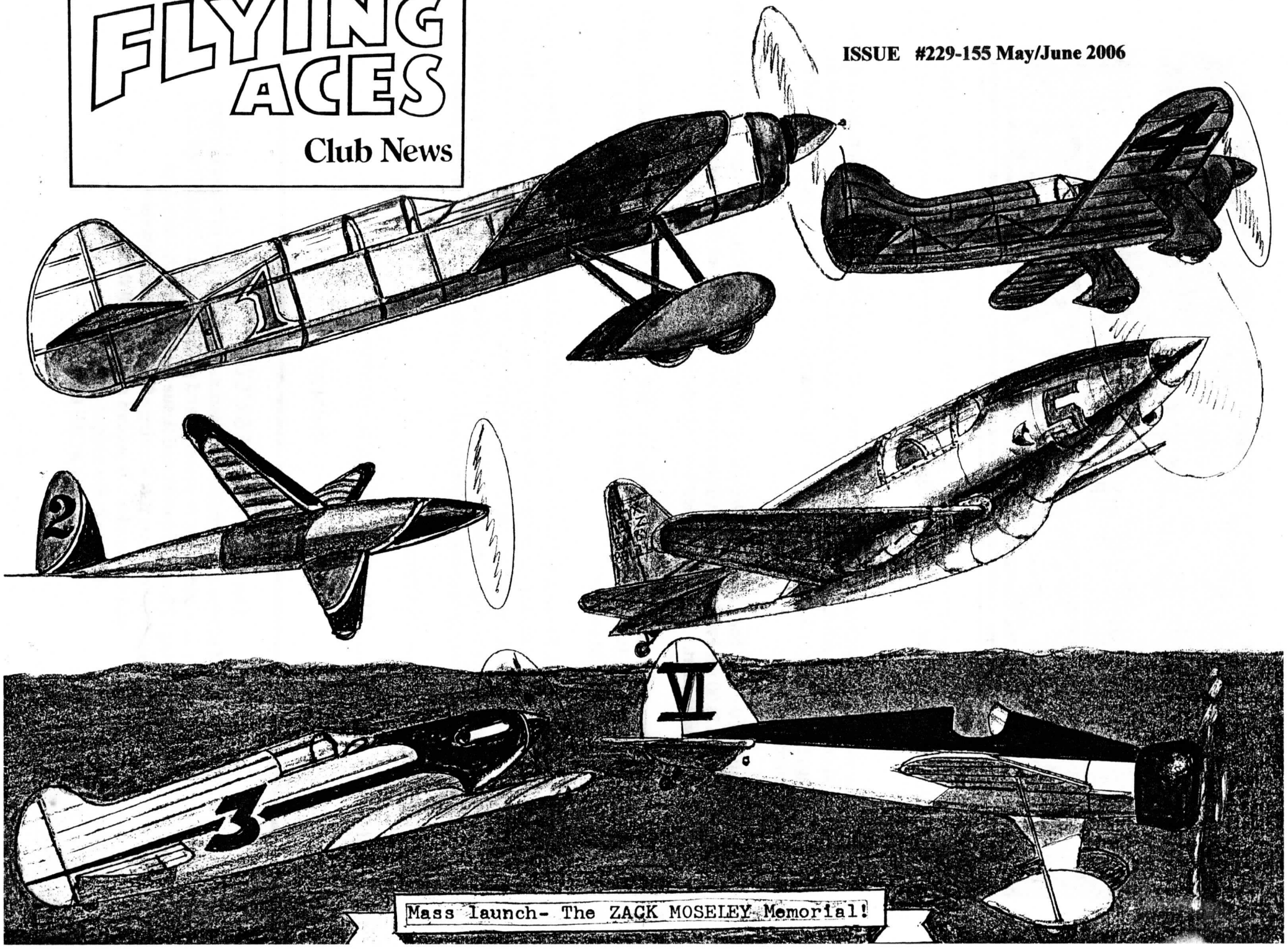
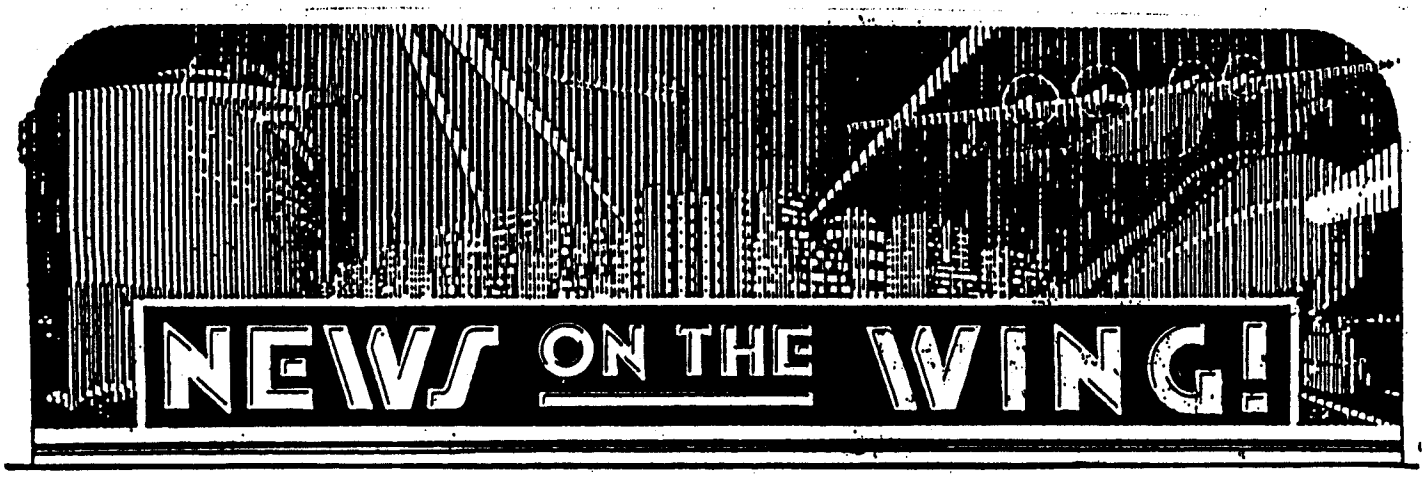
FLYING ACES

Club News

ISSUE #229-155 May/June 2006



Mass launch- The ZACK MOSELEY Memorial!



We have another one of those fine covers by Bob Rogers for you on this issue Skysters. Bob has has given us "Memorial to Zack Moseley" the creator of "Smiling' Jack" comic strip of many years ago. Nice job Bob, as usual!

As usual we wish to thank all who contributed to this isue. The plans came from the following; Ted Davis sent the Fokker B.III, our Clubster in Argentina sent us the Gourdou-Leseurre C-1, the Rare Bear is from Pres Bruning and the Saguaro Speedster was in our file, no name on it, but it looks like the work of Dave Smith of Arizona.

Now some info on the FAC Nats, Mk-XV. We still need some event sponsors. The cost to sponsor an event (5 places) is just $70.00 per event. Any manufacturer or individual interested please contact GHQ A.S.A.P. as the time is growing short. We will also accept prize donations as well from any source.

We still do not know what dorm we will be staying in but that info will be available when you check in at the time of the scale judging. Vendors who wish to have a table during the scale judging better hurry to reserve one. Space is limited! I kid you not!

Sorry to say, but the "Small Flying Arts" event has been cancelled, too bad! We are adding the Aerol Race to the schedule and will be run after the events on Saturday by Richard Zapf. Also, left out of the list of events was the "Angus McShadenfueher" and it is now re-instated. In case you don't remember, the event is for the highest placing "High-Wing" model entered in the FAC Scale event.Model must have zero bonus pts. Also as in the past, you can only have two models judged in the events that require full scale judging.

SEE YOU ALL AT THE FAC-NATS!!!!!!

BUILD---FLY---WIN.....EFF--AAA--CEEEEEE!!!!!!!!!!!!!!

Lin

Col. Lin Reichel, CinC-FAC

The FLYING ACES CLUB

is a society of unique individuals with a common interest that at times borders on a passion. It is our intent to preserve and promote the traditional building and flying of free flight stick and tissue model aircraft. Although competitive at times, the sharing of innovations, assistance and camaraderie is second nature to all that believe in the unique spirit of the FLYING ACES CLUB

NOMINEES FOR THE FAC HALL OF FAME—CLASS OF 2006

The following Clubsters have been nominated for induction to the FAC Hall of Fame. Please cast your votes for not more than three (3) individuals. The top 3 vote-getters will be inducted into the Hall at the FAC Nats this coming July.

Peck/Polymers; A backer of the FAC from the very beginning. Came out with the first Peanut kits as well as other kits and the supplies that are hard to get these days.
Diels Engineering; Manufacturer of fine kits for the serious minded FACer. Great backer of the FAC-Nats.
Golden Age Reproductions; Another great backer from day one of the FAC.
Vance Gilbert; Great modeler and helping hand at every contest he ever attended. Winner of the Vic Didelot Spirit of the FAC award in 2005.
Bob Schlosberg; Longtime contest director for the Cactus Squadron in Arizona. Great builder and inovator
Bob Haight; The Vegas Vulture, another inovator and promotor of the FAC around Las Vegas.
Hurst Bowers; Designer of many model plans and the first curator of the A.M.A. museum. Memorial events in Hurst's honor at this year's FAC-Nats.
Steve Griebling; Steve has drawn many plans which have appeared in the Cleveland Free Flight Society's newsletter as well as other newsletters. Also many new and great building tips.
Mike Nassise; Newsletter editor, plan designer, contest director and member of the FAC Council. Great asset to the Flying Aces Club.
Mark Fineman; Former editor of the Glastonbury Club newsletter, model designer (for one, the Cessna CR-3) Currently involved with buying and selling model kits, etc. on the internet. Still a tough competitor.

FICTION FLYER RULES

Regular FAC Scale rules apply with the following exceptions;

1. Documentation must include a 3-view and/or picture. Both if possible.
2. Color scheme should be appropiate for aircraft modeled.
3. Markings and control surface outlines must be there.
4. All struts, guns, exhausts, etc. must be there. Also a pilot and gunner if present.
5. Floats or landing gear may be built in the retracted postion if they wre retractable on said aircraft. Non retractable floats and landing gear must be 3 dimensional.
6. No limit on wingspan but to make them compatible with other models please try to keep them in the 24" range.
7. This event is for actual fiction flyers. Real aircraft that appeared in fiction are not eligible.

Now, let us go where no man has gone before!

If the box on the right has the dreaded RED "X" in it, it is time to renew your membership which includes the newsletter. Cost is $15.00 per year in the United States. Cost for Canada is $20.00 per year. Overseas the cost is $25.00 per year. All in U.S. dollars. Six issues per year, published approximitly every other month. Please make checks payable to; Flying Aces Club. Send to; FAC-GHQ, 3301 Cindy Ln., Erie, Pa. 16506.

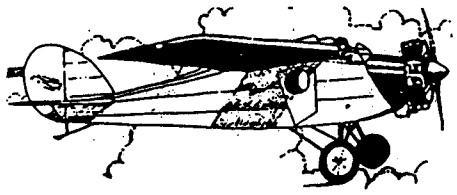
NEW PLANS FOR THE FAC PLAN SERVICE

John Blair has generously donated his plan service to the Flying Aces Club. John's plans are all first rate drawings and several of them have been winners at the A.M.A. Nationals as well as many other contests. Below is listed all of the plans that we now have ready for sale. There will be more added later. The number in parenthisis denotes the number of sheets for that plan. As usual, send your orders to; FAC-GHQ, 3301 Cindy Lane, Erie, Pa. 16506. All Plans are shipped postpaid.

AIRCRAFT	SPAN	SHEETS	PRICE
Cessna AW	30"	(2)	$8.00
Corben Super Ace	27"	(2)	8.00
Stinson Jr. Model S	26"	(2)	8.00
Pietenpol Aircamper	19.5"	(1)	6.00
SE-5	17"	(1)	6.00
Great Lakes 2T-1A	20"	(2)	8.00
Porterfield CP-65	25"	(1)	6.00
Howard DGA-15P	25"	(2)	8.00
Stinson Jr. SM-2	30.5"	(2)	8.00
Stinson Jr. SM-2	26"	(1)	6.00
Piper Pacer PA-20	29"	(2)	8.00
E.A.A. Baby Ace	25"	(2)	8.00
Buhl Bull Pup	23"	(1)	6.00

CESSNA PHANTOM PLAN AND T-SHIRT

Here is our latest t-shirt and plan. The shirt drawing is once again done by Bob Bojanowski and the plan is by Les Burdsal. You will want both of them we are sure. The model is an excellent flyer! Practically right off the board! All sizes are currently in stock for the shirt. The price of the shirt is $15.00 and the plan is $6.00 Both are postpaid. Send your orders to; FAC-GHQ, 3301 Cindy Lane, Erie, Pa. 16506.



Air Mail

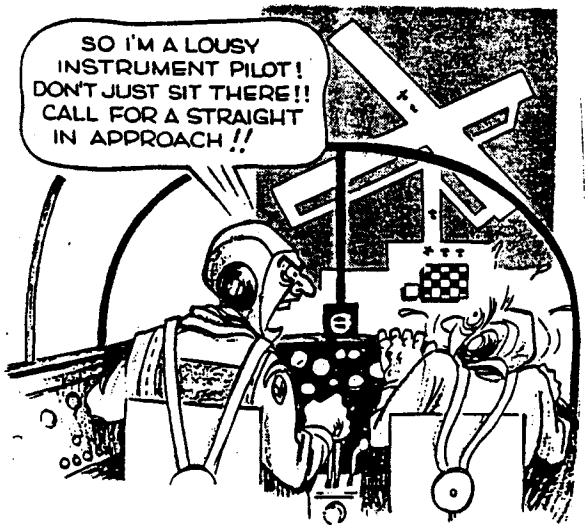
Dear Lin,

I enjoyed the article in the newsletter about the Waco Aristocrat. Twenty five years ago I had lunch with the pilot who did all the test flying on that plane. He said that it flew beautifully but landing was a little tippy due to that narrow tread landing gear. Afterwards, he sent me all his memorabilia about the tests, including his picture in the Troy, Ohio newspaper as he was preparing to take off. On my way towards Muncie several years ago I dropped off his photos and articles at the Waco museum there. Unfortunately I can't remember his name.

All the best.

Ollie

Ollie Benton



The Erie Model Aircraft Assn. will host a contest at Geneseo, N.Y. on September 23, 2006. Last year's contest was a success so we will do it again. More details in the next issue. (Events, time, etc.)

THE SKY ABOVE

Isn't it wonderful to watch the flight of several hawks wheeling about in the bright blue sky?

You can tell that they are not hunting prey, but enjoying flight as you or I might in a light aircraft or flying a free flight model airplane.

We free flight model builders immitate the birds by using bits of balsa wood, wire, and tissue powered by rubber bands.

On several occasions we have seen models and a hawk or eagle flying together in the same thermal of an expansive sky.

Only God can create the birds and natural flight, but He has also given us the ability to create a similar thing. This makes us feel closer to the heavens above.

Charles Hermanek
Decatur, Illinois

GONE WEST....We have just learned of the passing of two more of our members. Roger Gudhal of Tempe, Az. and Philip Landon from Plymouth, Ma. Our condolences to their families and many friends.

FLYING ACES PLAN SERVICE

These plans are from the FAC contests at Geneseo N.Y. and Muncie, In.

Aircraft	Span	Designer	Price
Erie Times O.T.	24"	Engstrom	3.00
Westland Lysander	25"	Studiette	4.00
Northrop Gamma	36"	Bruning	5.00
Fairchild PT-19	24"	John Low	4.00
Curtiss Gulfhawk	24"	Wilkey	4.00
Boeing P-26	18"	Wilkey	3.00
Waco C-7	22"	Boyanowski	5.00
Laird Solution	14"	Tom Nallen, Sr.	4.00
Waco "D"	24"	Bruning	4.00
Lockheed Orion	24"	Tom Nallen, Sr.	6.00
Monocoupe	24"	Canada M.C.	3.00
Seversky SEV-2	22"	Tom Nallen, Sr.	6.00
Gee Bee QED	24"	Tom Nallen, Sr.	6.00

POSTAL CONTEST

The postal contest continues on until May 30, 2006. So let's get those crates in the air, Skysters! There are four Wings (events) that you can enter; Indoor No-Cal, Indoor Peanut, Outdoor No-Cal and Outdoor Peanut. To enter all you have to do is fly your model, send in the times to FAC-GHQ before the deadline. Everytime you better a time with a model send it in. Contest times count too. Enter as many models as you wish in each event. Send times to; FAC-GHQ, 3301 Cindy Lane, Erie, Pa. 16506.

Outdoor Peanut

Pilot	Plane	Time
1.Dave Stott	Kalinin K-4	407 sec.
2.Larry Kruse	Voisin Canard	81 "
3.Ed McQuaid	Andreason BA-43	19 "
4.Fran Ptaszkiewicz	Martin MO-1	8 "

Outdoor No-Cal

Pilot	Plane	Time
1.John Stott	Extra 400	201 sec.
2.Fran Ptaszkiewicz	Dornier Falcke	8 "
3. Fran Ptaszkiewicz	Westland Lysander	6 "

Indoor Peanut

Pilot	Plane	Time
1.Jim Buxton	Miss Ashley	112 sec.
2.Gary Hodson	Santos Dumont 14bis	111 "
3.Steve Griebling	Lacey M-10	103 "
4.Jim Miller	Hi-Max	85 "

Indoor No-Cal

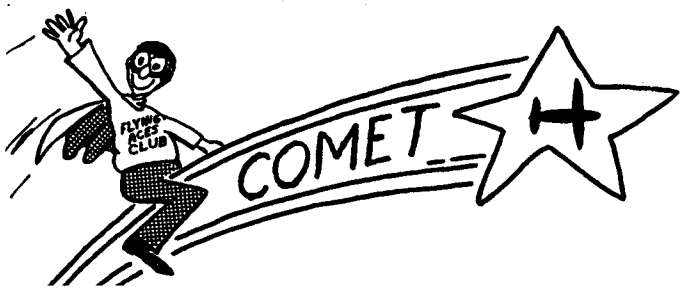
Pilot	Plane	Time
1.Larry Loucka	Hosler Fury	319 sec.
2.Chas. Slusarczyk	Hosler Fury	294 "
3.Don Slusarczyk	Hosler Fury	270 "
4.Larry Kruse	Boo Ray Racer	219 "
5.Larry Kruse	Fairey Barracuda	199 "
6.Dave Bubolz	Martin Mauler	114 "
7.Mike Welshans	Martin MO-1	90 "
8.Don Lang	Waterman Gosling	86 "

FAC T-SHIRT SALE

We still have a few t-shirts on sale. We need to move them to make room for this year's shirts. Here is the perfect time for you to get one of these great looking shirts, and save yourself a few dollars. Send your orders to; FAC-GHQ, 3301 Cindy Lane, Erie, Pa. 16506. All shirts are priced at just $10.00 each, postpaid.

Boeing F4B-4 [redacted] lge, XX-lge.
Messerschmitt BF-109 [redacted]
lge, X-lge, XX-lge.
Spartan Executive small., large.
Seversky SEV small, medium.
Hall Bulldog small
Curtiss P6-E large, XX-large

Youth sizes:
Boeing F4B-4 medium, large

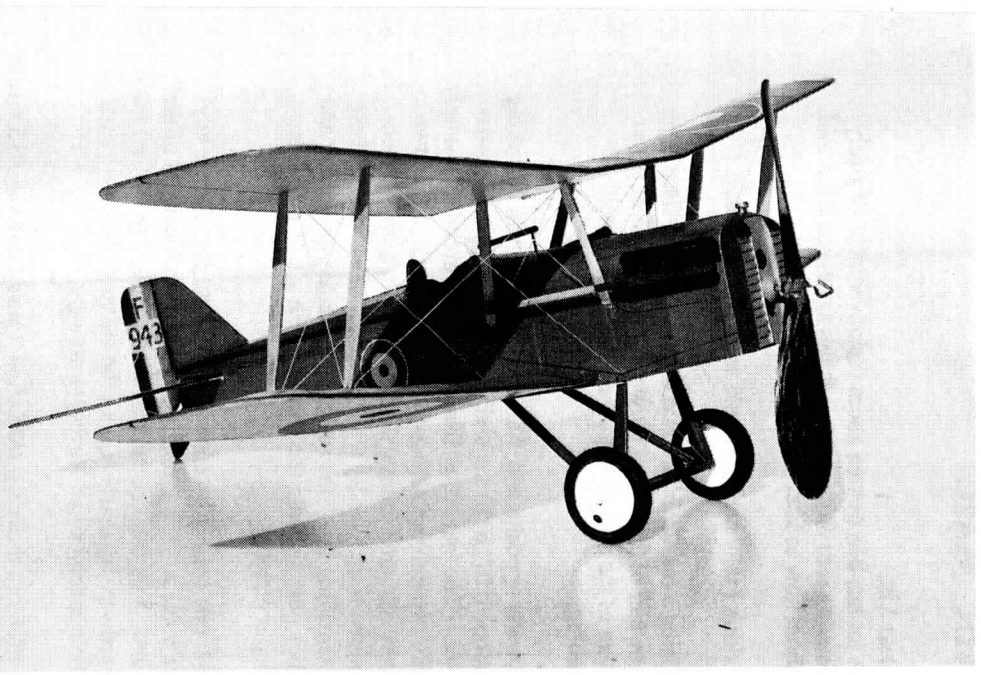


THE COMET POSTAL IS BACK!

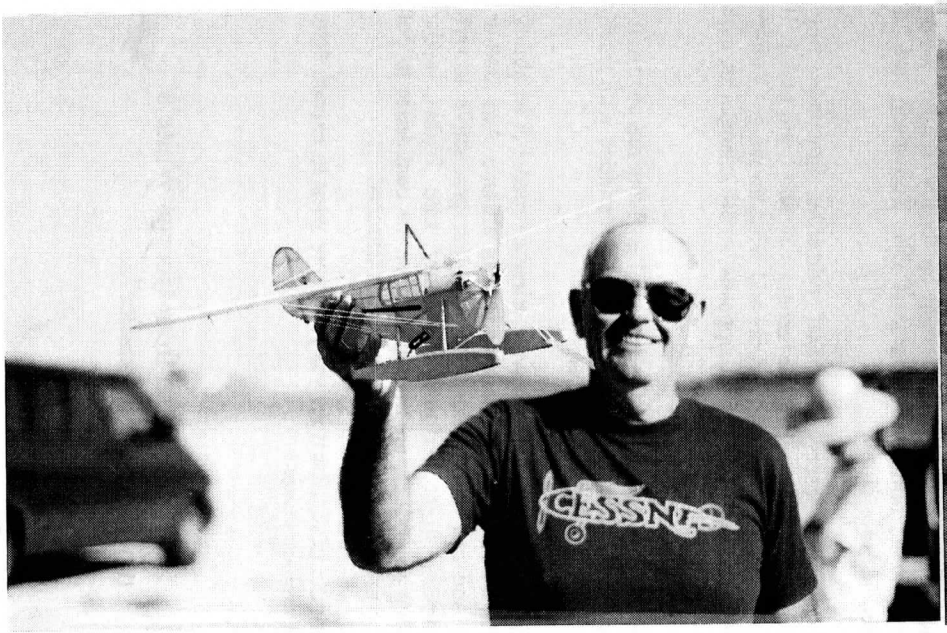
For those of you who have requested us to bring back the Comet Model Postal event your requests have *BEEN* answered. Fly all of your Comet models, regardless of size and send your times to FAC-GHQ. We will then add bonus points to your score. Contest times will also count. Enter as many models as you wish and any time you better a score with a particular model send in the time. The contest starts now and will end on October 29, 2006. Times postmarked after October 31, 2006 will not be eligible. Send your entries to; FAC-GHQ, 3301 Cindy Lane, Erie, Pa. 16506.
P.S. Please give name and wingspan of your model.

WANTED.... Phineas Pinkham stories for my new book. Matthew Smyytkowski, 22830 Calipa St., Woodland Hills, Ca. 91367. Phone (847) 540-9246

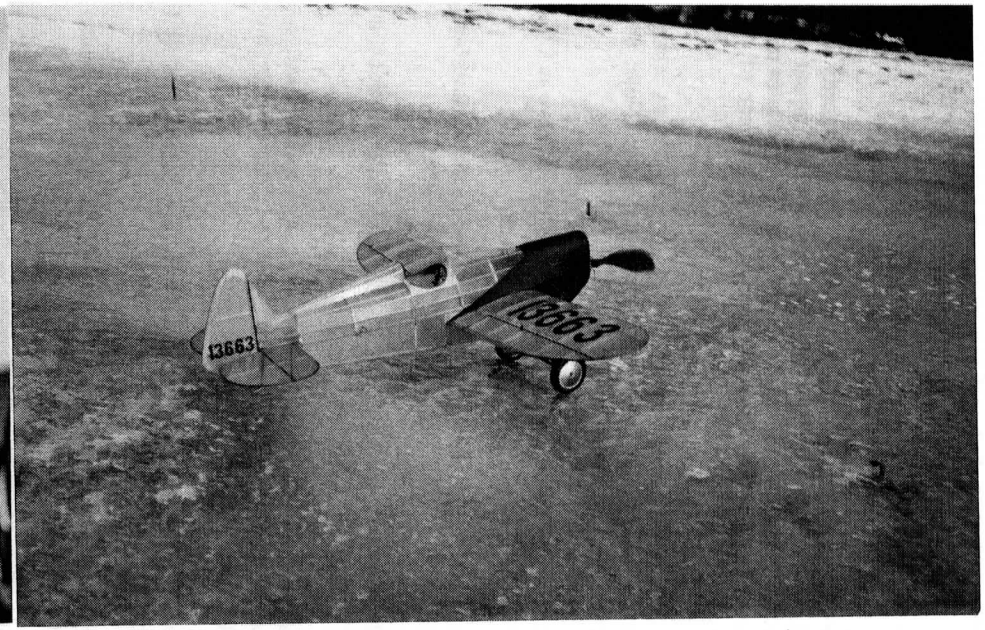
Here is a Dornier flying boat. Don't know who the builder is but she's sure purrrdy.



Here is a pic of the SE-5 that is now being kitted by Rocky Top Models. Ad in this issue.



Phil Cox proudly displaying his Co/2 powered Aeronca Seaplane. Model a great flier!



Dave Stott sent this photo of his Ambrosini Racer. Built from his own plan of course.

Painless, Productive Trimming

by Mike Midkiff

Basic steps for the flight trimming of rubber models.

In order to understand and apply these steps correctly one needs to understand trim vs. stability as they impact the process. Stability relates to the CG location. Trim relates to the stab angle. One will not work to take the place of the other. A model needs both.

Set the stab at 3 degree negative. This angle is set as related to the mean aerodynamic cord line of the wing. (Note: not necessarily the wing bottom)

Remove motor and prop and add ballast to achieve a CG. location 30% back from the LE.

Test glide model and adjust stab angle only to achieve best glide (farthest glide distance) Lock in stab angle.

Add motor and prop block and add ballast to balance model at same 30% CG location.

Wind in 25% of max winds and fly. Add down thrust to prevent a stall. Add right thrust to prevent torque roll. Do not make adjustments to CG or stab angle.

Wind 50% power and again shim for stall if it occurs or turn with opposite shim.

Wind 75% power and continue to correct stall or too much turn with appropriate shimming.

Power burst and climbout should be mostly straight away. Very gradual turn to either side is OK. Too much turn to either side robs climb.

After altitude, observe glide. Flat glide either direction is fine. If severe stall occurs in glide recheck CG and braid motor. If severe turn to right or left occurs add wing tip weight to high wing and compensate with opposite small changes in side thrust.

When you are satisfied that the model is flying reasonably in the power, cruise and glide faze, you can optimize with small CG vs. down thrust changes.

In summary the results of a well trimmed model is its ability to use all of the power available to gain altitude. Any stall or stall and roll wastes power and is non productive toward maximum flight performance. Many trim flights, under varying conditions, are needed to have the confidence to put 'er on the shelf knowing the model is trimmed.

When the next contest arrives you know what to expect, there is no embarrassment.

The above taken from George White's newsletter "Thermalier".

AIR MAIL

Dear Lin,
A lot has ben written about the advantages of freely rotating rear motor pegs, but not much has been said about how to keep them from coming out.

I think I may have a simple solution, as follows:

Using a regular aluminum tubing rear peg, flare open one end of the tubing by wallowing a piece of piano wire of the same size as the inside diameter of the tubing.

On the opposite end, file shallow notches in the tubing about 1/16" from the end with a very small triangular file. (You can either file a groove all around, or simply file two notches across from each other). Make two very thin aluminum washers from thin aluminum obtained from a pastry tray (like Sara Lee). Make these by drilling holes the same diameter as your tubing and then punching out the washers with a 1/4" diameter paper punch.

Put one washer on each end of the tubing. Either buy or make a "Hair Pin Clip" to fit the grooved end of the tube. You can get commercial hair pin clips from Lowes hardware by searching out the Hillman Fasteners stuff in their special small hardware drawers.

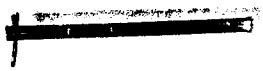
I prefer to make my own clips 'cause I can use .015 music wire instead of the thicker stuff Hillman uses. This sounds complicated, so I've decided to send you a photo made by scanning an actual example on a copy machine.

The washers keep the flared end from wedging into your rear peg support in the plane and the clip from scratching the tissue on the opposite side of the model. The whole device is very light and simple.

Kindest regards, Steve Griebling

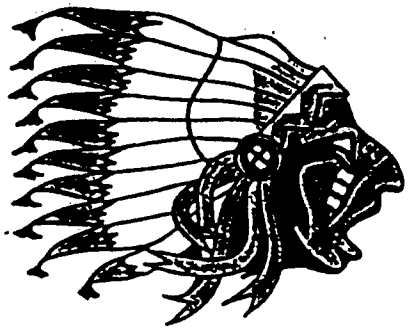
Hair Pin clips

P – nut size (1/16" O.D.)



Medium size (3/32" O.D.)

Hurricane Mk I



The Calumet Escadrille

2006 Outdoor flying Schedule at

S.A.C. R/C Field Flossmer rd. & Central ave.
Country Club Hills, IL

10:00 AM- 4 PM

Entry Fees: $5.00 Flys all events, Ribbons to 3rd
Points are accumulated for season awards.

No Rain dates this year

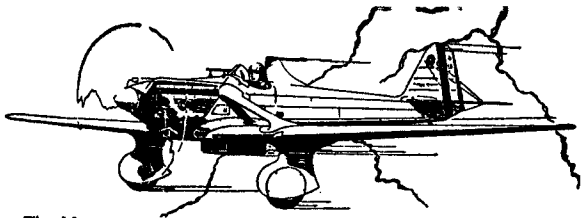
May 20 th.	June 17 th.	July 22 nd.	Aug. 19 th.	Sept. 30 th.	Oct. 28 th.
Old Time Rubber	Old time rubber	Old Time Rubber	Old time rubber	Old Time Rubber	Old time rubber
Embryo	Embryo	Embryo	Embryo	Embryo	Embryo
FAC Scale	Jumbo Scale	Power Scale	FAC Scale	Jumbo Scale	Power Scale
Race Planes ML	Fairchild 24 ML	WW2 ML	WW1 ML	Race planes ML	WW2 ML
Dime Scale	Golden age	Old time kit	Dime Scale	Golden age	Old time kit
NoCal	FAC Peanut	Double NoCal	Jimmie Allen	Cessna Phantom	NoCal

All Events Flown to Current FAC rules. Except:

- Old time rubber stick models are INCLUDED in the Old time rubber event.
- Double Nocal span must be 32" (+/- 1") no foam allowed.
- Cessna Phantom built from Les's Plans

To become a member and get a rule book and newsletter for the "Flying Aces Club". Send $15.00 to: FAC-GHQ 3301 Cindy Lane Erie, PA 16506

Questions/Comments/Directions contact: Les Burdsal 219-924-1149
lpbsr60@sbcglobal.net or Phil Cox 219-956-3728 & 219-838-2404



The Morane Saulnier 325-C1 French Pursuit Plane

* * Eliminate All Warps (?) * *
Mumbo Jumbo #125 from the Glue Guru
* * *

Classic advice for test flying a new model always starts with that strong command to rid the flying surfaces of warps. This seems a reasonable objective until one attempts to do so. The light weight construction we employ almost guarantees warp presence, if not initially then over time, as built-in stress and model temperature changes do their thing. Once the warp is there, merely applying reverse twist is unlikely to do much. As for heat, hot breath, and thinner – they are as likely to cause an opposing warp as to effect a genuine cure. What then?

First of all, is the warp really harmful? Many are not. Some – washout, for one – is usually beneficial. The notion that warps are invariably evil is simply not so. Even asymmetrical warps can be profitable, inducing a turn every time, both under power and in glide. The real issue is not the existence of a warp, but its effect on flight path – is it good or bad?

To find out, do some trial flights, starting with extended glides. Ordinary hand glides won't reveal much, as there isn't enough height available for the warp to demonstrate its bias. Wanted instead are flights under minimal power - just enough to supply a bit of altitude.

If some overly determined turn is displayed, right or left, try shim adjustment of the thrust line to produce a more modest turn. As for the choice between right and left, though it is generally held that right is safer, I have not found it so. Turns in either direction – if of large radius – seem equally safe to me. In other words, an inherent turn to the left is not to be sneered at - so long as it's gentle.

If the turn is fierce, accompanied with much wing banking, stronger measures are required. One is to mount a trailing edge trim tab at the outer portion of the wing tip that rises. When circling, that would be the outer wing tip. The tab is to be bent upwards, reducing the lift generated and simultaneously increasing drag. Properly done, the turning tendency will be eased.

However, if the warp is truly large, failure can result. This will likely take the form of a skidding, yawed flight. In this case, warp reduction is necessary. The warp should be large enough to be easily spotted. Apply the magical potion or process in which you have the most faith. Fortunately perfect elimination is not required – just a reduction to something that can be handled with the aid of the trim tab, already in place.

* * *

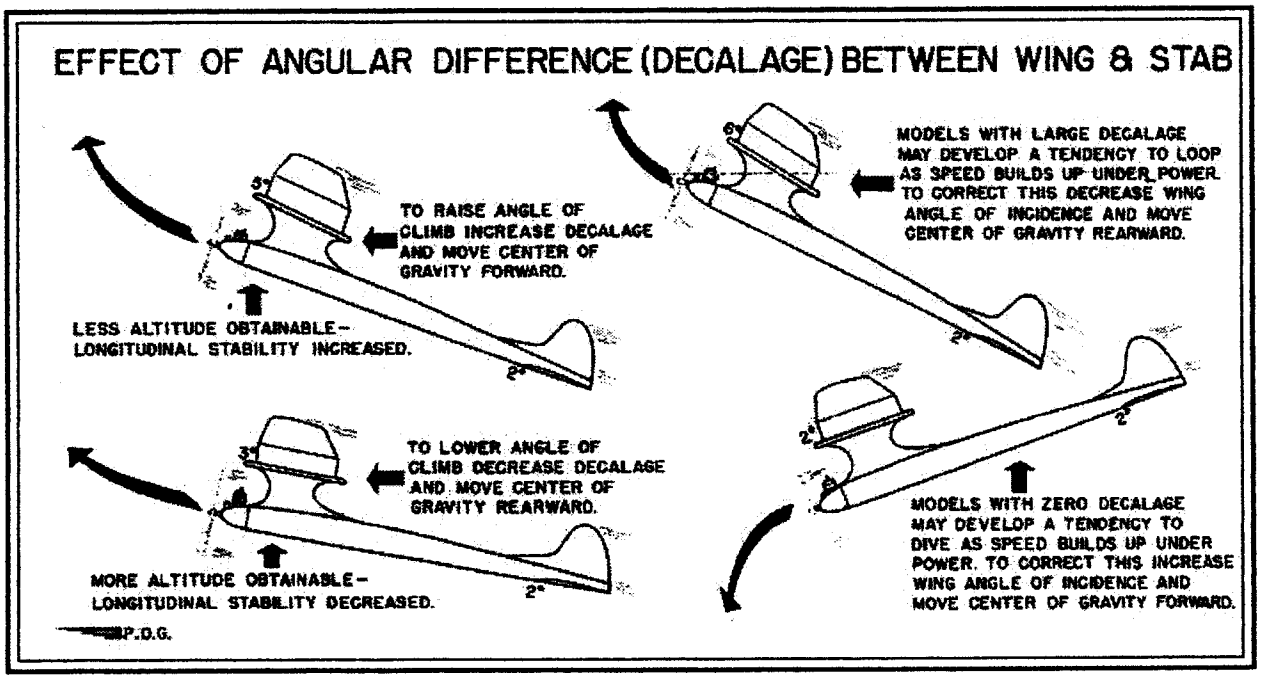
Elevator setting can be treated in the same fashion. Rather than worry over such classic trimming problems as longitudinal dihedral, simply mount the horizontal tail at about the same incidence angle as the wing. In the case of the flat-bottomed Clark-Y type airfoil favored by most of us, its OK to set the horizontal tail parallel to the wing bottom. Then place a trim tab on the tail trailing edge. It needn't be enormous. For a Jumbo, about 2 inches long by ½ wide will do.

Again, do some powered flights using modest thrust. You are looking for a decent "propeller conversion to free wheel + glide" phase. As for high power, it's best to use thrust line change as a means of regulation.

In sum, trim tabs can help eliminate both warp effects and elevator setting uncertainty.

How large should the rudder be? In my opinion, rudder area would be the toughest calculation to make exactly right as dihedral, aspect ratio, location of rudder, rudder airfoil, airflow around the fuselage, and many other factors come into the picture. The way I arrive at my rudder sizes is to build them about five percent as big as the wing and let it go at that. Too large rudders tend to cause spiral dives in the glide and power too. Too small rudders usually cause a "hunting" in the climb, with a very inconsistent turn in the glide, becoming very unstable in a thermal. The length of the tail moment has an effect on both stab and rudder areas. The tail moment arm used on my ship 48 percent of the wing span. This measurement is taken from the center of the wing to center of stabilizer. This figure will not hold true for wings of all shapes and aspect ratios. The tail moment can be longer; however, recovery after engine "cuts" is usually Let's assume a ship that has no angular difference between wing and tail. The ship takes off (ROG), climbs for a few seconds until speed builds up, then dives in, or "goes over the hump". The cause can easily be explained. While speed is building up, the ship climbs because the thrust is lifting the nose (see sketch below), and the ship is being rotated around the center of drag until the stabilizer lift with its long moment arm for a leverage overcomes the nose up and wing rotations tendency; then a modified outside loop is performed. To prevent this, move CG forward and increase angle of attack which will resist the tail force and prevent the nose's dropping. With an excess amount of angular difference between wing and tail (angle of attack), ship will take off and loop or spin. This can be stopped by down thrust in the engine, which will resist the nose's being drawn up by lift and rotational effect, or move CG back and decrease the angular difference between wing and tail. Some place between these examples would be ideal. Keep in mind that recovery after power cuts is usually better with the larger angular difference. Still, the compromise must be made.

To recap for a minute: low angular differences are good in climb, high angular differences usually recover quicker. And thickness relation between wing and tail airfoil acts in the same manner; that is a thick stab and thin wing act like a low angular difference and vice versa. With flat bottom wings, I use two degree angular difference between wing and stab. For other airfoils, approximately the same figures would apply as for the flat bottom section. Location of the highest camber point on wing airfoil will change these figures slightly. A wing with its highest camber point well forward will need a little thicker or larger area stab because rotational effect is increased with moving high camber point forward in most cases.



With the angular difference I use, I still have a definite nose up tendency at full power to the point of near loop (due to my high center of drag). I counteract this with down thrust. Now that I have injected thrust in this discussion, let's examine some facts. ***What is down thrust?*** It depends on where you measure from as to what your angles are. For the sake of a place to start from, let's use the center line of the

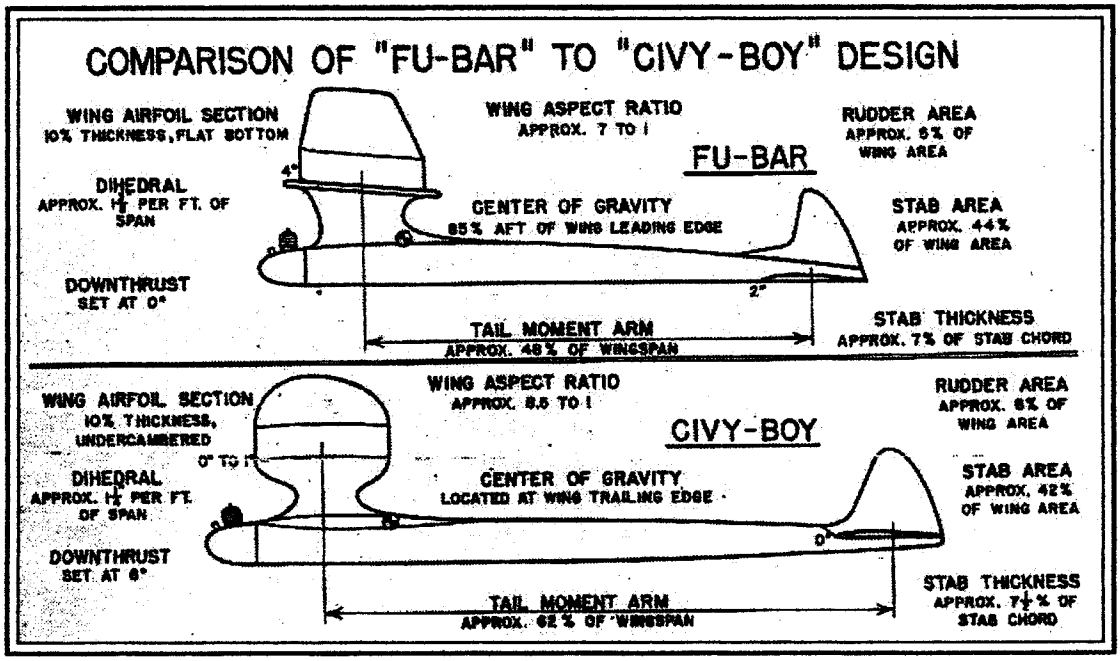
fuselage or reference line as a zero line. My force arrangement looks like this -- wing four degrees positive, stab two degrees positive, engine zero. Where did my down thrust go? If you notice, stab is +2° and engine zero; result, 2° difference or 2° down in the engine. Why not stab at 0°, wing at +2°, and engine at -2°? This is why: a -2° in the engine would not be enough. This is due to the fact that the prop blast is not pointed directly at the stab and would require more down thrust in the engine to obtain the same effect. The reason I couldn't reduce angular difference and move CG back, thereby eliminating necessity of down thrust, was a compromise with my recovery after engine cut. Less angular difference than 2° on my ship would result in a very slow recovery to the danger point -- just one compromise after another. Almost the same result as adding down thrust is to lower center of drag. This drag center could be lowered by using a lower pylon or raising thrust line to give a lesser difference between thrust reaction and total airplane resistance.

To this point almost all consideration has been given to factors affecting climb. ***How are these areas, angular differences, going to affect our glide?*** In the glide, it is mainly sinking rate that we are concerned with. These low angular differences usually give us a higher speed because of less drag; however, sinking rate is usually less, and that's all that counts anyway. With these low angles of attack and CG moved back, stab is working and providing more lifting surface to support the model. The low angular difference set up with CG too far back can be overdone and a very poor glide can result.

To give an example, let's imagine a model that has CG well back of the wing trailing edge. With a load arrangement like this, stab will carry more than its share of weight and cause "tail stalls". The ship being described would be very critical to adjust in glide; it could dive in on the glide one time and stall the next without changing any adjustments. This rearward CG location, if not too excessive, could produce a reasonably good glide in dead air, but in wind or turbulence, severe stalls would occur. We want consistency in any type weather, so make a compromise and don't go too far rearward with the CG. A very large, lightly loaded stab will tend to spin in or dive in strong turbulent thermals.

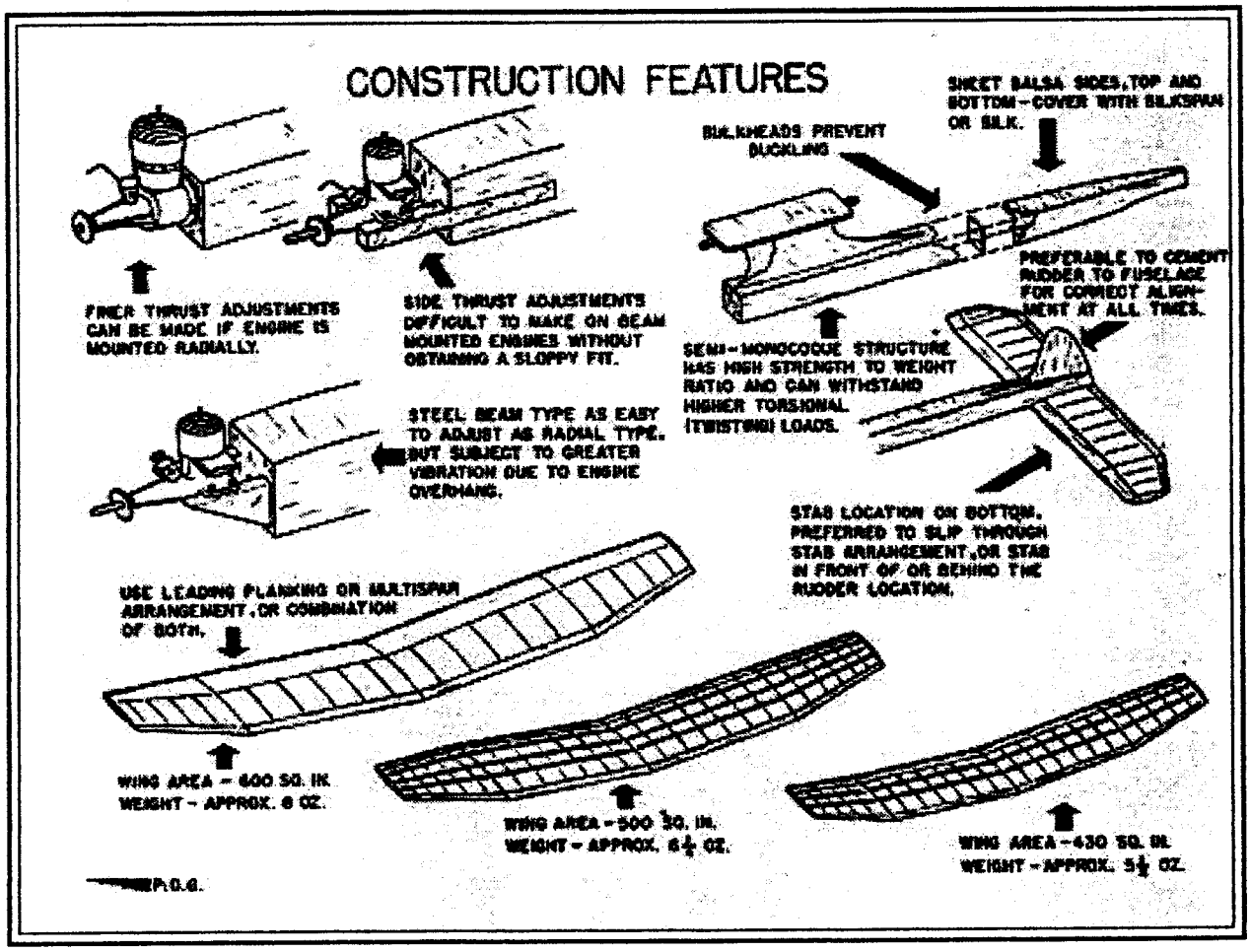
To stay on the safe side and maintain dynamic stability in the glide, I usually locate my CG at a point 85 percent of the chord from the leading edge. And, making minor adjustment to my angular difference, set up for the best glide -- provided I don't have to go below my 2° setting. I just found out from test flights and a multitude of "clobbered" ships that I couldn't be safe in all types of pull outs, weather elements, etc., with CG any farther back, which would necessitate less angular difference. With other airfoils, area combinations, etc., CG could go farther back or forward than my 85 percent idea. This was just my compromise for consistency and all around performance.

A very good example of CG location is Paul Gilliam and his Civy Boy design. Paul balances exactly on the rear of wing and at almost no angular difference between wing and tail. From all that I can determine



by checking Paul's plans, he is able to do this by using a stab section thinner than I use and a longer tail moment arm with a wing airfoil that apparently has a great tendency to lift its leading edge, or rotate at higher speeds, along with a model that has a high center of drag. This setup produces a very fine airplane but, like anything else, can be dangerous in the hands of modelers who do not stop to analyze the situation before making drastic adjustments.

As far as construction is concerned, everyone has his "pet" construction methods, so I will only attempt to "highlight" some general features. We must have a ship that is easy to build and repair. Too many contests are lost because good repairs can't be made quickly, and this is especially true of "fancy" complicated structures.



First, ***what must the fuselage do? Then, how can it be built to best do its job?*** The first question seems easy; it must provide an engine mount, a place to set the wing, a housing for most of the gadgets, a place for tail assembly, and one other very important feature: it must hold wing and tail in their proper relationship no matter what tries to move them (up to a limit, of course).

The second question is tough, if not impossible. To best do its job, fuselage must fulfill certain requirements; let's take one item at a time. The engine mount is a good place to start; I prefer the radial mount to any other because it lends itself to "finer" adjustments. There isn't anything wrong with a "beam" mount except thrust adjustments to right or left are very difficult to make. Most builders who use these beam mounts either make no side-thrust adjustments at all or drill out mounts to a sloppy fit so that engine can be slipped to one side or the other. I don't recommend either of these because, no matter how well the ship is engineered, it will require some thrust adjustment, and if this adjustment is not absolutely foolproof, it will result in disaster. Radial mounts can be adjusted by placing washers or shim stock between rear of engine and firewall, which proves very satisfactory. If steel beam mounts that bolt against firewall are used, they can be adjusted like the radial system; however, this type of mount increases engine "overhang" which causes much more strain on firewall and also gives engine more chance to vibrate. To sum up this engine mount, it should be strong, easy to make thrust adjustments, and must permit a minimum amount of vibration.

CONTINUED IN THE NEXT ISSUE.....

Choosing a Motor Size for a New Model

by Rich Weber, President of the Cleveland Free Flight Society, published in issue ft 112 of Cross winds, Russ Brown Editor

One of the great mysteries for beginners in rubber powered FFmodels can be choosing a motor for their new model. How Long? How wide? What color? Forget that last question. Stick with Tan.

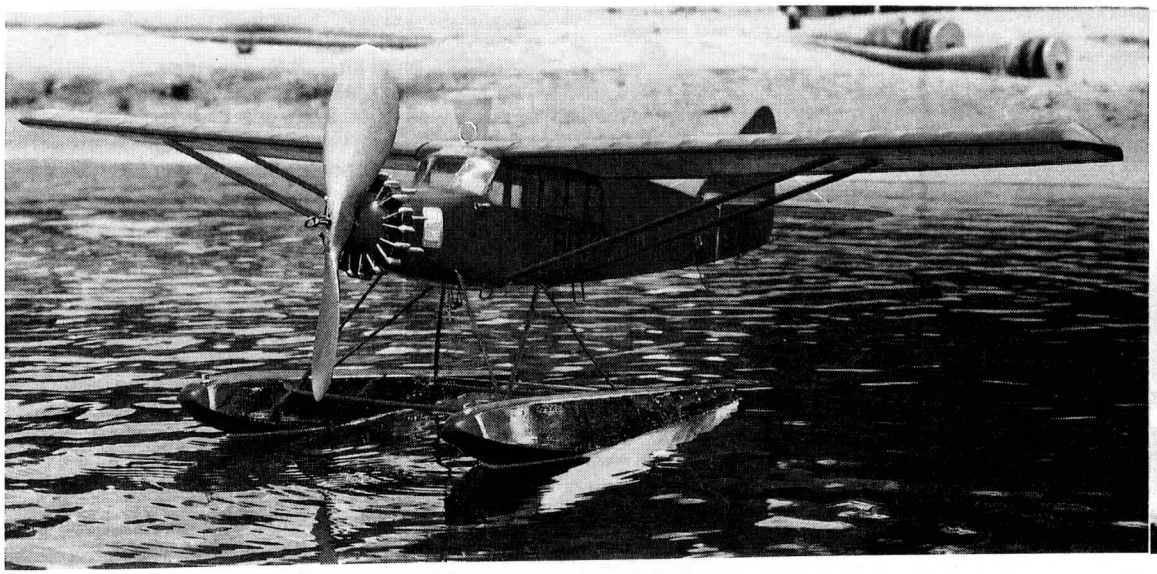
Chris Parent gave me this "rule of thumb" formula some years ago and I have found that is works pretty well to find a good starting point. It assumes a model with a wing loading of somewhere near .5 grams per square inch.

Here's how it works: Figure the all up weight of the model. This includes the weight of the motor. Most models fly happily with a motor that's around 25% of the empty weight of the model. If you have a light wing loading, you can use some of that carrying capacity to haul around more rubber. If your model is heavy, you may have to use less rubber to the keep the wing loading reasonable. Adjust accordingly. Now, take your all-up weight and multiply it by 1.1 to give you the total motor cross section in 100ths of an inch.

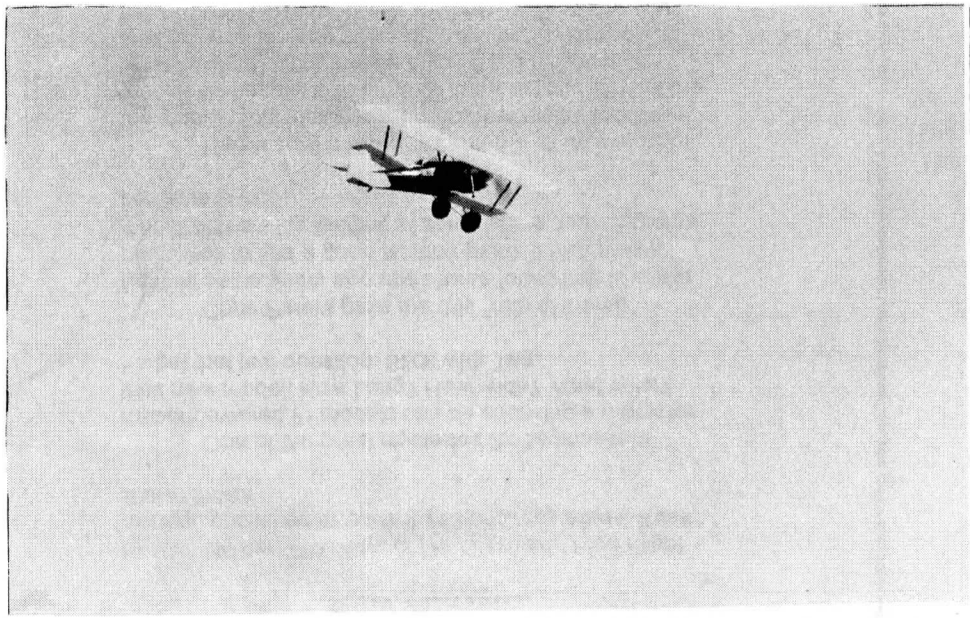
Example: 28 grams empty model x .25 = motor weight of 7 grams. All up weight: 28 + 7 = 35 grams. Multiply that by 1.1 (35 x 1.1 = 38.5 or .385") to get the cross section in inches. Multiply that by 16 to get a conversion factor to 1/16ths, if you like to think in a non decimal way. In any case, you'll want a motor that is around 6.16/ l6ths. *That's about 3/8 total cross section.*

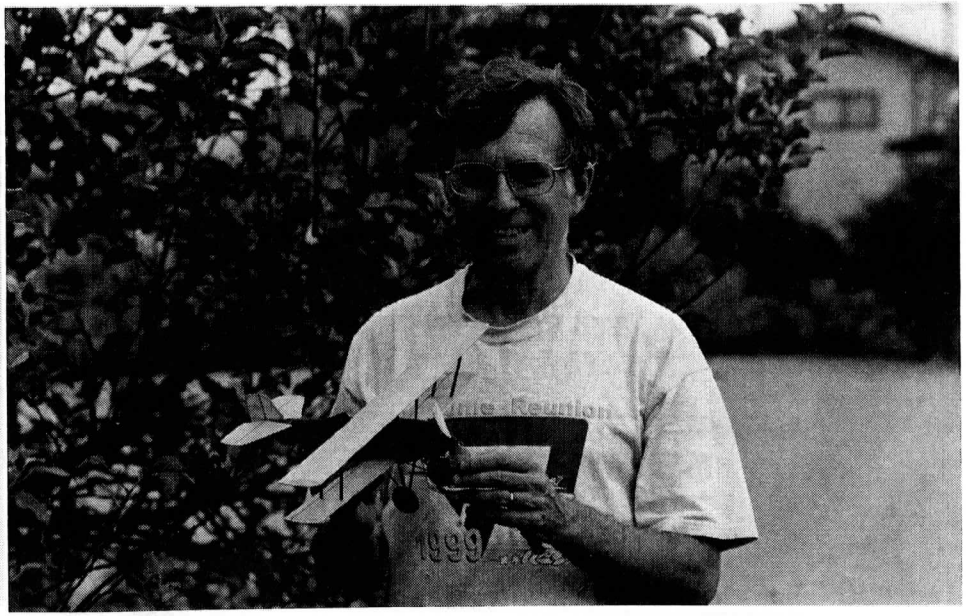
A loop of 3/16" does the job. Make up a loop with that cross section that weighs around 7.5 grams and you re in business. *Or four strands of 3/32 if you like easy braiding.*

Now, the fudge factors. If you have a short nosed model, you ll probably have to add ballast to balance. Aim a little high to allow for the weight of the ballast. Bigger models (over 24") often fly with motors that are closer to a 1.0 factor. Peanuts usually need more. 1.2 is marginal in some. Very clean models can get by with narrower cross sections. Draggy bipes and such may need a bit more oomph.



Dennis Osborne's Stinson SM-1 on floats. On the right is the model in the air.
Model is rubber powered and has a wingspan of 43 inches.

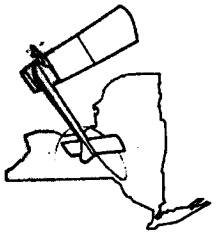




A Pitcairn PA-5 Mailwing in flight by Nate Sturman. On the right is Nate himself with the model. Haven't had a plan from him in a long time. Did you lose your drafting pen Nate? HAWWWW!!!!

15

The above photo shows one of Erie, Pa.'s greatest heroes of World War Two. Read about this great leader on the following pages.



The Western New York Free Flight Society

Presents the 37th Annual

Empire State Free Flight Championships

WNYFFS esffc OUTDOOR

Schedule of Flying Events

Friday 8AM to 5PM

- A-B Classic Gas
- B-C Nostalgia Gas
- .020 Replica
- Moffett
- Old Time Rubber
- Classic Towing
- Diesel Qualify

Saturday 8AM to 5PM

- ¼ A Nostalgia Gas
- ½ A Classic Gas (J)(S/O)
- ½ A – D Gas (S/O)
- A Nostalgia Gas
- ½ A AMA Power (J)
- Mulvihill
- Nostalgia Rubber/Wakefield
- FAC Rubber Scale
- FAC Golden Age Scale
- FAC 2 Bit Rubber
- FAC Embryo Endurance
- F1A, F1B, F1C (Open)
- F1P (J/S)
- Diesel Qualify

Sunday 8AM to 4PM

- ½ A Nostalgia Gas
- C-D Classic Gas
- Old Time Gas
- P-30 (J)(S/O)
- Catapult Glider (J)(S/O)
- FAC Dime Scale
- FAC No Cal Scale
- FAC WW II Mass Launch
- FAC Old Time Gas Replica
- F1G, F1H, F1J (Open)
- **Diesel Fly Off**

Date: August 18, 19 & 20

Location: Geneseo, NY at the *1941 Historic Aviation Group Museum*

Entry Fees: $25 for all events and field use fee. Juniors, $5 covers all events. Casual flyers *must* register with CD.

Contest Director: Lyle Whitford
For questions regarding the meet, contact Lyle at 716-795-3831 or at whitford@localnet.com

Dinner: At the Yard of Ale on Saturday, August 19. Details at the CD's table.

Rules for Empire State Free Flight Championships, a category III meet except:

- Old Time Gas
  16-second engine run for ignition (no glo)
  12-second engine run for old time diesel
- .020 Replica, 12 second engine run
- Old Time Rubber
  Mulvihill Rules for max flights
- America's Cup
  Flown in 1 ½ hour, overlapping rounds starting at 8 AM both days, i.e., 8 – 9:30, 9-10:30, etc.
- National Cup
  Qualifying events for this contest: ½ A, AB, +CD Classic, Moffett, Mulvihill, 1/4 A, 1/2 A & A Nostalgia, Nostalgia/Wakefield, Catapult Glider, P-30, Classic Towing.
- Junior National Cup events
  ½ A Classic Gas, ½ A AMA Power, P-30, Catapult Glider.
- Diesel Unofficial Fun Fly
  Three flights Friday and /or Saturday, 12 second run, 120 second max. Total of 250 seconds or more qualifies for Sunday 8 – 10 AM fly off, 12 second run.
- FAC Rubber Scale
  Judging 8 –12 noon on Saturday

Valid AMA or MAAC Proof of membership required for all contestants and casual flyers.

Colonel Phil Cochran... *A Final Salute*

by William Ericsson

Colonel Cochran gives the First Air Commandos a final briefing before "D-Day Burma." The map was fashioned from a bed-sheet.

His hat cocked back on his head, an improvised, bed-sheet map behind him, Colonel Philip G. Cochran stood before his First Air Commando Force on an airfield in India. The date was March 5, 1944, the day set for the Top Secret "Project Nine," the first total air assault behind Japanese lines using gliders to carry in everything from troops and bulldozers to Missouri mules. "Tonight," he told his men, "you are going to find out if you've got a soul. Nothing you've ever done, nothing you are ever going to do counts now. Only the next few hours. Good luck."

Erie's Phil Cochran, who 23 million Americans and countless others worldwide knew vicariously as the dashing fighter pilot, Flip Corkin, in the popular "Terry and the Pirates" comic strip was, at 34, one of the youngest colonels in the U.S. Army Air Force. As commanding officer of this newly-formed Air Commando Force, he felt he should be up front leading the assault, but he had been overruled by General Orde Wingate, the British commander of "Project Nine." He would instead remain behind the lines with Wingate to coordinate the assault from the rear. Earlier in the war, it had been Cochran's exploits against the Germans in badly out-gunned fighter planes over the deserts of Tunisia, that had brought him fame. This time it would be his words and leadership that would draw global attention. His remarks were later widely published, and their simplicity and sincerity made it possible for people far from the jungles of Burma to understand a little better the sacrifices Allied forces were making around the world.

Those sacrifices, those years of turbulence and uncertainty, were brought back to the forefront of people's minds over thirty-five years later, when, on August 25th, the news came that Phil Cochran, Erie's greatest war hero and one of its most respected citizens, was dead. He had died, at age 69, while on a fox hunt in Geneseo, New York. A man of undenied class and flair, even his death came in style. An active man all his life, he died on a hunt. A lover of horses from his boyhood, he died on horseback. A man who was extremely close to his tight circle of family and friends, he died after having seen everyone dear to him within the last few months, and after having attended, just three days before, the first family reunion he had ever taken upon himself to set up. Milton Caniff, the artist who fashioned the characters "Flip Corkin" and "General Philerie" after him, described Cochran as "the one person I thought would live forever." His death saddened those who knew him and those who only knew of him; few would deny that Phil Cochran had, as always, done it right.

Everything that Cochran did, spoke of class, that knack for doing the right thing. "It was electrifying just knowing him then," Caniff said recently, speaking of the war years. "He had class. Nobody can ever define it, but you can sense it. He had the ability to always do and say the right thing at the right time. The country needed heroes badly in the early days of the war, and he was a hero. He remains a genuine heroic figure today. He was never impressed by the hoopla himself," Caniff added. "He knew it was important, but he didn't let it change him. Some people naturally rise above the crowd. He was one of them."

The second of five sons of the late assistant city solicitor and one-time temporary mayor of Erie, Bernard "Barney" Cochran, and the former Lucy Reardon, Philip was an energetic boy interested in horses and football. He had an outlet for the first at Algeria Farms, on the then rural West Eighth Street. He was considerably less successful as a one-hundred-fourteen pound football player for Central High, never getting in a game for even one play. "I was so nuts about football that I wouldn't go to college until I was big

enough to play," he told *New Yorker* writer A.J. Liebling in 1943. "So I stayed out for two years and carried ice, the way Red Grange used to. My muscles developed," he continued, "but I only weighed one-twenty-eight then and I figured it was no use waiting any longer or I would just be in the ice business for life."

He worked his way through Ohio State by waiting tables and singing in dance bands. One of the bands he sang in also featured his brother, Paul "Shanty" Cochran, now an attorney in Columbus. His singing brought in up to eight dollars a night, and was, he often said, "like stealing money." The skills he had first developed as an Irish Catholic choir boy and refined here, later served him well leading such favorites at the front as "Dirty Gertie from Bizerte" and "Eunice from Tunis."

He came back to Erie to earn enough money to complete his schooling, working at Hammermill Paper Company for two years, then returned to Ohio State for his senior year. He graduated in 1935 at age 25 with a degree in business administration and advertising, which he soon found was not in much demand during that Great Depression year. He decided to take an examination for Air Force cadets, not because he was particularly attracted to flying, but because "it looked like a good way to make a pretty easy living." To finance the trip to Detroit for the examination, he sold an heirloom gold watch his grandmother had left him. "I never thought I'd pass the test," he said later, "but I did, and so I got a blue uniform and seventy-five dollars a month for two years."

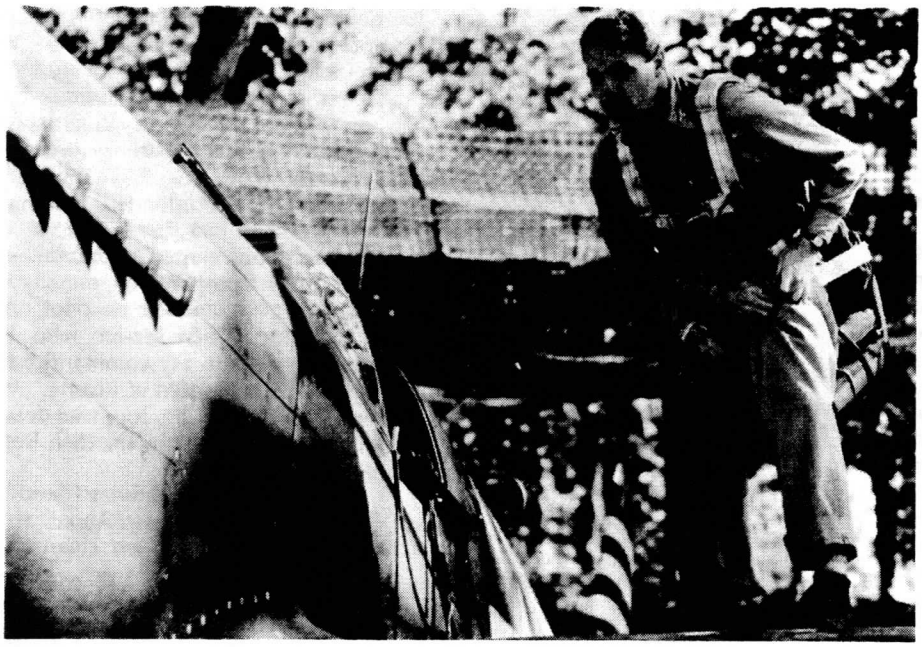
Cochran quickly developed into a top-notch pilot. At Langley Field, Virginia, he teamed up with another crack pilot who would later serve as Deputy Commander of the First Air Commando Unit in Burma. John Alison, now a retired Major General, recalls that Cochran's leadership abilities were evident even then. "He was a colorful individual, a natural leader. He was aggressive, but not ambitiously so," Alison said recently. "He and I both wanted the best possible squadron, but we didn't care who was commander. We were good friends and we treated the young pilots — he called them the 'new sports' — as friends. We had a great spirit of camaraderie."

It was Cochran's assignment to train a squadron of fighter pilots in Groton, Connecticut, that led to his becoming the prototype for the "Flip Corkin" character. Milton Caniff, an Ohio State classmate of Shanty Cochran's, learned that Phil was at Groton and dropped by to research a planned aerial sequence for "Terry and the Pirates." "I didn't know Phil very well at Ohio State, since I was a senior when he was a freshman," Caniff recalled. "But as soon as I saw him at Groton I knew I was sitting on top of a hell of a character. I knew then that he was going to be big." When Caniff was having Terry learn how to fly, Cochran would write out instructions for him in longhand: "we call them airplanes, not ships; they're engines, not motors, they're elevators, not flippers; you use the throttle, but you give it the gun." Later, when he was back in the states preparing to form the Air Commandos, he avoided his friend completely, afraid of letting some war secret slip to the 23 million-plus readers of "Terry and the Pirates."

When Flip Corkin first appeared in August of 1942, Cochran knew nothing of it until friends started sending him clippings. He was then in North Africa, and had already begun to make his mark as an unorthodox, take-charge-type leader. After delivering replacement planes and newly-trained pilots to other outfits, he set off across the continent to find the war. What he found was an isolated airstrip in southern Tunisia with a squadron of P-40 fighters who had little idea of what they were doing. Since he did have some ideas, he just sort of took over. "I called the boys together one day after they had mucked up something terrible on a raid by following the wrong line of railroad track and getting lost and finding the wrong target and getting their rumps shot off," he explained later, "and I told them I was going to run the field. It was just like something you'd see in a movie."

Though he was never officially in command of the squadron, he led them through successful dogfights, support of French ground troops, and attacks on German rail and truck supply lines. He even blew up a German divisional commander's headquarters with a bomb attached to his P-40, specifically for that purpose. As Vincent Sheean put it, he "dominated his world" there, and he also was coming to be known back in the states. For one thing, Phil was not only colorful in action, he was colorful in speech as well. For instance, in describing his plane after one dogfight, he said: "It was already just a lot of holes tied together with piano wire."

By 1943, Phil Cochran's picture was beginning to appear in newspapers and magazines across the country. In Erie, the papers were running banner headlines like "Major Cochran Wrecks German Field Base." In the summer of that year, a "Fighters for Phil" War Bond campaign was run locally, to "put a squadron of fighter planes in the air against the Axis powers with Erie money." Aided by the issuance of a new series of War Bonds, the



Here at his India base headquarters, Cochran buckles on his parachute before taking off for Burma.

An enthusiastic horseman, Cochran raised thoroughbreds and had breeding stables in Florida, Kentucky, and New York. This sketch by Milton Caniff was done after his death.

Morale was high under Colonel Cochran and Colonel John Alison, his Deputy Commander. There was little paper work or regimentation, and a spirit of camaraderie existed throughout the Air Commandos.

campaign, which had started with a goal of $2 million, hit $15 million in a little over a month.

When North Africa fell to the Allies, Cochran was recalled to the states to train pilots. It was then that he first ventured back to Erie and experienced some of the fruits of his fame. He heard himself described variously as "the intrepid grey eagle of the North American front," the "one-man air force from Erie, Pa.," and even "our little song sparrow who has become a fighting American eagle." He may even have been pleased when his "vacation" came to an end and he found himself, along with John Alison, in the outer office of U.S. Army Air Force General H.H. "Hap" Arnold.

"Neither of us knew what we were doing there, but we soon found out," recalled Alison, who had distinguished himself in England, Russia, and China. The assignment these two top-notch fighter pilots had drawn was one that had little to do with the type of combat they knew best. What General Arnold had in mind was providing air support for the "Chindits" under the command of British General Orde C. Wingate when they attempted to retake Burma by invasion from India. (The name was derived from "chintha," the grotesque mythical animal that guards Burmese temples.)

Wingate, one of the most capable but unorthodox men ever to wear a British uniform, had developed a means of fighting the Japanese that he called "Long Range Penetration." It was based on deep strikes behind enemy lines to disrupt communications and transport.

"The problem with Long Range Penetration," John Alison explained, "was that they had no means of evacuating wounded. If a man was unable to continue, all they could do was give him a rifle, prop him up against a tree, and leave him. That is the toughest thing any soldier ever has to do," he said, "so Wingate wanted air support to evacuate his men on this invasion." Wingate had convinced Churchill, Churchill had won over Roosevelt, and the order had gone down to Arnold, who brought Cochran and Alison back together again.

"When General Arnold described the mission to us," Alison continued, "I told him I was preparing for combat in the invasion of Europe, that my whole career had been aimed toward this, and that I didn't want to go. Phil, in one of the few times he was really tactful, said, 'General, I don't think he really means that.'" In an unusual move, the two fighter pilots requested a joint command, and were given it. As General Arnold dismissed them, he said, "Think up a name for this unit, something like 'Air Commandos.'

Think of something better." They couldn't, and the First Air Commandos were born.

Though Cochran and Alison got along very well, the military was not used to dealing with co-commanders. "Since Phil ranked me by about two weeks in his promotions, he became Commander. I was Deputy Commander," Alison said. Arnold, who called Cochran "the toughest little Irishman I've ever seen," told him to put together a list of what they needed. The list was quickly okayed — causing him to regret not asking for more — and then the two of them set about rounding up the equipment. The biggest surprise on the list was the 150 gliders, which both Cochran and Alison had independently decided would be the key to the operation. Gliders had been used with dramatic success in the Allied invasion of Sicily, but never before had they been tried in jungle terrain.

The Air Commandos were flown to India — a luxury in those days of troop transport ships — and they began planning in earnest for the assault. The gliders, instead of just being support vehicles, were going to fly in Wingate's troops, his pack animals, and the equipment to construct air bases large enough to handle the C-47 transport planes. All this had to be accomplished in the dead of night; landing bulky, heavily-laden gliders on unfamiliar, enemy-controlled jungle clearings. There were many nay-sayers, many who were telling Wingate it couldn't be done.

"Phil and I felt we could do it, and we became close to Wingate, partly because we were the only ones telling him 'Yes, General, we can do it.' " Phil's confidence and buoyant spirit also made him a great favorite of Lord Louis Mountbatten, the smiling, handsome cousin of King George VI who, at 43, was Supreme Commander of the Allied South East Asia Command. After one particularly bad series of events in that theatre of the war, Cochran showed up at a top-level conference representing Wingate, who was ill. His spirit and optimism encouraged the group, and Mountbatten remarked, "My boy, you are the only ray of sunshine we have had in this theatre this year."

When word of Cochran's death reached him, Mountbatten, who had last seen Cochran just this June at a "Chindits" reunion, sent a memorial wreath with an accompanying message: "in memory of a courageous pilot and an outstanding Allied leader who I was proud to have in my command." It was signed "Mountbatten of Burma." Within forty-eight hours, he, too, was dead, the victim of a bombing by the Irish Republican Army.

Code-named "Broadway" and "Piccadilly" to symbolize American and British cooperation, two clearings, 165

The brilliant British General Orde C. Wingate, who was often compared to T.E. Lawrence, was as unorthodox and colorful as Cochran. They were known as "the Beard and the Wing."

miles behind Japanese lines, were chosen as the targets for the Project Nine assault. After they were selected, diversionary actions were taken elsewhere, and to avoid alerting the enemy, no further reconnaissance flights were scheduled over those areas. On the hunch of one of his pilots, however, Colonel Cochran disobeyed Wingate's direct order, allowing last minute reconnaisance flights over both areas. His actions prevented certain disaster.

The photos of Piccadilly showed that logs had been placed across the clearings intended for the glider landings. Though it was learned much later that these logs were the result of routine Burmese logging operations, at that time it was assumed that the Japanese knew of the plan, or, were being extraordinarily cautious. With just minutes to go before H-hour, a decision had to be made. After consulting the other officers involved, General Wingate gave the order to scratch Piccadilly and send more gliders into Broadway. When announcing the news to the Air Commandos, Cochran showed himself to be skilled in the art of propaganda, telling them, "Boys, we have a better place to go."

It wasn't really a "better place," for the whole operation was almost a disaster. On the way, 17 gliders were lost, many of them over enemy territory. Of those that landed, most were smashed on the teak logs and ruts hidden by the tall grass. Alison, who flew one of the first gliders, gave the code to stop the launches, and then radio contact was lost. Throughout the night, the only knowledge Cochran and Wingate had about the invasion, was the fact that the code word for "disaster" had been sent. Finally, word came to continue sending the gliders; there had been no Japanese resistance.

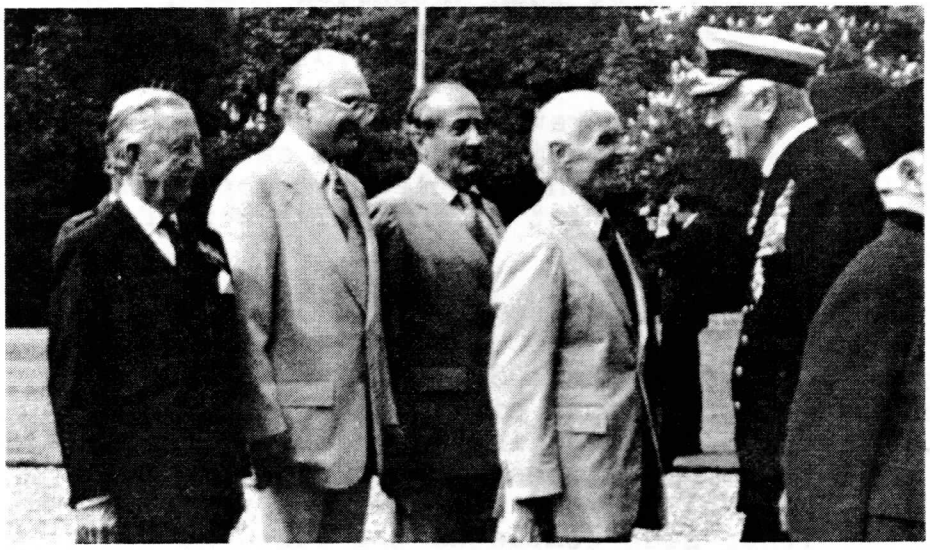
"When I found they were not all killed," Cochran said, "I was so relieved I was bawling, I was that upset. I had been physically knocked out by discouragement. Wingate was equally happy, but he didn't show it." Of the 540 men who had been sent out, 24 were killed in glider crashes, and 30 were badly wounded, but within the first few days after establishing the airfield, 9,000 troops and over 1,300 animals had been sent in. Wingate had "inserted himself in the guts of the enemy." Soon northern Burma would be regained by General Stillwell and several of the First Air Commando Unit, including Phil's brother, Joe would be the first Americans into Mandalay.

Following the success of Project Nine, Cochran went to Europe. Here, as he put it, he "dreamed up the largest Air Commando raid anyone ever thought of," but the German collapse along the Rhine made all that unneccessary. After meeting with his brother Tom, a sergeant who wrote for the Glenn Miller, A.A.F. Band (special), and who currently works as a TV producer in New York City, Phil was on his way to the Pacific as Japan surrendered. When it was all over Philip G. Cochran had garnered the Distinguished Service Medal, Distinguished Flying Cross with three Oak Leaf Clusters, Silver Star, Air Medal with four Oak Leaf Clusters, Soldier's Medal, British Distinguished Service Order, Bronze Star, and French Croix de Guerre with Star and Palm Leaf.

After the war, Cochran spent several years away from Erie, including two as a consultant on the film "Jet Pilot," produced by Howard Hughes and starring John Wayne. He returned in 1952 to become sales manager with Lyons Transportation Lines, which his brother John had acquired in 1946. He was Chief of the Executive Committee at Lyons when he died.

Active in local charities and the development of Gannon College, he was always a champion of Erie, even if he promoted things the Chamber of Commerce might not have mentioned. "Erie is not a bad joint," he said in the 1943 *New Yorker* profile. "There are a lot of beer clubs that you can join for fifty cents a year, so you can drink on Sunday, and the clubs are always planning to do something ambitious, like run a clambake, but," he added, "it always mucks up."

While Phil Cochran's actions and words shed some reflected glory on his hometown, he was truly a national hero, not just a local one. For countless others, less charismatic and articulate than he, his image and words expressed just what it meant to be an American during WW II. "Our kids are just automatically wonderful," he said about the American fighting man in a press conference during the war. "Just through our own way of life, they get something that makes them superior fighters. In Germany they have to be beaten over the head and get indoctrinated with all kinds of ersatz racial theories, and the Japs have the same system. Our boys have an individual sense of responsibility. The fighter pilot," he said, "flies with his heart. The thing that makes him superior is inside him all the time. Our kids — all of them — have it, and I think it's something they just get by growing up and living in this country." The point may be overstated; but whether or not all "our kids" really did have it, there can be little question about Colonel Philip G. Cochran. *He* had it. ▲



Cochran and Lord Louis Mountbatten last met in June at a Chindits reunion in London. They died within 48 hours of each other.

THE GOLDEN AGE

by
Fran Ptaszkiewicz

It was a radical design at the time, yet the Bell Aircraft Company Engineering Department had taken a bold step and were able to convince the United States Army Air Corps of the usefulness and suitability of a twin-engined, pusher, cannon carrying fighter aircraft.

The time was 1935 and the fledgling aircraft company was attempting to enter the military airplane market against some well established organizations, with what would be considered a somewhat unusual concept. Twin pusher engines, two cannons, machine guns, all a novelty at the time. It would be a bomber destroyer.

The military listened and bought the new idea's with an order which eventually amounted to a total of thirteen aircraft.

It had potential but when all the testing was finally completed, the war clouds were rolling in and the airplane was already outclassed by many new single engine fighters which were coming off other company drawing boards and being put into production. Bell Aircraft along with the rest was getting its other cannon fighter the P-39 "Airacobra" unto the assembly lines and the twin-engine fighter was forgotten.

The Bell XFM-1 "Airacuda", was a well steamlined design, perhaps a little ahead of it's time, yet had the look of a good airplane. With it's polished aluminum skin and standing 13ft-7in high when at rest, it looked like a world beater.

A large fighter by the standards of the day, with a seventy foot wingspan, this made it larger than the early B-25 at 67 ft-7 in and the B-26 at 65 ft-0in, medium bombers which were slowly being developed as the early XFM-1 was well into it's acceptance test programs.

Powered by two 1,150 hp engines, considered to be the most powerful in line motors of the day, mounted in a pusher configuration, driving three bladed propellers thru a 64 inch extension shaft, this twin cannon fighter promised speeds of 300 mph, yet when fully fueled and armed, it was only able to attain a speed of 270 mph.

Called "Sky Tiger" by some, it had a crew of five. Pilot, co-pilot/navigator/gunner, seated in a tandem configuration, a gunner/loader in each nacelle and a fuselage gunner who handled the upper and lower guns as well as the two waist guns, a lot of defensive work for one man as originally planned.

Total armament consisted of one 37mm cannon and one .30cal. machine gun in each nacelle. These weapons could be fired by the co-pilot thru a newly designed Sperry Fire Control System, which could lock on the target and fire both nacelle guns simultaneously. Although the nacelle gunners who acted as loaders in this situation could also fire these guns independently of each other. A .30 cal. machine gun in the dorsal (upper) and ventral (lower) positions as well as two .50 cal machine gun's on either side completed the fuselage armament.

As designed, the nacelle gunners could escape the aircraft in an emergency by crawling thru a passage in the leading edge of the wing, which would have been difficult under the best of conditions, wearing a parachute made it almost impossible. Then they would escape from the main fuselage. An escape hatch was also provided in the bottom of each nacelle, although using these exit's invited almost certain disaster due to the proximity of the pusher propellers which created a hazzard in bailout from almost any location of the airplane. There is a record of two succesful bailouts using the fuselage door.

In an attempt to alleviate this physical and psychological fear, Bell engineers devised a type of primer cord ring which was to shear the propeller shaft therby permitting a somewhat safe emergency bail-out. There is no evidence that this feature was ever used.

When fully feathered the propeller blades were only six inches from the trailing edge of the wing which created another problem, feath-ering one propeller and not the other at the same time would immed-iately throw the aircraft into a violent spin.

The first flight of the XFM-1 (Experimental Fighter, Multi-Place) took place on September 1, 1937 and was considered a success. Unfortunately on the second flight, the right landing gear collapsed during landing, resulting in much damage and caused a delay in the test program.

Following completion of all testing an order was placed for twelve more aircraft and given the designation YMF-1A with the last three incorporating tri-cycle landing gear and being designated YMF-1B. Provision was also made for carrying twenty (30 lb) bombs in the fuselage to add a capability as a light bomber.

Specifications were; Wingspan 70 ft-0 in. Length 46 ft- 0 in. Range 940 miles, Maximum speed 277 mph, Landing speed 77 mph.

Here was another example of an airplane like so many of that period which had tremendous potential in its design, having fallen by the wayside due to testing problems and being surpassed with newer air-craft before the "Airacuda's" could become operational.

Although the airplanes had never become fully incorporated as a squadron unit, the design brought the Bell Aircraft Company to the forefront with other aircraft producer's and actually launched the company.

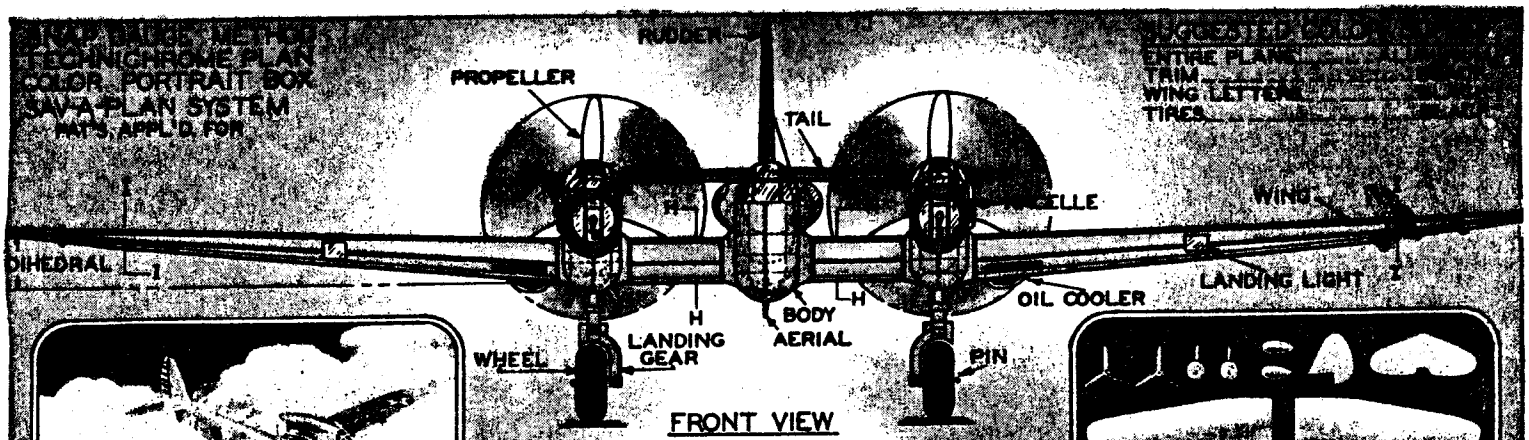
Many of the YFM features were to be found in a later design the P-39 "Airacobra" with tri-cycle gear, cannon and extension shaft. Other features were also incorporated in wartime aircraft of different manufactures.

Our accompaning drawing is a plan of a solid model manufactured by the Ace Whitman (Joe Ott) Company. It depicts the early version which had blister type side turrets. These were eventually revised to a flat panel gun access.

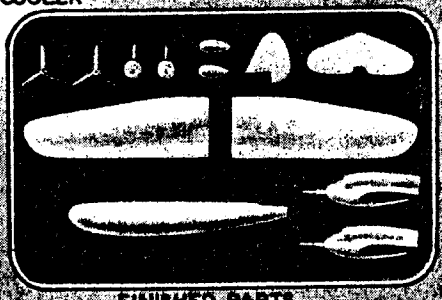
A good subject for a twin electricpowered model.

SNAP GAUGE METHOD
TECHNICHROME PLAN
COLOR PORTRAIT BOX
SAV-A-PLAN SYSTEM
PATS. APPL'D. FOR

SUGGESTED COLOR SCHEME
ENTIRE PLANE
TAIL
WING LETTERS
TIRES

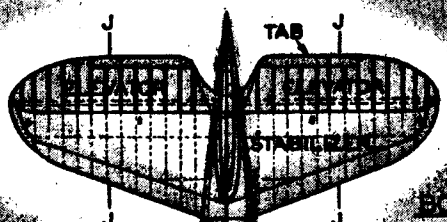


COMPLETE ASSEMBLED MODEL
MOTOGRAPHED BEFORE AN ENLARGEMENT OF CUMULUS CLOUD FORMATION. BLAST FROM ELECTRIC FAN SPINS PROPELLERS.

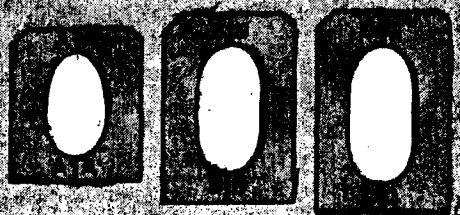


FINISHED PARTS
BEFORE ASSEMBLY

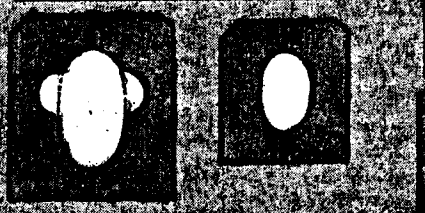
FRONT VIEW



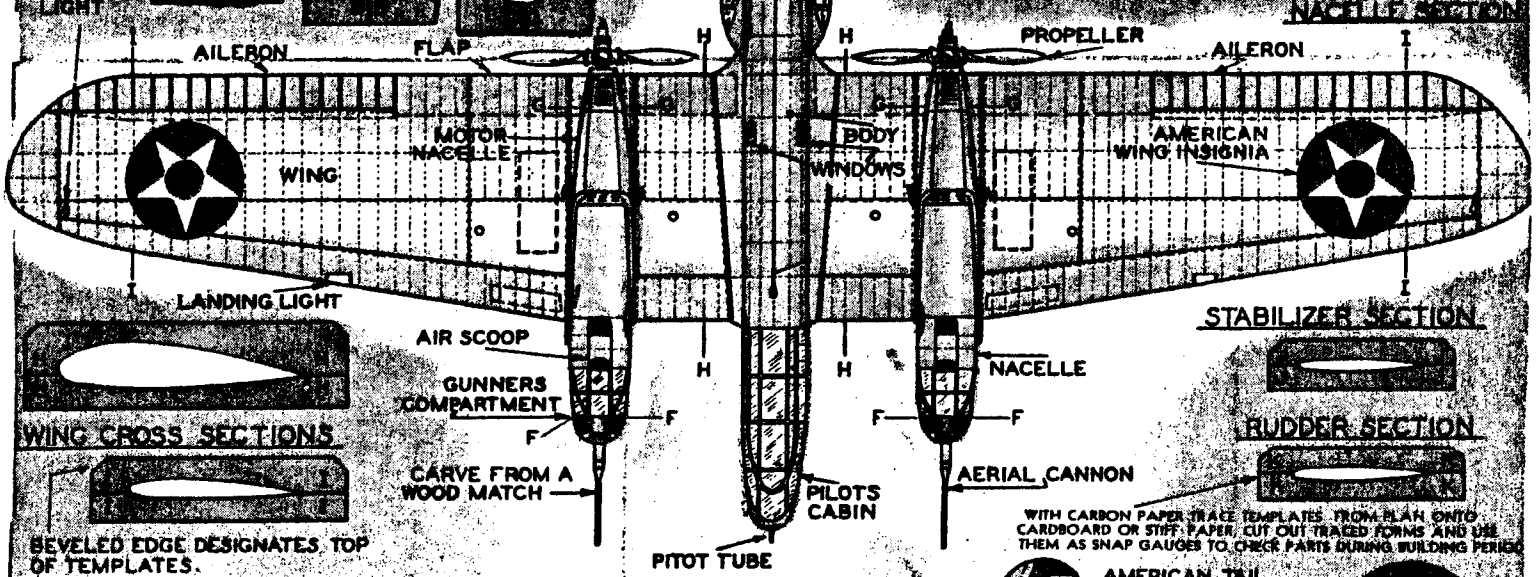
BODY CROSS SECTIONS



BODY CROSS SECTIONS



TOP VIEW



NACELLE SECTION

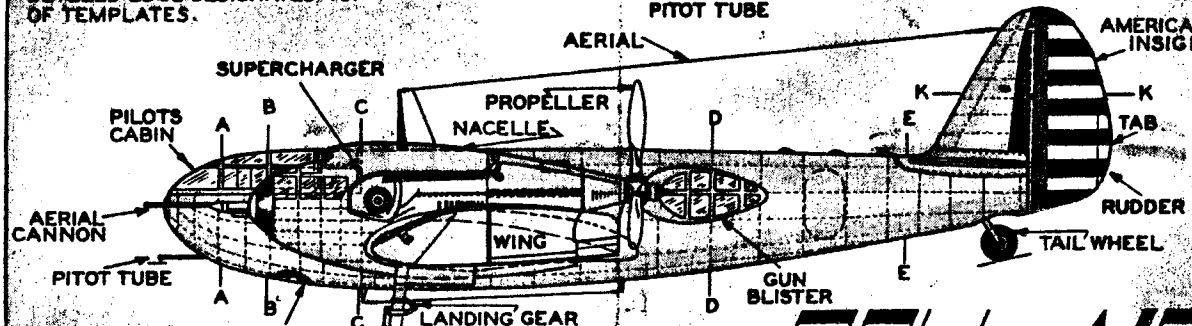
STABILIZER SECTION

RUDDER SECTION

WING CROSS SECTIONS

BEVELED EDGE DESIGNATES TOP OF TEMPLATES.

WITH CARBON PAPER TRACE TEMPLATES FROM PLAN ONTO CARDBOARD OR STIFF PAPER. CUT OUT TRACED FORMS AND USE THEM AS SNAP GAUGES TO CHECK PARTS DURING BUILDING PERIOD



LAWRENCE D. BELL, Pres.
Bell Aircraft Co., Buffalo, N. Y.

0 1 2 3 6

SCALE: 1 INCH=8 FT.-6 IN.

BELL AIRACUDA

AN EXACT REPRODUCTION SOLID MODEL

DETAILED INSTRUCTIONS

The following additional tools and materials are required to build this model: A razor blade (preferably one with a heavy rounded back); a small drawing board on which to work; about fifty small, thin pins; some small pieces of sandpaper; a small jar of library paste.

STEP No. 1 ● Remove Sav-A-Plan strips with scissors. From strips cut templates. Attach with library paste to corresponding balsa pieces. When thoroughly dry, shape parts to conform to templates. Remove templates from parts. Taper body sides to shape shown in top view.

STEP No. 2 ● Make a set of snap gauges from cardboard or stiff paper by tracing their shapes from plan with carbon paper.

STEP No. 3 ● Carve curved sections roughly on parts as shown. Leave somewhat oversize and sandpaper gradually to correct size and shape. Use snap gauges continuously.

STEP No. 4 ● Mark off all *positions* for wings, tail parts, etc., on body. Bevel ends of wing panels at positions shown to get the proper dihedral. Before cementing sections together, apply heavy cement to joining surfaces. Allow to dry. Final application of cement must be made just before joining. Use headless pins for reinforcing. Cut out notches in the motor nacelles to receive wing. Cement exhaust pipes and air intakes to nacelles. Any struts required can be inserted by trying for right lengths. Although we consider tentacle powdered cement preferable for this type of model, liquid cement can be used.

STEP No. 5 ● Complete streamlining with fillets of scrap balsa or heavy tentacle cement. Round and sooth with sandpaper.

STEP No. 6 ● If model is to be painted, first apply, as a filler, several coats of library paste. Apply smoothly, allow to dry, and sand every coat. Follow color scheme suggested. Windows, rivets and control outlines can be added with pen and ink.

STEP No. 7 ● Cut various decorations from Sav-A-Plan. Cement in correct positions. Make all serials and brace wires from thin thread or wire. Attach propellers to backs of nacelles with pins. A coat of clear lacquer may be applied to obtain a glossy finish.

OUT OF SIGHT

In a past issue of Model Aviation, Bill Baker wrote of his first out of sight (OOS) flight. He said that no free-flighter will ever forget their first experience.

I remember mine. It happened to me when I was around eleven years old. It was a much safer time then and my parents would drop me off at the flying field on Sunday and pick me up 3 or 4 hours later. I would watch the big guys fly their free flight gas models and sometimes would be allowed to chase their models.

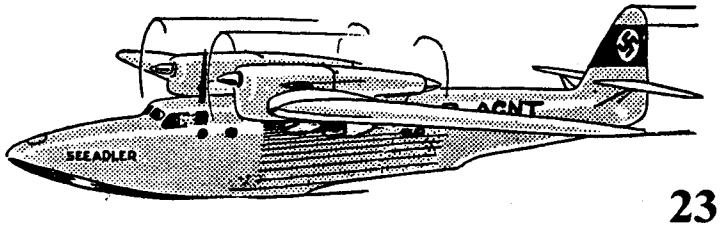
On the memorable day, I had brought along my "Army Interceptor". If you are in my age bracket, you will remember this as Jim Walker's American Junior folding wing catapult glider. It was the forerunner of the "404" Interceptor that was introduced in 1948. I had flown it occasionally along with my watching and chasing gas models.

It was getting close to the time that my parents said that they would meet me. I was walking toward the road when a grown-up stopped me and asked me if my little airplane really flew. I replied, "You bet it does", and stretched the rubber loop catapult as far as I could and let fly. When the wings unfolded at the top of the launch, the glider started to circle. It didn't lose any altitude. It kept circling and rising and drifting away. I didn't chase it. I just stood there awestruck and watched it become a small speck in the sky and then disappear.

I've thermaled many models since then, but I'll always remember that flight as special.

Don Lang

If your first OOS flight was memorable, you might like to share it with our members. Jot it down and send it to FAC-GHQ.



This Is It

I have figured it out. Flying free flight, we get bug bit, prop bit, sunburned, lost. We lose models, break models, find other people's models when looking for ours.

We get lost in the mesquite, suffer dehydration, get yelled at by property owners, fall off of our bikes, and maybe even get cut in the fracas.

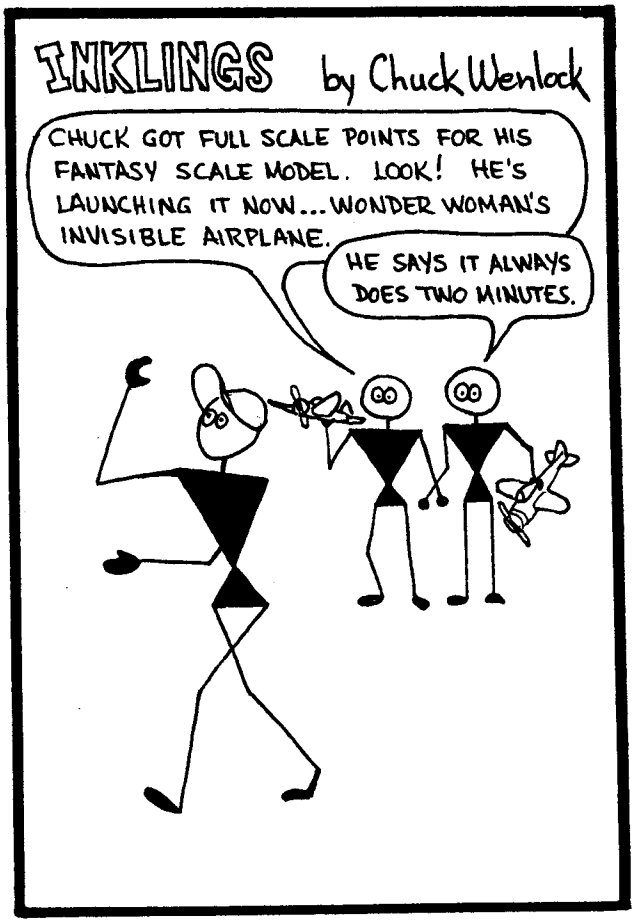
But when it is all over we say we had a good time. How can that be?

Here is the answer: Shared stress and misery promote social bonding. There is us, who understand, and them, who haven't a clue, because they ain't been there. Once one of us, always one of us. It is like Marine boot camp: the bonding is fierce, and the loyalty to one another is lasting.

And those with no knowledge or experience can only look on with total lack of understanding and say, "What insanity is this?"

But those who know can say, "This is the greatest thing there ever was."

—Bill Baker, *The Okie Flyer*



REGISTRATION FORM--FAC-NATS MK XV--GENESEO.N.Y. JULY 14-15-16, 2006

(PLEASE PRINT)

Name_____Address_____Jr._____Open_____

City_____State_____Zip_____AMA or MAAC No._____

Entry fees at $25.00 each (flies all events)_____$_____

Banquet tickets at $25.00 each with no dormitory reservations_____$_____

Reservations for double occupancy with meals & banquet at $195.00 each___$_____

Reservations for single occupancy with meals & banquet at $245.00 each____$_____

Total enclosed_____$_____

No entry fee for contestants under 18 years of age. All contestants must be members of the A.M.A. or the M.A.A.C. please remit entry fee by June 15, 2006 so as to ease paper work later on. Mail entries to; Lin Reichel, 3301 Cindy Lane, Erie, Pa. 16506. We will be unable to refund cancellations after June 20, 2006. If you plan to share a room with someone please indicate their name so we can direct the university to set up the proper arrangements._____

Awards through 5 places in each event. Contest times are as follows; Friday July 14, 8:30 am till 5:00 pm, Saturday July 15, 8:30 am till 5:00 pm and Sunday 8:30 am till 4: pm.

WAIVER: I/we, hereby release the 1941 Historical Aircraft Group, Inc., Austin Wadsworth, the State University of New York (Geneseo) the Flying Aces Club, Inc., all other persons and other organizations connected with this contest from any liability whatsoever for accidents incurred while participating in this contest. I/we also agree to abide by all flying and field rules in force at this contest.

SIGNATURE_____

Your meals at the university will include dinner on Thursday July 13, breakfast & dinner on Friday July 14, breakfast & dinner on Saturday July 15, breakfast on Sunday July 16 & breakfast on Monday July 17, 2006.

Scale judging will take place at the Quality Inn, 4242 Lakeville Rd., Rte. 20A, Geneseo, N.Y. on Thursday July 13 starting at 2:00 pm. Bring your models there to be scale judged. This includes Jumbo & Giant models also! No one admitted before 2:00pm. Vendors may set up starting at 12:30 pm.

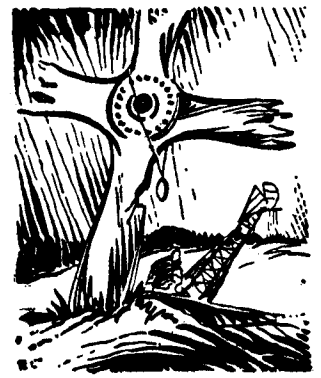
Plans must be presented in the Fairchild 24, Dime Scale, O.T. Plan/Kit Scale & the Two-Bit O.T. Rubber events.
Golden Age Civil, Golden Age Military, Modern Civil & Modern Military models will be judged on the field after their 1st official flight. Bring your documentation!
Dime Scale models cannot fly in both Dime Scale & Old Time Plan/Kit Scale. Pick your event!
All radial engine models in mass launch events must have at least a paper engine inside the cowl. All military models in mass launch events must have armament built into the model, no painted on guns, etc. No slab-sided models unless the real aircraft was slab-sided.
Have proof of scale for all mass launch events. All Pioneer Scale models must fly in the Pioneer event regardless of size!
Jumbo, Giant & Power Scale models may be flown on any day in any combination of flights per day until you have your 3 officials in!

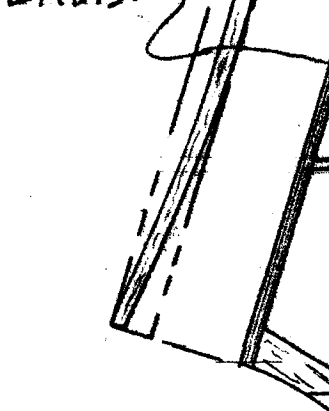
Friday July 14	Saturday July 15	Sunday July 16
Shell Speed Dash	FAC Scale	O.T. Plan/Kit Scale
World War I ML (multi-wing)	Hi-Wing Peanut	Low Wing Trainer ML
Embryo Endurance	Greve Race ML	FAC Peanut
No-Cal Scale	World War II ML	Thompson Race ML
Golden Age Civil	Pioneer Scale	FAC O.T. Gas Replica
FAC O.T. Rubber R.O.G.	FAC O.T. Stick	Modern Civil
Modern Military	Dime Scale	Golden Age Military
Guillows Fairchilr 24 ML	AT-6 ML	Jimmie Allen R.O.G.
Comet Phantom Flash	Fiction Flyers	Goodyear/Formula Race ML
Hurst Bowers Scale ML	Phanton Flash (Juniors only)	Powder Puff Scale (Ladies only)
[redacted]	B.L.U.R. Race	Two-Bit O.T. Rubber R.O.G.
	(Day to be determined)	

Aerol Race on Sunday

Jet Scale---powered by Jet-EX or Rapier engines. Day to be determined.

Jumbo, Giant, Power Scale (single engine) & Power Scale (multi engine) may be flown any day. AT-6 Scale must use a 7" Peck plastic prop and the 15% rubber rule will be in effect for this event only!



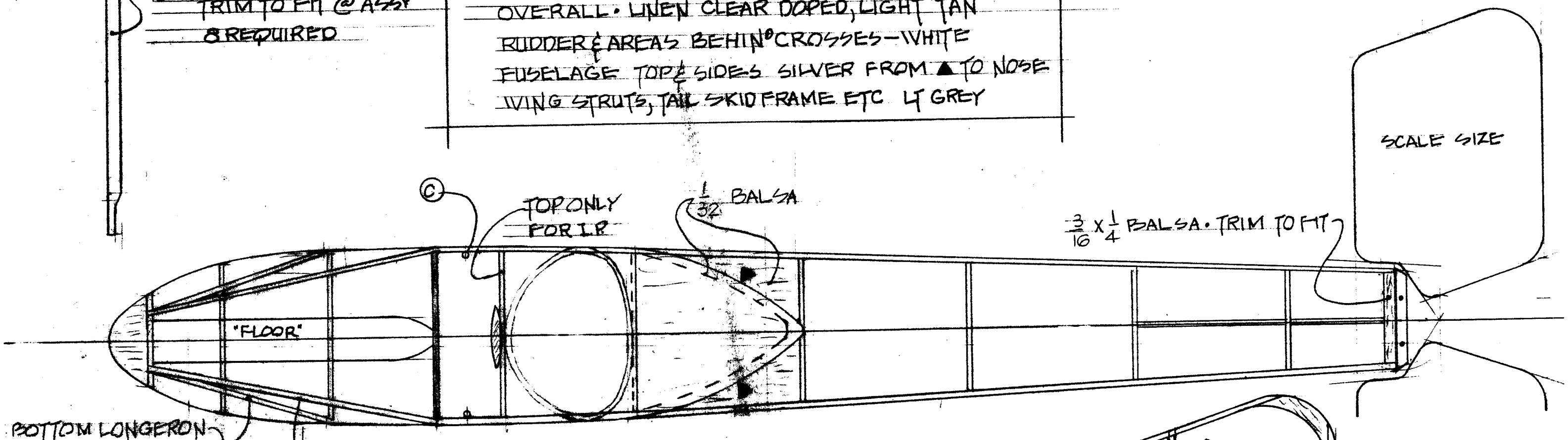


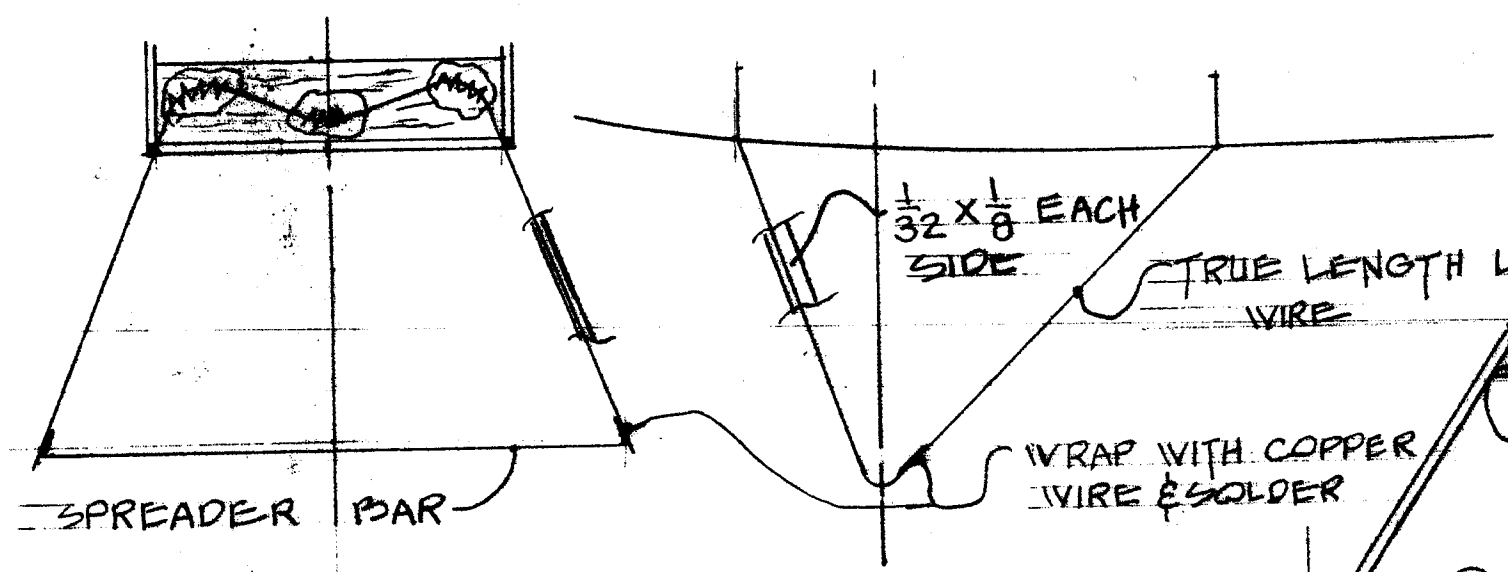
1/16 BALSA STRUT MOUNTS
TOP OF BOTTOM WING
BOTTOM OF TOP WING
1/16 X 1/8 SPAR
1/16 WIDE SLOT
FOR (A) (B)
3X1/32 LAMS.
1/16 X 3/32 SPAR
3/32
WHITE
1/16 BALSA RIBS
ROCKER ARMS
C
A B
RP
RP
RP
RP
3°

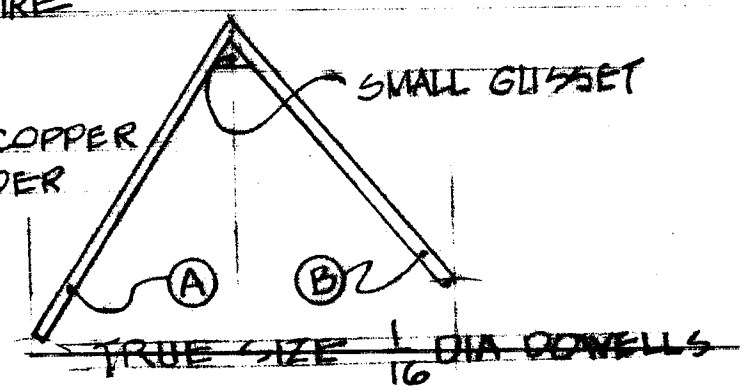
WING STRUTS
$\frac{1}{16}$ X $\frac{1}{8}$ BASSWOOD
TRIM TO FIT @ ASSY
8 REQUIRED

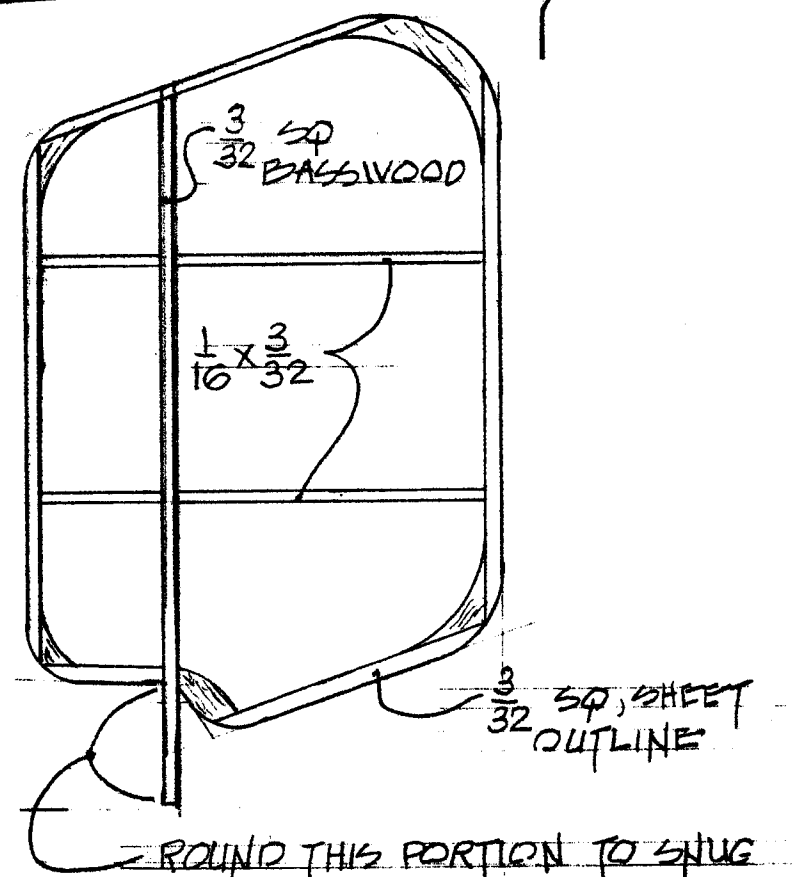
COLOR SCHEME

OVERALL - LINEN CLEAR DOPED, LIGHT TAN
RUDDER & AREAS BEHIND CROSSES - WHITE
FUSELAGE TOP & SIDES SILVER FROM ▲ TO NOSE
WING STRUTS, TAIL SKID FRAME ETC LT GREY









ROUND THIS PORTION TO SNUG FIT INTO AL. TUBE. TWIST TO SET INCIDENCE. SUPER GLUE TO HOLD SETTING.

1/32 MOTOR "FLOOR"

A

TRIM TO LENGTH @ ASSY

1/16 DIA DOWEL

IP

INSTRUMENT PANEL

HOLLOW

5

1/16 SQ BALSA STRINGERS

1/32 BALSA FLOOR FOR MOTOR

RUDDER ALL WHITE

1 2 3 4

FALSE RIB 1/32 ROD

A B & C ARE 1/16 DIA DOWELS - HARDWOOD

1/32 BALSA TOP FROM 1 TO 5

BALSA BLOCK HOLLOW OUT

OUTLINE: 2 LAMS 1/32 X 1/16 BALSA

WHITE ⇨ TO ⇦

1/16 SQ

1/16 X 1/8

STRINGERS NOT SHOWN FOR CLARITY

04.22

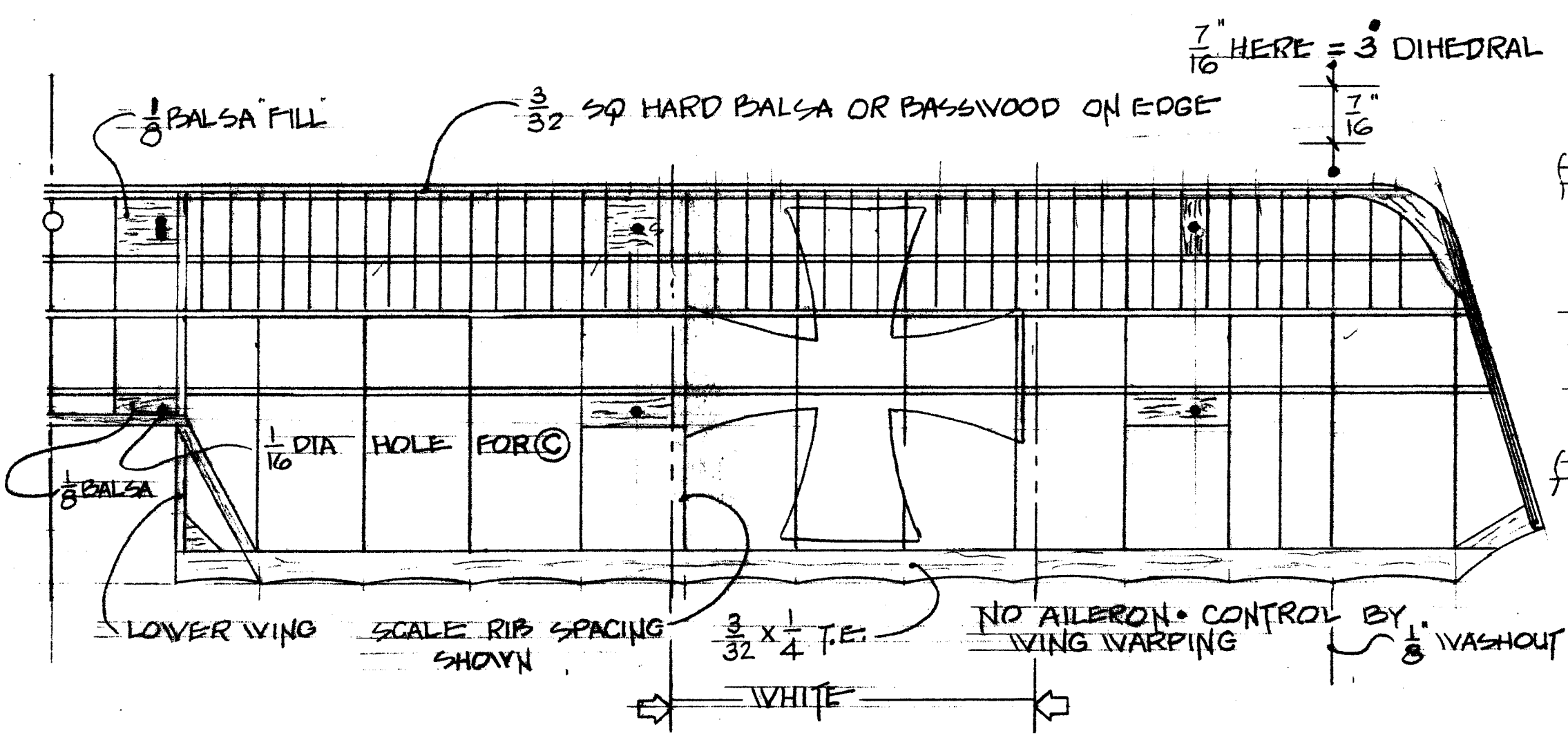
BALSA BLOCK

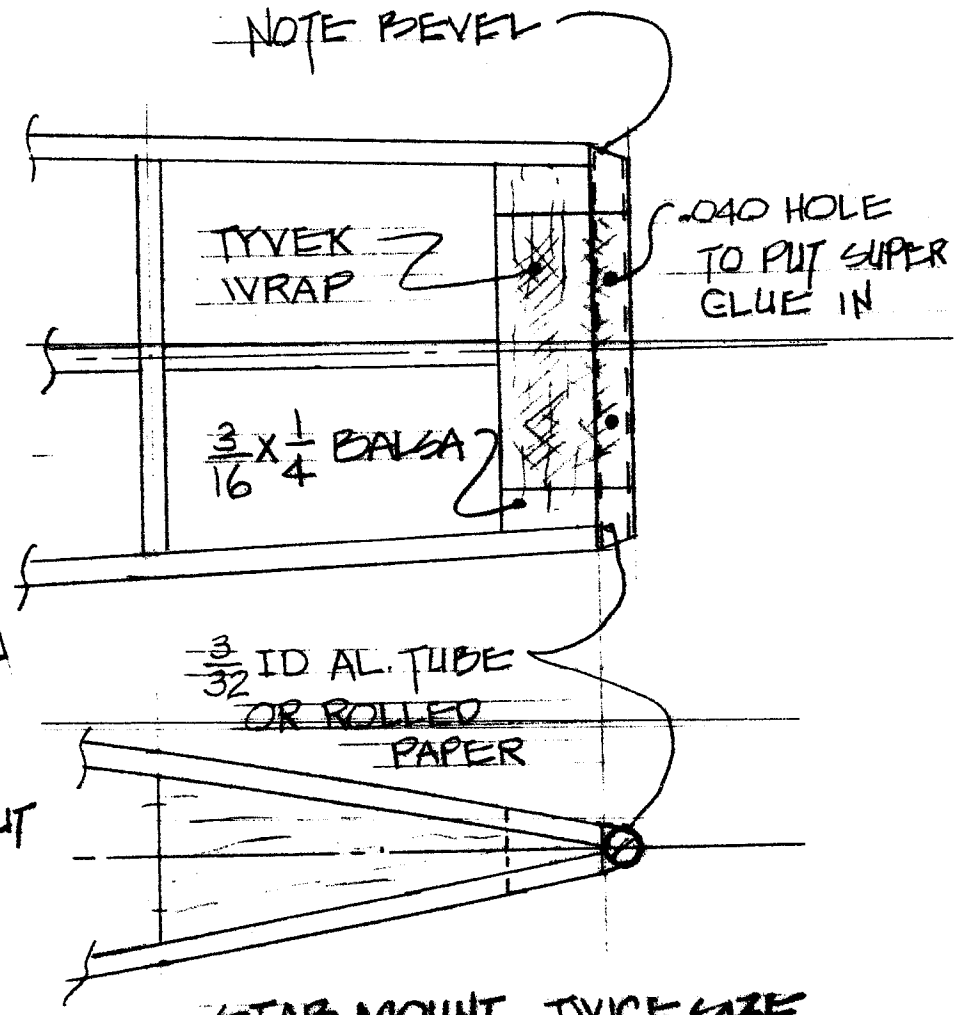
FILL BETWEEN STRINGERS FROM NOSE 1 TO THESE MARKS ▲ (USE 1/16 BALSA)

1 5/8 DIA WHEEL

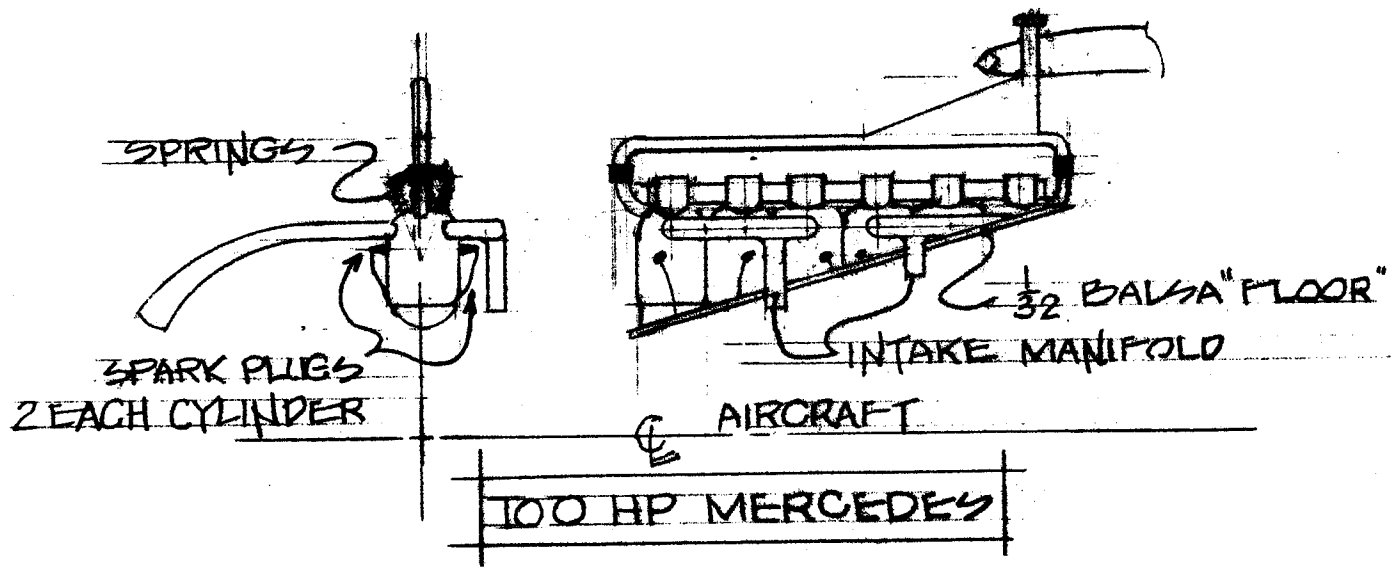
1/16 SQ STRINGER FROM 1 TO TAIL

1 2 3 4 5 6 7 8 9 10





DO NOT COVER CENTER SECTION UNTIL TOP WING IS GLUED TO FUSELAGE



FOKKER B.III SERIES 04.1
BUILT FOR AUSTO-HUNGARY AS FIGHTER TRAINERS
MODEL: WING SPAN 22 3/8 WING AREA 126 in²
HORIZONTAL STABS AREA = 14 in²
DESIGNED-DRAWN BY TED DAVIS: 865-458-5493
SCALE: 3/4" = 1'-0" APRIL 2004

A5

Diedro 14 mm

Montantes de cabana

VISTA DE FRENTE

Tensores hilo encerado

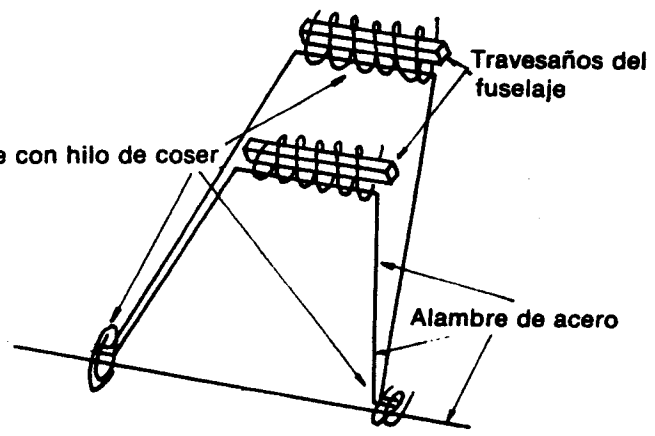
Montantes de 2 x 6

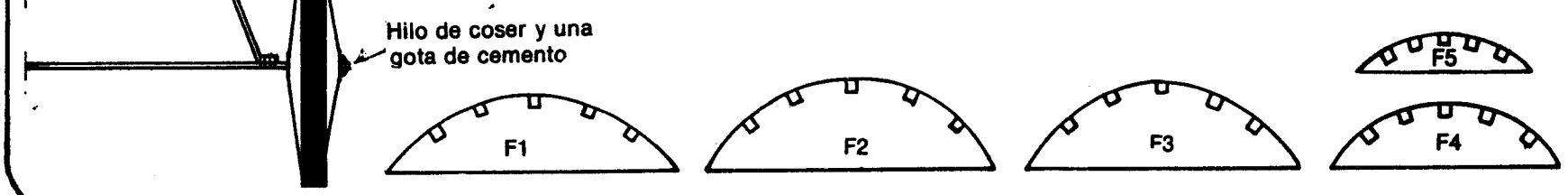
Vista lateral

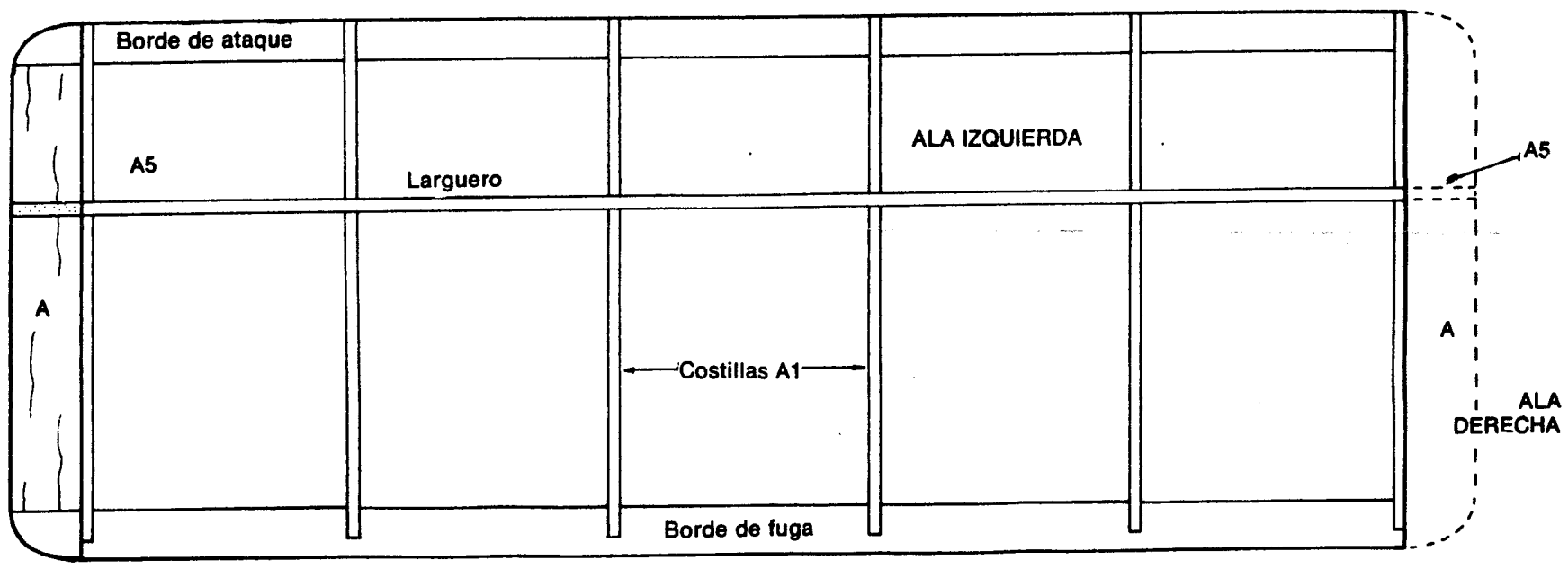
Tapa de válvulas
y caño de escape

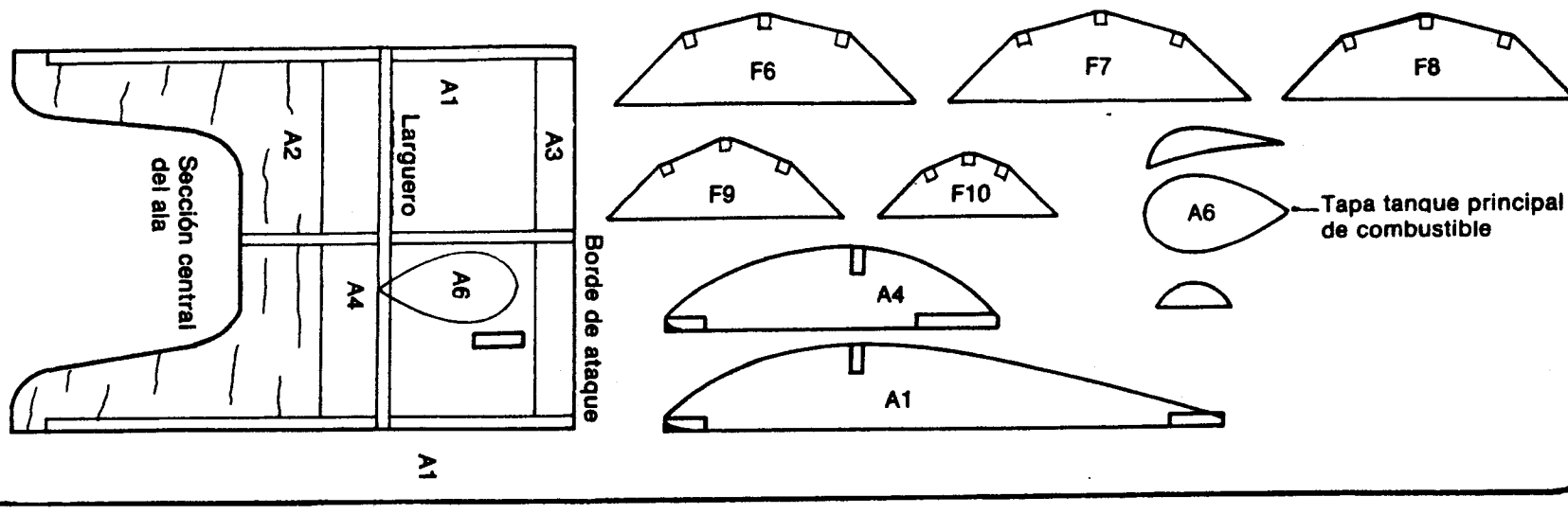
Vista superior

Hilo de coser y una
gota de cemento









GOURDOU-LESEURRE C1

Hélice 140 mm

Venteo combustible
Tapa tanque combustible
Tapa radiador agua
Ametralladora

F F F F F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 T T1

VISTA LATERAL

3 x 3
2 x 2
2 x 2

Posición del empenaje horizontal
Patín de cola

Empenaje vertical
2 x 2

Hélice
Arandela
Perla
Arandela
Buje
Plug
Base plug
Buje
Eje

Montaje motor

E E1 E2 E1 E

Empenaje horizontal

2x 2

Vista superior

2 x 2

Pasador para la goma
Agaderra para maniobra en tierra
Posición del empenaje horizontal

Planos y realización del prototipo: gentileza de TECNO-BALSA.

DYHEDRAL BREAK

SHEET RIBS

SPAR 1/16" MED.

LAM CURVED SURFACES 3 - 1/16 x 1/32

CRACKED RIB CROSS SECTION

Notch For Rib strip

FILLER PIECE

OVER LAP AT T.E.

OPTIONAL SHEET RIB CONST.

1 5/8"

HEADREST HOLLOWED SOFT BALSA OR BOND PAPER OVER FORMER SHOWN

ADD HEADREST AFTER FUSELAGE COVERING

1 2 3 4 5+6 6 7

SAGUARO SPEEDSTER

WING MOUNT PEGS - BAMBOO

A CACTUS SQUADRON ORIGINAL

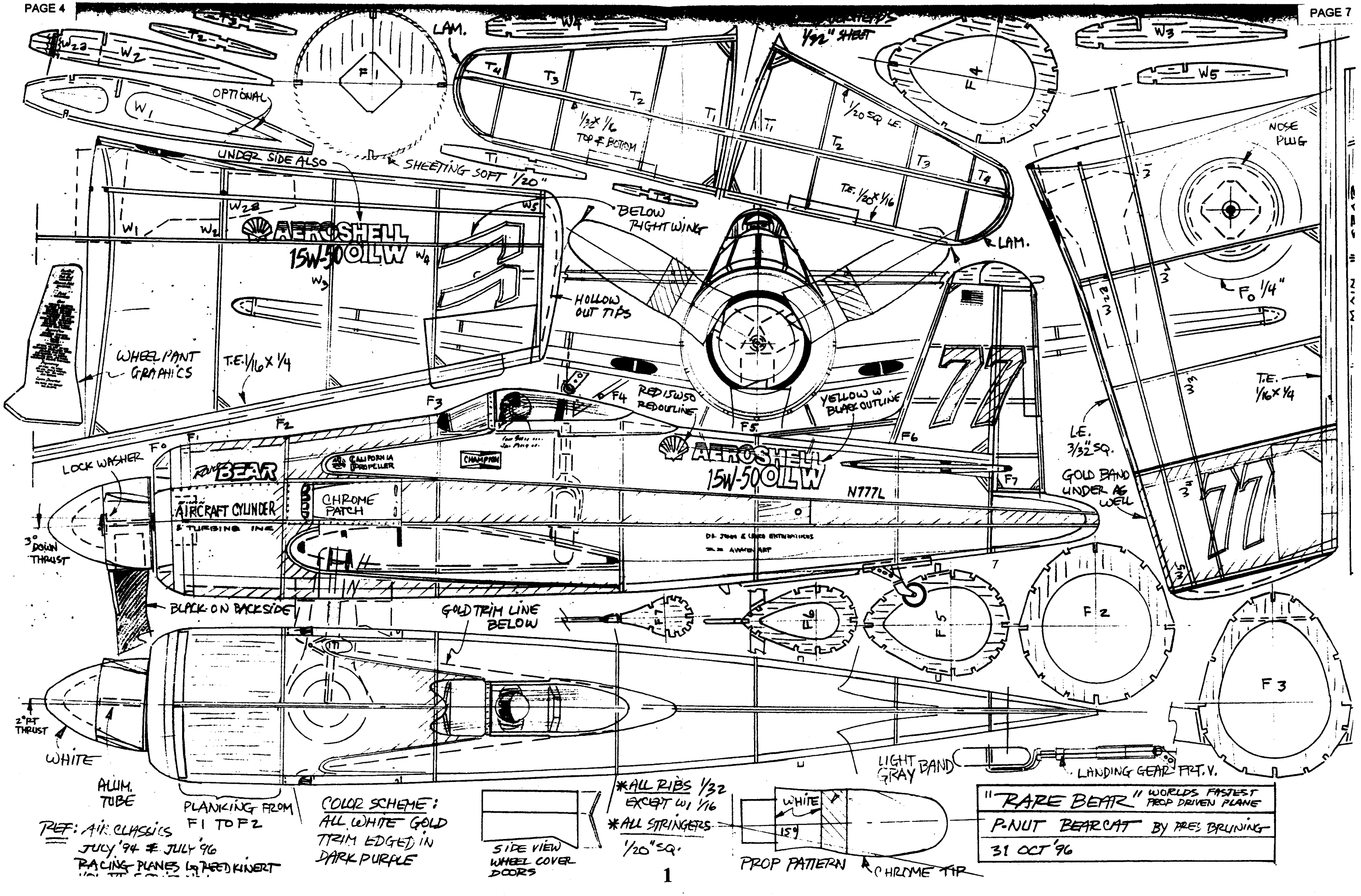
ALL CONST. 1/16" OR 1/20" □

.032 WIRE EPOXY TO ROOT RIB

3/32" FAIRING

PAPER L.G. STRUT LEAVE OPEN AT T.E. WRAP AROUND FAIRING IN AIRFOIL SHAPE

WHEELS 4" APART



REF: AIR CLASSICS JULY '94 & JULY '96 RACING PLANES by REED KNERT

COLOR SCHEME: ALL WHITE GOLD TRIM EDGED IN DARK PURPLE

*ALL RIBS 1/32 EXCEPT W1 1/16

*ALL STRINGERS 1/20" SQ.

"RARE BEAR" WORLDS FASTEST PROP DRIVEN PLANE

P-NUT BEARCAT BY PRES BRUNING

31 OCT '96