

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

In the matter of the petition of

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Regulatory Docket No. 055CE

SWEARINGEN ENGINEERING AND TECHNOLOGY, INC.*

for an exemption from § 23.903(e)(2)
of the Federal Aviation Regulations

GRANT OF EXEMPTION

By letter dated February 17, 1988, Mr. C. M. Butler, FAA Coordinator for Swearingen Engineering and Technology, Inc., 1234 99th Street, Suite A, San Antonio, Texas 78214, petitioned for an exemption from § 23.903(e)(2) of the Federal Aviation Regulations (FAR) to permit certification of the Model SA-30 airplane with the Williams International Model FJ44 engines which will not comply with § 23.903(e)(2). The Swearingen Model SA-30 is a twin-engine powered fanjet airplane with a six-to-eight place seating capacity.

Sections of the FAR affected:

Section 23.903(e)(2) requires, in part, for turbine engine airplanes that a means must be provided for stopping combustion and rotation of any engine.

The petitioner's supportive information is as follows:

The petitioner is ". . . specifically requesting relief from the requirement to stop rotation of the Williams International Model FJ44 engines powering the Swearingen Model SA-30. The Model SA-30 is an all aluminum aft fuselage mounted twin-engine powered executive 9,250 lb. GTOW fanjet aircraft with a six-to-eight place occupant seating capacity. Swearingen considers the development of this highly efficient aircraft to be in the public interest. However, it is essential that weight, complexity, and cost are closely controlled to achieve the product objectives. Systems which do not contribute to either the safety, performance, or comfort of the vehicle must not be installed.

"Swearingen believes that an editorial error exists in the current language of FAR 23.903(e)(2) in that rules governing transport and commuter aircraft which are presumably certified to higher standards clearly permit continued rotation of turbine engines after shutting down combustion if no hazard results. For example, FAR 25.903(c) states, 'There must be a means for stopping the rotation of any engine

individually in flight, except that, for turbine engine installations, the means for stopping the rotation of any engine need be provided only where rotation could jeopardize the safety of the airplane.' SFAR 23, Paragraph 38.(2) similarly permits continued rotation if it is shown to not be a hazard in itself. Swearingen proposes to show that continued rotation after shutdown of the FJ44 engines powering the Model SA-30 will not introduce an additional hazard and, therefore, the granting of a request for an exemption from this rule and replacement with language identical to 25.903(c) will not adversely affect safety."

Comments to published petition summary:

A summary of this petition was published in the FEDERAL REGISTER for public comment on March 21, 1988 (53 FR 9169). The comment period closed April 11, 1988. No comments were received.

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

To obtain the exemption, the petitioner must show, as required by § 11.25(b)(5) of the Federal Aviation Regulations, that: (1) granting the request is in the public interest; and (2) the grant of the exemption would 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.

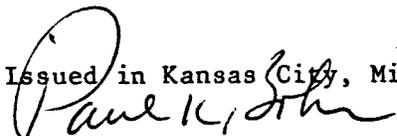
The FAA has carefully reviewed all of the information contained in the petitioner's request for exemption.

The FAA does not agree with the petitioner's contention that an editorial error exists in the current language of the rule. Early design turbine (jet) engines would not continue to rotate safely, after combustion was stopped, for an extended period; therefore, the current rule was adopted. The FAA would agree, however, that modern turbine engines are usually designed with the capability of continued rotation (windmilling) for extended periods without creating a hazard.

The FAA has determined that § 23.903(e)(2) should be amended to address modern designs capable of extended windmilling without hazard and is including such a proposal in a notice of proposed rulemaking now in the process leading to publication for public comment.

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), Swearingen Engineering and Technology, Inc., is hereby granted an exemption from § 23.903(e)(2) of the Federal Aviation Regulations to the extent necessary to permit the type certification of its Model SA-30 airplane with the Williams International Model FJ44 engines installed provided the petitioner demonstrates that continued rotation of the engines, after combustion has stopped, will not cause a hazard to the airplane.

Issued in Kansas City, Missouri on May 13, 1988.


Paul K. Bohr
Director, Central Region