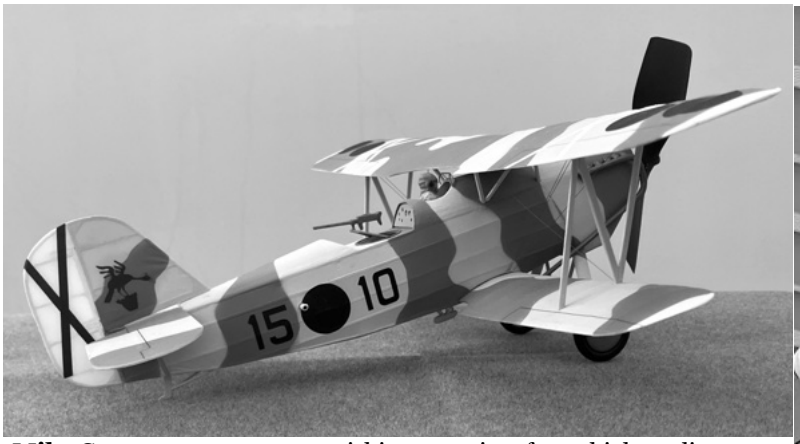
MAX FAX

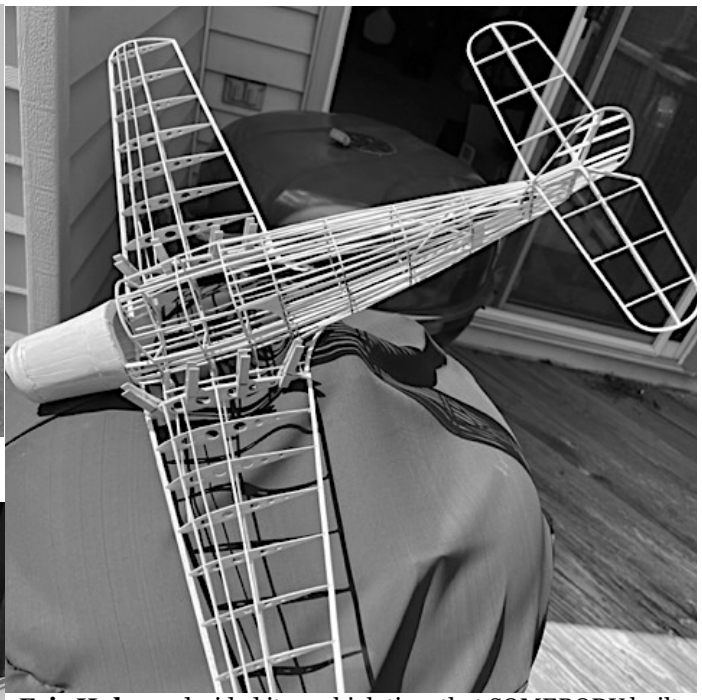
The Journal of the DC Maxecuters,
The dreaded Potomac Pursuit Squadron #6 of the Flying Aces Club

Editors: Dave Mitchell and Wally Farrell

2023-3



Mike Stuart puts out an astonishing quantity of very high quality models. Here's one of his latest, a Heinkel HE 45 peanut.

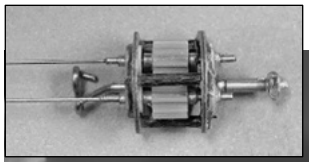


Eric Holmes decided it was high time that SOMEBODY built an FSI plan. Here's the bones of his lovely BF-108 Taifun. "It's my first FSI build and I have to say that despite the relative complexity of the fuselage structure, the parts fit has been good. Some of the details where the wing center section and fuselage meet become more clear as you're building it."

Dick Gorman sent this picture of his shop foreman, overseeing repairs of Dick's Cessna CR3. Nice puddy...? Better get it right, DG...

Great FF teams aren't born, they're MARRIED! Sure, they're focused competitors, but without **Karin Escalante** (right) and **Julie Farrell** (below right), Mike E. and Wally F. are mere duffers---all the Cessna CR2s and CR3s in the *world* won't help 'em. Photos taken at the 2023 Non Nats.

Your editor has been working on this Gloster AS31 Survey peanut for what seems like forever. Adapted from the original design by the great **Emmanuel Fillon,** it features a homemade 1:1 gearbox (see inset picture) in the rear fuselage that drives the props via .010 wire cables. Inital flight tests were...*disappointing,* owing (we think) to the props rotating *in* at the tops. That has since been corrected, and hopes are high again....



MAXFAX 2023-3

Friends, I have very sad news. **This issue of the MaxFax will be the last.** After close to 60 years of more-or-less continuous publication--during which time the MaxFax evolved from a few pages of hastily typed (or handwritten) minutes delivered by... by what, carrier pigeon? *Fax?*.... to the dozen or so shadowy local characters enthusiastically fanning the flames of a Free Flight revolution, into the professionally printed 20-page orgy of pictures, articles and plans of today--the time has come to close the hangar doors on this august publication. Those of you with current subscriptions that run beyond this issue will be contacted and offered a refund of your balance due.

I apologize if this feels abrupt. However, it's not *entirely* unexpected. Two years ago, we nearly shut down when the logistics of transitioning from one treasurer to another threatened to take out our engines. **Doug Beardsworth** stepped up then and provided a path for continuation. That took care of one big issue, but others were still lurking--the fact is the MaxFax has been on a financial razor's edge of late, and the latest bank statement was the *coup de grace*. We had hoped to make it to the 2023-4 issue, but this will not be possible. Maybe we could increase the subscription dues to cover, but...the larger problem is more than just finances. The fact is that **Stew Meyers** (editor of the FAC Newsletter) and I are chasing the same content. Gone it seems are the days when the world of FAC-style Free Flight was new (again), energetic scribes were elbowing for position to offer their learned insights, and original plans were being drafted faster than you can say *Smilin' Jack*. These days you really gotta beat the bushes for new stuff!

Additionally, as CinC of the FAC, it is my duty to peer into the clouds and try to plot a course--if not into the distant future, then at least to the end of my nose. I could see the need to eventually transition the FACNL from one editorship to another...and editors don't appear to be growing on trees.

I ultimately had to conclude that this funny little FF world ain't big enough for two major newsletters anymore, and that the needs of the many must outweigh the needs of the few. You can expect the energies that had gone into the MaxFax to now be directed towards the FACNL.

The Maxecuters will continue as an AMA chartered club. Whether it will be necessary for us to maintain club dues, and by extension a treasury / bank account, is still undecided. Once the MaxFax is closed down, recurring financial obligations for the club mostly involve maintaining our AMA Charter ($40 / yr) and the costs of maintaining our website (currently about $100 / yr).

In closing, this is where I shower *everyone* who has made the MaxFax possible through the years with thanks. Editors, contributors, go-fers, subscribers... you have created a legacy that *will* endure--we are even now reworking the Maxecuters' website to eventually allow access to the entire MaxFax back catalog. I would especially like to thank **Wally Farrell** for doing so much to help over the last several issues. We think you'll enjoy this last one too, as we revisit **Dudley Prisel's** *Hein,* I go hard in the paint on the **Winnie Mae**, we finish **Will Skelly's** treatise on balsa, get the benefit of **John Ernst's** technique for doing balsa infills, and learn about a new torque meter from **Jimmy Jordan.**

-DM

DUDLEY PRISEL, GONE WEST

Dudley Prisel passed away on June 23rd. I first met Dudley in 1980 when we were both engineers at the Naval Ordnance Station in Indian Head, MD. We were soon flying airplanes at lunchtime when the weather was perfect for small field flights. Endless hand launch gliders made their way into thermals up and over the explosive restricted area. We earned about the DC Maxecuters from a notice in a Virgina hobby shop. Soon we joined in the weekly flying at COMSAT and occasional indoor flying contests in the Navy hanger on Andrews air base. Flying frequently with the Maxecuters greatly improved our understanding of how these models were built and flown. On Fridays Dudley and I would pick Dan Driscoll up at his VA apartment, drive to COMSAT, fly until dark, talk with Maxecuters over fast food, and then talk about airplanes into the night back at Dudley's house.

Dudley built exquisite scale models and had an encyclopedic knowledge of aviation history. He, along with Pat Daily and Dan Driscoll, would instigate Maxecuter outings to small, lesser-known museums throughout the region, or get us into a by-appointment-only aviation bookshop in a garage near Williamsburg. Talking about airplanes was a real joy for him.

Dudley designed rubber scale models such as the lovely Kawasaki Ki-61 Hien (MaxFax 9/83). His models were carefully crafted with attention to finish and detail. We drove together to the 1982 and 1984 FAC Nats and came back each time excited on what we would build next.

For a while we lost track of each other as family time took precedent. With the advent of the internet, and Dudley's somewhat unique name, I found an email address and sent him a note. Reconnected, we flew the local flying sites, made the trek down to Kudzu to fly at the old field, and put airplanes in the air at Remington and Piscataway.

Dudley's approach to flying models was never focused on winning. He wanted the models to look realistic in the air, flying without drama or mysterious aerodynamics. He would be most excited if, when you watched the model fly, you could envisage the actual airplane in flight.
He will be sorely missed. Sympathy cards can be sent to:

Gail Prisel
11507 Ellerbee Mill Ave.
Chester, VA 23831

--Glen Simpers

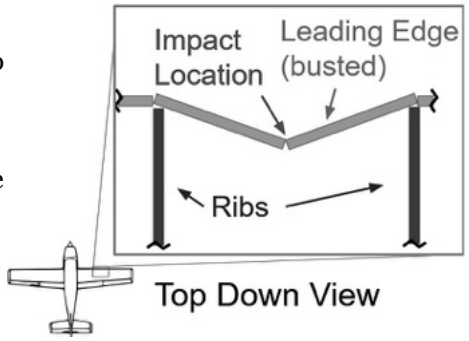
Mechanics of the Leading Edge

by William Skelly 2022

In a previous installment *(MaxFax 2023-2)* I did some experiments to find the Young's Modulus and failure stress for balsa as a function of density. Now that we have these material properties in hand, we can use beam bending equations to investigate the quandary that has troubled modelers since the dawn of indoor free flight: "what leading edge won't break when my plane hits a basketball hoop?"

There are lots of ways a free flight model can break indoors. One common scenario in my personal experience has been that the leading edge busts in between two wing ribs. Let's look at a section of the leading edge between two wing ribs by thinking about it like a beam fixed by pin joints. The beam corresponds to the leading edge. And the pin joints correspond to where the LE is glued to the front of the wing ribs.

Before it breaks, the leading edge acts like a spring because it deforms more the harder you push on it (the deformation is the distance that the leading edge has been pushed in). For "small" deformations, the deformation is proportional to the force pushing on the LE, and the proportion is called the effective spring constant. We can look up the formula for the effective spring constant of a beam loaded this way in a beam deflection table.



$$P = k_{eff}\delta \qquad k_{eff} = \frac{48EI}{L^3}$$

The equations for deflection of a spring and the effective spring constant for a beam with pin joins at each end and a load in the center. P is the force, k_{eff} is the effective spring constant, δ is the deformation, E is the Young's Modulus, I is the area moment of inertia, and L is the length (which corresponds to the rib spacing)

The area moment of inertia depends on the cross section dimensions of your LE stick. The formula for area moment of inertia of a rectangle is shown below. Formulas exist for other shapes. I tilt all my square leading edges at 45 degrees to get a sharper LE, and it is of note that the area moment of inertia for a square stick tilted 45 degrees winds up being almost the same as the un-tilted stick.

$$I = \frac{1}{12}hb^3$$

Formula for area moment of inertia, I, of a rectangular leading edge. h is the height of the leading edge, and b is the width of the leading edge.

As the LE deforms, it absorbs energy, but the stick cannot absorb any more energy once the stress within it reaches the failure stress (which we found earlier in part 1 as a material property of the balsa). If the airplane were to crash in a way that forced the stick to absorb any more energy, it would break. The energy absorbed by a spring depends on the spring constant and the deformation.

$$U_{spring} = \frac{1}{2}k_{eff}\delta^2$$

Equation for energy contained in a spring. K is the effective spring constant and δ is the deformation of the spring.

Our goal is to figure out what crash speed imparts that much energy into the leading edge. To find the energy, we need to know the displacement. To calculate the displacement, we need to know the force. Using the equation that relates force and stress within a beam, we can find the force required to create a stress that breaks the stick.

$$P = \frac{4\sigma_{fail}I}{Ly}$$

Equation for force (P) required to break the leading edge. σ_{fail} is the failure stress, I is the area moment of inertia, L is the rib spacing (i.e. beam length), and y is half the width of the leading edge.

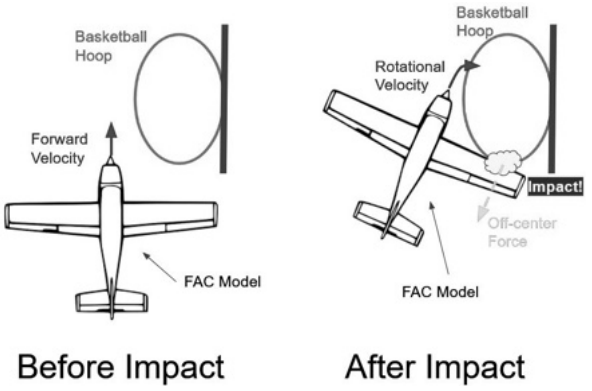
We can solve for the deformation at the point of failure by dividing the force by the effective spring constant. Plugging that into the energy equation gives the energy required to break the leading edge. This is the same as the energy absorbed by the leading edge at the point of failure.

$$U_{spring} = \frac{1}{2}\left(\frac{I\sigma_{fail}{}^2L}{3Ey^2}\right)$$

Equation for energy absorbed by the leading edge at point of failure. I is the area moment of inertia, σ_{fail} is the failure stress, L is the rib spacing (i.e. beam length), E is the Young's Modulus, and y is half the width of the leading edge.

When a model crashes into a basketball hoop, it stops moving forward, so the kinetic energy from the model's motion in flight is converted into other forms of energy. Some of this energy is absorbed by the leading edge, but not all of it. The model usually rotates about the point of contact when it hits a basketball hoop, and this rotation absorbs some of the kinetic energy by turning it into rotational energy.

The rotation is caused because the force stopping the model is exerted a distance away from the center of gravity. The energy absorbed by the rotation depends on the force, the angle of rotation, and where the impact occurs along the wing.



Unfortunately, this is a point where some guesswork enters the equation. Based on my memory of indoor ships crashing, the angle of rotation seems often to be about 60 degrees. This value seems to give reasonable final answers, so let's stick with it for now. We derived the formula for breaking force earlier, so let's substitute it into the equation for rotational energy ($U = P \times r \times \theta$). The point of contact with the basketball hoop is often a matter of chance, so think of it as a parameter (r).

$$U_{rotational} = P \times r \times \theta = \frac{4\sigma_{fail} I r \theta}{Ly}$$

Equation for rotational energy. P is the force; r is the distance from the point of impact to the center line; θ is the angle the plane rotates before stopping; σ_{fail} is the failure stress; I is the area moment of inertia; L is the rib spacing (i.e. beam length); and y is half the width of the leading edge.

Notice that if the point of contact is near the wing tip (large r), the rotation absorbs lots of energy (so less energy goes into the deformation of the LE). If the point of contact is near the centerline (r is almost 0), the rotation absorbs very little energy, and so more energy goes into deforming the LE. This correlates pretty well with reality. Post-crash inspections of my models have found the inner regions of the leading edge (just outside the prop arc) break more often than out at the tips. Inversely, when one of my models makes a glancing blow, it gets away with minimal damage.

At this point, we have formulae for the maximum energy absorbed by the leading edge before it breaks, and the energy absorbed by the rotation of the model. If all other sources of energy absorption are negligible, then the speed at which the kinetic energy of the model just before impact equals this total energy absorbed during the crash is the critical crash speed that busts the leading edge.

$$KE = U_{spring} + U_{rotational} = \frac{1}{2}mv^2 = \frac{1}{2}\left(\frac{I\sigma_{fail}{}^2 L}{3Ey^2}\right) + \frac{4\sigma_{fail} I r \theta}{Ly}$$

KE is the kinetic energy before impact; U_{spring} is the energy absorbed by the spring (LE); $U_{rotational}$ is the energy absorbed by rotation; m is the mass of the model; v is the speed before impact; I is the area moment of inertia; σ_{fail} is the failure stress; L is the rib spacing (i.e. beam length); E is the Young's Modulus; y is half the width of the leading edge; r is the distance from the point of impact on the LE to the centerline of the plane; and θ is the angle the plane rotates before stopping.

Rearranging this equation and solving for speed gives the following equation for the impact speed that will break the leading edge as a function of known attributes of the LE stick and the plane. This formula can lead us to useful conclusions about how to choose thickness and density for a LE that is less likely to break at a given speed.

$$v = \sqrt{\frac{2}{m}\left[\frac{1}{2}\left(\frac{I\sigma_{fail}{}^2 L}{3Ey^2}\right) + \frac{4\sigma_{fail} I r \theta}{Ly}\right]}$$

Equation for critical impact speed that breaks the LE. m is the mass of the model; I is the area moment of inertia; σ_{fail} is the failure stress; L is the rib spacing (i.e. beam length); E is the Young's Modulus; y is half the width of the leading edge; r is the distance from the point of impact to the center line; and θ is the angle the plane rotates before stopping

Enough math. Time for results!

My dime scale Hawker Hurricane weighs about 15 grams, and has a 1/16th inch square, 18 lb/ft^3 leading edge. The rib spacing is about 1.75". The prop diameter is 6", so a worst-case scenario impact location is 3" out from the centerline (just outside the prop arc). The above formula calculates a critical crash speed of 12 miles per hour.[1] Under 12 miles per hour, we would not expect the LE to break when it hits the basketball hoop.

Based on a video taken of my Hurricane at an indoor event, it flies at about 10 miles per hour, so the critical crash speed is just above flight speed. This makes sense based on my observations of that plane. It has crashed into basketball hoops when circling and made out with little damage, but the LE has snapped on the (not infrequent) occasions when the plane hit the hoop rim at a higher speed because it accelerated downward after hitting an obstacle in the rafters.

I have a 16" P-51 that weighs 20 grams with 1.25" rib spacing. I built it with a ⅛" square, 8 lb/ft^3 leading edge, and it has the same 6" prop diameter, so the worst-case impact is still at 3" from the centerline. The formula calculates a critical crash speed of 21 miles per hour, so the leading edge should be safe below that speed.

This also makes sense compared to observations, since my P-51 has suffered almost no leading edge injuries indoors despite flying a little faster than my Hurricane. The extra strength of the LE of my P-51 came with the penalty that the stick weighs twice as much as the LE for the Hurricane.

Now for the question we've all been waiting for: how to make a stronger leading edge without increasing the weight? As noted above, my Hawker Hurricane has an 18 lb/ft^3 1/16" LE. A 3/32" square 8 lb/ft^3 stick would weigh exactly the same, as would a 1/16" x ⅛" 9 lb/ft^3 stick. So which is stronger? If we substitute the 3/32" LE in for the 1/16" one in my Hurricane, the critical crash speed increases from 12 mph to 14mph. If we use the 1/16" x ⅛" stick (⅛" dimension running chordwise), the critical speed increases to 16 miles per hour. For the same weight, we've made the LE strong enough to withstand a 33% higher crash speed! The 1/16" x ⅛" stick gets its extra strength from its increased area moment of inertia, and this increase is more than enough to make up for the decreased Young's Modulus and failure stress that result from its decreased density.

So there you have it, skysters! We now have a scientifically based guideline for choosing the wood for the leading edge that can withstand a higher crash speed with no weight penalty.

-WS

[1] For a step by step walkthrough of this calculation, see appendix A

Appendix A: Formula Walkthrough

In this appendix, I'll go step by step as I plug in numbers to find the critical crash speed for my Dime Scale Hawker Hurricane. Note: for ease of computation, I'm going to do everything in metric units and convert back to mph at the end.

Here's the final formula:

$$v = \sqrt{\frac{2}{m}\left[\frac{1}{2}\left(\frac{I\sigma_{fail}{}^2 L}{3Ey^2}\right) + \frac{4\sigma_{fail} I r\theta}{Ly}\right]}$$

Equation for critical impact speed that breaks the LE. m is the mass of the model; I is the area moment of inertia; σ_{fail} is the failure stress; L is the rib spacing (i.e. beam length); E is the Young's Modulus; y is half the width of the leading edge; r is the distance from the point of impact to the center line; and θ is the angle the plane rotates before stopping

The first thing we're going to need is the mass. My dimer Hurricane weighs about 15 grams, so that means a mass of m = 0.015 kg. While I've got the model in front of me, I'm going to measure the rib spacing, which comes out to L = 1.75" = 0.04445m.

The next thing we'll need is the area moment of inertia, *I*. The LE of my hurricane is a 1/16" (0.001588m) square stick, so we can use the formula for the area moment of inertia of a rectangle. Note that I converted to meters.

$$I = \frac{hb^3}{12} = \frac{0.001588 \times 0.001588^3}{12} = 5.29 \times 10^{-13}\ [m^4]$$

We'll also need the failure stress. In my previous article, I came up with correlations to calculate failure stress and Young's Modulus based on density. The density of the LE is 18 lb/ft^3.

$$E\ [GPa] = 0.388 \times density\ [lb/ft^3] - 1.71 = 0.388 \times 18 - 1.71$$
$$= 5.27\ [GPa] = 5.27 \times 10^9 [Pa]$$
$$\sigma_{fail}[MPa] = 2.77 \times density\ [lb/ft^3] - 4.28 = 2.77 \times 18 - 4.28$$
$$= 45.6\ [MPa] = 4.56 \times 10^7 [Pa]$$

Since the LE is a 1/16" square stick, y = 0.5 * 1/16" = 1/32" = 0.00079375 meters.

The prop diameter is 6", so a worst-case scenario impact location is 3" out from the centerline (just outside the prop arc), so let's use r = 3" = 0.0762 meters.

Based on my memory of indoor ships crashing, the angle of rotation seems often to be about 60 degrees. The angle, θ, has to be in radians, and 60 degrees is almost 1 radian, so I'll use θ = 1 radian.

That's all the numbers gathered. Time to plug in:

$$v = \sqrt{\frac{2}{0.015}\left[\frac{1}{2}\left(\frac{5.29 \times 10^{-13} \times (4.56 \times 10^7)^2 \times 0.04445}{3 \times 5.27 \times 10^9 \times 0.00079375^2}\right) + \frac{4 \times 4.56 \times 10^7 \times 5.29 \times 10^{-13} \times 0.0762 \times 1}{0.04445 \times 0.00079375}\right]} = 5.3\frac{m}{s} = 12\ mph$$

UPCOMING EVENTS:

Maxecuters ZOOM meetings

Every other Tuesday at 11:30am, hosted by Carl Hampton. Check your e-mail for notices. To receive an invitation, E-mail Carl at: **champton3@cox.net**

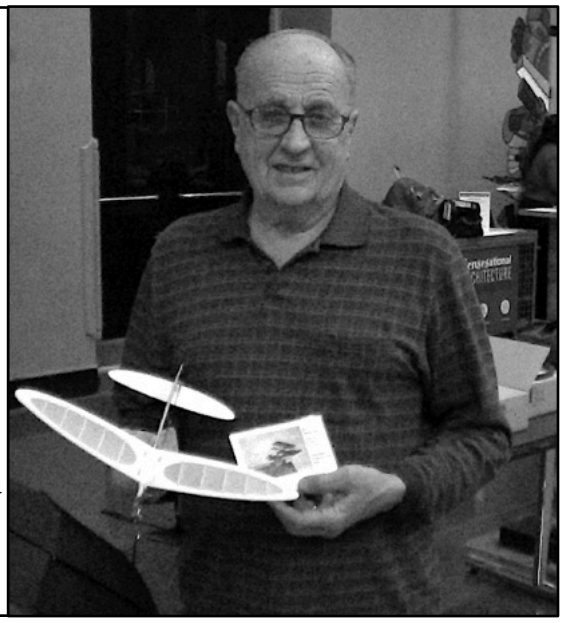
West Potomac High School Fun Fly

Sunday, November 12 8:00 AM to 3:00 PM,
Saturday, February 24 from 8:00 AM to 3:00 PM

Both fun flys will be held in the main gym

JOHN KROUSE, GONE WEST

As this issue was going to press, we learned that John passed on Oct. 8. John was a longtime Maxecuter who was responsible for securing our access to the Bauer Center, and was a mainstay of the Wednesday afternoon indoor flying events held there. Our sympathies go out to his wife Barbara and family; he will be missed.



Lockheed Vega WINNIE MAE

1930 Mens Air Derby

Sliding cockpit entry hatch

Cockpit rib doublers 1/16" sheet

WC1

WC2

WC3

W1

W2

W3

W4

W5

W6

W7

W8

Leading edge-1/8" x 3/16"

Main spar 1/16" x 1/8"

Top of wing: Insignia White with Sea Blue trim. Reg. # is white.

All wing spars hard 1/16" sq. except main spar

Wingtips and stab - 4 laminations 1/32" x 3/32"

3/4" DIHEDRAL AT EACH TIP

Trailing Edge 3/32" x 3/16"

Stab ribs and spar - 1/16" x 3/32"

Angle tip laminations upward to meet top main spar

Underside of wing: all Insignia White. Sea Blue reg. #

all WC parts 1/16" sheet

WC1

WC2

WC3

W1

W2

W3

W4

W5

W6

W7

W8

All wing ribs 1/20" sheet except W1--1/16" sheet

12

14

7

F1

C1

C2

C3 (x2)

F3-F4 Cowl Spacers

5/16" balsa

2 pcs 1/16" hard balsa

F3

cross laminated

F4

F5

F7

F8

F12

F9

F13

C3

C3

1/32" sheet wrap F7-F9

Fuselage formers F4-F7--1/16" F8-F13--1/20"

Front LG

Bind and solder rear LG to front

Rear LG

LG .025" wire

rudder ribs and spars 1/16" x 3/32"

Reg.# sea blue

NR-105-W

rudder outline - 4 laminations of 1/32" x 3/32"

In these markings the Winnie Mae, piloted by Wiley Post, won the Men's Air Derby at the 1930 National Air Races.

COLOR NOTES:
Overall: Insignia White (FS17875)
Dark blue trim: Sea Blue (FS15042)
Light blue trim: (FS15184)
See specific notes on plan

1/32" sheet balsa cowl wrap

F1

C1

F3

Light blue field with sea blue outline

F2

F4

F6

First and third windows covered over, left side; first window only on right side

F5

F7

F8

Race # black

F9

F10

F11

F12

F13

F7B

All stringers 1/20" sq

C2

Aft of F11, fill one bay above and below center stringer with balsa sheet; cut slot for stab through F12 & F13

F10

1/8" magnets (optional)

Exhaust - 1 each side

F2

hard 1/16" balsa

face with 1/64" ply

1/16" sheet oleo strut

Center laminaton 3/32" all others 1/16"

F6

Instrument panel - add your favorite gauges and glue to F6

F7B

F11

by Dave Mitchell 2023

Wheels 5/16" thick

8

13

Lockheed Vega WINNIE MAE

A RAZOR BLADE BROKEN AS SHOWN AT RIGHT, WITH A PIECE OF ADHESIVE TAPE STUCK ACROSS THE TOP, MAKES A GOOD TOOL FOR CUTTING NOTCHES IN THE FORMERS.

MAKE HOLE THRU LEADING EDGE WITH PIN AND INSERT THE PITOT TUBE

3/16" LEADING EDGE

SQ. NOTCHES FOR THE 3/32" BALSA CROSS PIECES

CENTER SPAR BRACER GOES INTO THIS NOTCH.

THE MODEL MAY BE LIGHTENED BY HOLLOWING OUT THE WING RIBS AS SHOWN BY DASH LINES

POSITION OF LICENSE NUMERALS ON INSIDE OF LEFT WING PANEL

THIS BRACE IS GLUED IN AFTER WINGS ARE ASSEMBLED AND THE WING TIPS BLOCKED UP FOR CORRECT DIHEDRAL

BUILD WING HALVES OVER PLAN. USE PINS TO ASSIST IN HOLDING SPARS IN PLACE. WHEN DRY, REMOVE FROM PLAN, BLOCK UP WING TIPS FOR PROPER DIHEDRAL AND CEMENT CENTER SPARS & TRAILING EDGES TOGETHER.

STREAMLINE ALL STRUTS AS SHOWN IN ABOVE STEPS. USE A KNIFE TO OBTAIN THE SHAPE GIVEN IN STEP 2.

FINISH STRUTS BY SANDPAPERING AS STEP 3 SHOWS.

LANDING LIGHT — STIFF PAPER CEMENTED ON.

3/16" SQ. BALSA LEADING EDGE GLUED IN RIB NOTCHES.

POSITION OF LICENSE NUMERALS ON UPPER SURFACE OF RIGHT WING

CENTER SPAR BRACER — 1/8" SHEET BALSA.

DARK THREAD OR A PIECE OF THE BORDER LINE CUT FROM PLAN AND STUCK TO WING SHOWS UP AILERON.

GREEN NAVIGATION LIGHT — CUT FROM PRINTED BALSA & SHAPED

5/32" X 5/16" BALSA TRAILING EDGE. TAPER AS SHOWN IN SKETCH. THIS IS DONE AFTER WING IS ASSEMBLED.

BUILD ELEVATOR IN ONE UNIT OVER PLAN. NOTICE THAT FORMER 7 IS MADE IN TWO SECTIONS SO ELEVATOR CAN BE SLIPPED IN PLACE.

THE ELEVATOR TAPERS TO A THIN EDGE AT THE REAR.

DARK THREAD OR PIECE OF THE BORDER LINE OF PLAN IS BANANA OILED HERE TO SHOW UP ELEVATOR

1/8" SQ. BALSA

AFTER THE ELEVATOR HAS BEEN ASSEMBLED ROUND OFF ALL EDGES.

BEND REAR HOOK TO FIT AROUND ELEVATOR PIECE, THEN APPLY CEMENT

REAR HOOK DETAIL

REAR HOOK

GREEN NAVIGATION LIGHT

LANDING LIGHT

RUDDER

3/32" SQ. WINDOW PIECES

PITOT TUBE (SEE DETAIL)

RED NAVIGATION LIGHT

1-5/16" DIHEDRAL ANGLE

SUPERCHARGER INTAKE HOUSING

ELEVATOR

LANDING LIGHT

LANDING GEAR FAIRING

3/16"X5/8"X4-5/16"

BELLY SKID

1/8" X1/4" X 3-5/8"

A BENT PIN MAKES A GOOD AXLE

FRONT VIEW OF SHIP DRAWN 1/3 SIZE

1/16" ROUND WOOD

WING RIB

PIN

PITOT TUBE DETAIL

WING RIB

3/16" SQ. LEADING EDGE

SAND LEADING EDGE OF WING ROUND AS SHOWN ABOVE.

WING RIB

5/32" X 5/16" TRAILING EDGE

TAPER TRAILING EDGE AS SHOWN ABOVE.

CENTER SPAR

FORMER 10 2 REQUIRED

FORMER 9 1 REQUIRED

LEADING EDGE

STIFF PAPER IS GLUED AROUND FRAMEWORK TO MAKE COWLING

PIN DOTS PIT

RUDDER

CEMENT THIS STIFF PAPER PLATE TO THE WING AT THIS POINT AND ATTACH THE AERIAL WIRE TO IT.

THREAD IS USED TO REPRESENT THE AERIAL WIRE

CENTER SPAR BRACER

RIB A

3/32" SQ. BALSA

ALL CABIN PIECES ARE 3/32" SQ. BALSA

MOTOR SUPPORT FORMER

REAR BLOCK IS SHAPED FROM A 1"X1-3/8"X1-5/8" BALSA BLOCK. CEMENT TO FORMER 7 AFTER THE ELEVATOR IS GLUED IN PLACE BETWEEN LONGERONS

THE SKETCH AT RIGHT SHOWS THE METHOD OF MAKING THE WINDOW CASING. A 3/32" SQ. BALSA PIECE IS GLUED ACROSS THE LONGERONS. THEN COVER THIS OPENING WITH CELLULOID. NEXT GLUE THE STIFF PAPER WINDOW FRAME IN PLACE OVER CELLULOID.

3/32" SQ. LONGERONS

FORMER 4

3/32" SQ. BALSA

WINDOW DETAIL

TRAILING EDGE OF WING

STREAMLINED LANDING GEAR FAIRING

EXHAUST PIPE - SODA STRAW. CUT 8 TO SIZE AND CEMENT IN PLACE

COLOR SCHEME

ENTIRE MODEL ···· WHITE
TRIMMINGS ····· BLUE

3/32" SQ. STRINGERS: THESE ARE HELD IN PLACE WITH PINS WHILE THE TOPS ARE GLUED ON PERPENDICULAR TO PLAN.

GLUE THIS AROUND THE TWO FORMERS MARKED "8" TO FORM SUPERCHARGER INTAKE HOUSING.

CEMENT THIS TO THE FRONT OF SUPERCHARGER INTAKE HOUSING.

USE 3/32" BALSA PIECES TO BRACE FORMERS IF NECESSARY

POSITION OF BELLY LANDING SKID SHOWN IN DASH LINES

NR105W

1/8" SQ. BALSA

CONSTRUCT RUDDER OVER PLAN.

AERIAL WIRE (THREAD)

CUT THESE PIECES FROM THE 1/8" PRINTED BALSA SHEET.

NOTE: STRINGERS ARE NOT SHOWN IN SIDE AND TOP VIEW OF FUSELAGE. 3/32" SQ. BALSA STRINGERS ARE GLUED IN FORMER NOTCHES.

3/32" SQ. BALSA CABIN PIECES CEMENTED ON AFTER WING IS IN PLACE.

PAPER SUPERCHARGER INTAKE HOUSING

FORMERS 8

BLUE TISSUE COLOR LINE. TISSUE IS BANANA OILED TO COWLING

FOR FLYING USE A 10" MACHINE CUT PROP.

REAR HOOK

ELEVATOR

THE WINNIE MAE

OF OKLAHOMA

LOS ANGELES TO CHICAGO • 9 HRS. 9 MIN. 4 SEC. • AUG. 27, 1930
AROUND THE WORLD • 8 DAYS. 15 HRS. 51 MIN. • JUNE 23 TO JULY 1, 1931
AROUND THE WORLD • 7 DAYS. 18 HRS. 49 MIN. • JULY 15 TO JULY 22, 1933.

CUT THIS LETTERING FROM THE TRANSFER SHEET, SOAK IN WATER FOR A FEW SECONDS, THEN SLIDE ONTO MODEL.

BLUE TISSUE COLOR LINE

CELLULOID

STIFF PAPER FRAME

DOOR HINGES INKED ON

DOOR OUTLINE GOES ON OTHER SIDE ONLY.

STOPS ON POSTS SOLO FLIGHT

STOPS ON POST-GATTY FLIGHT

THIS LETTERING IS CUT FROM TRANSFER SHEET

CUT FAIRINGS FROM PRINTED BALSA SHEET. SHAPE AND GLUE AT THIS LOCATION

U.S. MAIL TWA EXPERIMENTAL A-M-2

Phillips 77 Aviation

FORMER 10

FORMER 9

A PIN IS BENT, PUSHED IN AND GLUED SOLIDLY, TO HELP HOLD THE LANDING GEAR.

EXHAUST PIPES

STIFF PAPER GLUED AROUND STRUT TO REPRESENT OLEO.

3/16"X5/8"X4-5/16" BALSA STRUT

1/8" X1/4" LANDING GEAR STRUTS

3/32" SQ. BALSA COWLING BRACES

WASHERS

PROPELLER SHAFT

BEAD

PUSH PROP SHAFT THROUGH COWL PIECES AT REAR. PLACE WASHERS AND BEAD ON SHAFT & PUSH END OF SHAFT, AS SHOWN ABOVE, THROUGH THE PROPELLER. BEND PROTRUDING END AND PUSH INTO PROP. APPLY CEMENT GENEROUSLY.

GLUE THE TWO FORMER PIECES TOGETHER AT THIS POINT

WHITE TAIL LIGHT

PIN

BALSA

THREAD

SHOE

TAILSKID

EMERGENCY SKID IS CUT FROM PRINTED SHEET AND STREAMLINED.

SHOE SKID (STIFF PAPER)

AFTER ALL STRINGERS ARE CEMENTED IN PLACE, MOUNT ELEVATOR IN THE FOLLOWING MANNER: SPLIT FORMER 7 ACROSS THE CENTER WITH A RAZOR BLADE. SPREAD THE REAR APART AND INSERT THE ELEVATOR. APPLY CEMENT. NOW REGLUE FORMER 7 TOGETHER. THE REAR BLOCK IS THEN GLUED IN PLACE.

FUSELAGE CONSTRUCTION

EACH FORMER IS MADE OF FOUR PIECES TO INSURE STRENGTH. THE TWO TOP PIECES OF EACH FORMER ARE GLUED TOGETHER WITH THE AID OF THE LINE PERPENDICULAR TO THE BORDER (AS SHOWN AT RIGHT). ALLOW EACH TO DRY BEFORE REMOVING FROM PLAN. DO THE SAME FOR THE BOTTOM PIECES.

LAY 3/32" SQ. BALSA STRINGERS OVER HEAVY BLACK LINES IN TOP VIEW OF FUSELAGE. HOLD THESE IN PLACE WITH PINS PUSHED INTO DOTS SHOWN. NOW CEMENT THE FORMERS TO THESE STRIPS (SEE SKETCH AT LEFT), MAKING CERTAIN THEY ARE EXACTLY UPRIGHT. WHEN THESE ARE DRY, REMOVE FROM THE PLAN AND GLUE THE BOTTOM HALVES OF FORMERS IN PLACE. FINALLY GLUE THE STRINGERS IN THE NOTCHES, ADDING ONE ON EACH SIDE, SO AS NOT TO DISTORT THE FUSELAGE.

THE FUSELAGE SHOULD BE COVERED WITH TISSUE BEFORE THE STIFF PAPER IS GLUED TO COWLING.

AFTER THE FUSELAGE IS COVERED CEMENT THE 1/8 SKID SIDES TO THE FUSELAGE. BEVEL THE SKIDS TO FIT THE FUSELAGE (SEE FORMER 3 BELOW) THEN CEMENT THE STIFF PAPER ALONG THE BOTTOM.

1/8 BALSA CROSSPIECES GLUED BETWEEN SKID AND FUSELAGE TO SUPPORT LANDING GEAR STRUTS

PIN AXLE

2-3/4" WHEELS

MOTOR SUPPORT FORMER

STIFF PAPER

FORMER 1

3/32" SQ. BALSA

CYLINDER

PUSHROD

THE COWL PIECES ARE CUT FROM THE PRINTED BALSA SHEET AND SHAPED.

THE CRANKCASE PIECES, E, F, G & H, ARE CEMENTED TO THE MOTOR SUPPORT FORMER. NEXT CEMENT THE SHAPED CYLINDERS TO THIS. THEN ATTACH THE WIRE PUSHRODS.

NOTE: THE LARGER COWLING PIECES ARE PRINTED IN HALVES. THESE ARE CEMENTED TOGETHER TO FORM RINGS.

SECTION THROUGH COWLING SHOWN 1/2 SIZE

3/32" SQ. LONGERONS

3/32" SQ. STRINGERS

PINS HOLD 3/32" SQ. LONGERONS IN PLACE.

MOTOR SUPPORT FORMER. THE CRANKCASE PIECES ARE CEMENTED TO THIS.

3/32" SQ. COWLING BRACES

STRINGERS FIT INTO THESE NOTCHES.

CEMENT COWLING PIECES TO THIS FORMER AFTER MOTOR IS FINISHED.

THIS MODEL IS POWERED WITH SIX STRANDS OF 1/8" FLAT RUBBER.

SCRAP BALSA

1/8" BALSA

SIDE

PAPER GLUED AROUND HUB

FRONT

SCALE PROPELLER SHOWN HALF SIZE.

WIRE PUSHROD

SEMI-ROUNDED CYLINDERS

THREAD FIN

SPARK PLUG WIRE

CUT 9 CYLINDERS LIKE THE ABOVE FROM THE PRINTED BALSA SHEET. THEY ARE THEN SEMI-ROUNDED USING SANDPAPER. THREAD CAN BE GLUED OVER THE CYLINDERS TO IMITATE THE COOLING FINS. SHORT LENGTHS OF WIRE MAY BE EMPLOYED FOR THE PUSH RODS.

ROBERT REDER 2-7-36

12

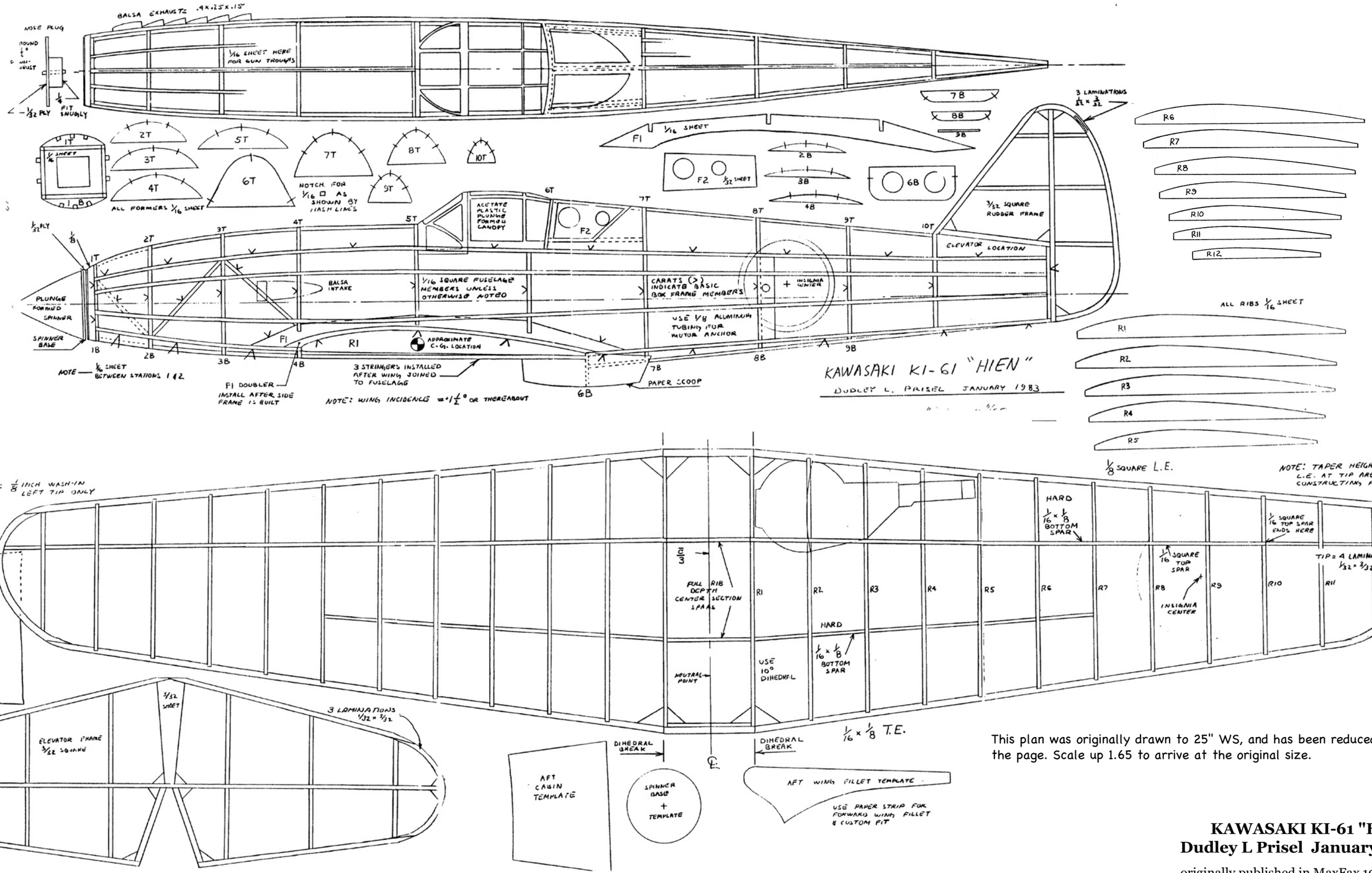
9

WILEY POST'S WINNIE MAE

36" WS

By COMET

This plan is reduced to 43.5% of original. Full-size digital copy available online at Outerzone.co.uk



This plan was originally drawn to 25" WS, and has been reduced to fit the page. Scale up 1.65 to arrive at the original size.

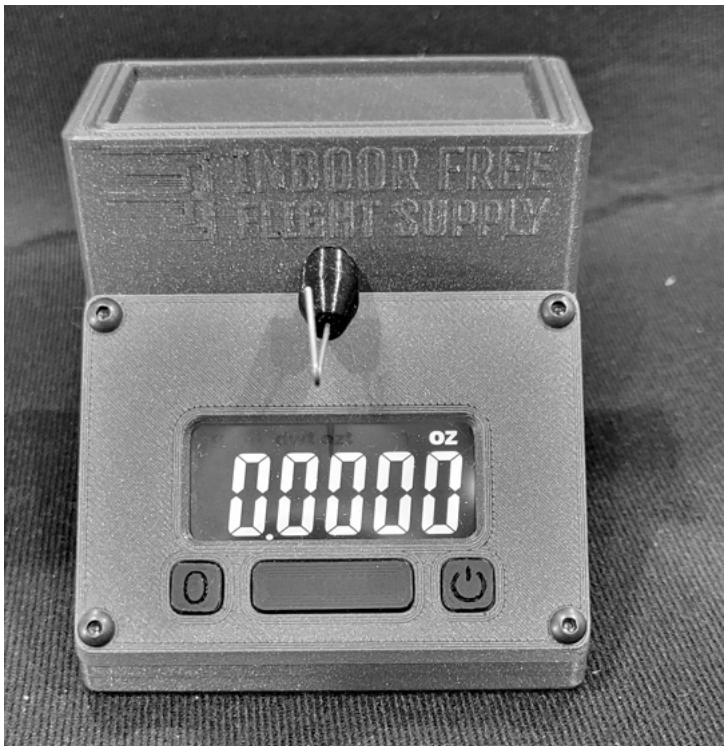
KAWASAKI KI-61 "HIEN"
Dudley L Prisel January 1983

originally published in MaxFax 1983 9-10

New Indoor Free Flight Supply Digital Torque Meter

Review by Jimmy Jordan

Around the first of March 2023, Dave Lindley announced he had added a new digital torque meter to his Indoor Free Flight Supply store. The first thing I noticed was how neat and compact the meter appeared. It looked like it was designed and built as a torque meter and not just a scale that had been modified to function as a torque meter. My order was immediately submitted. The meter arrived in a few days and my first impressions proved to be correct.



The meter is housed in a sturdy plastic box measuring approximately 3 inches square by 3 inches high. The front face, containing the digital readout and control buttons, is angled at 45 degrees making it very easy to see and read the meter even while stretch winding. This is a big improvement over the horizontal faced digital meters that I have used in the past. The top of the housing slides off for easy access to the battery box which holds two AAA alkaline cells. Thankfully, no odd ball button cell batteries needed. Two other features are visible with the top off. The load cell and pivot arm are mounted vertically. This eliminates all loads on the cell until torque is applied by winding. The motor hook and pivot arm are neatly attached to a substantial pivot shaft which is supported by ball bearings. This is a nice detail that ensures a smoothly operating meter. The only thing that is missing is a method to attach the meter to a table. This can easily be solved by using heavy duty Velcro or double-sided carpet tape. One person I know carefully drilled and tapped the bottom of the case and used machine screws to attach the meter to a board. Modelers are inventive by nature.

Three buttons, on-off, mode and zero (tare), control all functions of the meter. You may select readouts in grams or ounces using the mode button. The five extraneous modes, which show the meter's electronic scale heritage, can be ignored. At first, I did not see a need for the zero button but soon learned that tables and floors are not always level. If the meter is not "level" a preload reading may be displayed. The zero button solves this problem. The load cell has a maximum capacity of seven (7) ounce inches which is more than enough for its intended use as an indoor meter. I found the display easy to see and read under normal school gym lighting. The meter automatically turns itself off after one minute of inactivity to help extend battery life.

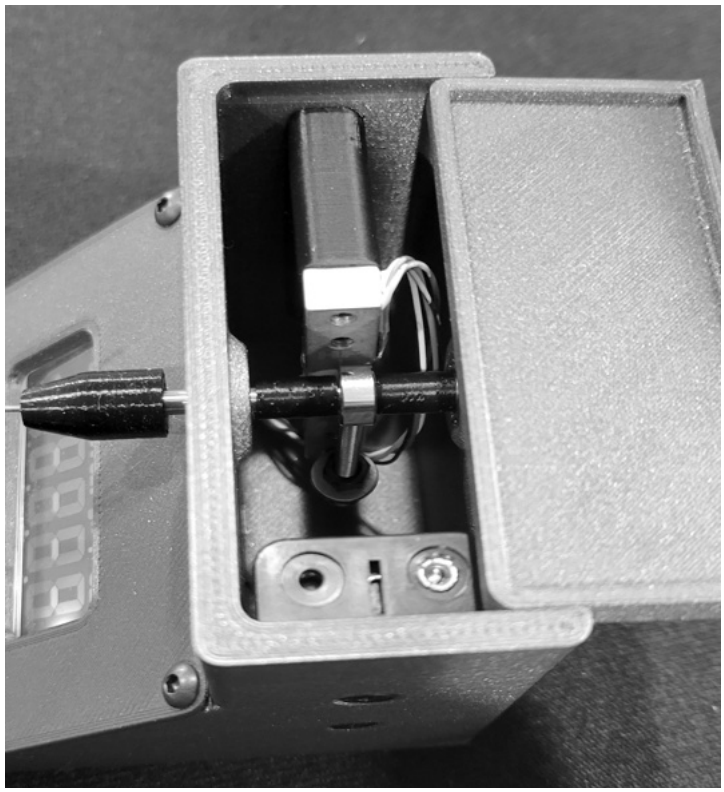
My meter was subjected to the ultimate delicate instrument test: use by my middle school Science Olympiad Wright Stuff Flight team! I'm happy to say that it survived with flying colors. The students really liked being able to read "real numbers" instead of trying to guesstimate a reading from the hash marks on a "twisted wire" meter faceplate. The meter displays a reading to the ten thousandth (four decimal places) of an ounce inch. We found this level of sensitivity to be a little distracting because the numbers bounced around so much. A small piece of blue painters tape over the last two digits calmed the visuals down a little bit while still providing good torque data. We also found that the shape of the wire hook made it easy for the students to slide a fully wound motor off of this meter.

All in all, I like this torque meter and it will probably be my go-to meter for indoor flying this year.

- JJ

You can visit Indoor Free Flight Supply at:

www.indoorffsupply.com

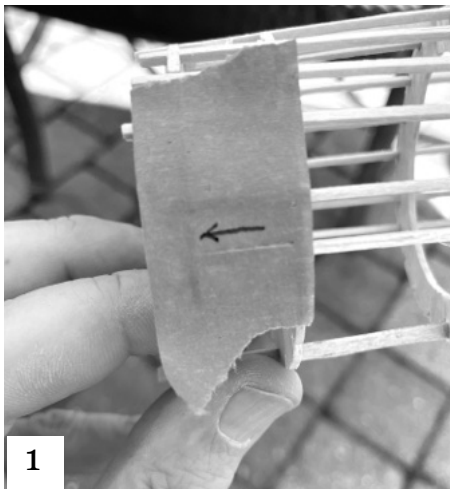


BALSA INFILLING by John Ernst

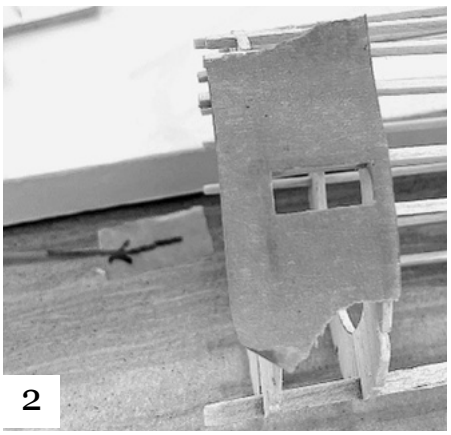
After more than three decades of model building experience, I've come to recognize the significance of adding reinforcement at the nose of the model. For me, this serves multiple purposes. Firstly, since my models often tend to be tail heavy, the additional weight has seldom posed an issue. Moreover, reinforcing the nose offers much needed support during challenging, nose-first landings. Also, the infill creates a solid area to hold when securing the model in and out of the winding stooge.

Here's a brief photo essay, featuring images of different models, illustrating my approach to filling the open bays around the nose with balsa. In the past, my go-to method was the traditional "measure, cut oversize, sand, then glue" technique, which served me well. However, in recent times, I've begun using the more precise "Tape Template" method, with pleasing results. This approach not only streamlines the process but also ensures a level of precision that saves time in the tedious task.

To start, I sand the adjacent sides of the bay to be filled to ensure a flush alignment. This creates a secure and reliable frame for adhesion of the tape. I've found the blue painter's tape to be an excellent choice due to its amount of 'stick' and ease of removal when required. Of course, there may be other tape options that work just as well.

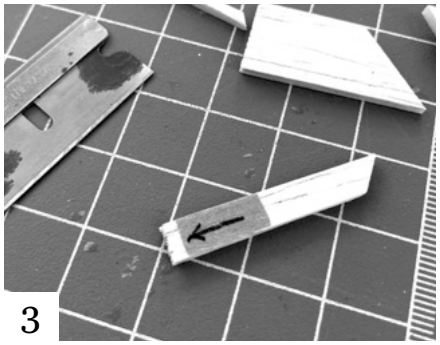

1

Moving forward, I carefully tape over the designated bay to be filled and provide a mark indicating the proper orientation of the balsa towards the front of the plane. This simple step eliminates guesswork during panel insertion, streamlining the entire procedure. (Photo-1).


2

Once everything is in position, I try to use background lighting to highlight the bay's perimeter through the tape. Armed with a sharp x-acto blade, I cut the tape to match the bay opening, hopefully ensuring a clean and accurate fit. (Photo-2)

The tape pattern can now be placed on a piece of balsa (I typically use 3/32") and cut to shape. The adhesive ensures the pattern doesn't move during while trimming to shape. (See Photo-3, next column)


3

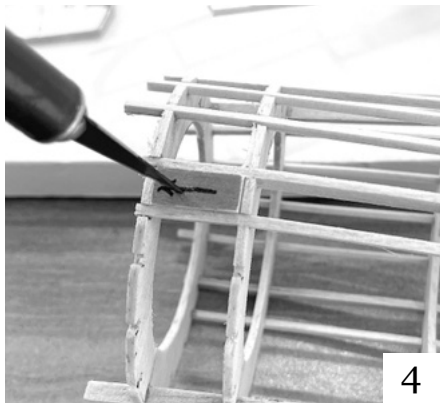
Once cut and tested for fit, the piece can be glued into place. I always glue the piece 'proud' of the surrounding frame to make sure there's enough balsa for final shaping and sanding. (See Photos 4 & 5)

Once the first piece of infill is in place, the process is pretty much - "rinse, later, repeat" around the remaining fuselage bay openings. Once complete, you can sand and shape 'til your hearts content (See Photos 7 & 8).

There are numerous approaches to accomplish this important step in the model finishing process. While I can't take credit for originating this method, I undoubtedly acquired it from a knowledgeable source out there—perhaps even someone reading this article! Nevertheless, this technique has been working well for me, and it serves as a pleasant reminder of how we can enhance the efficiency of our model-building endeavors. It's always rewarding to revisit and these valuable insights, allowing us to make the most of our time devoted to the hobby we love.

Please don't hesitate to reach out to me if you have any questions or comments. You can reach me at jje4iv@gmail.com

-JE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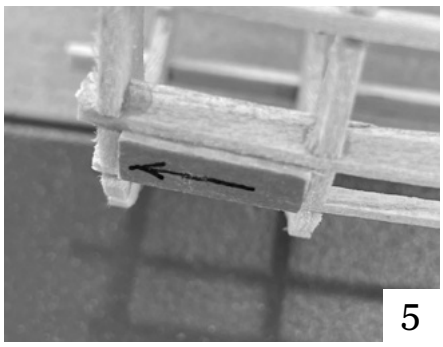
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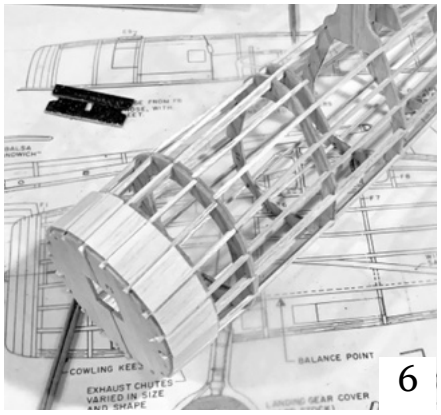

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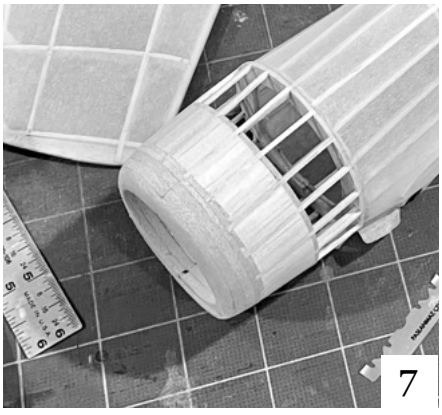

7

WINNIE MAE?

A Tenuous Contention, by Dave Mitchell

It all started when **Dave Beazley** asked me one day whether the *Winnie Mae* qualified to fly in the FAC National Air Race event. I wasn't sure; I had to admit I didn't really know the details of the early career of the famous old bird, but I didn't expect it to be all that difficult to trace its history. Surely its path to glory had been combed to a fare-thee-well?

Cutting to the chase, YES! The Winnie Mae, NR-105-R, flown by Post, competed in and won the 1930 National Air Races LA-to-Chicago Men's Air Derby, the first in a long line of feats to be listed on the WM's fuselage right below the striking "Winnie Mae" lettering, where it would read: "Los Angeles to Chicago - 9 hrs 9 min 4 sec - Aug 22 1930".

But...that would be later. If I wanted to model the plane as it appeared **during** the race, I would need to find photos *before* that lettering appeared, and *after* the original NC-105-W reg was changed to the restricted NR-105-W (this occurred about a week before the race). Easy peasy, right? Well...it wasn't that revealing photos didn't exist. The problem was that I came across a sequence of pictures taken before and after the race which seemed to suggest the Winnie Mae might have made its first noteworthy flight...*unmarked*.

Above, we see the WM in its original markings, reg. NC-105-W. Note the distinctive **Winnie Mae** on the side ("Of Oklahoma" did not appear until later), the lettering under the second window ("F.C. HALL, OKLAHOMA CITY, OKLA"), and the absence of any listed accomplishments. These markings are repeated on the port side.

In the second photo, we see the Winnie Mae just prior to the LA-to-Chicago race. Note the location on the hangar, the new registration NR-105-W, the big race number 11 painted on the side, a Richfield Gas emblem added under the cockpit, and...what is this? It seems that the "Winnie Mae" lettering and the "F.C.Hall" lettering have been whited out!

I assumed at first I was looking at a picture of the WM during a pre-race refresh of her markings--obviously she required some reworking, at the very least to accomodate the new reg. number---but then I received the following picture:

Note the degraded race number and Richfield Gas logo. Let's posit that this is the result of race wear--wind, weather, exhaust--on cheap paint, and that this is a post-race photograph. Wiley is even smiling (you bet he's happy, he's an unknown who just beat some of the best-known pilots of the day!). Note also that the "Winnie Mae" and "Fred C Hall" markings have returned. Specifically, as far as I can tell they are the same in *every* detail--location and stye--as those of all the available pre-race photos (at least, all the ones I could find). The stylish, complicated "Winnie Mae" lettering--bottom points of the "Ns" fully extended, and a period after "Mae"--are unchanged, from the first photo evidence of their application until after the culmination of Post and Gatty's 1931 around the world flight nearly a year later. A hasty, pre-race lettering refresh--for what reason?-- feels unlikely. Maybe the *photo* was whited out for some reason? No--another photo I found shows the same dirty cloud / whited out areas, from a different angle.

Let's focus on the second photo. Upon inspection, this 'dirty cloud' appears to be quickly brush painted--there are multiple drip streaks running down the side of the aft fuselage. The whited out areas appear roughly brushed on *over* the dirty cloud, with blurry edges--as opposed to being some kind of a paper or tape mask. This is coarse work. However, the horizontal pinstripe looks carefully preserved.

How to interpret all this? There's no normal paint-lettering process that I'm aware of being reflected in this photo (I am open to education!). The dirty clouds in particular cause me problems. Are they evidence of an adhesive? Paint overspray? Maybe some sort of protective resist? I threw this ball of questions out to the learned folk in one of the aviation forums I belong to, where it was suggested that given the high-profile dangers inherent in air racing, *maybe* F. C. Hall (owner at the time of the *Winnie Mae*, and a prominent oil baron) was uncomfortable with the prospect of his and his beloved daughter's name being associated with a possible air disaster, and requested that Post white it all out temporarily for the race--*just in case*. Well! IF we accept this idea--admittedly based on circumstantial evidence-- I propose the following:

1. Prior to the race, an easily removeable liquid resist --perhaps shellac, or liquid wax-- was brushed over the "Winnie Mae" and "F.C. Hall" lettering, to isolate that lettering from whatever was used as a white-out...and from whatever would be used to *remove* that white out.

cont. next page

2. The white-out was applied over the resist. I don't know what might have been used for this, but weekend auto racers commonly use black or white shoe polish for temporary numbers. It can be difficult to remove once baked dry by the sun for a few days, hence the need for the aforementioned resist to protect the underlying paint. IF I'm right in my premise, and that Mr. Hall was serious in his unease, he would want Post to use something reasonably durable, so it did not easily degrade when raked by fuel, exhaust, rain and wind and possibly re-expose the "Winnie Mae" and "Fred C. Hall" lettering for all the world to see after the potential air disaster. Note that Post and Gatty originally planned to continue on to New York after touching down in Chicago, in an effort to set a new transcontinental speed record. This daring attempt would mean more air time, weathering...and more possibility of complications (it's always something... the record attempt was abandoned because a stuck magnetic compass cost the duo 40 minutes early in the first leg, ruining their chance at the record.)

3. After the race - if successful!--Post would presumably have been instructed to immediately remove the white-out so that, history having been made, it would be duly recorded by the cameras; the *Winnie Mae* would become famous, and the relieved Mr. Hall (and his daughter) would bask in the reflected glory that was rightly theirs.

There you have it. It's not an ironclad case--it may even qualify as wild speculation--but I hereby submit that the Winnie Mae flew *unmarked as such* in the 1930 Men's Air Derby, and the markings on my plan included in this issue reflect that. The late **Michael Heinrich** is probably rolling over in his grave; we had many a conversation on the importance of not perpetrating historical myths. May further research prove me right! For all I know, some other earnest amateur sleuth has already pinned the tail on this donkey. If I can be proven *wrong*, I will take my lumps, tuck my tail between my legs and publish my abashed retraction for all the world to see. This plan, after all, is based largely on my previous plan for the Vega *Golden Eagle* (MaxFax 2019-1) which *itself* was marred by an embarrassing markings inaccuracy that I was compelled to correct later in MaxFax 2022-2. History repeats itself.... anyway, working from that plan, I have made the necessary modifications for the full cowl, different fin, and other details. The *Golden Eagle* was a very good flyer, so I have little doubt that the *Winnie Mae?* will follow suit. That's another way of saying no, I haven't built her yet. Just be grateful you don't have to bend yourself to the task of doing all that consarned lettering!!! You're welcome. Whether or not you want to try and replicate the alleged 'dirty cloud' resist surrounding the white-out is up to you.

For those of you interested in a less controversial work-up of the *Winnie Mae,* we include in this issue the 36" Comet plan from 1936, a real beauty which *includes* the aforementioned consarned lettering, and lots of good scale detail. This plan presents the *WM* ca.1935, after Post had flown her solo around the world and cemented their place in history. By that time he and the Winnie Mae were already world famous; you have to go back to 1930 and the NAR if you want to take Winnie Mae to the dance... *incognito!*

-DM

A Trickle, The Pickle, The Nickle

Real Life Drama by Bob Hodes

My wife, Vicki and I lived in Saudi Arabia for a number of years - I was working with a joint USAF/RSAF program in the Kingdom. While there, I learned to fly RC models.

The house we lived in had an unused spare bedroom, and that is where a lot of my model building was done. I had placed a heavy plastic office floor protector down so as to not to damage the carpet. One side of the plastic protector was anchored down by a desk.

So, one day I was building a wing. I was standing on the protector and I was barefoot. I was in the process of gluing something on the wing with thin CA, and for some reason, I wasn't paying proper attention to the amount of glue that was flowing. Unknown to me, some of it was falling on the protector and collecting in a small pool.

Next, I moved my foot and stepped on the puddle. I didn't realize it until I tried to move my foot again and I learned that my foot was firmly glued to the protector.

I couldn't move the protector because it was firmly held in place by the desk

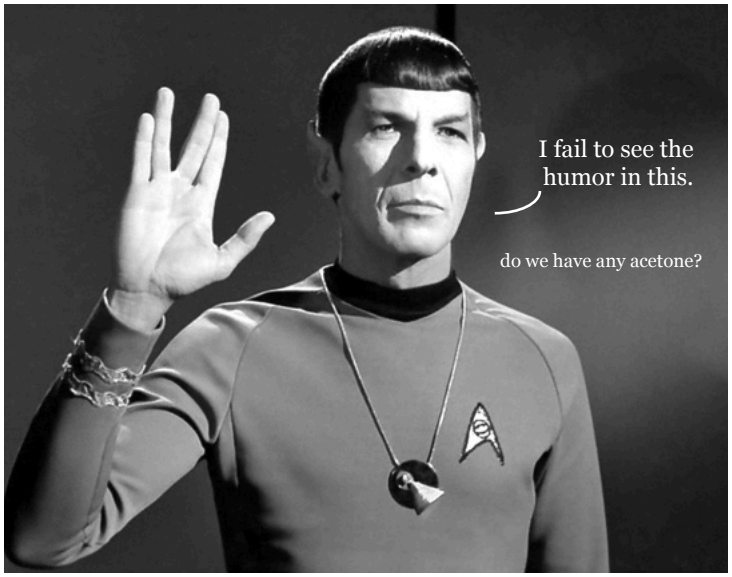
Fortunately Vicki was out of the house at the time, and I knew I had to get unstuck before she came back.
You have to understand that there was very little public entertainment in S.A. at the time, so had she found me like that, she might have taken photos and possibly even invited some of the neighbors over to have a laugh. That, potentially, could have been the talk of the neighborhood for some time.

I finally managed to reach a single edge razor blade from the desk, then bent over and started cutting myself loose. After a few minutes of this, I was able to slide the razor between the protector and the bottom of my foot and was almost free except for a remaining nickel-size patch.

I was now running out of time, as Vicki was due back at any minute. I leaned down and grabbed my leg and pulled it up as hard as I could. I was free, but had left the nickel-sized patch of skin on the protector.

I didn't tell Vicki about this for a long time. My foot was really sore for a while.

-BH



MAX FAX MENSCHES: An appreciation of some of the guys who made the Max Fax GREAT!

Some famous Maxecuters. Back row: **Bill Bell, Ernie Green, Don Srull, Paul Spreiregen, Stew Meyers, Pat Daily, Kevin Sharbonda, Stefan Prosky;** middle row: **Hurst Bowers, Ray Rakow, Doug Buchannan, Jerry Paisley.** Front row: **Bill Ceresa, Dan Driscoll, Allan Schanzle.** Allan and Stew were both long-serving Max Fax editors, with Don and Bill C.--as "Max" and "Massimo" respectively-- contributing a long-running series of great cover drawings. Ray and Hurst often teamed up to edit issues, with Dan and Jerry spotting in from time to time. The *Max Fax* in the early days was assembled by hand at production parties; I'm told there may have been beer involved.

Capt. Pat was a principal editor in the mid 70's and 80's, during which time the *Max Fax*--originally the *Max Facts*--became considerably more regular in its publication. In later years, Pat was a major contributor of photographs, both for the *Max Fax* and for the Maxecuters' website.

ABOVE: **Wally Farrell, Dave Mitchell,** and **Stew Meyers**. Stew edited the *Max Fax* on a spot basis throughout the 70's-90's before more or less flying it solo beginning in the early 2000s. He handed the stick off to Dave in 2015 and has been editing the FACNL ever since! Wally has been co-editing the *Max Fax* with Dave for the last several issues.

Tom Schmitt, whose photographs graced the pages of the *Max Fax* for decades. Tom's work, along with Don and Bill's drawings, and all those wonderful, hand- folded full size plans (!), defined the *Max Fax* during its heyday. Tom was also the architect of the Maxecuters' website which, along with Pat's photos, brought modeling excellence to the attention of the world in the early days of the internet.

Terry Pittman (right) edited several *Max Faxes*, and contributed a number of superb and unusual power scale plans.

Other 'spot' editors and notable contributors through the years include **Dudley Prisel, Rolf Gregory, Russ Sandusky, David Franks, Bob Marchese, Ted Davis....** and many, many more, all of whom played a part in making the *Max Fax* one of the premier newsletters of the hobby.

THANK YOU ALL!!

D.C. MAXECUTERS
% Dave Mitchell
230 Walnut St. NW
Washington, DC 20012

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FRONT COVER: Peter Kaiteris' Slingsby Prefect goes up, up and away. Photos by Pete Kaiteris and Tom Hallman; photo collage by Dave Mitchell

Pilots of the 1929 National Air Races Women's Air Derby pause for a photo before the race. L-R: Louise Thaden, Bobbi Trout, Patty Willis, Marvel Crosson, Blanche Noyes, Vera Dawn Walker, Amelia Earhart, Marjorie Crawford, Ruth Elder, and Pancho Barnes.