

NAA NEWS

National Aeronautic Association



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New Helicopter Chosen for Collier Trophy

A new helicopter whose state-of-the-art features make it attractive for both civil and military applications has been selected by the National Aeronautic Association (NAA) to receive the Robert J. Collier Trophy for the year 2002.

The Sikorsky S-92 helicopter--the only helicopter to date to be certified under the federal government's latest standards for transport-category rotorcraft (FAR Part 29)--was singled out for the Collier award because it incorporates multiple improvements in safety, operating cost, and traveling comfort, thus offering potential users--whether common carriers or the armed forces--enhanced opportunities to place helicopters in service. Because of its many technical advances, the S-92 more than meets the Collier's criteria for recognition as the "greatest achievement in aeronautics or astronautics in America for the preceding year," NAA concluded.

In a letter to Sikorsky's President, Dean Borgman, announcing the award, NAA President Donald Koranda said, "The S-92 stands out as a welcome sign that important innovations are coming on line. Your efforts to improve the performance, efficiency, and safety of rotary wing flight will benefit the entire industry. I wish to extend to you and all the members of the Sikorsky team our congratulations on winning this important national trophy, which resides in the Smithsonian's National Air and Space Museum."

The S-92 is a 19-passenger, twin-engine transport that has a range of approximately 575 miles, making it suitable for numerous short-haul commercial markets. It is also being developed in a military version, the H-92, which offers the same performance characteristics. The aircraft can operate at speeds of up to 190 miles per hour.

In the area of safety the new machine boasts a long list of "major investments" that increases in-service reliability. For example, the aircraft is "fully flaw and damage tolerant," making it less likely to suffer fatigue from the "nicks, dents, scratches, impacts, corrosion, and fretting damage that can occur in manufacturing and service use. Retirement times and inspection procedures based on this approach provide significantly improved safety margins."

Another advancement, according to Sikorsky, is the S-92's critical parts program, which establishes procedures for designing, marking, handling, and overhauling critical components so that they "are always safe, even when on the shelf or in transit."

Still other safety improvements include: (1) "an onboard system to monitor the health of all critical drive-system components," (2) "a fuel system that meets the highest crashworthiness standards," (3) enhancements that satisfy "stringent bird-strike criteria for the entire aircraft," and (4) increased protection from the effects of lightning and high-energy radiated fields.

Finally, the S-92 is designed so that "engine failure can be tolerated anywhere in the flight envelope while permitting safe flight to landing."

To help reduce maintenance costs, Sikorsky says the helicopter's "main transmission is the only component requiring overhaul, and even that takes place at 6,000 hours, twice the previous best in the industry. Every other system and component requires only on-condition maintenance. There are very few components on the S-92 that have retirement intervals of less than 10 years or 12,000 hours."

Reacting to common passenger complaints about helicopters, Sikorsky reports that it achieved a "full-height cabin (six-foot)" for the S-92 by redesigning various systems that would otherwise intrude into the cabin space. At the same time, the design team utilized interior trim panels and other devices to reduce cabin noise by as much as 50 percent in comparison to other helicopters.

Yet another innovation aimed at passenger comfort is a Sikorsky-developed active vibration control system that creates "counter vibrations to cancel the signatures normally present, even as aircraft configurations and flight regimes change." This results, the company states, in a 30-percent decrease in vibration levels.

Sikorsky has built five prototypes of the S-92 and is talking to 20 potential buyers of production models.

This is not the first time that NAA has chosen a rotorcraft as winner of the Collier Trophy. It has happened on four previous occasions. In 1930, the Collier went to Harold Pitcairn and his associates for development of the autogiro. In 1950, the Trophy was shared by helicopter manufacturers, the military services, and the Coast Guard for their efforts to use helicopters for air rescue missions. In 1983, the U.S. Army and Hughes Helicopters took the honor for their work on the AH-64A Apache helicopter. And in 1990, the team of Bell Helicopter and the Boeing Company was tapped for the Collier prize for engineering the world's first large-scale tiltrotor aircraft, the V-22 Osprey.

The Robert J. Collier Trophy was created in 1911 by a prominent publisher and sportsman who was the first person to purchase an airplane from the Wright Brothers for personal use. The National Aeronautic Association is a non-profit, membership organization devoted to fostering America's aerospace leadership and promoting public understanding of the importance of aviation and space flight to the United States.