation will affect about 35 aircraft deliveries. Even though the Rotax 912 F3 engine has not yet received FAR 33 certification, Transport Canada has notified us that sufficient data has been gathered to indicate that the engine would be eligible for FAR 33 certification. Likewise, Transport Canada has informed us that the two versions of the Rotax 912 are sufficiently similar such that the Block Test requirements of FAR 33, Subpart D conducted on the F3 version are also applicable to the A3 version. They have also indicated that the ignition system on the A3 version is the same as that on the F3 version which complies with FAR 33.37.

Diamond Aircraft would like to receive certification for night VFR operations for the DA20-A1. Currently, aircraft certificated under FAR 21.17(b) are restricted to day VFR operations. The DA20-A1 complies with all of the requirements for night VFR operations as identified in AC23-11 except for the requirement for a type certificated engine.

APPLICABLE REGULATIONS:

The applicable Federal Aviation Regulation (FAR) paragraph states:

23.903 \*\*\*\*

(a) (1) Each engine must have a type certificate and must meet the applicable requirements of part 34 of this chapter.

APPLICANT POSITION:

Applicant concurs with FAA position

FAA POSITION:

Due to the anticipated FAR 33 certification of the Rotax 912 F3 engine as well as the similarities between the Rotax 912 A3 and F3 engines, sufficient data exists to indicate that the Diamond DA20-A1, equipped with the Rotax 912 A3 engine, would comply with the intent of the regulations for night VFR operations.

COMPENSATING FEATURES:

The compensating features include:

- a) Transport Canada has informed us that sufficient data has been gathered on the Rotax 912 F3 engine to indicate that it would be eligible for FAR 33 certification.
- b) Transport Canada has informed us that the Block Test requirements of FAR 33, Subpart D conducted on the F3 version are also applicable to the Rotax 912 A3 engine.
- c) The ignition system on the A3 version of the Rotax 912 is the same as that on the F3 version which complies with FAR 33.37.
- d) The Rotax 912 A3 is certificated under JAR 22, Subpart H.

RECOMMENDATION:

Due to the compensating features (similarity between the A3 and F3 versions of the Rotax 912 and the anticipated certification of the Rotax 912 F3 engine) sufficient evidence exists to indicate that the Diamond DA20-A1, equipped with the Rotax 912 A3 engine, provides an equivalent level of safety to that intended by FAR Part 23.903(a)(1) requirement of a type certificated engine.

Concurred by:

Donald P. Michel  
 Manager, Chicago Aircraft  
 Certification Office, CHI-ACO

11-28-94  
 Date

for Larry Mahli  
 Manager, Standards Office, ACE-110

12/2/94  
 Date

Henry A. Armstrong  
 Manager, Small Airplane Directorate,  
 Aircraft Certification Service, ACE-100

12-2-94  
 Date