CENTRAL INDIANA AEROMODELLERS

INFORMER

FREE FLIGHT NEWS OF THE MIDWEST

** The Weather **
Wind in the south?
It's in the
rain's mouth!

- Editor -
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Richmond's WC-winning "Salty Dog" F1D!!

It's not everyday that our lead-off article is about an Indoor model. But here 'tis!! And I'm sure there's something here for those of the Outdoor Discipline to Borrow, and use to their advantage! And I'm sure our Closet Indoorsmen readers will benefit from Jim's words. Enjoy!!

Agent **Jim** sez "This rather simple looking plane with the less-than-complimentary name (I dunno. Sounds like a Dixieland group out of Purdue. Right, Jim?) is the result of the most extensive developmental effort I have made in a long history of model plane design."

"This program was begun after the 2000 World Championships, with an effort to apply the old F1D technology to these smaller planes. It became apparent right away that the high torque climb-out had to be handled differently. Something like the way the EZB's do it, and so the wing bracing was eliminated! The following are the design changes that were made – and the reasons for them:

- No wing bracing. Permits wing twist for good climbing turn.
- Boron-stiffened wing spars. It's needed, due to lack of bracing.
- Stab lowered 1"below boom. This reduces the center of drag, and lowers the C.G. to improve the late stage climb-out (less likely to stall during a steep climb).
- Shortened wing posts from 4" to 3 ½". Same reason as #3, above...
- The use of stab tip dihedral (and no rudder) for easier construction, less drag and less weight.
- The use of a wire spacer on each end of the motor. These are removable to avoid adding to motor weight, and the permit moving the wing away from the prop. They also permit the use of a motor stick long enough to accommodate the wing posts.



- Stronger wing posts, with boron on 3 sides. The twisting wing was found to be tough on prior wing posts (broke 3!!)
- Straight, rather than angled wing posts. This provides a longer inboard wing and gives more wash-in than wash-out during the wing twist phase, for a better climb-out.
- 75% CG instead of 70% - for a better cruise.
- Y2K2 instead of microfilm. Hey, I like this stuff!! It's strong and dimensionally stable. And it doesn't die of old age!!!"

"Now that we have a plane that flies, all we

(cont'd. p.5)

New Face!!! How about a bone-crunching handshake for new Agent **J.B.M. Griner**, from Indianapolis, IN. (JB comes to us from the recently-'defuncted' Indianapolis Model Airplane Club, a FF group.....)

CIA Election Results... The Officers for the upcoming season are:

President: **Lonnie Kinder**
Vice Pres: **Bob Abernathy**
Sec'y/Treas: **Meredith Chamberlain**

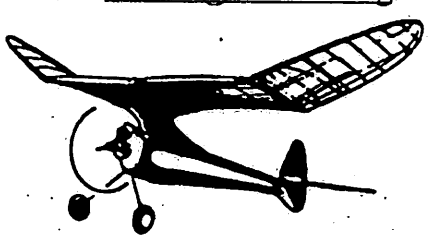
(Again, nobody volunteered to take over the editing of the CIA Informer from Moe...)

Indoor Supplies Update... Tim Goldstein would like the modeling world to know that he's greatly expanded his line of Indoor products. He's now offering 5:1, 10:1 and 15:1 winders; a prop pitch gauge, deflection gauge and torque meters; music wire from .008" - .019"; magnets for nose block and wing hold-downs; and pultruded carbon fibre material.

Tim's ordering system has been totally revamped. All products (except balsa wood) can now be ordered via his newly-installed e-commerce system. Tim now can accept Master Card & Visa charges, as well as PayPal transactions.

Check the site out at www.F1D.biz , then select 'Order Other Products'.

Like the Look of CIA's recent Award Certificates? If so, thank Agent **Bob Mattes**! He can make 'em for your club, too! Bob can be contacted at 190 Hunter's Pointe Dr., St. Charles, MO 63304.
His email is: rmattes@mail.win.org.



Got a request from Agent **Charlie Harper.** He copied Dick Covalt's wing keying method and loves it! And wants me to coax Dick into doing an article on his wing-keying technique.

Apparently certain traditional wing-keying methods have a tendency to break wing mounts, causing certain flyers to shy away from using any keys at all. Covalt's method doesn't allow this to happen.

How 'bout it, Dick?? - MJW

Agent **Bob Abernathy** would like us to know that we can do some Indoor flying at the ***Yorktown Elementary School*** gym!

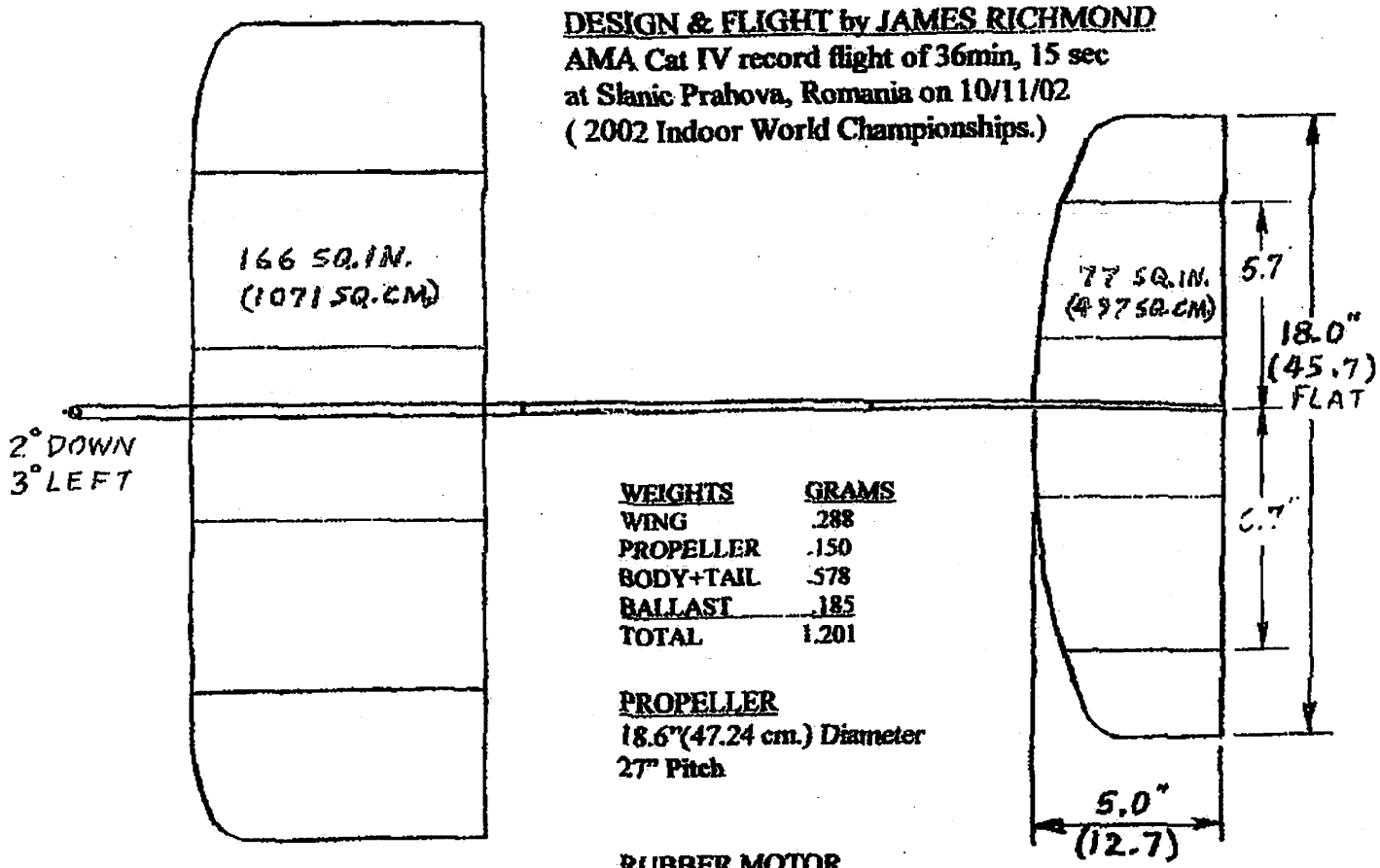
Ceiling height is 20', with smallish girders. The gym is open for flying on Mondays & Wednesdays from 3pm-5pm.

From Agent Elmer Jordan comes this list of various "Aviation Sounds" that he has personally experienced while driving from the Left Seat!

- ***Scariest Sound***: No Sound!! You're at 800ft, and BOTH engines quit at the same time!!
- ***Dumbest Scary Sound***: No Sound!! You're a student pilot and the engine just stopped! But you get lucky - a grass airstrip is close by. Carburetor Ice!!
- ***Rude Awakening Sound***: You're hand flying a Lodestar on a cold, dark night. The drone of the big round engines is putting you to sleep. Then there's a LOUD BANG on the fuselage, right beside you! Ice is coming off the props!
- ***Shocking Sound***: You're in severe turbulence, flying through a line of thunder storms. There's a LOUD CRACK under your seat!! You think the wing spar broke, but it's a very close lightning strike!!
- ***Most Depressing Sound***: You're at 10,00ft over Lake Michigan. You can't see anything but rain against the windscreen, and the radio has been silent for over 15 minutes. The silence finally is broken with "All aircraft this frequency stand by for a message about the President". *"President Kennedy has been shot"*!!!

- Elmer Jordan

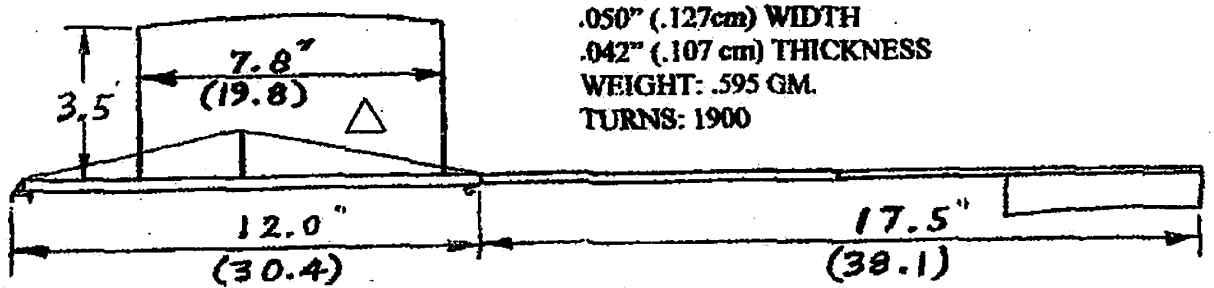
DESIGN & FLIGHT by JAMES RICHMOND
AMA Cat IV record flight of 36min, 15 sec
at Slanic Prahova, Romania on 10/11/02
(2002 Indoor World Championships.)

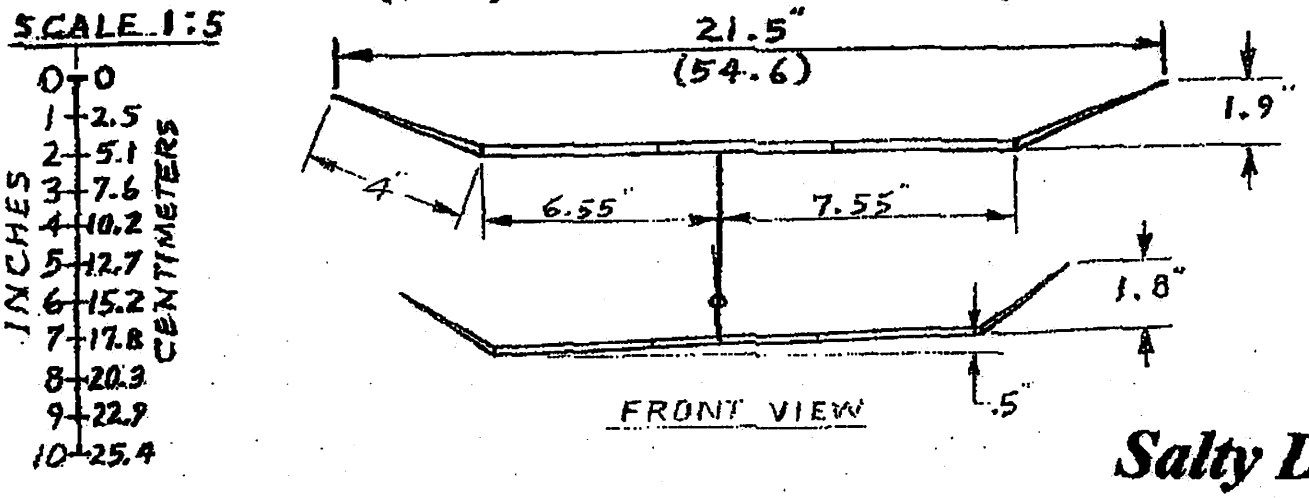


WEIGHTS	GRAMS
WING	.288
PROPELLER	.150
BODY+TAIL	.578
BALLAST	.185
TOTAL	1.201

PROPELLER
18.6"(47.24 cm.) Diameter
27" Pitch

RUBBER MOTOR
9.5" (24.13 cm)
.050" (.127cm) WIDTH
.042" (.107 cm) THICKNESS
WEIGHT: .595 GM.
TURNS: 1900

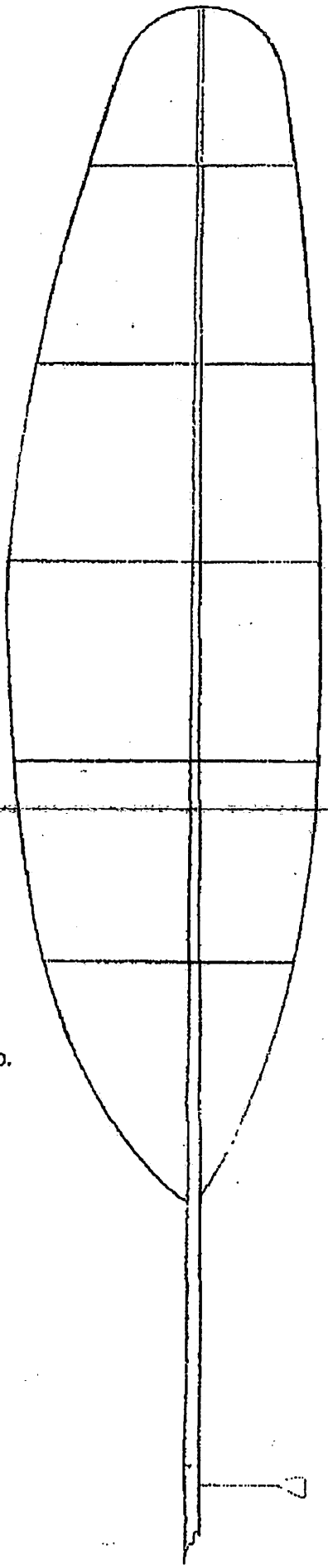




Salty Dog

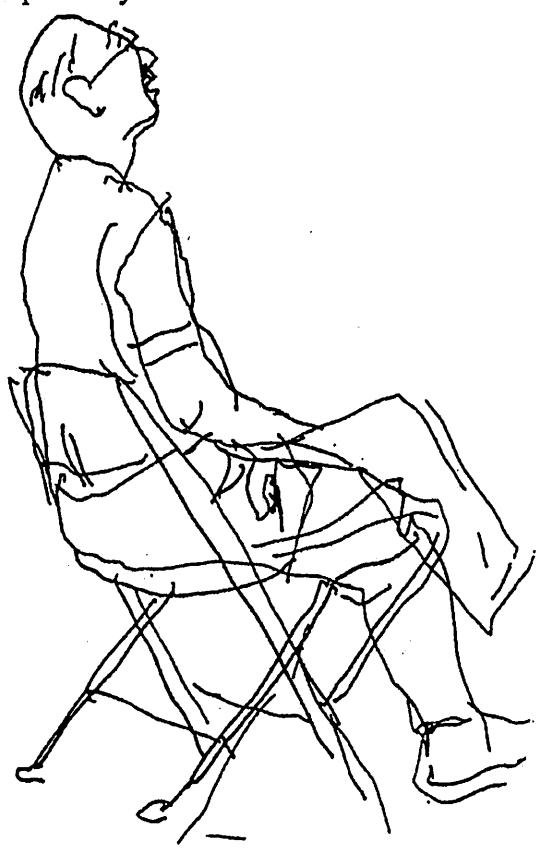
Materials & Dimensions

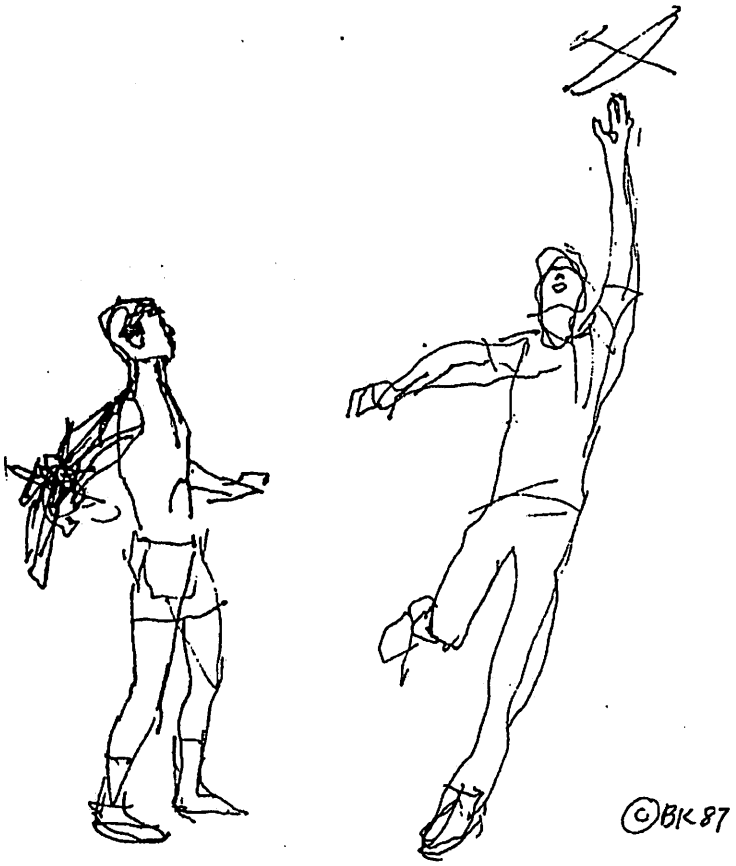
Wing	
spars	.035 x .046 - 5 lb.
	.003 boron top & bottom
middle ribs	.030 x .037 - 4.5 lb.
compression ribs	.032 x .040 - 4.5 lb.
tips	.032 x .043 - 6 lb.
tissue tubes (2)	1/16 I.D. x 3/8 long
airfoil	3 % arc
Stabilizer	
spars	.042 x .032 - 5 lb.
ribs	.030 x .040 - 4.6 lb
tissue tubes (2)	.050 I.D. x .300 long
airfoil	2.5 % arc
Motor Stick	
tube	.0135 wall- .250 I.D. x 12"- 3.9 lb.
	(3) .003 boron ; (each side& bottom)
webs	.020- 4.5 lb.
rear hook	.013
bracing post	.045 x .045→.034 x .934- 5.5 lb.
thrust bearing	.012 aluminum
wing posts (2)	.037 x .045 x 3.5"- 5.5 lb.- ends
	flattened to mate with 1/16 I.D.
	wing tubes. .003 boron 3 sides
Extension	.010 wall - .250 O.D. x 9"- 3.9lb.
Tail boom	
tube	.009 wall- .235 O.D.→.100 O.D. x 9"- 3.9 lb.
stab post (front)	.054 x .035 x 1. 200 "- 5.0lb.
stab post (rear)	.054 x .035 x .950"- 5.0lb
Propeller	
spar	.055 x .090→.030 x .030 x 18.6- 4.5 lb.
ribs	.020 x .020- 4.5 lb
outline	.020 x .020- 4.5 lb
shaft	.013 dia.
airfoil	3.5% arc



("Salty Dog" F1D – cont'd.....)
need is a prop/motor combination that works in the Slanic salt mine. Not having the opportunity to fly a plane of this type in the mine before, we were all scratching our heads, trying to figure it out! In my case, I had brought an assortment of 11 props, hoping at least one of them would do the trick! As it turned out, the oldest and least likely one of the bunch gave the best performance!!!"

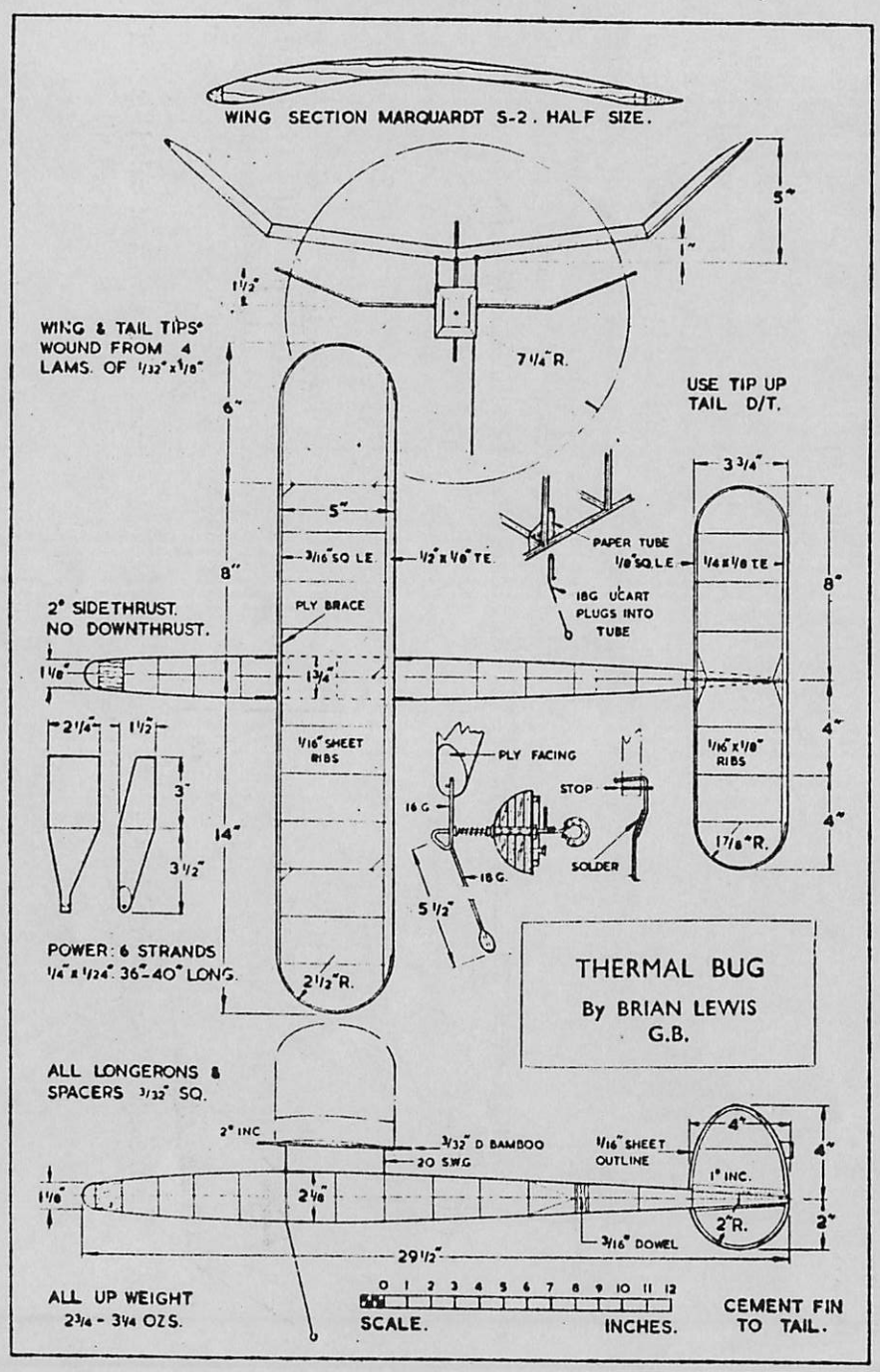
"When I go to a competition, it is my usual practice to take a less desirable plane out of the box first, especially if it needs testing anyway. Then I can develop my "indoor touch" once again, without risking the 'good stuff'! In this case I took out plane #2, which I regarded as the worst in the box ("the dog"), and began the series of 1/6 motor test flights. After the last day of testing of several planes, guess what?? The 'Dog' of the bunch was doing the best time!! Not being one to argue with the facts, I made my first few official flights with plane #2, and it made my second longest flight of 35:29. The full motor flights, however, were turning up some problems. Like power stalls, and a huge first circle! At this point, the competition was already won, but I switched off to the #5 plane for the remainder of the officials – and It behaved perfectly!"





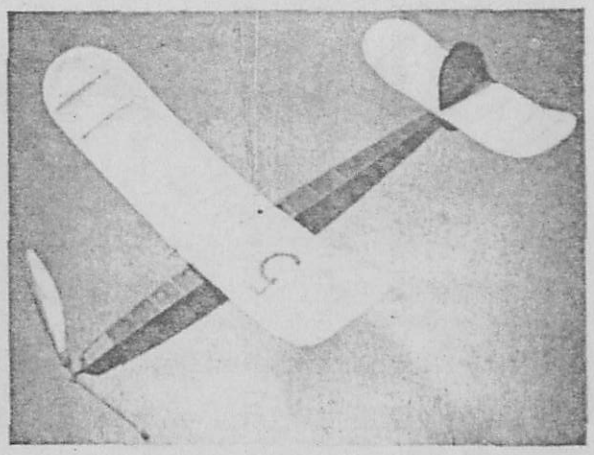
"OK. So we tested and adjusted the planes and managed to win the World Championship. Now, for the rest of the story:

The prop I had selected as being the best choice had been modified from an old F1D 17 ½" prop made in the 1960's. Props made during this era were very light and delicate. And this one was no exception! When I arrived home from Romania, I found I needed a drawing of this prop to go with the drawing of the plane. So when I started measuring it, guess what? One blade was broken in 4 places!! The three inboard ribs were cracked just behind the spar, and the outline was broken at the rear spar junction! All were being held in position only by the sturdy green microfilm covering! I knew immediately that this was steering damage, and that it must have occurred during my 1st round attempt when the prop caught on the line. So all of my official flights were made using a prop that was broken in 4 places! How 'bout that??" - JR



Thermal Bug

By BRIAN LEWIS



THE first Thermal Bug was designed in the early part of 1948; it weighed 2¼ oz. and had a 2½ min. motor run. Since then the design has been developed through seven models, and a Wakefield version is being built for the 1953 season.

Mk. 2 won first prize in the 1950 Southern Cross Exhibition and went on to win two club contests, and win second place in the Southern Counties rally. Mk. 3 was lost on its first flight and spent two weeks in a potato field, which wrote it off. Mk. 4 was flown in the Northern Heights gala, but after climbing to 100 feet the motor peg slipped out, prop and rubber shot out of the nose, and the rest of the model sank for 30 secs. ! Model No. 5 won a Southern Cross contest first day out. Flown in the 1951 Bill White trophy it was lost on its second flight, but placed 13th; another flight of 2½ min. would have placed it first.

The sixth model was flown in the Farrow Shield and returned top time in the S.E. Area. Later it was flown in an Icarian/Luton/St. Albans triangle match at Eaton Bray and placed third.

Trimming the model is straightforward enough. Just move the wing fore or aft to get the glide, then trim the bamboo runners to project ¼ inch either side of leading and trailing edges. This will make sure the wing position is the same every time the model is assembled. Try not to use any downthrust, but use a little sidethrust if necessary. A tight right hand turn is best. The Thermal Bug has plenty of spiral stability so do not be afraid of overdoing the turn, provided that the model is launched to the left of the wind it will get away safely every time.

Though the first Thermal Bugs were very light, due to influence of indoor flying, the later jobs are made more robust using quite hard balsa. This has paid off in consistency of performance, less repair work and fewer warps.

This type of job makes an ideal contest model. It costs about 3s. all up to make and can be built in a week of evenings. Trimming is usually completed in half a dozen flights. By the way, final trimming is done by bending the prop hinge to alter the pitch and obtain the best climb : motor run ratio. This can be altered to suit conditions—fine pitch for gusty weather, coarse pitch for "still air."

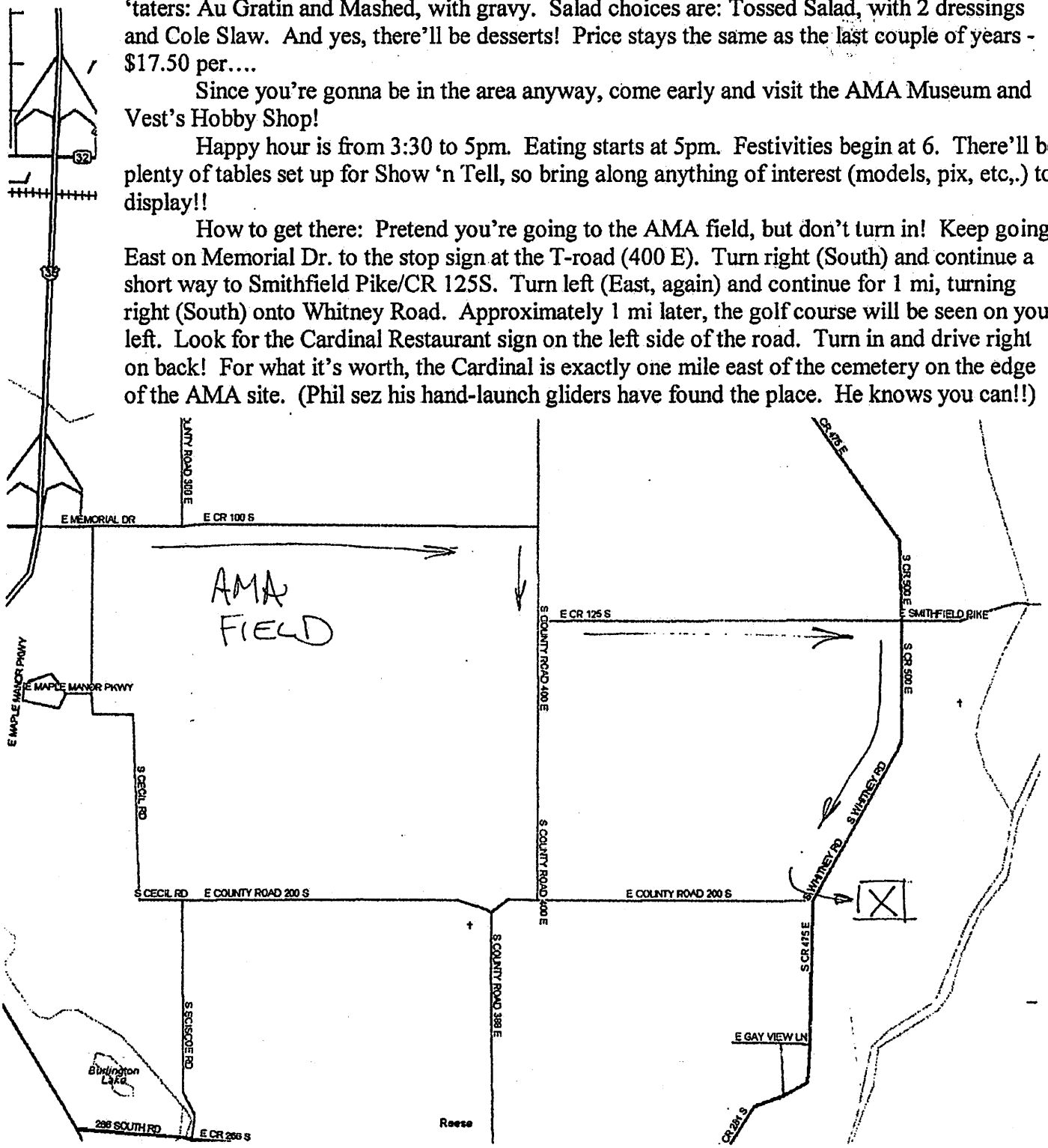
The CIA 2002/03 Annual Awards Banquet, Saturday January 18th!!

It's that time again! And this year the bloatfest moves to yet another site! The location is the Cardinal Family Restaurant, outside of Muncie, IN. Check out the furnished map and directions. The dinner will be buffet style. The meat choices are: Round of Roast Beef, with either Au Jus or light brown gravy; Pan Fried Chicken and Indiana Center Cut Pork Chops. Veggies are: Buttered Corn, Green Bean Casserole and Glazed Carrots. 2 different kinds of 'taters: Au Gratin and Mashed, with gravy. Salad choices are: Tossed Salad, with 2 dressings and Cole Slaw. And yes, there'll be desserts! Price stays the same as the last couple of years - $17.50 per....

Since you're gonna be in the area anyway, come early and visit the AMA Museum and Vest's Hobby Shop!

Happy hour is from 3:30 to 5pm. Eating starts at 5pm. Festivities begin at 6. There'll be plenty of tables set up for Show 'n Tell, so bring along anything of interest (models, pix, etc,.) to display!!

How to get there: Pretend you're going to the AMA field, but don't turn in! Keep going East on Memorial Dr. to the stop sign at the T-road (400 E). Turn right (South) and continue a short way to Smithfield Pike/CR 125S. Turn left (East, again) and continue for 1 mi, turning right (South) onto Whitney Road. Approximately 1 mi later, the golf course will be seen on your left. Look for the Cardinal Restaurant sign on the left side of the road. Turn in and drive right on back! For what it's worth, the Cardinal is exactly one mile east of the cemetery on the edge of the AMA site. (Phil sez his hand-launch gliders have found the place. He knows you can!!)



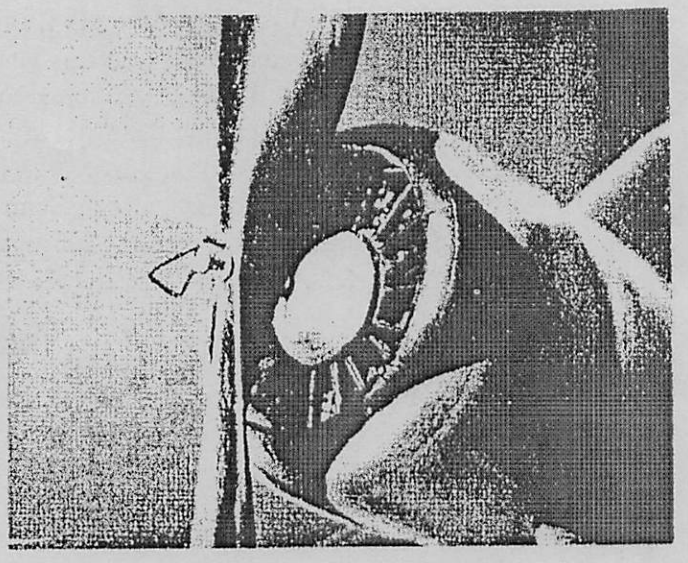
An aside: The Cardinal Restaurant was originally named because of the Cardinal Hills golf course, where the BSU golf team (Cardinals) played their home matches. When Phil played there, it was known as the Green Hills Country Club.

FREE WHEELERS

A Gala Group of Great Glide-Stretchers

By That Free-Flight Fan

PAUL McILRATH



Scale models have a special need for free-wheeling props, even those with built-in headwinds like this Hall Racer.

A large, wide-blade propeller is the trademark of a high climbing rubber powered model. But the big fan that is so efficient under power, is nothing but a big DRAG when the motor is unwound.

To get rid of this drag, some smart Junior Birdman invented a gadget that let his propeller windmill freely after the power ran out. The idea took the name "Free-Wheeling" from a similar device that was popular on the automobiles of the day. And free-wheeling so improved the glide of those early planes that record books were re-written.

No special tools are required to build most types of free-wheeler, but a good pair of pliers IS necessary. Long nose pliers are the handiest for wire bending. The miniature sizes are rugged enough for wire sizes of 1/32 or 3/64 inch diameter. Good quality diagonal cutters will cut hard steel music wire; cheap ones won't. Several shapes of noses are made specially for wire bending, but thousands of fine models have been built with nothing fancier than old-faithful mechanic's pliers. It is important, though, that your pliers have a solid, tight joint at the hinge pin. If they twist and slip, you'll end up with nothing but crooked parts and a long list of bad words.

Use a small file for cutting and smoothing wire and metal parts. Wire and tubing can be broken after notching with the files. Aluminum tubing can be cut with a model maker's knife, but a fine razor saw or hack saw is necessary for cutting brass tubing and sheet metal.

Most of the materials illustrated are available from Sig or from your hobby shop. Glass beads can often be substituted for washers or eyelets. Beads are used in handicraft projects and are available at hobby shops, and dime or department stores. Of course, you can always buy a Woolworth "diamond" necklace and unstring it. Eyelets (used by the radio control builders) and small washers are available at some hobby shops and mail order houses. Good springs can be found in discarded tire valves, ball point pens, and safety pins.

White glue or airplane cement is needed, but stronger wood-to-metal joints can be made with epoxy glue. Epoxy will even stick metal-to-metal if it is used properly, (clean and rough-up parts before joining).

We have shown several styles of free-wheelers on our page of sketches. The simple cam idea, Figure-1, copied from the plastic props, works quite well if the tension of the unwound rubber is not too great. But, unless there is SOME rubber tension, the propeller won't stay locked to the shaft when you try to hand-wind. In this situation, a winding hook, Figure-2 is helpful even if you aren't using a winder. Just slide a dowel thru the hook and "wind the dowel" until enough tension is built up to lock the shaft to the prop.

The latch made of control line wire, Figure-3, is an improvement over a cam because it doesn't depend on rubber tension and can be made more frictionless. We'll discuss friction later. There are two details to watch in a latch free-wheeler. The latch wire must be long and springy enough to bend inward (lock) and spring out (release) without bending permanently. Also, the latch wire must meet the arm of the shaft at about a right angle or it will slip off when the motor is fully wound. That is about as pleasant as holding 10,000 volts in your bare feet.

A widely used free-wheeler is the "contest standard", Figure-4. This spring operated arrangement is similar to the one used on folding propellers. When the motor is nearly unwound, the spring slides the shaft forward, the prop is released, and the shaft is locked against the screw in the noseblock. Locking the shaft prevents the rubber from getting slack and sliding backward or forward in the fuselage. A long, slack motor can completely destroy a model's balance in the glide unless it is *tensioned.*

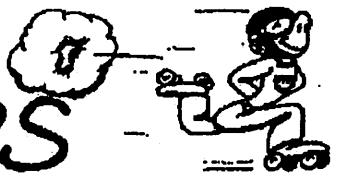
You're probably wondering what the extra tubing and washers are for in our sketch. This is the *frictionless* feature that we mentioned earlier. Notice that the tubing inside the propeller prevents the tension of the motor (or spring) from squeezing the propeller. The prop is completely free of bind or drag. If you want the very best free-wheeling glide, use this no-drag feature. It can be used with any style free-wheeler except the cams.

The last two gadgets in our collection Figure-5, have the advantage that they don't have to be engaged by hand. They will lock by themselves whether you wind by hand or with a winder. The free-swinger locks when the airplane is tipped nose down during winding.

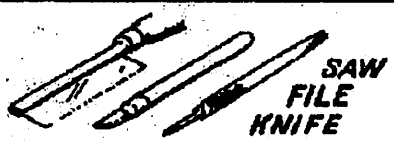
The escapement is automatic self locking, Figure-6, however it puts some drag on the propeller while free-wheeling, and the flip-flop part should be kept light and free turning.

Your choice of free-wheeler style will depend on the airplane type, your winding habits, and the available tools and materials. Many variations and combinations of features are possible. Try some of the mechanisms shown here first. Then invent an original design, suited to your tools and materials, and your own free-wheeler needs.

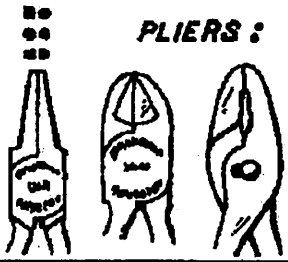
FREE-WHEELERS



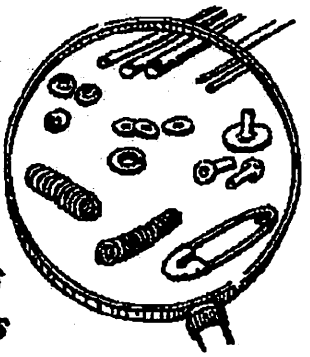
FOR THAT "FLOATING" GLIDE



SAW
FILE
KNIFE



PLIERS:
LONG NOSE
DIAGONALS
OLD FAITH-FUL



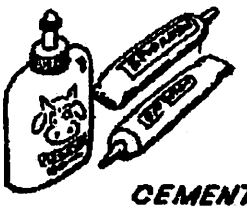
TUBING
MUSIC WIRE
BEADS
WASHERS
EYELETS
SPRINGS



CONTROL WIRE



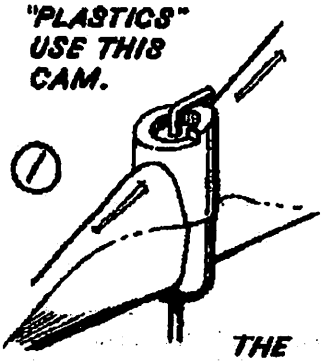
THREAD



CEMENT

TOOLS & MATERIALS

"PLASTICS" USE THIS CAM.



(1)

THE SIMPLEST!

CAMS CAN BE HOMEMADE FROM: TUBING, SHEET METAL,





OR EVEN A SPLIT-LOCK WASHER.

BUT ADD A WINDING HOOK.



THIS HOOK LOOKS NEATEST.

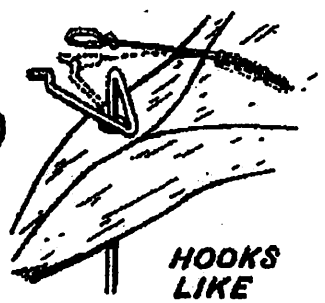
BUT--



THIS KIND IS EASIER TO BEND.

(2)

A FINE WIRE LATCH

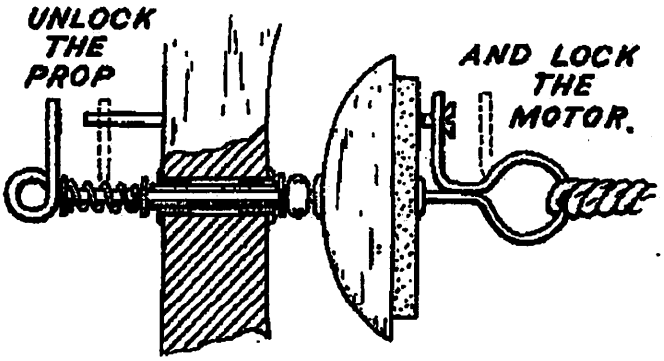


(3)

HOOKS LIKE A SCREEN DOOR.

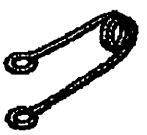
(4) THE "CONTEST STANDARD" USES A SPRING TO

UNLOCK THE PROP



AND LOCK THE MOTOR.

EITHER

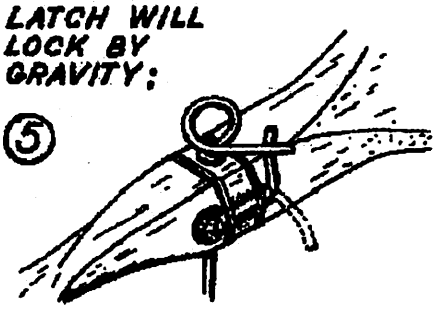


SPRING



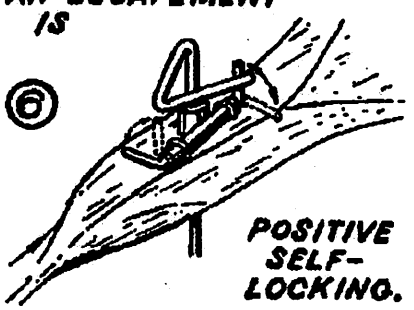
WILL WORK.

A SWING-FREE LATCH WILL LOCK BY GRAVITY:



(5)

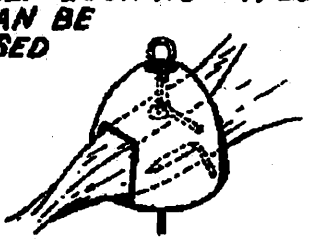
AN ESCAPEMENT IS



(6)

POSITIVE SELF-LOCKING.

SELF-LOCKING TYPES CAN BE USED



ENCLOSED IN A SPINNER.

2003 FREE FLIGHT SCHEDULE

Preliminary Outlook as reflected from 2002

April 4, 5, 6	*Toledo Trade Show*	Toledo, Ohio
April 26, 27	?Eastern FF Championships (Joe Wagner, jwagnerF1C@aol.com)	Higgs Farm, MD
May 17, 18	*FFMAS Contest* (O.C. Stewart, 765-288-0071)	AMA Site
May 17, 18	?Skyscraper International Challenge	Wawayanda, NY
May 28-June 1	*USIC Indoor National Championships*	Johnson City, TN
May 31-June 1	*CIA OT/Nostalgia FF Contest* (Gilbert Robbins, 765-644-2046)	AMA Site
June 2, 3	*CIA National Cup Challenge* (Robert Mattes, rmattes@mail.win.org)	AMA Site
June 6, 7, 8	*AMA Grand Event*	AMA Site
June 14, 15	?Kansas City FF Contest	Kansas City, KS
June 21, 22	*Inter-City FAI/Nos/AMA Contest*	AMA Site
July 28 – Aug. 1	*USOC/AMA National Championships*	AMA Site
Aug. 9, 10	*NOFFA Contest* (Charles Jones, charlesj@us.ibm.com)	AMA Site
Aug. 15, 16, 17	?Empire State FF Championship (John Carls, 814-362-7789)	Geneseo, NY
Aug. 23, 24	*Aeronuts Midwestern States FF Championships*	AMA Site
August 25-29	*SAM CHAMPS*	Claremore, OK
Aug. 30, 31	*COFFC Contest*	AMA Site
Sept. 6, 7, 8	*Flying Aces Midwest Nats*	AMA Site
Sept. 19, 20, 21	*CIA Regional FF Championships* (Phil Sullivan, ciasilk@aol.com)	AMA Site
October 4, 5	*Tri County Aero Contest*	Lawrenceville, IL
October 11, 12	*CIA FAC Contest* (Lee Campbell, 765-289-7753)	Muncie Site
Dec. 29, 30, 31	?King Orange International	Palm Bay, FL

Italicized and underlined dates have been officially approved.

Other dates are estimated from 2002 schedule. Please inform me of changes, additions, and pertinent information regarding the 03 schedule. Rev. 12-02-02

CIA Point Claim Sheet

Meredith Chamberlain, 5810 S Madison Ave, Anderson, IN 46013
Or send to CIA website, www.members.aol.com/ciaffclub/cia.htm

Deadline, December 31, 2002

Member____________________ Open_____ or Jr/Sr_____ (under 19 by 7/1

Date	Contest	Location	Class	Events	Model Design	Place	Points

2002 AREA F.F. SCHEDULE

Nov	30	R/C Swap Meet	Del. Co. F'gds, Muncie IN
Dec	29-31	King Orange International	Palm Bay, FL

The **INFORMER**

2348S, 700W
New Palestine,
IN
46163

2002 President
Lee Campbell

Vice President
O.C. Stewart

Sec'y/Treasurer
Meredith Chamberlain

Issue No. 6 - 02

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