

# WHAM

## NEWS, VIEWS and REVIEWS

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2013

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and the Kansas Sunflower Squadron, FAC Squadron #23

### Tail Volume Coefficient

The Tail Volume Coefficient is a very handy tool for understanding why a model acts like it does, and for determining what can be done to help it act more like what is desired. TVo will help decide just how big the stabilizer should be and provide a starting point for the Center of Gravity location.

**Tail Volume = (Tail Area/Wing Area) X ( Tail Arm/Wing Avg. Chord)**

**where:**

- Tail Area = area of the horizontal stabilizer
- Wing Area = area of the wing
- [both areas include that encased by/covered by the fuselage]
- Tail Arm = distance from LE of wing to LE of stab [for untapered surfaces; for tapered, use LEs at average chord]
- Wing Avg. Chord = area / wing span

Looking at the formula, one can see [other parts being the same] that a larger tail area and/or a longer tail arm will produce a larger tail volume.

Here are some sample TVo numbers:

AMA gas models	1.0 to 2.0
Mulvihill rubber	1.5 to 2.2
Wakefield rubber	1.4 to 1.7
Indoor rubber duration	1.0 to 1.5
Hand launched glider	.6 to 1.1

Full size 1913 Moraine-Saulnier, Type 'L' .16

**We can find a good starting point for the center of gravity location.**

CG [in % back from the wing's LE] = 16 + (36 X Tail Volume)

An example: if Tail Volume is .50, then CG is: 16 + 36 X .5 = 34%

This CG calculation is really handy for those old timer gas models that have no balance point marked on the plans!

What else does this mean? In general, a forward CG such as the typical '1/3 back' or the 36% noted above, means that the wing will need to be at a higher angle of attack - and a powered model will, because of that greater angle, require more down thrust.

You do, at least have the balance point at a near-optimum location for that design. Check out that Moraine-Saulnier 'L' above - with its 6% stab area, the TVo is very small and the balance point will have to be quite far forward.

For a model that you're designing [or a scale model that you're working up], checking out the TVo is a good idea so you can tune the design for more efficiency.

You can adjust the tail arm length and/or the tail area to get a greater TVo.

## **July 29, 2013 Meeting Minutes**

### **ATTENDEES:**

Mary Kay & George Avila, Lori & Phil Burris, Paula & Jeff Englert, Jane & Earl Griffith, Regina & Marty Kline, Regina & Richard Kirkland, Jim O'Reilly, Eleanor Phelps, Linda & Chuck Powell, Charlene & Ed Salguero, Marilynn & Bill Schmidt, Dan Walton

President Avila called the meeting to order.  
The previous meeting minutes were approved.  
The treasurer's report was presented by Jim O'Reilly.

### **OLD BUSINESS:**

A Nationals report was presented by those attending. Linda Powell placed 3rd in E-36, Chuck flew 13 events, placing in two. Jim O'Reilly finished in 1st, 2nd and 5th in events.

### **NEW BUSINESS:**

Jeff Englert reported on the alternate site search, nothing positive....

### **SHOW AND TELL:**

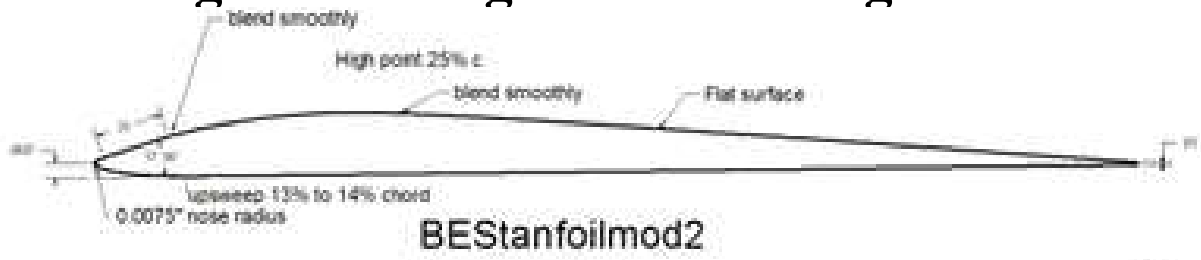
Bill Schmidt showed a Berkeley 1939 Musketeer 42 cabin equipped with a 1938 0.12 Sycro B.

Phil Buris displayed a Sig 29 and Pitcrain Fleetwing built from a Easybuilt kit converted to 3 channel Parkzone vapor RC system.

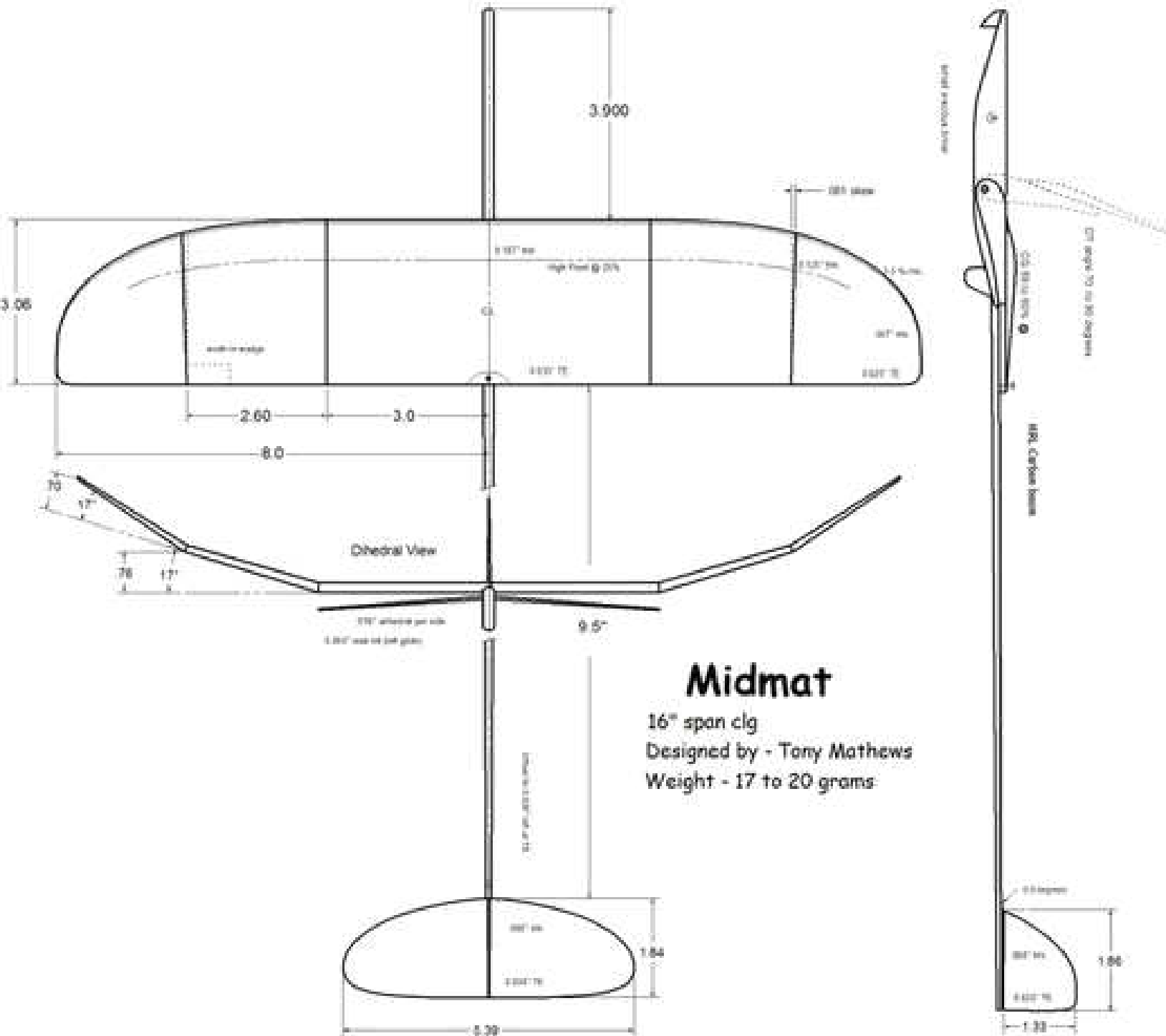
Chuck Powell showed a replacement tip launch glider, Spinfin, equipped with an RDT system.

Richard Kirkland showed a Stomp Rocket built for scout use.

# Plating Model Engine Model Engine



BESTanfoilmod2



## Midmat

16" span c/g  
Designed by - Tony Mathews  
Weight - 17 to 20 grams

# 1911 Voisin Frères Hydro Canard I

RECONSTRUCTION  
by BENNO G. SABEL

(Other Voisin canards differed in shape; some had wheels; one was an amphibian!)

### DOCUMENTATION:

Photographs

Jiro Sugimoto, Japan: Smithsonian NASM, (USA)

Benno Sabel, Germany: *Fliegerei + Raumfahrt*

Bill Hannan, USA: *Avia 1911*, (Netherlands)

*Volksbücher der Technik Flugzeuge*, circa 1911 (Germany)

J.F. Frugoli, France: Dimensions

### DATA:

Wing span: 10 meters

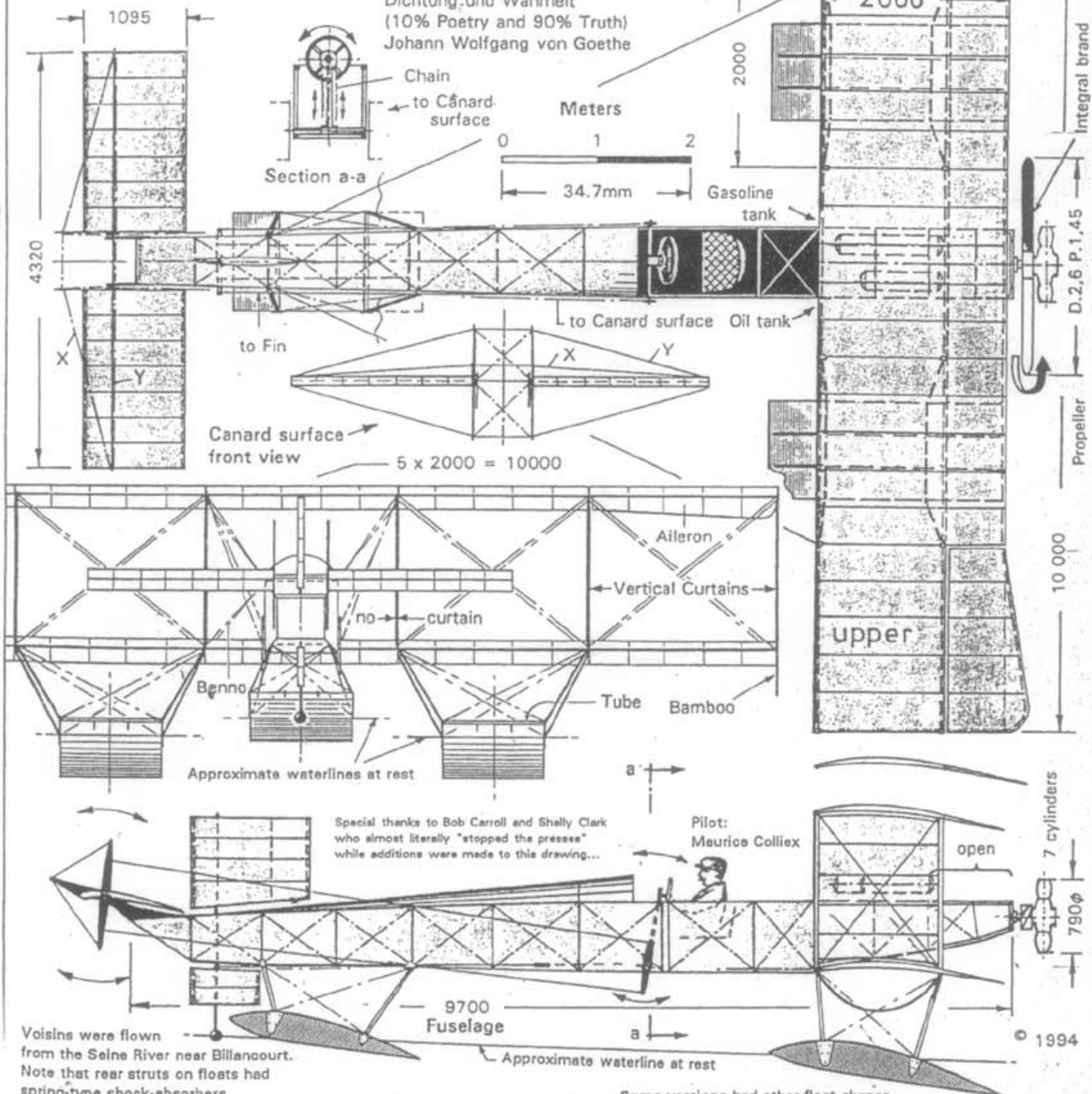
Area: 40 square meters

Weight: 400 kg total

Power: 50 HP Gnome rotary  
(7 cylinders)

SCALE: 1:57.6

10% und 90%  
Dichtung und Wahrheit  
(10% Poetry and 90% Truth)  
Johann Wolfgang von Goethe

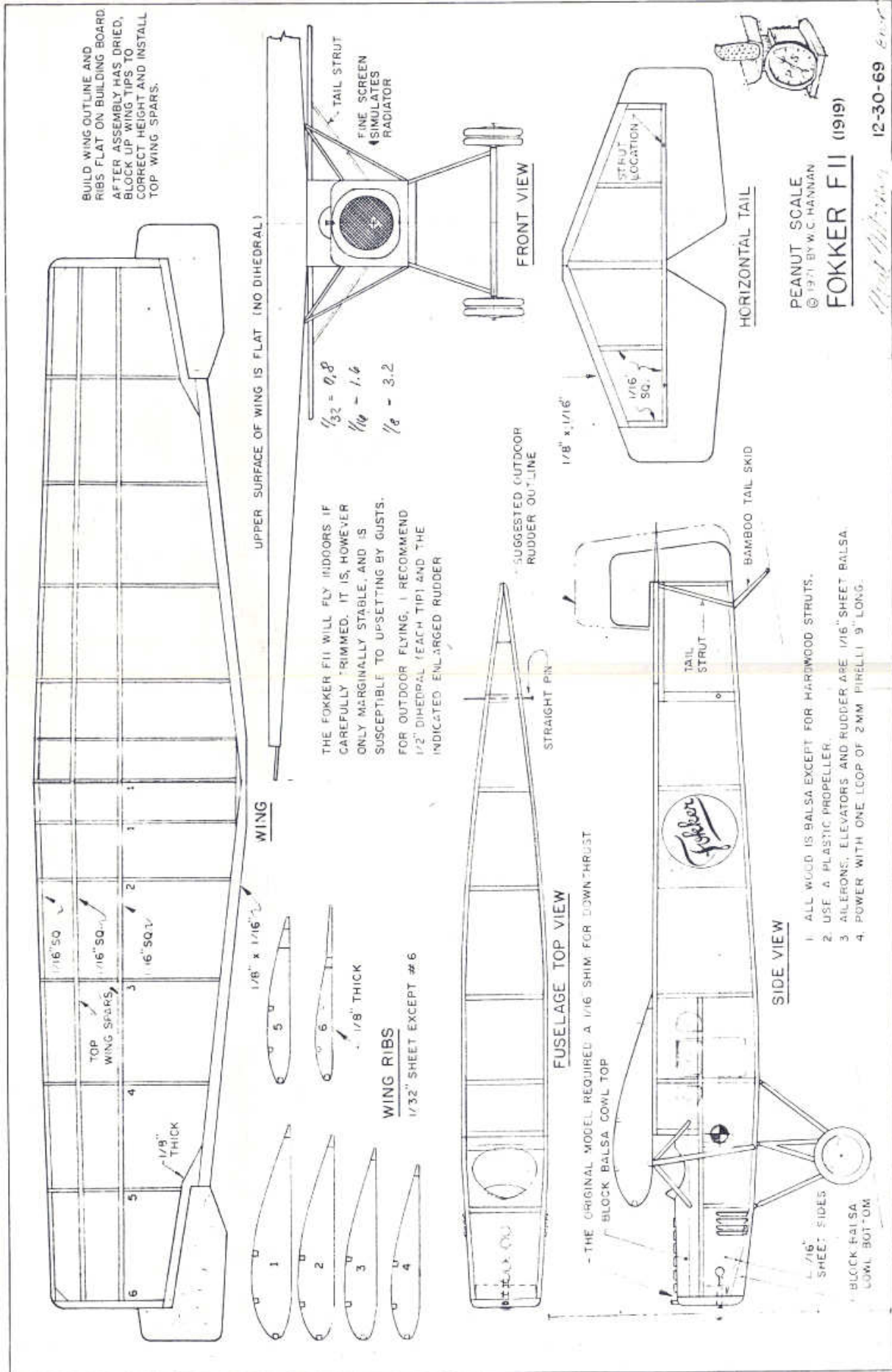


Special thanks to Bob Carroll and Shelly Clark who almost literally "stopped the presses" while additions were made to this drawing...

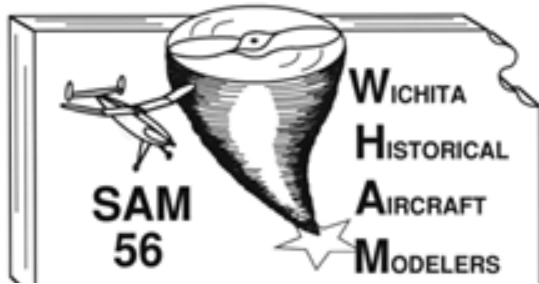
Pilot: Maurice Colliex

Voisins were flown from the Seine River near Billancourt. Note that rear struts on floats had spring-type shock-absorbers.

Some versions had other float shapes



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**FLYING  
ACES**



**Sunflower Squadron  
Wichita, KS**

The next SAM 56 Dinner Meeting will be at:

**Ciao Italian Kitchen**

2121 N. Tyler Road  
Suite #144

Wichita, KS 67205 - (The old Tommy's)  
(316) 651-5599

**Saturday, September 14, 2013**

Social Hour @ 6:00 PM, Dinner @ 7:00 PM..

**Upcoming events:**

**Membership Information:**

Open to all interested AMA members, founded to encourage and promote the model airplane building hobby. Member dues \$20 annually, Subscription only; \$12 annually, \$18 foreign. Send checks to Jim O'Reilly, 4760 Battin, Wichita, KS 67220. All memberships and subscription renewals are due January 1st of the new year.

Club Officers: President: George Avila, 683-1474 Vice-President: Bill Schmidt 744-0378,  
Treasurer: Jim O'Reilly, 744-0856 Secretary: Jeff Englert, 722-7491