



The AMA History Project Presents: Biography of WILLIAM HENRY (BILL) CHAFFEE 1912 - 1994



Written and Submitted by HC (2013) and AMA Staff (2016), Reformatted and edited by JS (02/2014)

The following was written and submitted by William's son, Hal, for nomination to the AMA Model Aviation Hall of Fame. William was inducted into the 2013 Hall of Fame.



Bill Chaffee was 11 when he took his first flight on May 30, 1924, and a photograph of the smile on his face in that cockpit forecasts the rest of his life. Born in Rochester, Vermont in 1912, he moved with his widowed mother Emilie and older brother John to Detroit in 1918. In 1927, at the age of 15, he won the world's indoor model airplane flight record with a time of 173 seconds – one of many such honors in his younger years. Throughout his teens, Bill found adventure and success with his model airplane talents, including:

- 1927: Winner, Michigan State Model Airplane Contest, Junior Outdoor category (281 seconds)
- 1927: On August 10, he was invited with other model plane contest winners to attend and fly their model planes at a banquet in Detroit to honor Col. Charles A. Lindbergh.
- 1928: Demonstration for U.S. President Calvin Coolidge on the south lawn of the White House on April 2 with three other national champions. The boys left two of the model planes dangling from the tall poplar trees adjacent to the executive offices, and two landed on the roof. President Coolidge was reportedly very interested in the models' mechanisms, wrapping up the event with a photo shoot with the boys.
- 1928: Demonstration at Bolling Field (now Bolling Air Force Base) for U.S. Secretary of Commerce Herbert Hoover that same day, as well as Assistant Secretary of Commerce William P. McCracken in charge of commercial aviation. George F. Plerrot, managing editor of the *American Boy* magazine, accompanied the boys to Washington. Edsel Ford of the Ford Motor Company provided air transportation to Washington in a large monoplane for the delegation, including Fred L. Black, Ford's advertising manager.

- 1929: Meeting with President Herbert Hoover on April 4 at the White House with Aram Abgarian, who succeeded Chaffee as world indoor record-holder; Thomas Hill of Winston-Salem, North Carolina, boy's outdoor champion; and Ford Grant of Detroit, winner of the international championship held in England in July 1928. Fred L. Black again accompanied the team, as did Mitchell V. Charnley of *American Boy's* editorial staff. Edsel Ford again provided air transportation, this time in a giant Ford all-metal tri-motor airplane. The flight took three hours and 15 minutes. For fun they flew their model planes inside the plane on the flight.
- 1930: At age 17 First place in the Senior Scale Model Contest part of the Third National Airplane Model League of American Contests. For his scale model Boeing P-12B, Chaffee won a first prize silver cup, \$200.00 and a six-week trip to Europe.
- 1930: Sixth place in the Wakefield International Cup - the rubber band powered fuselage model airplane tournament in England.
- 1930: Designed the Chaffee C-4 indoor fuselage model, with drawings and instructions comprising Chapter XVI (pp. 164-172) of Merrill Hamburg's 1930 book *Beginning to Fly*. A favorite of model builders, the Chaffee C-4 was originally sold as a kit by the Airplane Model League of American from the League Promotion and Supply Division, 300 David Avenue, Dayton, Ohio. The AMLA was interested in moving model builders from "flying sticks" to fuselage models to advance their skills and to add a new contest category. The rubber band powered C-4 flies for about 3 minutes.
- 1932: Honorable Mention in the National Finals of GM's Fisher Body Craftsman's Guild model coach competition. Also the Senior winner in Ohio. It took over 2,500 hours to make. He also won third place in Michigan in 1931 and entered the contest in Michigan in 1933.

Chaffee's love of flight and model-making continued as the dominant theme of his life. At the age of 21, he designed the balsa wood Spee-D-Flyer Soaring Glider No. 333 and sold 24,000 of them to S.S. Kresge on March 3, 1933 – the day the banks failed. Chaffee built them in conjunction with pattern maker Emory Zimmerman.

In the 1930s, Eugene Kettering bought Chaffee's prize-winning Boeing P-12B for \$500.00 and then commissioned Chaffee to create more than 600 scale model planes over a period of about 40 years, now housed in the E.W. Kettering Collection at the Wright Patterson Air Force Base Museum in Dayton, Ohio. Years later, Kettering returned the Boeing P-12B model to its creator. Bill did not have the opportunity to attend college, but many considered his engineering talents to be exceptional. He graduated cum laude from Detroit Northern High School in 1930 - just in time to look for a job in the beginning of the Depression.

Here is an overview of Bill Chaffee's employment which kept him in the fields he loved best - model building, prototyping, and inventing.

February 1930 – November 1932

Model maker at Geo. D. Wanner & Co., Dayton, Ohio.

November 1932 – September 1934

Pattern maker apprentice and builder of invention models at Zimmerman Pattern Works in Detroit, Michigan.

September 1934 – March 1935

Pattern maker at Koestlin Tool & Die Co. Detroit, Michigan.

March 1935 – March 1942

Assistant in the mechanical laboratory of the Jam Handy Organization in Detroit, Michigan building models for educational and photographic purposes as well as maintaining and improving motion picture camera equipment. He was in charge of the team that created all the models in the 1938 General Motors five minute movie “Round and Round” (now on YouTube). It was filmed in 1938 about how the economy works. Bill plays the new man part in their training film titled “Passing the Know How Along,” filmed in 1941.

Bill also did extensive model work for the Jam Handy films that trained gunners in WWII to shoot down other aircraft. The simulator was known as the Jam Handy, and used two synchronized movie projectors with sound effects of real engine noise and machine gun fire. One projector ran combat film footage while the other cast a spotlight in the shape of a gun sight showing the correct point of aim. The student sat behind a mock .30 caliber machine gun with an optic sight and shot a spot of light when he pulled the trigger. The instructor could later turn off the projected sight and test the student. When the student made a hit, there was a machine gun noise; if he missed, a bell rang.

March 1942 – November 1945

Master Mechanic for the Cycleweld Division of Chrysler Corp. in Detroit, Michigan. Responsible for tooling methods and setting up production of fabricated parts to be assembled by the Cycleweld process. The Cycleweld process bonds dissimilar materials such as rubber to aluminum.

November 1945 – May 1947

Supervisor for the Mechanical Laboratory of the Jam Handy Organization in Detroit, Michigan. Designed and built special devices, models and photographic equipment for the company, which was the largest commercial motion picture company in the country.

May 1947 - February 1948

Plant manager of the Industrial Specialties Corp. in Detroit, Michigan, which manufactured the Cool Luxury Hair Dryer for beauty shops.

February 1948 – June 1949

Plant manager and Treasurer, Bathey Mfg. Co., Plymouth, Michigan. Manufacturer of sheet metal fabricated parts, stampings, and fluorescent lighting fixtures.

June 1949 – November 1950

Senior Model Design Engineer, Engineering Dept., Electro-Motive Division of General Motors in LaGrange, Illinois. One project there was a 13-foot long model of a diesel locomotive with a cutaway view of half the interior that was later donated to the Smithsonian and has been viewed there by the public ever since.

November 1950 – April 1994

Owner and President of Model Builders, Inc. in Chicago, Illinois, which builds a wide variety of prototypes, models, electrical and mechanical devices, architectural models, and more.

With his growing reputation for precision work and the post-war industrial boom, Chaffee established Model Builders, Inc. in a hanger on the south side of Chicago's Midway Airport in 1950, a business he led for the rest of his life. He earned a reputation for creativity, problem-solving, and perfection. In the 1950s, he did about 90 projects for industrial designer Raymond Loewy's Chicago office. For the 1953-1955 Corvette, he built 20 cockpit-type clear bubble tops, and the first one was for his friend, Eugene Kettering. In 1962, NASA hired Model Builders, Inc. to build a demonstration device to show how astronauts could talk over light waves and communicate with earth during reentry. Another project was to build the entire undersea section of the GM ride at the 1964 World's Fair in New York. He built several aircraft models for the Smithsonian's Air & Space Museum. One was a model of the Macchi M-7 seaplane.

In 1960, Bill added a subsidiary, Technical Exhibits Corp., to develop, make and sell products such as the Hearphone, a handheld speaker for exhibit audio. It is still selling today. Bill's son, Hal, is now running both businesses.

Always curious, the secrets and puzzles of flight were among Bill's favorites. What can we learn about flight from the improbable dynamics of the bumble bee? How can we solve the dilemma of the astronaut's glove – to be safe yet highly flexible and responsive in space? Bill was invited and participated in a NASA meeting with other outside experts to try to come up with solutions to that problem at Johnson Space Center in the 1980s. He later was asked by the Adler Planetarium in Chicago to figure out how to build a rotating scale model of a quadrant of the universe six feet in diameter, which he did.

Bill did the above accomplishments while raising three children with his wife, Ellen D. Chaffee – Ellen, Hal and Clark. They lived in Detroit, Michigan, Western Springs, Illinois, Hinsdale, Illinois and Tryon, North Carolina, where he spent most of his last seven years still active with Model Builders, Inc.

Patents:

#4727960 - Support structure (sawhorse)
#4187649 - Frame construction (Connectra framing and connecting system)
#3990220 - Method and apparatus used for forming wound music string
#3962827 - Panel connector (Connectra part)
#3608418 - Kettledrum
#3520446 - Condiment dispensers (Salt/Pepper Shelters)
#3353884 - Compact Multi-Purpose Display Module
#3187925 - Self-Closing container (Trappit - table top rubbish container)
Design Patents: Des. 210,743 and Des. 220,213

Eight of the patents are the basis of products that were produced and sold.

The following page shows a press release from May 31, 2016 about Bill Chaffee's P-12B and other items displayed at the National Model Aviation Museum.



MEDIA RELEASE
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National Model Aviation Museum Announces New Exhibit
Bill Chaffee's Boeing P-12B to be displayed in the museum's main gallery.

MUNCIE, IN—The Academy of Model Aeronautics is thrilled to announce a new exhibit at the National Model Aviation Museum that will be on display Memorial Day through Labor Day 2016. Bill Chaffee's Boeing P-12B will be exhibited thanks to a loan from Ellen Earle-Chaffee, Henry Chaffee, and Clark Chaffee.

Bill Chaffee won first place for Senior Scale Model at the 1930 National Airplane Model League of America (AMLA) Contest with his Boeing P-12B. According to the stated rules, judgment decisions were based on "workmanship, originality in obtaining the desired resemblance to the man-carrying ship, the exactness to which the model is scaled and any other points which are, in the opinion of the judges, important in such a contest." The model did not need to be built from the same materials as the original, did not have to fly, and none of the control surfaces had to move.

More than 500 hours were spent building the P-12B from official AMLA plans. Despite the rules stating that control surfaces did not need to work, each one of the controls worked through a mechanism located in the cockpit. Bill's hard work paid off with a first-place silver trophy, \$200, and a six-week trip to Europe.

Bill's P-12B will be on display throughout the summer, along with the first-place trophy and his passport documenting his trip to Europe. To learn more about the museum and its collection of more 11,000 model aircraft artifacts, visit the [museum website](#).

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The Academy of Model Aeronautics, founded in 1936, continues to be devoted to national airspace safety. It serves as the nation's collective voice for approximately 189,000 modelers in 2,400 clubs in the United States and Puerto Rico. Headquartered in Muncie, Indiana, AMA is a membership organization representing those who fly model aircraft for recreation and educational purposes. For more information, visit www.modelaircraft.org.

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