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# Autobiography of LEON SHULMAN

Modeler since 1932      Birth Date: November 29, 1920      AMA Number: L8

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## Career:

- Model Designer: Skyscraper, Wedgy, Zomby, Banshee and Zoomer
- World War II aviation cadet/Air Force pilot/B-26 - B/24
- Manufacturer: Drone Diesel
- Manufacturer representative for major model companies for 30 years

## Honors:

- 1978 – AMA Hall of Fame
  - 1975 – AMA Distinguished Service Award
  - AMA Life Member #8 – Leader Member
  - Scientific Member – Industry Member
  - 1982 – National Free Flight Society Hall of Fame
  - 1992 – Society of Antique Modelers Hall of Fame – Life Member
  - The Gas Model Pioneers – Life Member, 1939
  - I.M.A.A. Life Member #8
  - 1999 – Vintage Radio Controlled Society Hall of Fame
  - 1999 – Howard McEntee Award
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## How Leon got into the model airplane hobby

Leon Shulman initially was bitten by the aviation bug while walking home from grade school in Brooklyn, New York in the early 1920s and saw the Graf Zeppelin flying overhead – casting a shadow over one block long. Fascinated by its immense size and the ability to carry so many people from so far, yet stay airborne for long periods, tingled his imagination. Three Cracker-Jack box tops and 10 cents brought him his first model airplane Rise-off-Ground (R.O.G.) stick model through the mail. Assembling this with mucilage (glue) and thread, his first attempt making something fly was mediocre but challenging!

Thru the ensuing years and several models later, both solid balsa models and stick and tissue type scale models, he craved for bigger airplanes with real gasoline engines. These were the Great Depression years, so as a teenager he joined and worked in the C.C.C. (Civilian Conservation Corps – a depression era works corps) to earn enough money to buy his first gasoline engine, a Brown Jr.

In October 1936 his first flight was one-half minute with a 50-foot string tied to the tail skid of the model and Leon running behind it as it took off. If everything wasn't looking good he would slow down and tighten the string, causing the model to slowly settle back to the ground. At this time he read whatever magazines and books he could find to learn about aeronautics.

## As a builder/designer

In 1937 he built a T-D Coupe from magazine plans. The desire to design airplanes started here. He redesigned it to suit his tastes, moving the landing gear further forward to prevent breaking

propellers, eliminating the fuselage bottom formers/stringers to reduce weight. He eliminated the Cowl for the same reason, plus for easier access to the engine, tank and ignition system. Not having the money to buy light fabric, he covered the model with brown wrapping paper and painted it with (10-cent) Red-Devil bicycle enamel. He flew this model for many months but knew he could do better, so he designed his first Free-Flight gas engine powered airplane, the Sky Scraper, which was the first one-wheel model design. He developed the one wheel idea to save weight and drag on his model also the cost of the other wheel. A bonus with the wheel under the engine was that it saved breaking propellers.

He used a 3-1/2-inch M&M air wheel on the nose with two wire skids under the fuselage sides to keep the plane balanced on the ground for takeoffs and landings. The Sky Scraper design started with a Trojan (.19 size) engine using a modified McBride B-7 airfoil wing made of 1/4-inch sheet balsa with no spars and used a double ellipse outline and dihedral. This was a first also for such a wing on a gas model. This design was very original and featured in Frank Zaic's 1938 yearbook.

This design and wing construction was the forerunner of the many models that emanated from the Brooklyn Skyscrapers Club as the Topper, Rocketeer, etc. Leon favored the Low Center of Gravity Theory and the Center of Lateral Area Placement expounded by Charles Hainpson Grant, then editor of Model Airplane News (M.A.N.) magazine and the Sky Scraper was used by Grant to prove his theories. This design was very stable and became a consistent contest winner. High lift airfoils and unusual wing structures attracted Leon's attention and several models were designed and built to test these theories.

It was during this period that Leon's 9G model was designed. The airfoil was very thin with considerable undercamber and flown at close to zero incidence with a slight lifting tail (the airfoiled stab – another early experiment). Many excellent flights were achieved with better-than-average performance. But frequently, if the engine cutoff while in an extreme nose-high attitude, the model would then do a tail-side, drop its nose then tuck under for a prolonged dive-hence the name 9G!!!

It was then that Leon went back to more conventional airfoils and started developing simpler, cleaner, lighter structures and more aerodynamically efficient airplanes. This brought about the Wedgy.

In 1940, he designed the Zomby, followed by the Banshee and the Zoomer. At this time he developed and marketed a folding propeller for gas models and the first unbreakable plastic prop (named Flexo) of 10-inch diameter in early 1941.

### **As a kit designer and magazine contributor**

The Sky Scraper was published by Frank Zaic in his 1938 Yearbook. Then as a magazine article the same year followed by the Sky Rocket later in 1938, which was produced as a kit by Paramount Models, who then sold it to and marketed by Berkeley Models in 1939-40.

The Wedgy was published in 1940 after winning first and third place at the 1940 Nationals. It was followed by the Zomby in 1940-41. Megow Model Airplane Co. made a kit of the ZOMBY A (there were five sizes designed and flown) plus a large magazine article on all five sizes.

The Banshee followed in a magazine article and again a kit by Megow. The Banshee won many area contests and earned a worldwide reputation by winning the Ireland Free Flight Championships and several meets throughout England, Europe, South Africa and South America.

Following the Banshee was the Zoomer in 1946 that was also typical of Leon's designs with a single wheel landing gear with a folding propeller. Two sizes of this design were kitted by Pilot Models (a USA Co. which Leon started with a G.I. Loan). In 1946, his folding propeller hardware kit was also marketed. (Today there are dozens of similar folding propellers marketed for use on electric flying models.)

In 1946 Leon heard about a new kind of engine, the diesel engine that could run without the need of batteries, spark coil, plug, condenser and troublesome ignition points. He developed the Drone Diesel with a .29 cubic inch displacement that ran on ether and mineral oil. With encouragement and financing of a close friend, they went into manufacturing this engine. During the postwar years, two different models were manufactured. Because the engine design was so unusual Leon developed a line of props, fuel, engine accessories and airplane kits to complement and further the use of the Drone Diesel. Over 20,000 engines were sold before the coming of the glow plug made its impact on the model engine market.

Several other types of magazine articles appeared such as "Wing Loading-at-a glance," the first Radio Controlled electric car design with variable speeds, forward and reverse. In 1959 Leon had started the trend toward the new hobby of electric cars that had tremendous impact on the hobby in the 1980s. He designed several Control-Line and team racing models and had published articles through the 1950s and 1960s.

In the early 1980s he designed several molded Styrene Gliders that resembled Space ships for a leading toy manufacturer - several hundreds of thousands were produced.

### **As a Leader in Model Aviation**

The first model airplane club that Leon joined was TAMBE. That was an acronym for The Airplane Model Builders Exchange. He made many life long friendships from this original group. Eventually the TAMBE Club fell apart and from it sprang the original Brooklyn (New York) Skyscrapers club that is still in existence. Leon was one of the early members (#52) of the International Gas Model Airplane Association (I.G.M.A.A.) in 1936.

In November 1939 he was named an official delegate to the National Model Aircraft Conference at Langley Field, Virginia, representing the New York City Area Model Airplane Clubs. This conference created the Free Flight Rules that came into being and was the basis for future rules

making. The flying and competition of Free Flight models then became standard throughout the country, and was adopted by the A.M.A. for its rule-making procedure.

### **As a Contestant/Competitor**

Along with the urge to create his own designed models he enjoyed the competition of Free Flight, then on to Control-Line and Radio Control. Leon won the following:

- 3rd place in Class A Free Flight at his First National Championship in 1939 with his Sky Rocket design
- First Place in Class A and third Place in Class B Free Flight in the 1940 Nationals with his Wedgy
- In 1941, his Zomby won first place in Class C Free Flight
- After World War II he flew Control Line and won several regional and National meets through 1951 when he went into Radio Control
- In 1957 he tied for first place in Rudder-Only event; the tie was broken by the second flight
- Throughout the 1950s, 1960s and 1970s he won several regional and national meets in RC pattern and scale. Before retiring from the contest scene, Leon had garnered over 300 trophies and awards.

With all this activity he frequently overheard comments from other competitors such as, "There goes my chances of winning," when Leon competed. This was a turning point for Leon since many competitors were being discouraged and Leon always enjoyed contributing to the hobby, and now, with his competing in many other competitions made him feel that he was taking away from the hobby. After that he did not accept the prizes (upon winning) and passed it on to the next competitor. He did this for many years and still enjoyed the competitive hobby/sport.

### **As a Contest Director**

In the late 1930s as a member of the most active Free Flight club in the area, and as their representative to the Metropolitan Model Airplane League, Leon was called upon to direct several contests. When he moved to New Jersey to study Aeronautical Engineering at the Casey Jones School of Aeronautics, he was offered a full time job as director of the Kresge Aero Club (sponsored by the prestigious S. Kresge department store). He directed the Kresge annual Free Flight contest, the largest contest in the East called the Eastern States Model Airplane Championships.

During the World War II years Leon ran several meets in different parts of the country where he was stationed as an Air Force pilot. In 1946 the New York Daily Mirror newspaper chose Leon as contest director of what was planned to be the largest contest ever.

Shortly afterwards, the Plymouth Motor Corporation decided to sponsor model plane meets all

over the country with the finals – the Plymouth International meet – in Detroit each summer. He was chosen to direct several regional and county meets, then the international meet held in Detroit for several years.

These meets were gigantic and the largest meets of those times. From this experience Leon and the two other contest directors established the concept of the Board of Contest Directors for the AMA Nationals that was followed then and to the this day. Leon directed several AMA Nationals into the 1950s.

From the 1950s into the 1970s he directed the Gigantic (Central Jersey Club) Eastern States Championships Contest from which evolved the “Shulman System of Contest Management;” frequency pins, frequency cards, flight line assignments, etc.

One year they had 122 contestants flying in RC, which demanded a practical workable system to keep everybody happy and flying. This system was widely published and from this and the current procedure in use today evolved as a standard for contest management.

## Honors

With all this fun there had to be some repercussion. The following were awarded to Leon:

- The Gas Model Pioneers, Life Member, March 1939
- AMA Hall of Fame, 1978
- AMA Distinguished Service Award
- I.M.A.A. Life Member #8
- Contest Board Chairman mid-1950s
- Leader Member; Scientific Member; Industry Member
- National Free Flight Society Hall Of Fame, 1982
- Society of Antique Modelers Life Member, Hall of Fame, 1993

At the Lincoln, Nebraska Nationals Leon was honored by the National Free Flight Society by induction into the Free Flight Hall of Fame. He couldn't attend and asked his friend Charles Bauer of Chicago to accept the award for him. They had met only a couple years earlier and Charles didn't know much of Leon's background from the early days. He knew Leon only by reputation. So being a very creative modeler with a good sense of humor, related the following:

“Leon Shulman's modeling experience dates back several centuries. In fact, one of the earlier models that he designed and kitted resembled a bird. The kit consisted of a bale of bird feathers and a vase of wax applied to the arms and legs. He sold this early kit to an Italian citizen who followed his instructions explicitly, even to jumping off a cliff and really started to fly. He went higher and higher, and you know how that worked out! In those days he was known as Leonardo! Obviously, because of this incident he had to change his name to Leon!”

## **As a full scale pilot**

Loving all aspects of flight the triumphant culmination was actual flight as a pilot! With determination and the start of World War II there was an opportunity to obtain Pilot Training as an aviation cadet in the Army Air Corps. Zing – Leon was there! After a rich diet of carrots and taking all kinds of tests, he was accepted as an aviation cadet early in 1942 for the class of 43K to start in March of 1943.

In 1939 to 1942 Leon was attending an aeronautical engineering school so had an excellent base for pilot, in addition to his Free Flight background. Because of this, he was always the first student in his class to solo in each category of pilot training. He was commissioned a second lieutenant and pilot in December 1943 and went on to fly the B-26 Martin Marauder, and the B-24 Liberator. His eagerness to pilot aircraft earned him ratings as a qualified pilot in more than 20 different aircraft during the war, both single and multi-engine aircraft.

Much of his duty was towing targets for air-to-air gunnery in a B-26. He also did double duty ferrying B-24's around the first Air Force to replace bombers going to Europe to take part in the furious Air War in 1944.

He was also designated as a check pilot and maintenance engineering officer and still holds an active rating as a commercial multi-engine pilot.

## **As a career businessman**

From his early days as a kit designer, Leon enjoyed the hobby and really working at it. After his efforts in manufacturing the Drone Diesel engines, kits, accessories, etc., he worked as a salesman for a Hobby Wholesaler selling hobby goods to hobby shops around the New Jersey and New York area – working his way up to sales manager and vice president with Monogram Models in Chicago.

He then decided that he preferred working with several different manufacturers with diversification of products, that kept him more interested and productive. He has been at this as a manufacturers' sales representative since 1955. He was instrumental in the establishment and growth of factories through the years such as Top Flight, Durbro, Fox Motors, DeBolt Models, Midwest Models, Grish Brothers, Citizenship Radio, Bonner Electronics, E.K. Logitrol Radios, Sullivan Products and several others. He is also a hobby consultant and works at product development and marketing for these and other companies.

## **Currently**

The past several years, Leon has been into giant scale RC models, designing the Kool Canary, a takeoff on the Hot Canary racing biplane. While scratch building an RC CAP 21 he decided to redesign it and altered it into a P-51 Mustang (what a switch!).

A recent adventure (1990-91) was resurrecting his 1947 Control Line design the Secret Weapon into a giant-sized RC model with great success. A great demand occurred in this resurrected design and this model was custom kitted and marketed.

### **Addendum (September 1991)**

With 11 grandchildren, two of his grandsons have taken to the RC hobby and have started on the contest circuit. David, age 14, and Jason, age 17, have already garnered respect for their flying ability. With Jason winning second place at the last Nat's in RC Pattern and first in the Tangerines the past two years with David right on his tail.

Leon's son, Donald (father of David and Jason), is no slouch either as a flyer and “burns-up-the sky” at many giant scale fly-ins with his acrobatic shows. This branch of Leon's family moved to the Orlando, Florida area and the young boys are now climbing the ladder in the competition circuit and following in their grandfather's path.

### **Addendum (June 24, 1994)**

Jason (now age 20) was just selected to participate in the Circus-Circus Tournament of Champions competing in a field of 20 of the top pilots in the world. Additionally, David and Jason perfected a team, flying at air shows and are featured performers at many fly-ins with their giant RC scale aircraft.

### **Addendum (November 1994)**

Jason came in sixth place at the T.O.C. as the youngest contestant and was honored by having him fly, the unknown flight pattern in front of the judges to indoctrinate them for the pattern the five finalists were required to fly to complete the competition.

### **Addendum (March 1996)**

Jason is again invited to participate in the 1996 T.O.C - the youngest flier, once again. It was just announced that Pat Hartness of Greenville, South Carolina is sponsoring the first World Masters Aerobatic Championship in October 1996 and both Jason and his younger brother, David, are invited to compete, a first ever for two from the same family being invited to participate (my chest grew another few inches). There are 30 of the Top US fliers invited with David and Jason being the youngest, the majority are in their 40s.

Leon's interest in model aviation has never waned and he is looking forward to another 70 (plus) years of designing, redesigning building and flying model planes and associating with similarly addicted persons known as model airplane nuts (enthusiasts)!

*Leon Shulman 1996*

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