INDOOR CUTTING EDGE

ISSUE 137

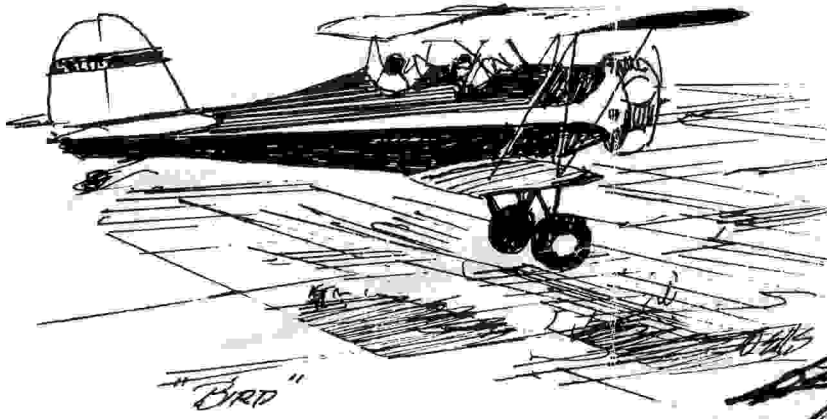
THE HANGAR PILOT

MIAMI INDOOR AIRCRAFT MODEL ASSOCIATION — MIAMA

- RESULTS - MEET 2
- HEDLEY'S 7-UP BOSTONIAN
- SLUSARCZYK'S CASSUTT NO-CAL

10TH YEAR OF PUBLICATION-
INDOOR ISN'T FOREVERYONE

MERRY CHRISTMAS FROM MIAMA





NEXT EVENT - F.A.R.T. III
YOUTH FAIR - SUN NOV. 25 9-5

NEXT MEET - KING OF THE HILL

TAMPA DELTA AIRLINE HANGAR 9-5
DEC 29+30 - MASS LAUNCH WW II

(1)



"LIKE A LETTER FROM HOME" WHELAN

THE HANGAR PILOT

Is published 8 (or 9) times a season for a bunch of middle aged guys who refuse to grow up. MIAMA (Miami Indoor Aircraft Model Association,) AMA Club 986, is one of two active all indoor free flight clubs in AMA. Our Motto: "It must be fun.", and "Indoor isn't for everyone." For $12.50 a year you will receive all copies. We solicit your contributions since we are always running out of material. Letters, plans, 3-views, articles, gripes, and Money to: Dr. John Martin Pres./Editor. 2180 Tigertail Ave. Miami, Fla. 33133 USA Phone: 305-858-6363 We want to hear from you!!! Send material!!!

NOTE NEW $12.50 ANNUAL RATE

MIAMA MEET 2 REPORT! CAT. II

MIAMA MEET #2 in full swing...a busy Saturday! In Oakland it's game 4 (and last) of the World Series. In South Bend the Fighting Irish are slugging it out with arch rival- #2 ranked Miami Hurricanes. Dave Linstrum came well prepared. With his ghetto blaster by his side he is tuned to his favorite FM station.....listening to classical music, Dave marches to a different drummer.

The heat of the local battle was in the Clearwater Coast Guard Hangar. Four new State records are going down. Obarski bounces his novice penny plane many times off the girders for a new state record....within a minute of the national record. Linstrum's NO-Cal Cassutt (Built from plans in this issue) breaks Martin's old record by a bunch. Wayne Trivin overthrows MacEntee's Embryo Endurance record, and Doc Martin's Coconut established a new record by 2/10 seconds! Near ideal conditions at USCG.

Seven World War I biplanes took the air in the FAC mass launch. In round 1 Linstrum's Euler, and Jake Larson's Albatross were out. Judy Nunez's SE-5 motor broke then, and Stoutenburg's SE-5 and Well's Nieuport were dropped in round II. Big finale...George Nunez's Rumpler was badly launched, (Coffee Nerves) into a stall which killed at least 15 ft. of altitude. Doc Martin's Italian Nieuport X prevailed with a respectable flight of well over a minute, Wayne Trivin is on a 14-Bis kick. He flew 3 different versions - a peanut, a profile (No-Cal), and a FAC Scale. He promises a Coconut Scale 14-Bis for the next meet..Wow!

At the big annual awards dinner at 94th Aero Squadron that night... Millard Wells" son Robert took a lot of video footage at Johnson City last June & we all got to view his " gee,gosh" approach to the meet.. a good viewpoint for the uninitiate a nd a real laugh for the veterans. All the pilots from MIAMA Hall of Fame got their hard earned awards...Genevieve Obarski was honored for working every MIAMA contest, and George Nunez got his EARL STAHL trophy from Old Warden. The beautiful Harry LeVous MIAMA trophy is on Wayne Trivin's mantelpiece, and who will be the next Fla. Champ?

RESULTS - MEET 2 - CD DICK OBARSKI (2)

OCT 20, 21 USCG
CATAGORY II

PEANUT SCALE EVENT:

		Static	2 best flights		
1. George Nunez	Sopwith Triplane	108	1:05.7	1:11	176.3
2. Wayne Trivin	14 Bis	111.6	1:05	:47	167.6
3. John Martin	Bleriot 25	86.8	1:07	1:22.8	161.7
X Geo Nunez	Turbo Beaver	86.8	1:14.5	1:16	161.8
X. Doc Martin	Nieuport X	87.2	1:04	1:04	151.2
4. Millard Wells	Micro-Veloz	76	1:08	:55	137.5
X " " "	P-40	82.8	41.5	:43.4	110.5
6. Bill Stoutenburg	Cougar	70.6	39.5	37.4	119
XMillard Wells	OWL	89	38.6	43.1	129.8
X. " " "	Waco Bipe	80.4	48.6	46.0	127.7
5. Dave Linstrum	Euler	92.4	41.6	41	134.0

Flying Aces Scale Event:

1. Wayne Trivin	14 -Bis	82	1:17.6	150.7	
2. George Nunez	Rumpler	75	1:04.4	137.2	
3. John Martin	Bleriot 25	69.0	1:14	136	
4. Millard Wells	Avenger	64	:58	122	
X. Geo. Nunez	Avenger	65	1:26.2	138.1	
5. Dick Obarski	Curtiss Robin	36	59.3	95.3	
6. Walt Schlesinger	P.Porter	52.4	:22	74.4	

EASY B EVENT:
1. DICK OBARSKI 11:26

CATAPULT GLIDER:
1. WAYNE TRIVIN 76.0
2. DICK OBARSKI 72.8

NEW STATE RECORD - OLD RECORD 352 - RICH MACENTEE

COCONUT SCALE EVENT

		Static	Fly	Pts		
1. George Nunez	Potez 36	1	1:11.2	3	4	
2. Dave Linstrum	Compte	2	1:21.2	2	4	
3. John Martin	BMW 20b	3	1:21.4		4	
4. Millard Wells	Ford 2-AT	2	57.4	4	6	

STATE RECORD

EMBRYO EVENT:

1. Wayne Trivin	375.4
2. Dave Linstrum	360
3. Doc Martin	356
4. W. Schlesinger	110

Bostonian Event:

1. Wayne Trivin	Living Colors	1.12	325.9
2. Dick Obarski	Gen	1.10	298.1
3. Dave Linstrum	7-Up	1.10	284.9
4. Doc Martin	Ugless	1.05	254
5. Millard Wells	Wee Bee	1.12	187
6. Bill Stoutenburg	Pup	1.10	85.8
7. Walt Schlesinger	Pup	1.10	53

NO-CAL SCALE EVENT

NEW STATE RECORD

1. Dave Linstrum	Cassutt 2:45.5
2. Doc Martin	Dayton 1:56.6
3. Wayne Trivin	14-Bis 1:47.2
4. W. Schlesinger	Lacey :28
5. Bill Stoutenburg	Gosling 22.4

Novice Penny Plane event:

1. Dick Obarski	9:45.5	NEW STATE RECORD
2. Wayne Trivin	8:46.3	

OLD RECORD 9:40. GEO. LEFFLER

FEDERATION ROG:

1. Wayne Trivin	4:19
2. Dick Obarski	3:45

PISTACHIO SCALE:

1. Millard Wells	Wee Bee	1:11.6
2. Doc Martin	Windham tandem	:38.2

RESULTS OF SEVEN PLANE WW I MASS LAUNCH EVENT:

1. Doc Martin, 2. George Nunez

RETIRED PLANES DUE TO TWO WINS: WAYNE TRIVIN: FLYING COLORS, ALSO EMBRYO DOC MARTIN - DAYTON NO-CAL, BMW 206 COCONUT

(3) CATAGORY I RECORD TRIALS

THE F.A.R.T. III

FLA. ANNUAL RECORD TRIALS

DADE COUNTY YOUTH FAIR - FIU COLLEGE GROUNDS AT END OF CORAL WAY -

FOR SURE - SUN. NOV. 25-5

POSSIBLY SAT. NOV. 24 AS WELL - CALL 305-858-6363 ON FRI. NOV. 23 FOR DETAILS

ALL RECORDS UP FOR GRABS.

Rubber Power



INVISIBLE RUBBER LUBE
by John Oldenkamp
from El Torbelino

Some colleagues snicker at the appearance of my rubber motors because they look "dry". I do lube my stuff, not with the usual gunk, but have gone over to an STP product called "Son of a Gun" protectant, a water based polymer very similar to Armorall, but which does not contain destructive solvents. So my "lube" is invisible, odorless, doesn't splash and cheap at $1.89/pint. To use, saturate the motors, leave overnight, then pat off excess. Excellent for tissue covered OT's, etc., to avoid the white lube "zits" that pile up after a few flights. Renew the STP application whenever you feel you need it. I have 30 times fully wound a Wake motor just to see what the difference might be, and it still puts out, has not busted!

NFFS

MINNEAPOLIS MODEL AERO CLUB

3M 1357 HIGH PERFORMANCE CONTACT ADHESIVE..... Sal Fruciano ....Phoenix MAC

Modellers today have a wide variety of cements, glues, adhesives and methods of attaching one thing to something else. My workshop procedure includes the use of Z-Cyano, 2 Epoxies, Vinyl Glue, Nitrate Dope Contact Cement, a wide variety of Tapes, and others that I have not thought of. Compare that to not too many years ago when Ambroid and Testors were the main stay of our ability to assemble a variety of Balsa Wood Sticks to resemble a model airplane.

Somewhere in the variety of model literature passing our way monthly, we came upon a brief description of a new Adhesive with some specific characteristics we thought worthwhile investigating.

3M 1357 High Performance Contact Adhesive is now sharing the shelf with other Adhesives in our work shop. On obtaining a tube of this product, we found it to be quite a bit different than other Contact 3M's 77 Spray Adhesive, and similar are heavy, too much 'body' and difficult to control in small areas to be covered. Additionally, most Contact Cements soften with heat, therefore present a problem in hot, sunlit environments. 1357 can be thinned easily, will brush on without difficulty. Best of all, a very small amount will hold any plastic film firmly. It tolerates high temperatiture, so will not soften in direct sunlite on hot summer days.

1357 is available from Industrial Supply 3M Dealers. An 8 oz. tube is about $ 3.00.

DAVE LINSTRUM WON NO-CAL & SET A NEW FLA. STATE RECORD WITH THIS PLANE. ITS A GOOD NO-CAL SUBJECT:

(4)

NO-CAL SCALE 1st PLACE 1989 USIC 5:03
CHUCK SLUSARCZYK, Brecksville, OH

I started flying No-Cal models when I got back into Indoor flying after a 25-year hiatus. The event appealed to me because the models resembled full-size planes. It is based solely on flying time, not on decisions by a scale judge. Since I wanted a low wing loading, I looked for an airplane design with low aspect ratio wings. A long nose was necessary to aid balance without adding lots of clay. Full-size airplanes that have short noses but have spinners are good because the model prop is in front of the scale spinner.

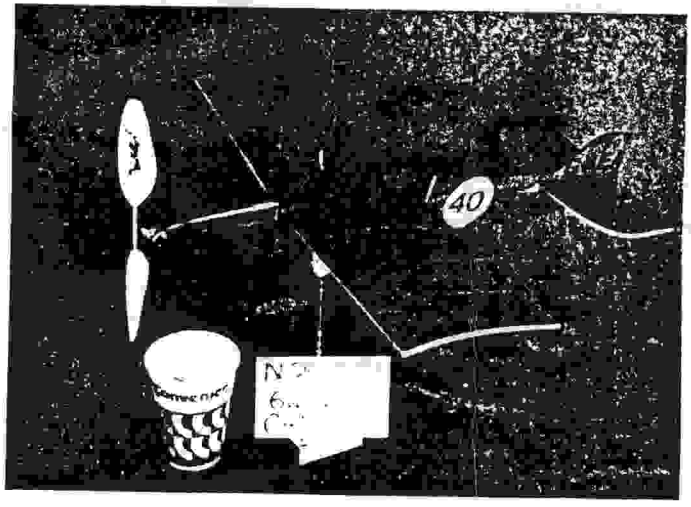
Use thinned Duco cement on all wood joints. While flight testing, temporarily cement the nose bearing on with Duco and silk. After the side and down thrust is determined, a medium grade of CyA cement will lock the bearing on. The airframe is conventional. Make a template of the rudder and stabilizer out of hard balsa and form the wet outlines around the template. Bake them in the oven at 200° for 15-20 minutes. The wings are designed to be removed for transportation.

When covering, preshrink and iron the tissue. Draw the control outlines, cockpit, markings, etc., with felt and ball pens prior to attaching with diluted Elmers glue (60% water) for attaching. Lay the part on the tissue and place small weights on the part to hold it flat. Then apply the adhesive with a small pointed paint brush. Let dry, then trim tissue. After wing is covered, it is cut in half and mounted to the fuselage with proper dihedral and washin angle.

Coffee cups make excellent prop blades. Props and rubber are probably the most important aspect of flying indoor models, for no matter how well the model is built, if the prop and rubber combination are wrong, your model will not fly to its potential. Rubber can vary, but we've had good luck with FAI tan.

Check CG and adjust with clay if needed. Start off with a short loop of .100 x 18" rubber. Test fly with about 500 turns. Model should fly slightly nose high and to the right. Stabilizer angle can be adjusted up or down and weight added to the nose if required. When properly adjusted, the model will climb quickly to 40-50' and then slowly circle, flying slightly nose high for the duration of the flight.

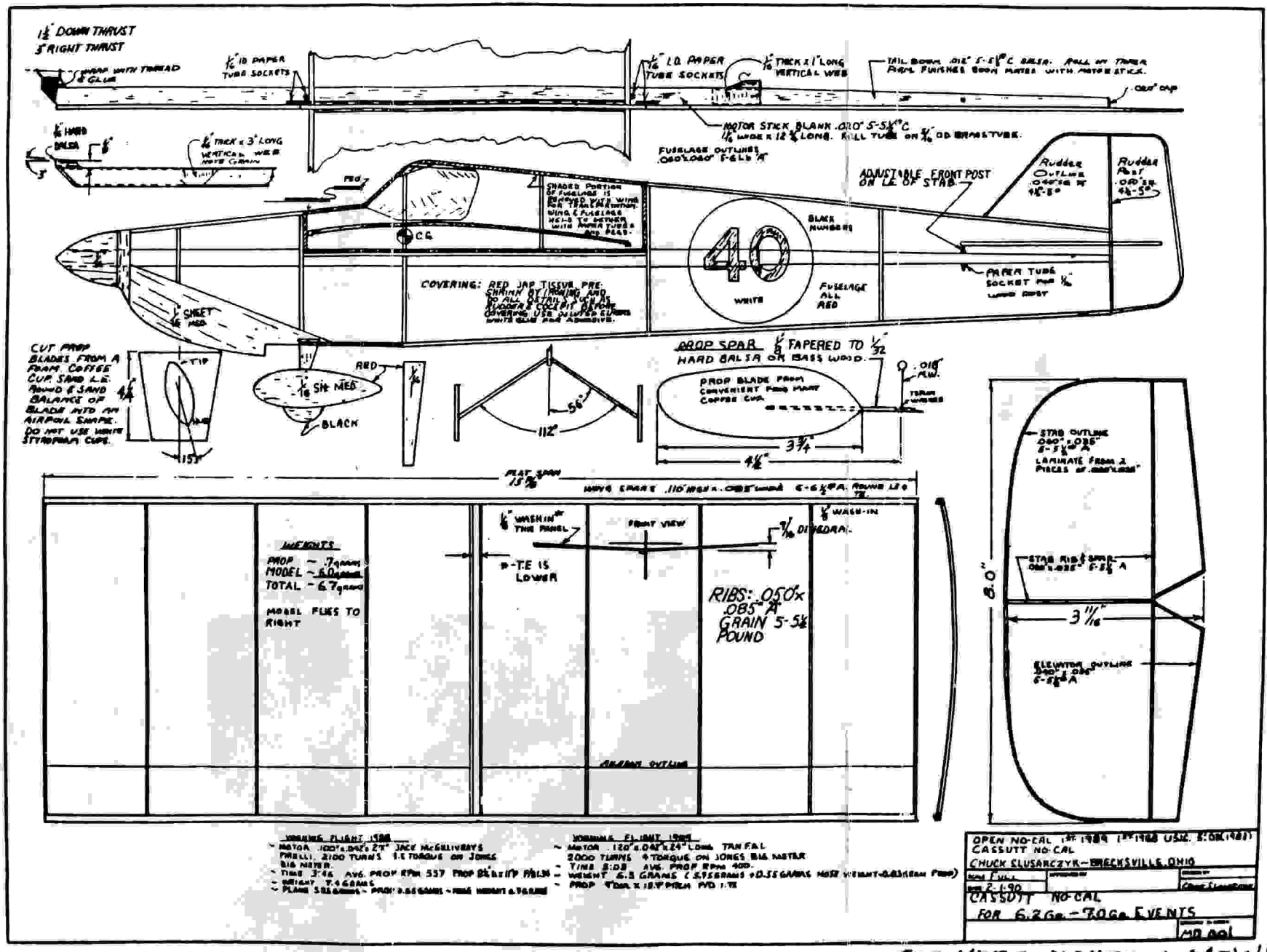
THIS IS ANOTHER PLAN FROM THE NFFS BOOK - "WINNING . . ." INDOOR DESIGNS FROM BILL HANNAN BOX 210 MAGALIA, CAL 95954 $18.95



RACE PLANES ARE VERY GOOD FOR NO-CAL AS ARE ALL OTHER LOW ASPECT AIRCRAFT FIKE, LACEY, ETC. UGH!

(5)

FOR HANGAR PILOTS: ..... ← ENLARGE TO EIGHT IN. →

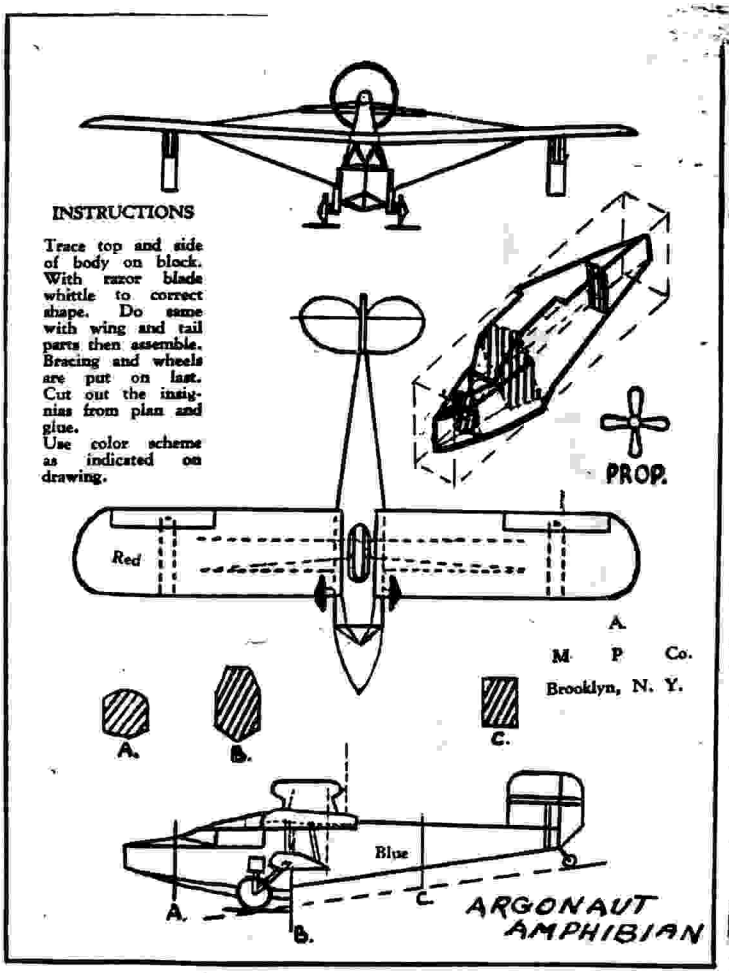


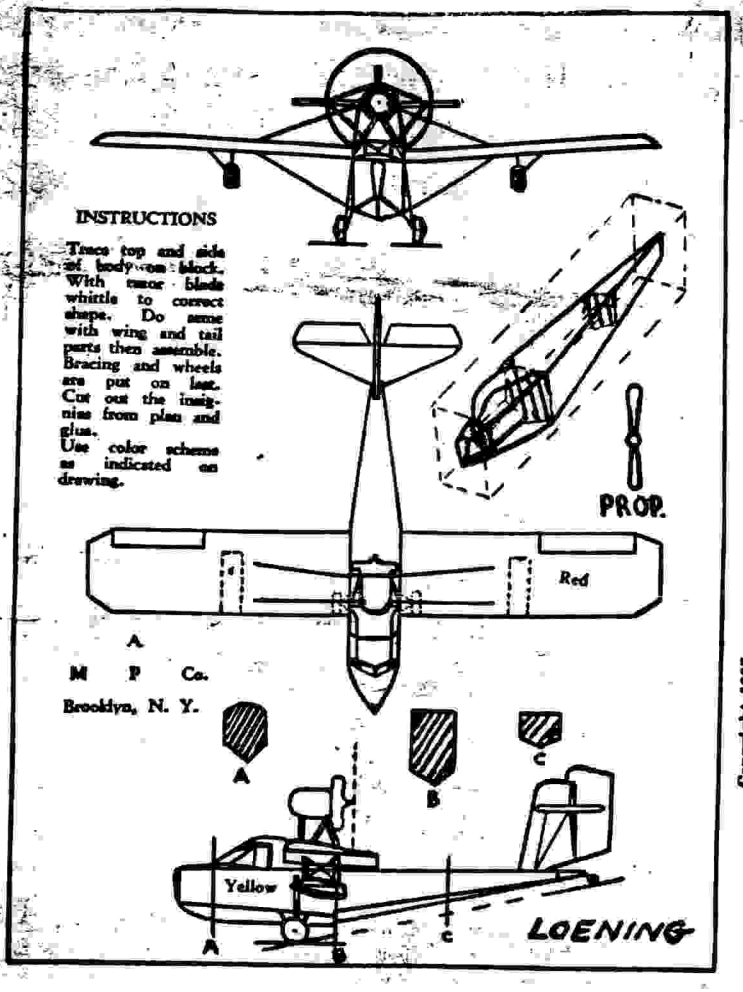
VERSION 1 FLIGHT 1988
- MOTOR .100" x .042" x 27" JACK McGILLIVRAY'S PARALLEL 2100 TURNS 1.1 TORQUE ON JONES BIG MASTER
- TIME 3'46 AVG. PROP RPM 537 PROP DIA 17" PITCH
- WEIGHT 7.4 GRAMS
- PLANE 5.85 GRAMS - PROP 0.85 GRAMS - TOTAL WEIGHT 6.7 GRAMS

VERSION 2 FLIGHT 1988
- MOTOR .120" x .042" x 24" LONG TAN FAI
- 2000 TURNS 4 TORQUE ON JONES BIG MASTER
- TIME 8:08 AVG. PROP RPM 400.
- WEIGHT 8.3 GRAMS (5.95 GRAMS + 0.55 GRAMS MOTOR WEIGHT - 0.85 GRAMS FROM PROP)
- PROP 9" DIA x 12.9" PITCH PVD 1.72

OPEN NO-CAL 1ST 1984 1ST 1988 USIC 5.0K (1981)
CASSUTT NO-CAL
CHUCK SLUSARCZYK — BRECKSVILLE, OHIO
DATE 2-1-90
CASSUTT NO-CAL
FOR 6.2 Gr. - 7.0 Gr. EVENTS
MD 001

THE NFFS MONTHLY NEWS LETTER IS GREATLY IM-PROVED + FULL OF GOOD STUFF





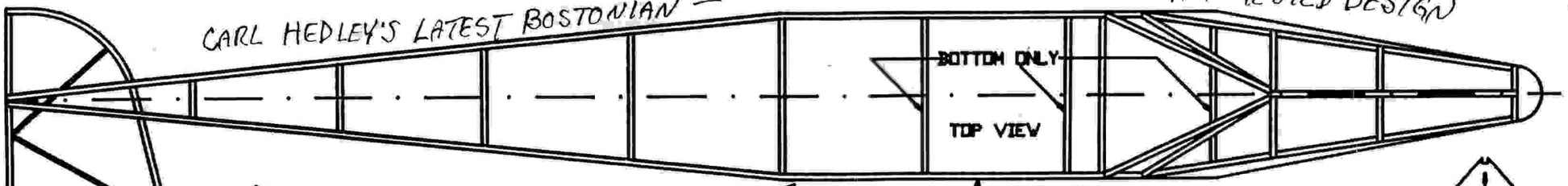
AIRWAY MODEL PLANE CO.
Copyright 1937

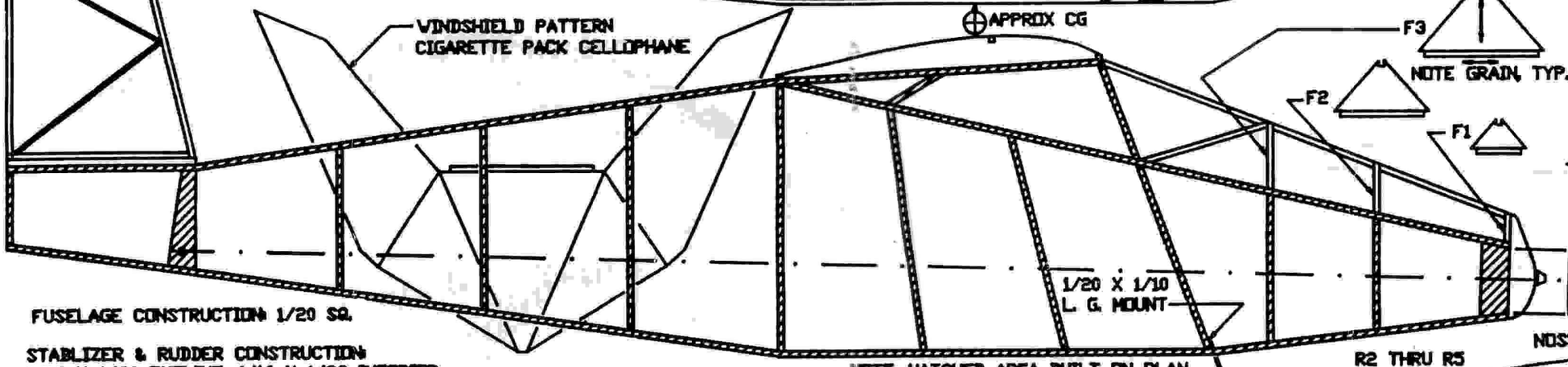
ANOTHER IN OUR SERIES OF 1937 "PENNY SOLIDS" A COUPLE OF WEIRD AMPHIBIANS GOOD FOR ELEC. OR CO_2 SCALE. ARE THESE OBSCURE ENOUGH FOR YOU, U TO?

9

(7)

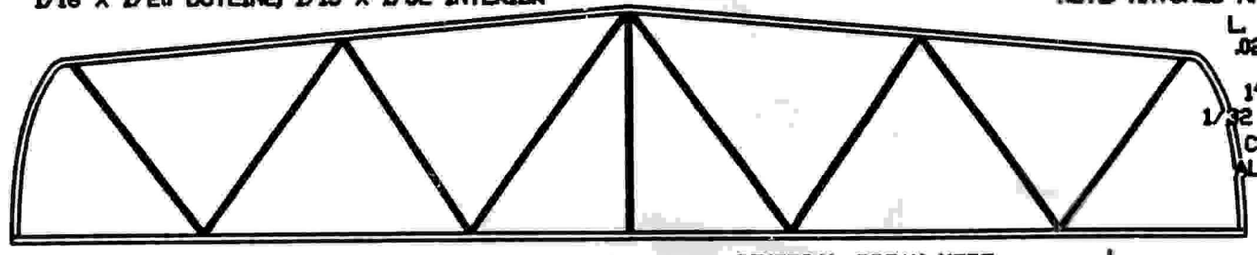
CARL HEDLEY'S LATEST BOSTONIAN — A FLIGHT TESTED DESIGN



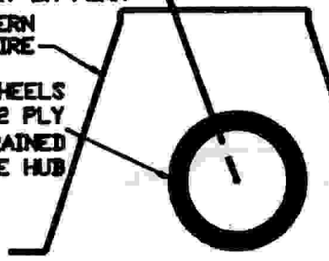


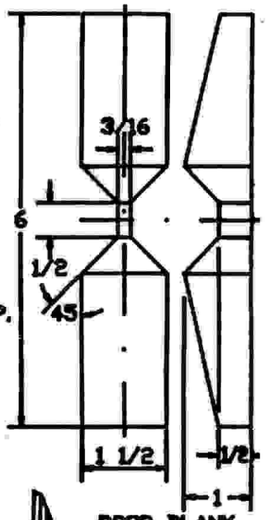
FUSELAGE CONSTRUCTION: 1/20 SQ.

STABLIZER & RUDDER CONSTRUCTION:
1/16 X 1/20 OUTLINE, 1/16 X 1/32 INTERIOR



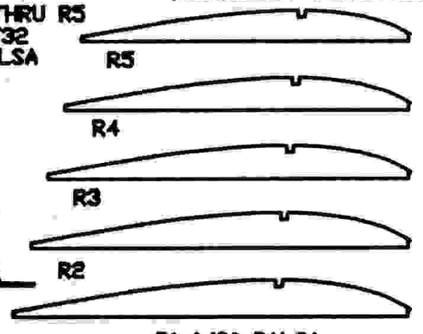
NOTE: HATCHED AREA BUILT ON PLAN





1/20 LAMINATED
CROSS GRAINED
NOSEBLOCK (REMOVABLE)

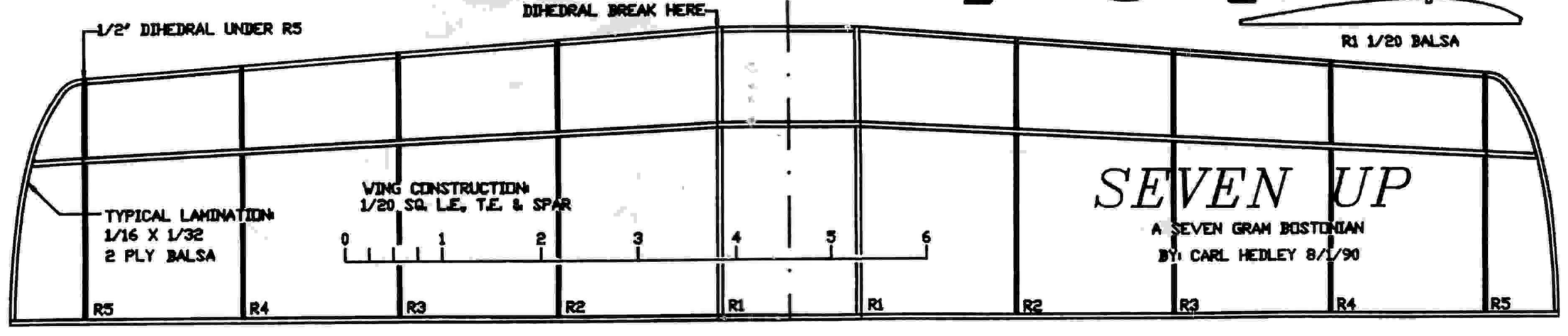
R2 THRU R5
1/32
BALSA



R1 1/20 BALSA

DIHEDRAL BREAK HERE

1/2" DIHEDRAL UNDER R5



SEVEN UP

A SEVEN GRAM BOSTONIAN

BY: CARL HEDLEY 8/1/90

NOTES: PROTOTYPE WAS NOSE HEAVY, KEEP NOSE LIGHT.
ENLARGEMENT FACTOR FOR FULL SIZE PLAN IS 1.276

(9)

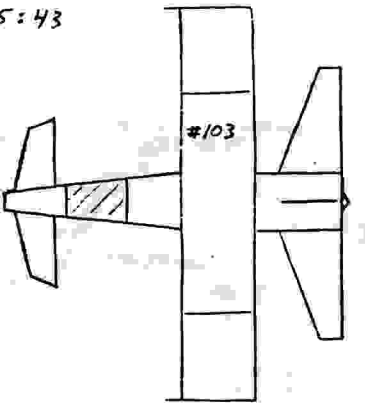
HANGAR PILOTS: YOU CAN'T GO WRONG WITH AN ARONSTEIN MODEL - ASK FOR HIS COMPLETE LIST OF PLANES PLANS

INDOOR DESIGNS BY DAVE ARONSTEIN

NEW COMPETITION DESIGNS - $3.00 EACH

PROFILE SU-27 'FLANKER' NO-CAL

1ST PL. 1990 U.S. 5:43
INDOOR CHAMPIONSHIPS
PLAN # 101



FEDERATION R.O.G.

2ND, 1990 U.S.I.C.
CURRENT RECORDHOLDER 8:01
PLAN # 102

BOSTONIAN 'I-5 FALCON' 3rd 1990 U.S.I.C. PLAN # 103

SEND $1.00 & SASE FOR LIST & SAMPLE: LAURA SCHULTZ
2216 O ST. NE APT. C
AUBURN, WA 98002

PLAN # 104 - FULL-SIZE SEAGULL $2.00

(5)

THE SEAGULL WAS A SENSATION AT 1990 JOHNSON CITY - DID EVERYTHING BUT LAY AN EGG.

MERRY CHRISTMAS

PILOTS - WHEN REJOIN-ING MIAMA DROP US A LINE WITH ANY NEWS.

HOW'RE YOU DOIN'?

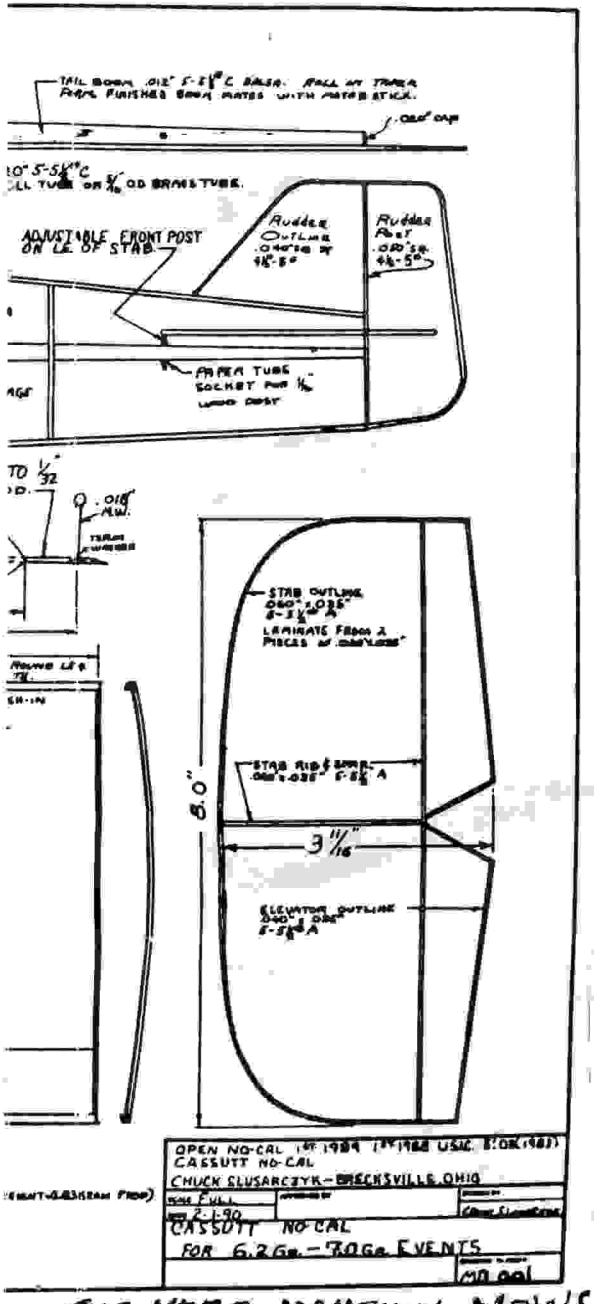
FORM ANY INDOOR CLUB LATELY?

WHAT'CHA BUILDING?

WADDYA WANT IN HANGAR PILOT?

PLANS, 3-VIEWS - TIPS? AND

WHILE YOU HAVE YOUR CHECK BOOK OUT FOR MIAMA - JOIN NFFS



OPEN NO-CAL 1st 1984 (1st 1982 USIC) FLOOR (48')
CASSUTT NO-CAL
CHUCK SLUSARCZYK - BRECKSVILLE, OHIO
SCALE FULL
2-1-90
CASSUTT NO CAL
FOR 6.2 Gr. - 7.0 Gr. EVENTS
MD 001

THE NFFS MONTHLY NEWS LETTER IS GREATLY IMPROVED + FULL OF GOOD STUFF

NFFS MEMBERSHIP AND RENEWAL APPLICATION

Mail to:

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Scottsdale, AZ 85253

Make checks payable to the National Free Flight Society

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	2 yr. $13.50 ($1.00 membership fee plus $12.50 subscription)

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Ages are as of July 1 of the current year. Please circle applicable fees.

New member ☐ Renewal ☐ Address change ☐

Current expiration date: Mo. Yr.

Name AMA#

Address

City, State Zip

F/F Misc

COVERING WINDOWS
by "Uncle" Carl Fries, co-founder of the NFFS

I recall that recently I read, in the NFFS Digest, a discussion (or complaint) in reference to the difficult and disgusting task of covering windows and windshields. First of all I agree wholeheartedly; this modeling chore on many of our FF Old Timer models is hard to do neatly. I have found a way to satisfy the most particular critic. Firstly, forget about using "rigid" clear plastic, meaning that thicker stuff. Go out and buy a box of clear polyethylene Glad sandwich bags. The price is $1.00 for 150 bags, a lifetime supply. Also buy one bottle of Wilhold RC-56 glue; I imagine any other contact cement would be, but I use RC-56 because it drys clear, no messy residue to spoil your meticulous efforts! Incidentally, I do cover the windows before covering the fuselage with my favorite covering, Micafilm "clear", which is the lightest made. Now, rough-cut-out your window contour with sharp scissors. The side windows will be covered in separate pieces, one piece for each side; cover all windows at once. The RC-56 glue will have already been applied five minutes prior to laying down the polyethylene piece. You have allowed 1/4 inch all around: trim it off neatly later. Now for the difficult one - a windshield, probably double contoured windshield. It will be laid up in one piece. Yes, you will have plenty of wrinkles. Don't fret, we will get them out perfectly, later. Lay this one piece on and press fit with your index finger - you have already cussed loudly at Uncle Carl!

Keep saying to your self that the beautifully finished, tight windows will be my reward for this mess. To prevent "melting overlap" it might be well to now trim off the excess polyethylene with a sharp single edge razor blade. Ah, you read the word "melt", and yes now the magic. Get our your old heat gun (from Monokote days). Note I did not say heat iron: never use an iron on polyethylene as it melts it. We want stretch, not melt! Holding the blower six to eight inches away from the windows, wave the heat blower back and forth several times across surfaces of covered windows. Note that if you get too close you will burn holes through the windows. Be very careful on this last step. Yes, I have had to do the job over again because of burn-through, but the task is so fast I didn't mind in the least. Try my way: I have not copied from anyone else. Go ahead and curse me or love me for this tip. Oh, incidentally, I first used this window covering method some 55 years ago, using a colored transparent covering I found on a box of quality chocolates tnat I had given to my mother. I used Ambroid glue (no RC-56 in those days) and a hand fired large soldering iron for the heat source. The airplane was a flying-scale cabin Fairchild. The judges liked the tight windows but reminded me that the real ship did not have purple windows.

Some of you may like to experiment with a slightly thicker polyethylene bag for a more durable window. But be careful that the thicker stuff does not ruin your window structure. You might build this part of the fuselage extra strong. Trim tape applied around the edges and over structural members completes the job.

DOC RECOMMENDS RC-56 CEMENT OR DAP WELDWOOD GLUE - BOTH DRY TRANSPARENT.

KING ORANGE

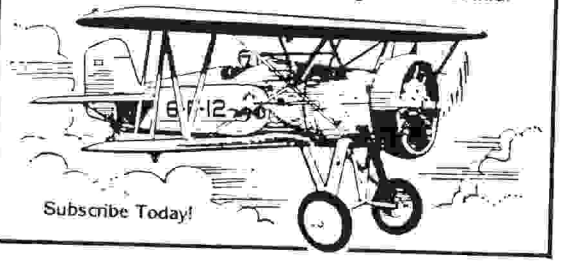
(12)

PLAN ON THE BIG 2 DAY DELTA MEET
TAMPA WTERNATIONAL AIRPORT
DELTA AIRLINE MAINTAINANCE HANGAR
CD RICH MACENTEE 1-813-729-1524
ALL EVENTS BOTH DAYS DEC 29 + 30, 9-5
WW II MASS LAUNCH SAT AT 5:00 (AVENGER?)
70' HIGH
MIAMA MEET 3
HAPPY NEW YEAR!

1919-1939
AIR WARS
THE AIRCRAFT AND AIR WARFARE OF THE MIDDLE YEARS

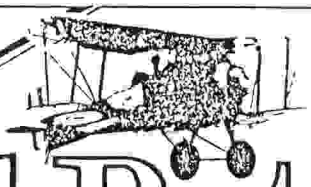
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(13) FLORIDA STATE RECORDS AS OF MAR. 1990

CATAGORY I: Set at Youth Fair	(Up to 26'3")
FAC Scale: Doc Martin	116.4 (11/89)
COCONUT : John LeBlanc	1:05 (11/89)
PISTACHIO: Millard Wells	1:23.1 (4/86)JaiAlai
NO-CAL: Doc Martin	1:31 (11/89)
FAC SCALE: DOC Martin	116.4 (11/89)
NOVICE PENNY Nancy Beitz	7:59 (5/89)
EASY B: Stan Chilton	12:43 (2/86)
H.L.Stick: Roman Szymula	14:35 (10/74)
ROG Stick:Walt Everson	5:23 (3/83)
FED. ROG : Doc Martin	2:46.7 (11/89)
PAPER STICK: Gary Myers	8:25 (4/73)
MANHATTAN: Walt. Everson	3:54 (4/84)
H.L.GLIDER:Don Bal	1:12.4 (2/83)
BOSTONIAN: Carl Hedley	135.8 (11/89)
EMBRYO : Walt Everson	175.0 (11/89)

LOW CEILING - HOW DO THESE COMPARE WITH YOUR PERSONEL BEST?

FLEMALLE, SHONAI, MIAMA WTER-GNATS, + NOW UK FOR YOUR PISTACHIOS

Interscale '91

The first international indoor scale competition in many years has just been announced by the British Model Flying Association under the auspices of the prestigious U.K. Society of Model Aeronautical Engineers. Four classes of indoor scale models have been established—rubber scale, CO_2, electric scale, Peanut scale, and Pistachio scale. Unfortunately, only Pistachio models will be allowed to be proxy flown; however, the advance notification should allow for a good international contingent.

Models will be flown at the University Sports Complex in Nottingham on September 21 and 22, 1991. The initial announcement bulletin gives two site sizes: 125 feet by 115 feet by 62 feet, both with "sufficient height". The university will also be able to provide single occupancy accommodations and meals. Subsequent announcements will be forthcoming in the form of additional bulletins, Write to Reg Boor, Interscale '91, 103 Crow Hill South, Middleton, Manchester, M24 1LA England for more information.



"Well now, and what seems to be YOUR problem?"

Lead Story

• Six U.S. soldiers who recently deserted sensitive intelligence positions in West Germany were found in Gulf Breeze, in July, and under questioning revealed that they had been spiritually chosen to greet spaceships and to work toward achieving world nirvana. (Gulf Breeze was the location of a large number of UFO sightings in 1987.) In June, or earlier, the six had predicted that Jesus Christ's spaceship would land on August 6 and would be accompanied by war in Lebanon. (On August 2, Iraq invaded Kuwait.)

• El Paso, Texas, police said in May they were looking for a woman in her twenties, who wore a wrestler's mask and had tied at least three boys, aged seven to nine, to a tree and given them hickeys on their necks.

FROM JANE'S 1971

(14)

CHKALOV

CHKALOV AERONAUTICAL COLLEGE

ADDRESS: Voronezh

At the suggestion of the Technical Director of the Chkalov Aeronautical College, the students' amateur design group has designed and built a flying scooter. Structural and aerodynamic testing of the prototype was under way in 1969, prior to the start of flight testing.

CHKALOV C-12

TYPE: Single-seat flying scooter.

WINGS: Cantilever low-wing monoplane. Wing section NACA 43012. Dihedral 6°. Incidence 1°. Basic structure of two metal spars; fabric covering. Full-span ailerons. No trim-tabs.

FUSELAGE: Welded steel-tube framework, with fabric covering.

POWER PLANT: One 28 hp K-750 motor-cycle engine, driving a two-blade wooden propeller, diameter 3 ft 11¼ in (1·20 m). Duralumin fuel tank on each side of fuselage, of same profile as wing-roots.

ACCOMMODATION: Pilot only, sitting astride fuselage on bicycle-type seat, protected by Plexiglas windscreen. Handlebar controls operate elevators and ailerons in same way as normal joystick. Basic flying instruments, electrical and radio switches and fuel valve aft of windscreen.

DIMENSIONS, EXTERNAL:

Wing span	17 ft 8½ in (5·40 m)
Tail unit span	14 ft 5 in (4·40 m)

TAIL UNIT: Wire-braced tailplane and full-span horn-balanced elevators are so large that the aircraft is reminiscent of the Mignet tandem-wing configuration. Gap between wing trailing-edge and tailplane leading-edge is 16·45 in (41·8 cm) at root, in plan, but tailplane is placed higher than wings on fuselage, with incidence of 3° 30'; no dihedral. Large vertical fin and rudder. Tail surfaces are each built around a single metal spar, with fabric covering. Ground-adjustable tab in each elevator at root.

LANDING GEAR: Non-retractable tricycle type. Twin wheels, size 210 × 180 mm, on nose unit. Single wheel, size 310 × 350 mm (same as Yak-12 tailwheel), on each main unit.

Length overall	12 ft 1½ in (3·70 m)
Wheel track	3 ft 7½ in (1·11 m)
Wheelbase	3 ft 3½ in (1·00 m)

AREAS:

Wings, gross	72·33 sq ft (6·72 m²)
Horizontal tail surfaces, gross	60·06 sq ft (5·58 m²)

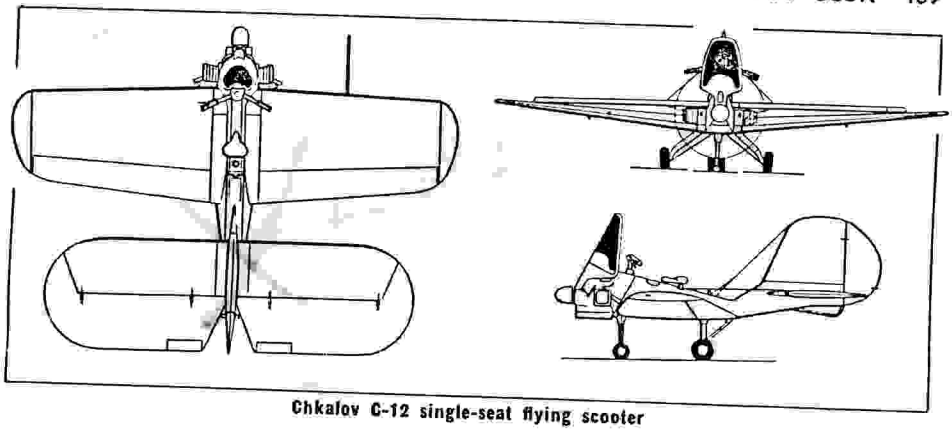
WEIGHT:

Weight empty	507 lb (230 kg)

PERFORMANCE (estimated):

Max level speed at S/L	56 knots (65 mph; 105 km/h)
Climbing speed	21 knots (24 mph; 39 km/h)
Landing speed	17 knots (20 mph; 31 km/h)
Service ceiling	6,560 ft (2,000 m)
T-O run	50 ft (15 m)

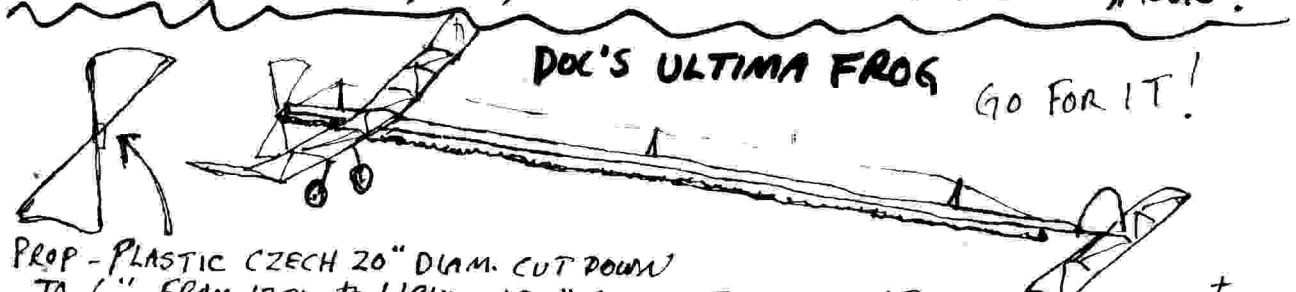
Range 313-334 nm (360-385 miles; 580-620 km)



Chkalov C-12 single-seat flying scooter

FROM DANIEL BUDDE 200 37ST. E NORFOLK NE 68701

NO-CAL, PISTACHIO, FAC, COCONUT... WHAT ABOUT THIS ONE PILOTS?



PROP - PLASTIC CZECH 20" DIAM. CUT DOWN TO 6" FROM 129m to 1.19m. 120" LOOP OF FAI .063 - 15,000 TURNS - 15 MIN.+

JIM MILLER
827 YORKHAVEN RD
CINCINNATI, OH 45240

HEY, PILOTS
IS THE DREADED
RED X IN
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RESUBSCRIBE TO MIAMA!
see page!

THE HANGAR PILOT
EDITOR: DR JOHN MARTIN, JR.
2180 TIGERTAIL AVE MIAMI FLA.
33133

WHAT'S ON IN FREE FLIGHT ?:

FRIDAY NOV. 23. Call 8586363 today to find out about the F.A.R.T. III Florida Annual Record Trials to be held at Youth Fair Exhibit Hall on FIU College grounds at the end of Coral Way on Sun Nov. 25 and maybe Sat Nov. 24 from 9 to 5. Bring out all kinds of indoor models for a record blast. Or just come to spectate and take photos

DECEMBER 16.. MIAMI DADE SOUTH COLLEGE from 9 to 5...MIAMA MIAMA INDOOR FUN FLY.

DECEMBER 29, 30 TAMPA INTERNATIONAL AIRPORT..DELTA AIRLINE MAINT. HANGAR. ANNUAL KING ORANGE INDOOR MEET AND MIAMA MEET #3 WW II Mass Launch. C D Rich MacEntee 1-813-729-1524.

Dec. 29,30,31. Palm Bay Outdoor King Orange Free Flight.

Jan. 27.. Miami Dade South College MIAMA INDOOR FUN FLY

FEBRURARY 16,17..ST. PETERSBERG, CLEARWATER AIRPORT. US COAST GUARD HANGAR CAT. II MIAMA MEET #4

MARCH 10 MIAMI DADE SOUTH COLLEGE FUN FLY

MARCH 23, 24 TAMPA..MACDILL AFB MIAMA MEET # 5

APRIL 20,21 MIAMI DADE SOUTH COLLEGE...MIAMA PISTACHIO INTER-GNATS..PROXY MEET

MAY 18,19 TAMPA.. MACDILL AFB LAST MIAMA INDOOR MEET (#6)

CONFIRM ALL MEETS BY CALLING 305-858-6363 THE DAY BEFORE