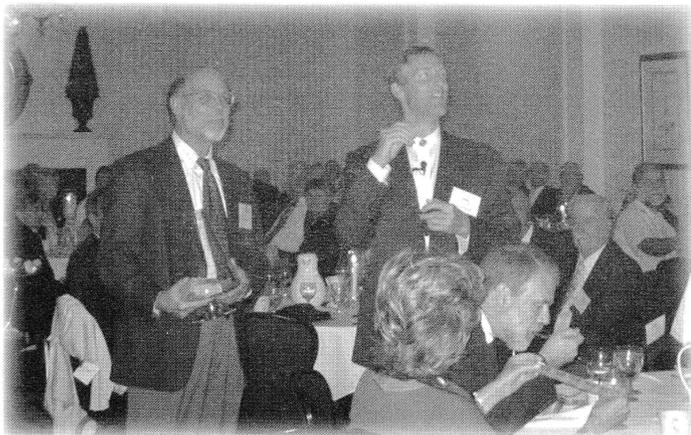




History Meets History

Lindbergh! That name instantly brings to mind the exciting history of flight and individual courage. For those reasons, the Board of Directors was delighted when Erik Lindbergh, grandson of the 1927 "conqueror" of the Atlantic, agreed to be the keynote speaker at the New Hampshire Aviation Historical Society's 10th Annual Gala Banquet. Erik presented an outstanding program for the NHAHS membership, blending his family connection to the "Lone Eagle" and his own place in aviation history.

The New Hampshire Aviation Historical Society is thankful to Erik for the support he has shown for our mission. For a non-profit organization working to start the Museum of New Hampshire Aviation History, public attention and awareness is critical to fundraising, membership, and attracting material for display. Erik's visit to New Hampshire was incredibly help-



Immediate Past President Steve Berardo and guest speaker Erik Lindbergh draw winning raffle tickets at 10th Anniversary Gala.

PHOTO BY DAVE BLANCHET

ful in all of these areas.

A number of NHAHS contributors dined with him at an event catered in the museum, and the next day NHAHS member Ed Brouder arranged several media appearances, including an extended segment on NH Public Radio. At the Museum rib-

THE Aeronaut

bon cutting on September 16, 2005, a large crowd gathered to hear Erik and public officials commemorate NHAHS moving into our new "home," the restored 1937 terminal building at Manchester Airport. At the banquet, Erik entertained the record crowd with reflections on his grandfather. He also described his own commemorative trans-Atlantic flight that celebrated the 75th anniversary of his grandfather's adventure, and shared a fascinating look inside the world of the "X" Prize competition won by the Burt Rutan/Scaled Composites design team.

The 2005-2006 officer nominees were approved at the banquet. Jack Ferns takes the reins again as President. Pat Duffy was re-elected Vice President, Dick Ludders will continue as Secretary, and Stephen Christy was elected as the new Treasurer.

The ongoing capital campaign for support of the Museum and the Society can point to that sequence of events as evidence of the group's credibility, the strong support of its members, and the worthiness of supporting its activities. Speaking of support, the NHAHS Board would like to acknowledge the assistance of our members who helped make Erik's trip possible, especially the tireless efforts of Carla Ferns.

It was terrific to have Erik Lindbergh on hand at the ribbon cutting ceremony for the Museum. After the presentation of the colors by the Pease Honor Guard, Society president Jack Ferns welcomed the crowd and introduced the program. In addition to remarks from Lindbergh, a highlight of the ceremony was the presentation of a scale model Curtis JN-4 "Jenny" built by The Flying Tigers, a remote control modeling club located in Derry. The Jenny was autographed by Bob Fogg,

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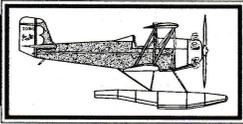
From the Cockpit
by Jack Ferns

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Mystery Airplane
by Peter Bland

PAGE 4

Events Past & Future



From the Cockpit

We are into the New Year, and there are a lot of exciting events coming up in 2002! There are major milestones about to occur. February 4th, 2002, will be the centenary of Lindbergh's birth, and this summer will be the 75th anniversary of Lindbergh's flight across the Atlantic Ocean (May 20-21, 1927), and his flight to Concord, NH on July 25, 1927. In addition, it will soon be the anniversary of the centenary of flight (December 17, 2002), which will be here in less than two years.

It is interesting to note just how fast aviation technology has advanced: Lindbergh's historic flight occurred only 23 years after the Wright Brothers (remember - Lindbergh was the 13th person to fly across the Atlantic. He was the first to do it solo non-stop). Only 20 years after Lindbergh's flight, Chuck Yeager broke the sound barrier for the first time (October 14, 1947), and only 22 years after that, Neil Armstrong

walked on the moon (July 20, 1969).

We are planning on organizing special events to commemorate Lindbergh's visit to New Hampshire at the end of July, which hopefully will include his daughter, Reeve, and a visit by a replica of the Spirit of St. Louis.

In addition, the NHDOT Division of Aeronautics has established a committee to organize events and activities to commemorate the centenary of flight, which will officially occur on December 17, 2003. The NHAHS is represented on that committee, and we strongly encourage all of our members to participate. A number of events and activities are being planned, all in an effort to make people aware throughout New Hampshire about the value of aviation to this state.

We also believe that these activities will increase awareness of the NHAHS. Barbara Miles, our archivist, has done an incredible job of

collecting, cataloging, and storing materials, and we think that will only increase as time goes on.

For additional information regarding upcoming events or the NHAHS, give me a call at **(603) 228-3664**.

Remember—don't throw those old pictures, books, and articles away!

Give us a call at (603) 228-3664 or (603) 223-0333 and help us preserve New Hampshire aviation history.

Steve Berardo



Marci and Fred Pratt enjoy hors d'oeuvres and conversation at the NHAHS Annual Meeting.



OFFICERS 2002

Steve Berardo PRESIDENT	Helen Cole TREASURER
David Blanchet VICE PRESIDENT	Deb Blanchet SECRETARY

DIRECTORS 2002

Jack W. Ferns	Dick Bleakney
Steve Berardo	George Wiggin
Helen Cole	Leslie Hibbert
Chuck Cole	Ed Josephson
Jack Denison	John Barker
Dick Harrington	

For more information, or to submit an article, please contact:

NH Aviation Historical Society
PO Box 3653
Concord, NH 03302-3653

The Gee Bee Model A Sport Plane (pictured in the Society's logo) was the first plane built by the Granville brothers of Madison, New Hampshire in Boston, Massachusetts. They built nine in Springfield, Massachusetts followed by a series of sportsters (monoplanes) and finally leading to the famous Gee Bee supersportster racers, one of which established a new world land-air speed record. It was flown by James Doolittle.



Bits & Pieces

New Hampshire Celebration of Flight

There is a committee underway to plan a NH celebration of the 100th anniversary of powered flight in 2003. A logo has been adopted (see below).



Sub-committees have been formed to work on a state aeronautical chart, airport displays, aviation education programs, and a celebration reception/dinner.

Anyone interested is welcome to join the committee meeting. Call Jack Ferns for information at 271-1676. The most recent meeting was held on January 16th at the NHDOT John O. Morton Building in Concord.



Manchester Airport Terminal Restoration Update

A select group comprised of state, federal and local officials are

continuing to pursue funding for the preservation of the "old terminal" building located at the Manchester airport.



NH Aviation Historical Society Hats & Polos

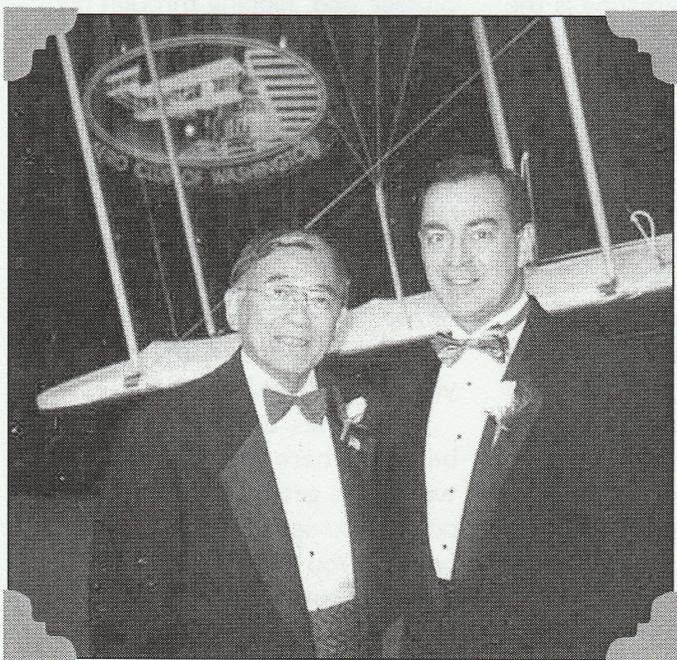
Made especially for members to wear with pride, our hats and polo shirts are high quality and make great gifts for family and friends!

Contact Steve Berardo, your President, for ordering information.



What to Give Someone Who Has Everything...

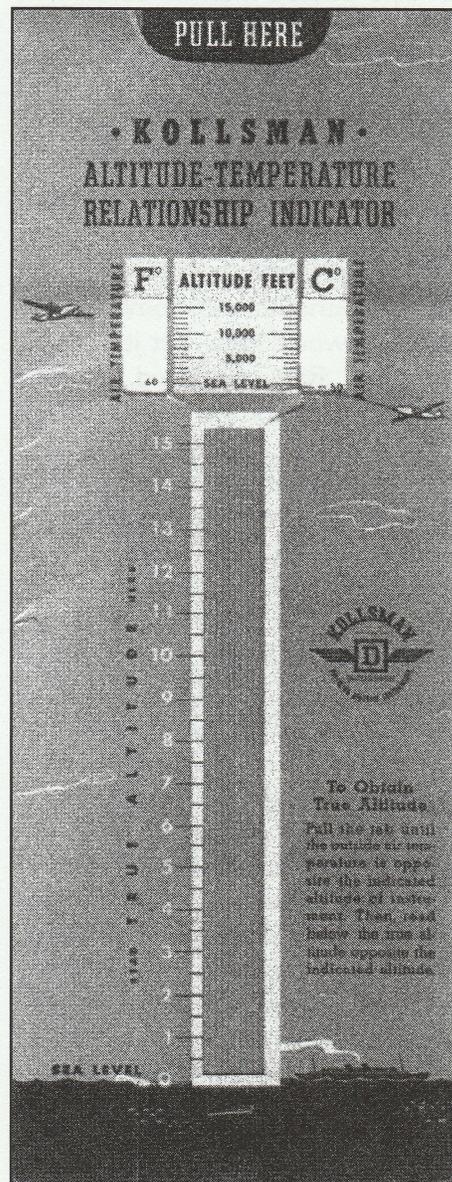
Give memberships the the NH Aviation Historical Society! This is a great way to get your associates and friends interested in the preservation of our aviation history in New Hampshire. Contact the Society at the address in the masthead box on page 2 to receive information on giving a Gift Membership.



Norman Y. Mineta (L), U.S.D.O.T. Secretary of Transportation, and Jack Ferns (R) stop for a moment to have their picture taken at the Wright Memorial Dinner that Jack attended in December (see story on page 6).

Aeronautical Acquisitions

Thanks to our members, the NHAHS archives is "acquiring many interesting manuscripts and artifacts. During the October meeting, Jack Denison presented us with this Kollsman instrument copyright 1941.



Hopkinton Man Helped Develop War Radar

By Scott Fraser
(reprinted from *The Bow Times*, May 25, 1996)

HOPKINTON—Each morning of 1942, Eugene Slusser boarded the trolley for Cambridge, Mass., but as an able-bodied man he often was looked on with scorn by women passengers who wondered why he was not off fighting in the war like their men. He could not tell them he was involved in a top secret project that would help turn around World War II for the allies.

"We probably would have won the war without the A-bomb, but we certainly would have lost it without radar," I.I. Rabi often said. He was associate director for forwarded advanced design of the project located at the Massachusetts Institute of Technology, where Slusser worked.

RADAR—Radio Direction and Ranging—has evolved as we know it today from the secret research lab known as the RAD Lab, where Slusser served his country during the war.

The name RAD Lab had more to do with confusing enemy spies than radiation. With the now-famous Manhattan Project atom bomb research simultaneously taking place in Oak Ridge, Tennessee, it was hoped spies might be misdirected to Cambridge, where the A-bomb was not.

"Everything that we did was secret. Our notebooks, they were secret; our patent applications, they were secret. I had patent applications that were classified secret that were released about 1950," Slusser said. "By that time they weren't that valuable to anybody because the science had gone forward."

The secrecy that led to the scornful looks on the trolley also caused problems for Slusser. At one point, he became so disillusioned, he tried to

join the Navy. But when it was discovered he worked at the Rad lab, Navy officials laughed and sent him home. They knew his work was too important. Slusser's work at the lab also was made easier when he met Anne Longley there. They now have been married for 52 years.

They moved to Hopkinton in 1958 and started Aerotronics, a company that did reliability testings on semiconductors. They sold the business in 1984, but still live in Hopkinton Village.

Prior to World War II, radar was a rather crude system in which signals were transmitted and received over a long wire stretched out along protected shorelines.

The military had such little confidence in radar that signals often were disregarded. Such was the case off the coast of Hawaii on Sunday morning, December 7, 1941. A radar operator notified his supervisor of an unusually strong signal and was told it had to be an error; forget it. History has recorded how wrong the supervisor was.

"When you think about what came out of this laboratory, one of the things that is most interesting is the fact that your air traffic control today came from the early work called Ground Control Approach which was done at MIT and East Boston Airport," Slusser said.

Two crises spurred radar research in 1943, one at home and another around the world.

Gen. Claire Chennault was having a tough time defending China against the Japanese, and German submarines were sinking ships off the coast of Massachusetts.

The Japanese shuttled supplies across the Yangtze River under the cover of darkness. By day they surrounded their transports with gunships. Chennault's Flying Tigers could

not see the ships at night or get within two miles of the river without being shot down during the day.

Meanwhile, in Boston, German submarines were close to shore.

"Some of them were practically right on the shore; you could almost walk out to them. These guys were really coming in," Slusser said. "People didn't believe that, but they were there. We had ships sunk right off the shore, especially down in the south. They were tracking the Liberty Ships that would come out. They would get out about 15 miles and that's it."

By November 1941, progress at the lab had ground to a halt. The American scientists couldn't figure out how to generate the high energy needed to improve the quality of radar signals. But the British developed the high voltage magnetron, breathing life back into the MIT research underway.

Planes flew practice bombing runs out of East Boston airport and Grenier Field in Manchester, NH.

"I always wondered what the local people thought as we were dive-bombing their bridge everyday," Slusser said, flipping through photographs taken over Lawrence, Massachusetts, as the radar equipped planes dive-bombed a large metal bridge spanning a river. They were trying to develop a method for target identification by radar.

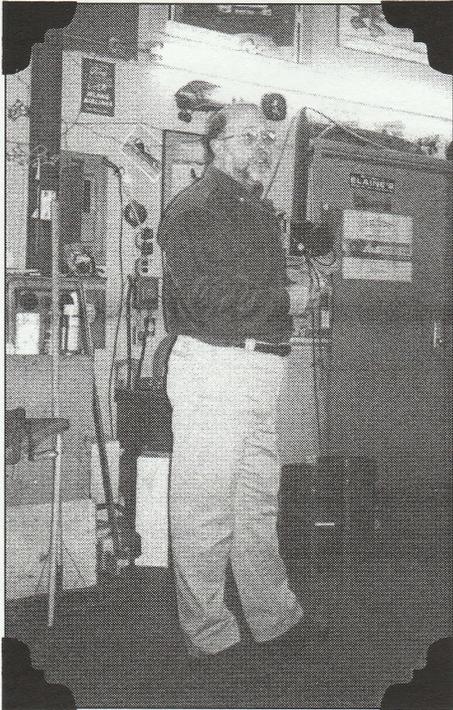
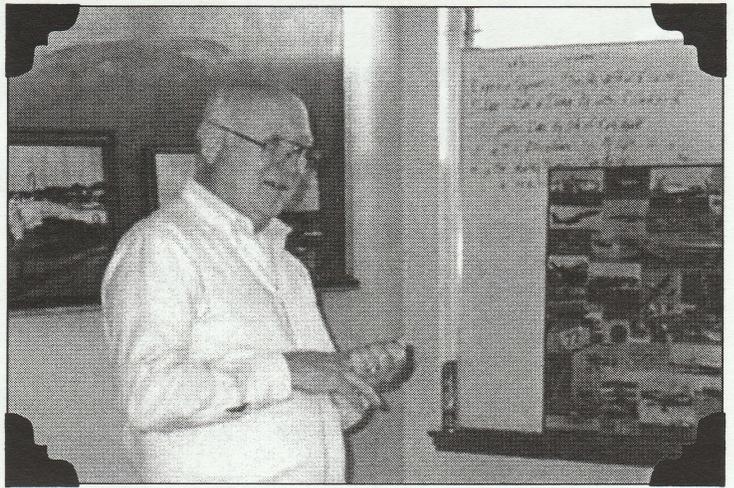
Pointing to an aluminum parabolic dish housed in the nose of a plane, Slusser said, "This invention was to pick up the range of any target that you pointed it at."

There are a whole lot of targets between here and there, but you wanted to get rid of those," he said, pointing to aerial photographs of the bridge. "You wanted that one target and not another farther out."

Crouched in the back of an army

In Pictures...

TOP RIGHT—NH Aviation Historical Society guest speaker Ed Stead talks to his NHAHS audience, bottom right picture. BELOW LEFT—Steve Berardo speaks at an NHAHS gathering at Dick Jackson's hangar in Rochester.



plane, repeatedly diving on the Massachusetts bridge, he found a solution.

Having the radar dish oscillate in a circular pattern left a steady non-oscillating center that provided a clear signal wherever that center was pointed. Line that up with a set of gun sights and the pilot would be right on target.

"It was that simple," Slusser said. "So we just looked at the modulation of the signal, and I where we found a signal with no modulation that is where we would track."

The first combat test came with Chennault in China. The RAD Lab sent six B-25's armed with cannons and the prototype radar units.

For the first time his planes flew in circles around the Japanese con-

voys, sinking their ships while remaining just out of range of enemy guns.

"The pilot is sitting off on the tree top two miles away shooting at the ships, and they can't hit him with their gun boats," Slusser said.

The new radar also made the difference against the Germans off the Massachusetts coast and in Europe.

"They would surface at night and we couldn't see them. So we made up some search radars and put them in B-18s, which was a very early bomber. The military took the B-18s out and soon found all the subs and bombed them," Slusser said.

England benefited as well. Once perfected at MIT, radar controlled guns soon protected the British coast. Anti-aircraft guns now could be elec-

tronically locked on enemy planes and rockets.

To conquer the Germans, their war factories had to be destroyed, and that required hazardous low-level precision bombing.

Low-level daylight bombings saw many allied bombers shot out of the European sky because they had to see what they were bombing. The scientists at MIT changed that.

"To do that, we had to have the radar to get our airplanes in there," Slusser said. "We didn't have anything sophisticated enough at the beginning of the war to let you go in blind and bomb."

Without the ability to produce more supplies, the end was near for Germany.

*New Hampshire
Aviation Historical Society*

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THE AERONAUT

Jack Ferns Attends the 54th Annual Wright Memorial Dinner in Washington, DC

On December 14, 2001, I was fortunate enough to be invited to sit at the head table for the 54th Annual Wright Memorial Dinner honoring Neil A. Armstrong. Armstrong was presented with the Wright Brothers Memorial Trophy which honors Orville and Wilbur Wright and commemorates the anniversary of man's first powered, controlled and sustained flight in a heavier-than-air machine. It has been awarded annually since 1948 for "significant public service of enduring value to aviation in the United States."

It was quite a thrill to be in Neil's presence. I will always remember sitting at home in front of our black and white television on July 20, 1969 and

watching astronaut Neil Armstrong climb down the ladder of the lunar module, Eagle, and become the first person to walk on the moon.

Neil Armstrong spends a few moments with Jack Ferns of the New Hampshire Aviation Historical Society.

