§ 44504. Improved aircraft, aircraft engines, propellers, and appliances

(a) Developmental Work and Service Testing.— The Administrator of the Federal Aviation Administration may conduct or supervise developmental work and service testing to improve aircraft, aircraft engines, propellers, and appliances.

(b) Research.— The Administrator shall conduct or supervise research—

(1) to develop technologies and analyze information to predict the effects of aircraft design, maintenance, testing, wear, and fatigue on the life of aircraft, including nonstructural aircraft systems, and air safety;
(2) to develop methods of analyzing and improving aircraft maintenance technology and practices, including nondestructive evaluation of aircraft structures;
(3) to assess the fire and smoke resistance of aircraft material;
(4) to develop improved fire and smoke resistant material for aircraft interiors;
(5) to develop and improve fire and smoke containment systems for inflight aircraft fires;
(6) to develop advanced aircraft fuels with low flammability and technologies that will contain aircraft fuels to minimize post-crash fire hazards; and
(7) to develop technologies and methods to assess the risk of and prevent defects, failures, and malfunctions of products, parts, processes, and articles manufactured for use in aircraft, aircraft engines, propellers, and appliances that could result in a catastrophic failure of an aircraft.

(c) Authority To Buy Items Offering Special Advantages.— In carrying out this section, the Administrator, by negotiation or otherwise, may buy or exchange experimental aircraft, aircraft engines, propellers, and appliances that the Administrator decides may offer special advantages to aeronautics.


### Historical and Revision Notes

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In this section, the word “Administrator” in section 312(b) of the Federal Aviation Act of 1958 (Public Law 85–726, 72 Stat. 752) is retained on authority of 49:106(g).

In subsection (a), the words “to improve” are substituted for “such . . . as tends to the creation of improved” to eliminate unnecessary words.

**Amendments**


**Effective Date of 2000 Amendment**


**FAA Center for Excellence for Applied Research and Training in the Use of Advanced Materials in Transport Aircraft**


“(a) In General.—The Administrator of the Federal Aviation Administration shall develop a Center for Excellence focused on applied research and training on the durability and maintainability of advanced materials in transport airframe structures. The Center shall—

“(1) promote and facilitate collaboration among academia, the Federal Aviation Administration’s Transportation Division, and the commercial aircraft industry, including manufacturers, commercial air carriers, and suppliers; and

“(2) establish goals set to advance technology, improve engineering practices, and facilitate continuing education in relevant areas of study.

“(b) Authorization of Appropriations.—There is authorized to be appropriated to the Administrator $500,000 for fiscal year 2004 to carry out this section.”

**Rotorcraft Research and Development Initiative**


“(a) Objective.—The Administrator of the Federal Aviation Administration shall establish a rotorcraft initiative with the objective of developing, and demonstrating in a relevant environment, within 10 years after the date of the enactment of this Act [Dec. 12, 2003], technologies to enable rotorcraft with the following improvements relative to rotorcraft existing as of the date of the enactment of this Act:

“(1) 80 percent reduction in noise levels on takeoff and on approach and landing as perceived by a human observer.

“(2) Factor of 10 reduction in vibration.

“(3) 30 percent reduction in empty weight.

“(4) Predicted accident rate equivalent to that of fixed-wing aircraft in commercial service within 10 years after the date of the enactment of this Act.

“(5) Capability for zero-ceiling, zero-visibility operations.

“(b) Implementation.—Within 180 days after the date of the enactment of this Act [Dec. 12, 2003], the Administrator of the Federal Aviation Administration, in cooperation with the Administrator of the National Aeronautics and Space Administration, shall provide a plan to the Committee on Science [now Committee on Science, Space, and Technology] of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate for the implementation of the initiative described in subsection (a).”

**Specialty Metals Consortium**

Pub. L. 106–181, title VII, § 742, Apr. 5, 2000, 114 Stat. 175, provided that:

“(a) In General.—The Administrator [of the Federal Aviation Administration] may work with a consortium of domestic metal producers and aircraft engine manufacturers to improve the quality of turbine engine materials and to address melting technology enhancements.

“(b) Report.—Not later than 6 months after entering into an agreement with a consortium described in subsection (a), the Administrator shall transmit to Congress a report on the goals and efforts of the consortium.”