

UNITED STATES OF AMERICA  
DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
KANSAS CITY, MISSOURI 64106

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In the matter of the petition of \*  
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RAISBECK ENGINEERING \*  
\* Regulatory Docket No. 076CE  
\*  
for an exemption from a portion of \*  
§ 3.242(b) of the Civil Air \*  
Regulations \*  
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GRANT OF EXEMPTION

By letter dated November 7, 1989, Mr. L. M. Timmons on behalf of Raisbeck Engineering, 7675 Perimeter Road South, Boeing Field International, Seattle, Washington 98108, petitioned for an exemption from a portion of § 3.242(b) of the Civil Air Regulations (CAR). Raisbeck is seeking supplemental type certification of various Beech Aircraft Corporation Model 90 series airplanes having a landing weight less than 95 percent of the maximum takeoff weight without installing a fuel jettisoning system.

Section of the CAR affected:

Section 3.242(b) requires, in pertinent part, that multiengine airplanes having a design landing weight less than 95 percent of the maximum weight comply with the fuel jettisoning system requirements of CAR § 4b.437.

The Petitioner's supportive information is as follows:

Raisbeck Engineering is seeking a supplemental type certificate to increase by up to 1000 pounds, the maximum weight of Beech Model B90, C90, C90A and E90 airplanes, as defined by Type Certificate Data Sheet (TCDS) No. 3A20. Section 3.242(b) of the CAR permits the design landing weight of multiengine airplanes to be less than 95 percent of the maximum weight if certain requirements are satisfied; among them is the

requirement for a fuel jettisoning system in accordance with CAR § 4b.437. Raisbeck is petitioning for an exemption from that portion of CAR § 3.242(b) requiring compliance with CAR § 4b.437 and offers to substitute the climb requirements incorporated by reference in § 25.1001(a) of the Federal Aviation Regulations (FAR).

The following is extracted verbatim from the petition:

"For Transport Category airplanes the fuel jettisoning requirements of 4b.437 were changed with FAR Part 25. This change removed the requirement for a fuel jettisoning system for transport airplanes as long as specific climb gradients are satisfied. This change has been shown to have resulted in an equivalent level of safety for transport category airplanes. Therefore, incorporation of these same provisions (specific approach and landing climb performance requirements in lieu of a fuel jettisoning system) for normal category airplanes will also result in an equivalent level of safety.

"Granting of this exemption is in the public interest since:

"(a) Incorporation of a fuel jettisoning system, by itself, does not guarantee that a specific takeoff will have go-around capability in event of an immediate return to the field whereas requiring specific climb gradients will assure this capability.

"(b) Dumping of fuel is not environmentally acceptable from the viewpoints of a wasted resource and air/ground/water pollution. Transport aircraft experience has shown that fuel dumping is not necessary to assure safety of the flight.

"(c) The costs to the public associated with increasing the utility of the airplane (increased payload-range) will be substantially lower without a fuel jettisoning system.

"(d) The safety concerns in event of an inadvertent fuel dump far outweigh the potential benefit of protecting the airplane

from an overweight landing in the event of an immediate return to the takeoff field.

"Any structural strength concern about overweight landings is addressed in both CAR 4b.230 and FAR 25.473(a) by requiring the structure to be designed for a sink rate of 10 ft./sec. at design landing weight and 6 ft./sec. at design takeoff weight. Raisbeck Engineering will substantiate the structure to these limits."

Comments on published petition summary:

A summary of the petition was published in the FEDERAL REGISTER for public comment on January 11, 1990 (55 FR 1135). The comment period closed January 31, 1990. No comments were received.

The Federal Aviation Administration's (FAA) analysis is as follows:

To obtain the exemption, Raisbeck must show, as required by § 11.25(b)(5) of the FAR that: (1) granting the request is in the public interest, and (2) the exemption will not adversely affect safety, or that a level of safety will be provided which is equal to that provided by the rule from which the exemption is sought.

The FAA has carefully reviewed and evaluated the information contained in Raisbeck's petition. The major thrust of Raisbeck's supportive data is: since transport category airplanes with specific climb gradients and without fuel jettisoning systems have been shown to be safe, the incorporation of such provisions (i.e., specific climb gradients in the absence of a fuel jettisoning system) will result in an equivalent level of safety for normal category airplanes.

The FAA agrees that transport category airplanes without fuel jettisoning systems have been shown to be safe. Notice 67-51 (32 FR 17487, December 6, 1967) resulted in amendment 25-18 to FAR Part 25 (33 FR 12224, August 30, 1968). Amendment 25-18 deleted the requirement for a fuel jettisoning system for transport category airplanes that can meet specific approach and landing climb requirements at maximum takeoff weight minus the weight of fuel consumed during a 15-minute takeoff, go-around, and landing at the airport of departure.

The salient difference between transport category airplanes and normal category airplanes, as it relates to this matter, is identified in the preamble to Notice 67-51, thus:

"Service experience with airplanes certificated under the current regulations and under the various exemptions to these regulations has shown that the structural design requirements applicable to transport category airplanes provide sufficient structural strength for landings at weights up to the maximum takeoff weight established for these airplanes."

In the absence of data showing that design requirements for normal category airplanes provide sufficient structural strength for landings at weights up to maximum takeoff weight, Raisbeck must substantiate the structure at a sink rate of 10 feet per second at a weight equal to maximum landing weight (per TCDS 3A20) plus 1000 pounds minus the weight of fuel consumed during a 15-minute takeoff, go-around, and landing. This is among other conditions and limitations defined below.

In consideration of the foregoing, I find that a grant of exemption is in the public interest and will not adversely affect safety. Therefore, pursuant to the authority contained in Sections 313(a) and 601(c) of the Federal Aviation Act of 1958, as amended, delegated to me by the Administrator (14 CFR 11.53), Raisbeck Engineering is granted an exemption from § 3.242(b) of the Civil Air Regulations to the extent necessary to permit supplemental type certification of Beech Model B90, C90, C90A, and E90 airplanes having a landing weight less than 95 percent of the maximum takeoff weight without installing a fuel jettisoning system. For Beech Model B90, C90, C90A, and E90 airplanes, this exemption is subject to the following conditions and limitations:

1. The climb requirements included by reference in FAR § 25.1001(a) must be satisfied.
2. The maximum weight as specified in CAR § 3.242(b) shall be the maximum takeoff weight identified on TCDS 3A20 plus 1000 pounds.

3. The weight to be used in place of design landing weight specified in CAR § 3.242(b) shall be the maximum landing weight identified on TCDS 3A20 plus 1000 pounds minus the weight of fuel consumed during a 15-minute takeoff, go-around, and landing.

Issued in Kansas City, Missouri on February 20, 1990.



Barry D. Clements, Manager  
Small Airplane Directorate  
Aircraft Certification Service