



Sikorsky Archives News

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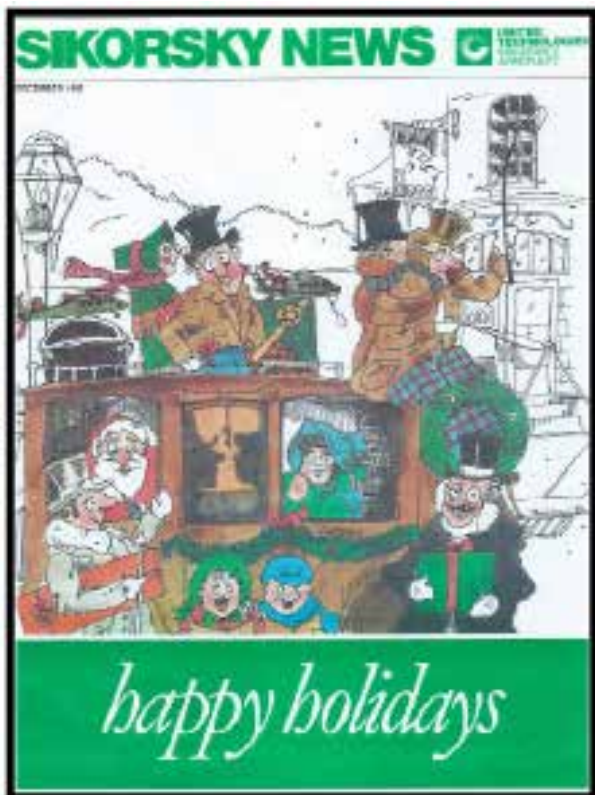
Business Optimism Reigned Supreme at Sikorsky Aircraft During the 1980s Decade

Winning the Utility Tactical Transport Aircraft System (UTTAS) program was the spark that mobi-lized all members of the Sikorsky Aircraft Company to build the most advanced and productive helicopters in the world. The spirit and joy of all company employees at the time is graphically portrayed by the front cover illustration of the December 1985 issue of The Sikorsky News publication shown below.

The Army BLACK HAWK, Navy Seahawk, Air Force Pave Hawk, Coast Guard Jayhawk and commercial product lines expanded to cover over 30 international

countries. During this period of company growth, the S-76 commercial product line was developed.. The CH-53E and MH-53E were in production, and the S-80M a derivative of the MH-53E was produced for the Japanese Maritime Service.

The team desire for continuous improvement and to develop new technology was the driving force during this period. Sikorsky won the Army Advanced Composite Airframe Program (ACAP) and built the S-75 aircraft, which was a derivative of the S-76. Advanced aircraft programs during this period included the XH-59 ABC demonstrator, the X-Wing Concept and the Boeing Sikorsky RAH-66 Comanche program.



S-75 ACAP



S-76



(S-70) UH-60



(S-70) SH-60



(S-65) S-80M

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Over 100 BLACK HAWKS Were Delivered During The First Three Years of Production. By 2015 Over 4000 BLACK HAWKS And Its Many Derivatives Were Delivered. They Are Still Being Produced.



S-70 (UH-60)



S-70 (UH-60)



S-70 (UH-60)

Operation Bright Star Succumbs To Egyptian Conflict .

The United States and Egypt had been holding the “Bright Star” military exercise since 1980. Bright Star was a biennial military training exercise conducted in Egypt and cohosted by Egypt and the United States. Bright Star was designed to enhance military cooperation among the United States, Egypt,

France, Germany, Greece, Italy, Jordan, Kuwait, the Netherlands, United Arab Emirates, and the United Kingdom. On August 15, 2013 the Bright Star military exercise was cancelled due to Egyptian civil turmoil and violent crackdown by Egyptian security forces.



UH-60 BLACK HAWK near Egyptian Pyramids



Four H-60 BLACK HAWKS flying past Egyptian Pyramids with Kiowa scout helicopters in front and AH-1 Cobra attack helicopters in back

The U.S. Navy Competition For A Ship Based Anti Submarine Helicopter (ASW) To Replace Their Aging Fleet Occurred In The Fourth Quarter Of The 1970s

After evaluating proposed versions from Sikorsky, Bell, Kaman, Westland in the United Kingdom and MBB in Germany, the Navy selected Sikorsky Aircraft in early 1978 as the winner of the competition. Prior Sikorsky helicopters for the U.S. Navy incorporated an automatic hydraulically actuated main blade folding system. The SH-60B Sea Hawk blade folding system is electrically actuated, and has been proven to be superior to previous model hydraulic systems.

Two years after the SH-60B entered service, the U.S. Navy started development of the SH-60F to provide close in protection of aircraft carrier groups. The key feature of the SH-60F was the installation of a dipping sonar system to detect submarines that were close to the carrier task force where waterborne noise is high, and where sono buoys would be less effective. First flight occurred in March 1987, and first fleet deployment began in 1991 aboard the USS Nimitz. A total of 76 were produced.



S-70 (SH-60B)



S-70 (SH-60) Launching a Penguin Missile



S-70 (HH-60H)

The U.S. Navy developed the HH-60H, a special version of the Seahawk in 1986 whose primary mission was to provide combat rescue and special warfare support in all weather and in combat conditions.

In 1986 the U.S. Coast Guard started development of a new medium-range rescue helicopter HH-60J based on the Navy HH-60H airframe. Its mission was to fly out 300 miles, conduct search operations for one and a half hours, rescue as many as six people and return to base.



S-70 Fire Hawk was produced for fire fighting missions



S-70 (HH-60J)

The S-76 Commercial Helicopter Was Designed, Built And FAA Certified In Four Years

For marketing purposes, the S-76 was initially named the “Spirit” in recognition of the United States bicentennial “Spirit of 1776”, which was soon to be celebrated. The Sikorsky West Palm Beach Flight Test Facility was opened in 1976 to start the Flight Test Program for the S-76 aircraft. The initial FAA certification was issued in Nov., 1978.

During marketing efforts in foreign countries, it was recognized that the S-76 Spirit name was inappropriate, because of religious connotations. A Detroit manufactured car was also named the Spirit at the time, and it was quickly changed. The S-76 was subsequently renamed “The Eagle”.

The S-76 helicopter benefitted from the advanced technology dynamic component systems developed and proven on the Black Hawk and Sea Hawk aircraft. Sikorsky Aircraft also recognized the importance of providing an experienced product support team to rapidly resolve early operating problems with the new advanced state of the art helicopter. A product support team made up of experienced technical and operational disciplines was organized and collocated to provide rapid response to any customer issue.



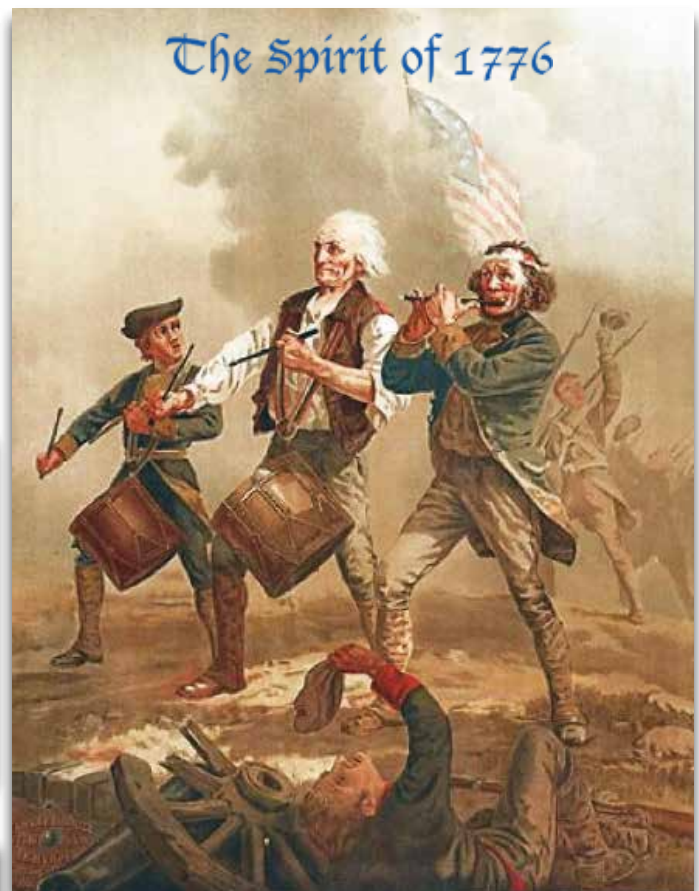
S-76A



S-76A first flight



S-76B



S-76 Program Major Milestones	
Program Turn On	January 1975
Completed Detail Design	April 1976
1st Flight	March 13, 1977
FAA TIA	March 17, 1978
FAA TC	November 21, 1978
First Production Delivery	January, 1979

Various engines, power plant installations and system equipment modifications were incorporated on the S-76 aircraft depending on the customer's operational requirements.

Model	Engine	Max Continuous/
S-76A	Allison 250-C30S	700 shp
S-76B	P&WC PT6B-36A	887 shp
S-76C	Turbomecca Arriel 1S	730 shp
S-76D	Pratt & Whitney 210S	966 shp



S-76A



S-76D



S-76C



Six passenger executive interior shown on left.



Twelve passenger offshore oil interior shown on right

Over 800 S-76 aircraft consisting of models S-76A, S-76B, S-76C and S-76D have been delivered to date. The worldwide missions include the following:

- Emergency Medical services
- Offshore Oil Support
- Executive Transport
- Armed Utility Support



The Republic of the Philippines Air Force procured 19 S-76 aircraft for search and rescue, counter insurgency, troop and logistic support, medical evacuation, and offshore oil support

1980's Advanced Aircraft Projects

The XH-59A Advancing Blade Concept

While the production side of the company was very successful during the 1980s, the preliminary design areas were working on advanced aircraft concepts. The XH-59A Advancing Blade Concept (ABC) demonstrator completed its flight test program in 1981. The aircraft flew to 250 knots when most helicopters were limited to 120-140 knots. The concept was not ready for release due to heavy weight and high vibration levels. The propulsion system and controls were too heavy. Thirty years later, using more advanced technology, the X-2 solved those problems. The S-97 Raider will continue the development of this promising concept.



S-69 (XH-59)



S-97 Raider first flight May 22, 2015 Raider



X2

The X-Wing was another approach to combine the hovering efficiency of the helicopter with the high speed capability of fixed wing aircraft. This was a DARPA/Navy/NASA concept that Sikorsky was contracted to reduce to practicality. As it neared the critical testing of stopping the rotor in flight, the risk was deemed too high and the program was cancelled.



X Wing on Rotor System Research Aircraft



X-Wing Aircraft Concept

S-75 Advanced Composite Airframe Program (ACAP)

The S-75 ACAP built an all composite fuselage combined with S-76 dynamic components to prove the feasibility of this advanced structural technology. After proving the feasibility of composite structure to reduce fuselage weight and simplifying fabrication, the fuselage was crash tested proving its ability to absorb energy in a crash. Examples of some of the airframe structural parts are shown in the photos.



ACAP in flight



ACAP airframe assembly



ACAP Stabilizer



ACAP Tail Cone Assembly

LHX Comanche Program

ACAP was one of a number of technologies, which led to the Comanche program. Comanche, then called the LHX, was in its early development in the 1980s. At the beginning of the decade there were early preliminary design studies to determine what was feasible. By the end of the decade Sikorsky had teamed with Boeing to put together what would become the design selected by the Army for full-scale flight development of the RAH-66.

Comanche Test Aircraft



Please Note:

The Sikorsky Historical Archives is in the process of archiving copies of the discontinued "Sikorsky News" publication. We have captured all but the following missing issues to complete the file. Please consider donating or allowing us to reproduce copies of the missing issues you may still have in your possession. The missing issues are February and May of 1951, and the 2nd, 3rd and 4th quarter of 1999.

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Sikorsky Aircraft Regained World Leadership In Helicopter Technology During The 1980s



Newsletter designed and edited by Lee Jacobson, Art Linden, and archive members with graphic art assistance by Jodi Buckley



“We were ignorant , and we were ignorant of the fact that we were ignorant! This was ignorance squared, and it often led to disaster. My first two machines were built between 1909 and 1910 and were helicopters. The first of these ships refused to leave the ground while the second could lift itself but refused to lift me.”

– Igor Sikorsky



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