



The AMA History Project Presents: Autobiography of RON ST. JEAN

February 27, 1927 – May 15, 2016

Started modeling in 1935

AMA #15856



Written & Submitted by RS (2002), Transcribed & Edited by SS (2002), Reformatted by JS (02/2010); Updated by JS (06/2016)

Career:

- Designed a successful competitive Free Flight model called Ramrod in 1953; it was published in the June 1956 issue of Model Airplane News magazine and on the cover of Model Aviation magazine in January 1997 as a popular nostalgia model
- Designed numerous Free Flight models
- Experimented often and made many discoveries relating to model aeronautics; many of these discoveries were published in magazines and/or newsletters
- Served on AMA's contest board in the 1950s and 1960s
- Served under John Worth around 1960 as AMA's committee for bylaw changes and committee to set up procedures for the contest board; became the original contest board coordinator
- Has published construction articles of his designs; other articles are on: rule change proposals, aero theories, competitive philosophies and model adjustments
- Designed the Gym-E-Flyer for beginners

Honors:

- 1964: AMA Fellow
- 1967: AMA Distinguished Service Award
- 1997: National Free Flight Society Hall of Fame

The following was written and submitted to the AMA History Project (at the time called the AMA History Program) by Ron St. Jean in 2002.

My Aeromodeling History

By Ron St. Jean

Summary

My modeling began by attempts to complete a kit, then trying to get it to fly, designing my own, and finally understanding how planes fly. Early on, the focus was upon Free Flight gas competition, but now centers upon electric models of both Free Flight and Radio Controlled (RC) types, mostly for duration. The non-duration types have been and are attempts to configure a model that will meet specific criteria for a possible homebuilt full-scale.

The Beginning

My modeling started in the Los Angeles area about 1935 with the usual 10-cent kits, as I'd learned to love planes due to the influence of a beloved uncle who ended his flying career as a captain for United Airlines. This led to gas modeling, my first being a Miss Tiny with an Ohlsson 23; but the first gas job that flew without crashing was Goldberg's Clipper. This soon led into original designs, some of which were successful.

Competition

This was the name of the game for me until the mid-1960s when I started to withdraw from competition. It all began at the Los Angeles Rosencrans-and-Western field – a hub of activity in the 1930s and 1940s. This was the home field for many of the greats in model aviation. Then in the 1950s and 1960s, the center of L.A. activity moved to the Sepulveda Flood Control Basin.

In 1953, I got lucky and configured a competitive Free Flight design called Ramrod. It was not only a winner in my hands, but in those of many Free Flighters, since it had a max of inherent stability and was, therefore, very easy to adjust. It was published in the June 1956 issue of Model Airplane News magazine and later kitted by Berkeley in two sizes. I never did better than a third place with it at the Nationals contest (Nats), but others won six first places with it at an Eastern Nats about 1958. It is still very popular today flying as a Nostalgia model. The Ramrod even graced the cover of Model Aviation magazine for the January 1997 issue! Many other Free Flight models were designed, built, and flown, but none ever came close to the successes of the Ramrod.

Experiments

“Experimental” probably should have been my middle name, as my curiosity knows no bounds. I find great joy in figuring out how something works, especially if aerodynamics is involved, and then sharing it with others.

The following is a list of some of my discoveries:

SFC (Structureless Foam Composites): This was an effort to beat the high cost of balsa by finding a practical substitute. Although it offers few advantages for competition, economic gains are huge. Twenty-year-old expertise may be found in two Model Aviation magazine issues – April 1982 and August 1983. The cover on the latter magazine shows three SFC models, the one at the top being an early RC model of a proposed homebuilt.

VTO (Vertical Take Off): I was not the inventor of this for models, but found a simple, safe way to do it. The key was in discovering how to mix high-speed and low-speed factors to produce a desired result. This was part of the Ramrod package and had a great deal to do with success.

High-Speed versus Low-Speed Factors: As applied to VTO, down thrust is set against decalage to provide a low-speed force, which results in the departing model's nosing down from

a vertical launch (even against a wind!) while accelerating, but reaching a point where its speed allows decalage to overpower the down thrust and nose the model up. There are several other uses for this general principle.

The Soft Rudder: Since rudder offset is a high-speed factor, but is often used to achieve a desired result at low speeds, this may be done by building a certain amount of softness or flexibility into the rudder-driving mechanism. Then, the softness allows the offset rudder to partially (or completely) feather (neutralize) during power, but return for glide when prop blast is gone. (See SAM Speaks, November/December 1999 for more information.) Successfully done numerous times on RC models, this principle has recently been nicely applied to a Free Flight Model as well.

Wing Fins: Similar to NASA's "winglets," mine were flat and not toed-out. Some were even toed-in to provide extra directional stability. Although I prepared much verbiage to logically support the idea, a simple flight test later proved wing fins to not noticeably improve efficiency, as had been believed. They have been proven to augment dihedral, however, so are still useful to avoid having to rebuild a wing that has insufficient dihedral.

Airfoil Balancing: I've found that the airfoil used in a stabilizer should be matched to that of the wing to insure longitudinal stability without the need for excessive decalage. In general, it should be faster than that of the wing. Since a flat-topped (but rounded bottom) airfoil requires negative decalage to fly, it stands to reason that a stab airfoil could be found that flies at zero decalage and that this would be best to minimize drag.

Flipper Effect: This one is difficult to explain, so reference is made to a separate paper (on file in the National Model Aviation Museum Archives), which does a minimum job of doing so. Suffice it to say here that it is concerned with means for so controlling aircraft geometry, that the downwash coming from a wing's trailing edge will, in all cases, stabilize rather than destabilize the model as it impinges upon the stabilizer.

Free Flight Use of RC: There are places where a decent Free Flight field is not within a reasonable distance from one's home, so the practice of Free Flight has been largely abandoned. I've been experimenting for several decades with the use of RC to make small fields usable for Free Flight. With the hardware now available, this can be done with a weight penalty of as little as 1-½ ounces. The soft rudder described here is a standard part of the system used.

Inherent Stability: Designing a model for stability is not hard once one gets a handle on the principles involved. Frequent crashes and introspection that followed have allowed me to vastly reduce the frequency of same, as the principles were learned. Numerous articles to share such data have been written.

Electric Power: The past four years I've spent experimenting with various combinations of sub-systems in an attempt to gain an understanding of the best way to bring the "right stuff" together in an electric powered system that will do what's wanted at least cost. Once this goal was achieved, I put together a paper (on file in the National Model Aviation Museum Archives) to share what I'd learned.

A Full-Scale Homebuilt: Because I've felt for decades that a new approach to the design of light aircraft was needed to simplify, to improve safety, to reduce cost and to greatly shorten pilot training, I've attempted to apply the results of other experiments to configure a plane that could meet these goals. Both RC and Free Flight models have been made to do this, one of which is on the cover of Model Aviation magazine for August 1983. Although past models have looked rather orthodox, the one of current interest is an M-wing canard (see photo file). This one would be a rudder-only plane with elevator trim. I've found three ways to induce roll in a plane in response to rudder input, so ailerons are not needed for coordinated turns, as long as the plane is configured appropriately. Crosswind landings would be handled with crosswind gear.

Leadership

When John Worth became president of the AMA about 1960 in order to reform an ailing AMA, I helped on two of his committees – the one needed for bylaw changes and the one to set up definite procedures for the contest board. I'd been a contest board member prior to this, and became the original contest board coordinator upon the change from an unspecialized contest board to one that has several model-specialized groups.

Publishing Experience

In addition to having several construction articles of some of my designs published, there have been others in areas such as rules change proposals, aero theory, competitive philosophy, and model adjustment. The most noteworthy, in my opinion, was an article in the August 1959 issue of Model Airplane News magazine. Entitled "Wing Loading is Three-Dimensional," this article explained why it was that the small models of the 1930s and 1940s flew so poorly compared to larger ones. Numerical proof from my experiences was offered that showed that the lift of a wing was not proportional to its area, as commonly believed, but to its volume! Comparing the wing loading in ounces-per-square-foot between models is only meaningful when they are about the same size. The truth of this was later confirmed by a leader in the aero engineering field.

Education Involvement

Perhaps because I had to struggle so hard when I was a beginner, there is a soft spot in my heart for others who are now starting to become modelers. But my calling is not to teach, per se, but to provide designs suitable for beginners. The Gym-E-Flyer (drawing on file in the National Model Aviation Museum Archives) is such a model and is a great flyer, too. It was designed to fly in a standard gymnasium (basketball court) without hitting walls or ceiling and was quite successful at doing this. Besides being a good beginner's model to fly in this mode, it also could help solve the small field problem. And when a larger field is available, it performs like a champ.

*(signed) Ron St. Jean
August 20, 2002*

Ron received the following letter from Carl Goldberg. He was excited to get it saying that, "Receiving this from the greatest one of all time convinced me that I might not be crazy after all!"

July 26, 1982

Carl Goldberg Models, Inc.
4734 W. Chicago Avenue
Chicago, Illinois 60651

Mr. Ron St. Jean
3744 E. Nye Lane
Carson City, Nevada 89701

Dear Ron:

Thought I'd write a few words of appreciation for your article on "Some Typically Overlooked Principles of Stability and Performance." It really is the best thing I've ever read of its kind. Considering the hazardous nature of a high performance Free Flight in general and the difficulties of obtaining a suitable balance of the forces involved, it seems to me that anyone struggling with these forces might well find the answers he needs in your article.

I gather the article first appeared in the September/October 1981 issue of *Free Flight*. I also saw it recently in *Bugs Buzz*, the newsletter of the Thunderbugs Club. Ed Lidgard evidently recommended the article to Jim Scarborough, the editor.

If you have any interest in having the article reach a wider audience, it seems to me it might well appear in one of the model magazines and preferably with illustrations. In fact, that's my single significant criticism – as is, it's a bit cerebral, and illustrations would greatly relieve that and increase its effectiveness.

In any case, let me congratulate you on writing it and also for writing the article on why the Sweepette was so successful.

With kind regards, I am very truly yours,

Carl Goldberg
President, Carl Goldberg
Models, Inc.



Ron launching a 1/2-A sized Odd-Rodd (derived from the Ramrod) at a Free Flight field 3/4-miles from where he lives. This was in the winter.



Ron with a SFC Strato-Streak in his shop at Yerington. The model was made for a 020-Replica Society of Antique Modelers (SAM) event but was later converted to electric.



Another Ramrod derivative – this one with a swept-back wing 30% longer than original to increase the area and aspect ratio, which is a great way to go for an electric.



The test ship for wing fins (detachable) that demonstrated lack of performance improvement. The Radio Control (RC) model was first flown with no wing fins then the rudder was trimmed to result in a straight glide. One fin was installed after that to see if a turn would be induced because of increased lift and/or reduced drag. The result was that it still glided straight at the same trim setting on Tx – another great idea shot down!



A larger SFC Odd-Rod showing a weird accident that actually happened – a normal landing in sage brush clean off the fin and somehow buried it in the wing's trailing edge!



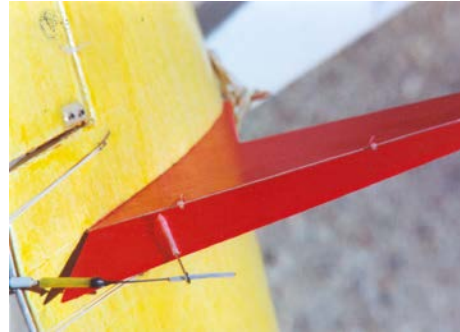
The latest scale home built model from Ron before he messed with the dihedral. A smaller dynamically similar glider is to the right of it; this was first made to find a good center of gravity location for the yellow Free Flight model. A large RC model is in the works.



An intermediate RC job scaled down from a proposed home built. It flew, but not to Ron's satisfaction.



These two nearly identical micro-models were flight-compared to measure the differences between direct-drive and geared motors. What he found was that the geared job climbed slower, but the motor ran longer on the same battery charge (Cutie design).



The tail end of one of the many RC jobs Ron has with a soft rudder. This one has removable bendy-stuff.



A 600-inch M-wing job in flight. Nothing special seen.

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