



The AMA History Project Presents: Autography of HENRY A. (HANK) COLE

Started modeling in the mid-1930



Written by HC; Edited by JS (12/2008); Updated by JS (05/2013)

Career:

- 1938: Won second place in the Tacoma News Tribune model airplane contest; Joined the Tacoma Gas Wings
- 1946-1949, 1951, 1955, 1958-1959, 1967, 1980, 1984, 1993: Placed well in the AMA Nats (first through third places)
- 1947: Held the A Speed National Record
- 1948, 1955, 1981-1991-92, 2001, 2004-05, 2007: Place in first in Western regional contests
- 1957, 1962: Held the Nordic National Record
- 1959: Held the Wakefield National Record
- Several of his airplanes, including the Smoothie and Stratosphere, were published in modeling magazines.

Honors:

- 1959: AMA Fellow
 - 1980: NFFS Hall of Fame Inductee
 - 2005: SAM Hall of Fame Inductee
 - 2009: AMA Model Aviation Hall of Fame Inductee
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My Sixty Years of Model Flying

By Hank Cole

My long fascination for flying models began in the mid-thirties when I built a rubber-powered cabin model by Frank Zaic from plans in *Popular Mechanics*. The model flew very well and I was soon known as that crazy kid down the block whose plane was landing on top of houses and in back yards. I did not know any other model builders until 1938, when the Tacoma Public Schools and the Tacoma News Tribune sponsored a contest at Mauler Harkens airport. At the contest, I won a second place, but more importantly, I met Chuck Hollinger who ran a model shop downtown and other model builders who belonged to a club called the Tacoma Gas Wings. I joined the club and the AMA, and soon was building a Class C gas model called the *Zenith*, powered by a Brown Jr. The club was very competitive. We attended contests in Seattle and Yakima, and flew all kinds of indoor and outdoor models. Also, I spent a lot of time at the library reading NACA reports which led me to my first original design, a larger than usual hand-launch glider with swept back tips which won the 1939 TNT contest and many others. Plans were published in *Bill Winter's Planbook*. (See Reference Section, #1)

In 1940, our dreams came true and five of us drove 2000 miles to the Chicago Nationals, which is documented in *Air Trails* (see References, #2). There we met such notables as Frank Zaic, Bill

Winter, Carl Goldberg, Sal Taibi, Dick Korda, Chet Lanzo, Walt Good, and more. My original design, the rubber-powered cabin model *Stratosphere*, was noted for its much larger than usual propeller and was published in *Model Airplane News*. (See Reference Section, #3) Chuck and I also went to the 1941 Nats, which was another great experience that resulted in two more models accepted for publication. (See Reference Section, #4 and 5) The *Smoothie* has many fans around the world even today. The 3-view plans drawn by Douglas Rolfe were a work of art and can be viewed on the internet by searching for “Hank Cole smoothie” through Google. The plans have also been drawn by Jim O’Reilly and a kit produced by Bob Holman.

In 1942, I was studying aeronautical engineering at the University of Washington and working part-time in the wind tunnel. The Davis airfoil used on the *Liberator* in WWII came in for a test. I found that the airfoil was generated by a set of equations from which all kinds of airfoils could be defined. From these I selected five airfoils suitable for models and they were published in *Air Trails*. (See Reference Section, #6) The Davis 3 has been widely used on *FIBs* and the Davis 5 on gas models. During summer vacation, I started experimenting with flying wings and used the equations to generate a sable airfoil, which worked very well on a high start model. Also, I designed and flew an Ohlsson “23” – powered pusher gas model called the *Dry Duck*. The engine could not be dunked even when it flipped upside down. WWII suspended my free flight activities but the Navy allowed me to complete my Bachelors of Science degree in Aeronautical Engineering before sending me to the South Pacific on an aircraft carrier.

The work I had done in 1942 was published in *Air Trails* and *Air Trails Model Annual*. (See Reference Section, #7 and 8) In the two years I was on the aircraft carrier, I built the elf-powered flying wing U-Control model shown in the photo. As construction progressed, the pilots on the ship were equally divided on whether or not it would fly. When it was finished, I built a dolly and we took it out on one of the islands and cranked it up. It took about a half a circle to get off, but fly it did. When it landed, I noticed that a lot of money was changing hands among the pilots.

After the war, I was assigned to Alameda Naval Air Station, where I worked in A&R. While there, I joined the East Bay Aeroneers and became friends with Don Foote and Bud Romak. Don would pick me up on weekends to fly models at Pleasant Hill. I built a gas model, Asymmetrical Pusher (See Reference Section, #9 and photo), which I flew in a contest and came in second to Don’s Westerner. Meanwhile, Chuck Hollinger was getting a model shop going in Seattle that we planned to run jointly when I was released from the Navy. While in the Bay Area, I was able to help by buying kits at distributors in San Francisco. On May 1, 1946, I headed for Seattle to be discharged but stayed in contact with Don Foote for many years as a member of the AMA Gas Model Rules Committee along with Carl Goldberg, Carroll Moon, and Dick Verba, later replaced by Al Lewis.

Aero-Craft Model Shop, which Chuck and I ran in Seattle, was launched in the age of the U-Control boom. We got to know Jim Walker in Portland very well and sold lots of *Fireballs*. We cut custom balsa and helped customers start engines and fly their planes. We always had models under construction on our counter and behind the shop. I continued to write articles for magazines. (See Reference Section, #10 to 18) We closed the shop to attend the 1946 and 1947 Nationals with some modest success shown on the contest results sheet. This was great for a couple years recovering after the war, but as the aircraft industry started to recover, we decided

to close the shop and move on to better opportunities. I returned to the University of Washington to obtain a Masters of Science degree in Aeronautical Engineering.

In 1951, I accepted a job in flight research at the NACA Ames Research Lab at Moffett Field, California. Joe Bilgri worked there, Joe Foster lived nearby, and we became flying buddies. Joe Bilgri and I went to the Nationals in Dallas. He won Wakefield and I won Mulvihill with the Osolong. (See Photo) This was my first National win and it was even more memorable to me because the Mulvihill trophy was presented to me by Arthur Godfrey. Another memorable time was in 1955 when I made the US Nordic Team and went to Germany. My experience there led me to develop the short-nose high-tail glider in the photo (See Reference #22) Similar models were built by Hermann Andresen Desert Rat, Zaic 196401965 and George Xenakis Tadpole, NFFS A-1 Model of the Year. The below contest results, photos and references tell the rest of the story.

Junior Program

Back in 1973 at an AIAA meeting, R.T. Jones gave a talk on his Asymmetric airplane design. Afterwards we were talking about it and decided to sponsor a hand-launched glider asymmetrical model airplane contest for kids in the NASA Ames Hangar. We enlisted Ralph Carmichael and George Xenakis to help. AIAA gave us \$100 for prizes and we distributed a flyer to all the AIAA members. The contest was a huge success except for a boomerang, which I had to disqualify for being too dangerous. The following year we decided to have another contest with Delta Darts., George Xenakis found a flying site in Sunnyvale and the Oakland Cloud Dusters sponsored the event. This was done annually for many years and was gradually expanded to include other events such as penny plane and original design. At present, Lou Young teaches a class weekly along with flying sessions in a San Jose Recreation Center and contests held about every three months. My specialty has been to operate the repair table. (See photo)

Honors

Elevated to AMA Fellow	1959
Inducted into NFFS Hall of Fame	1980
Inducted into SAM Hall of Fame	2005

AMA Nationals Placements to Third Place

Nats Year and Location	Place and Event	Description
1946 Wichita, KS	3rd Indoor Hand-Launched Glider	1938 original swept tip
1946 Wichita, KS	2nd Rubber Outdoor Cabin	Smoothie & Cirrus Cruiser
1947 Minneapolis, MN	2nd Class II Speed	Arden-Powered Original
1947 Minneapolis, MN	3rd Wakefield	HC-3 Cirrus Cruiser Wake
1948 Olathe, KS	3rd Indoor Stick	V-Tail Original
1949 Olathe, KS	3rd Outdoor Cabin	Cirrus Cruiser
1951 Dallas, TX	1st Mulvihill	HC-4 Osolong
1951 Dallas, TX	3rd Wakefield	HC-4 Osolong

1951 Dallas, TX	3rd Indoor Stick	V-Tail Original
1955 Los Alamitos, CA	1st Outdoor Hand-Launched Glider	1938 original swept tip
1955 Los Alamitos, CA	3rd Mulvihill	Original
1955 Los Alamitos, CA	3rd Nordic Glider	Original
1958 Glenview, IL	1st National Team Champs	Andrade, Bilgri, Cole, Foster & Rambo
1959 Los Alamitos, CA	1st Wakefield and National Record	HC-9 Davis 3 with turbulators
1959 Los Alamitos, CA	3rd Mulvihill	Original 260 sq. in.
1967 Los Alamitos, CA	2nd Mulvihill	Original with Davis 2 wing
1980 Dayton, OH	Inducted into NFFS Hall of Fame	
1980 Dayton, OH	2nd Wakefield	HC-10 1961 Wakefield
1984 Reno, NV	1st Wakefield	HC-13 Serephenn
1984 Reno, NV	1st Indoor Unlimited Pennyplane	Boxcar
1993 Lawrenceville, IL	2nd Wakefield	HC-15 with CH407 airfoil

Western Contests, 1st Place Only

Contest Year and Location	Contest Type	Placement and Event	Description
1948 Walla Walla, WA	Washington State Meet	1st A-Gas	Class A Gas
1948 Walla Walla, WA	Gas	1st High Time	Banford Russ Perpetual Trophy
1955 Sacramento, CA	Nordic	1st	U.S. Team Selection
1981 Taft, CA	USA Champs	1st Mulvihill	Fly-off with Jim Quinn
1988 Lost Hills, CA	USA Champs	1st Coupe	Coupe
1990 Sacramento, CA	Sierra Cup	1st F1B	HC-17 Fly-off with Andriukov, Ghio and Foster
1991 Lost Hills, CA	Livotto Invitational	1st F1B	HC-17 Fly-off with Piserchio and Sessums
1992 Lost Hills, CA	USA Champs	1st	HC-17 Joined Dawn 360 Club
1998 Lost Hills, CA	Livotto Invitational	1st F1G	1998 CP Fly-off with Bob White
1999 Lost Hills, CA	US Champs	1st Twin Pusher	Model (Burnham)
2001 Sacramento	Norcal	1st F1G	1998-Plus 3
2001 Lost Hills, CA	Big Als	1st F1G	1998-Plus 3
2004 Tangent, OR	Tangent Classic	1st F1G	1998-Plus 6 Fly-off at dawn with Emery & Pratt
2005 Las Vegas, NV	Inducted into SAM Hall of Fame		
2005 Las Vegas, NV	SAM Champs	1st Twin Pusher	Model (Burnham)
2007 Las Vegas, NV	SAM Champs	1st Twin Pusher	Model (Burnham)

National Records

A Speed (1947)
 Nordic (1957 & 1962)
 Wakefield (1959)

References

1. Hand-Launched Glider, *Bill Winter's Planbook*, 1946 (see photo)
2. National or Bust!, *Air Trails*, May 1941 (story of a trip to the Nationals)
3. Stratosphere Contest Model, *Model Airplane News*, June 1941 (see photo)
4. Smoothie, *Air Trails*, September 1942, and *Air Trails Model Annual*, 1943 (see photo)
5. Tether Tractor, *Air Trails*, February 1942 (Indoor Free Flight)
6. A Davis Airfoil for Every Model, *Air Trails*, May 1942
7. Flying Wings, *Air Trails Model Annual*, 1944 (Free Flight Gas and High Start)
8. Performance Plus, *Air Trails*, February 1944 (Free Flight rubber and Row Gas)
9. Asymmetrical Pusher, *Air Trails*, January 1947 (Free Flight Gas, see photo)
10. Arrowhead, *Air Trails*, October 1947 (U-Control)
11. The Center of Gravity Question, *Air Trails*, December 1947
12. Cirrus Cruiser, *Air World*, November 1947 (Free Flight Rubber)
13. A-Class A, *Flying Models*, February 1948 (Free Flight Gas)

14. Super Looper, *Flying Models*, June 1948 (U-Control)
15. Whingding, *Flying Models*, October 1948 (see photo, CO2 and Coupe)
16. Cumulus Cruiser, *Air World*, November 1949 (Free Flight Rubber)
17. Tandem Twister, *Flying Models*, June 1949 (U-Control)
18. Flapalong, *Flying Models*, February 1951 (U-Control)
19. Osolong, *Air Trails*, March 1952 (see photo, Free Flight Rubber)
20. Spiral Stability, Frank Zaic's *1953 Model Aeronautic Yearbook*
21. Ein Motormodel mit Flugelklappen, *Der Flugmodellbau*, April 1956; also in Frank Zaic's 1957-1958 Yearbook (Free Flight Gas, see photo)
22. Frank Zaic's *1959-1961 Model Aeronautic Yearbook*, FAI Power, page 69; Record Wakefield, page 120; Short Nose Nordic, page 172 (see photo); M. Andrade's version, page 183
23. 1959 Nats Wakefield Winner and Record Holder, *Air Trails Model Annual*, 1960; also in March 1960 *Der Flugmodellbau*
24. 1961 Nordic Plans in *Scatter[?]*, 1961. This model introduced the CH407 airfoil, which was widely used in the 1960s and 1970s, i.e. Issacson, Klintworth, Crowley
25. Selection of Aspect Ratio for Minimum Sinking Speed of a Nordic Glider, *The NFFS Symposium*, 1970
26. Hall of Fame, Hank Cole, biographical sketches by Chuck Hollinger and Joe Bilgri, *The NFFS Symposium*, 1980
27. Polars of Four Airfoils, by Alan Johnson, *The NFFS Symposium*, 1983, contains results of tests on CH407 airfoil built by Hank Cole
28. Boxcar, 1984 Nats Winning Pennyplane, *Free Flight Digest*, December 1984 (Indoor)
29. Serephenn, NFFS F1B Model of the Year, *The NFFS Symposium*, 1985 (see photo)*
30. Airfoil Development by Glide Testing, *The NFFS Symposium*, 1989 (see photo)
31. HC17 Tiltwing, NFFS F1B Model of the Year, *The NFFS Symposium*, 1992*
32. Tiltwing Design, *The NFFS Symposium*, 1993
33. 1998 Plus4, NFFS F1G Model of the Year, *The NFFS Symposium*, 2003*
34. Selected Wing Designs for F1A and F1B, *The NFFS Symposium*, 2004

*Models of the Year

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