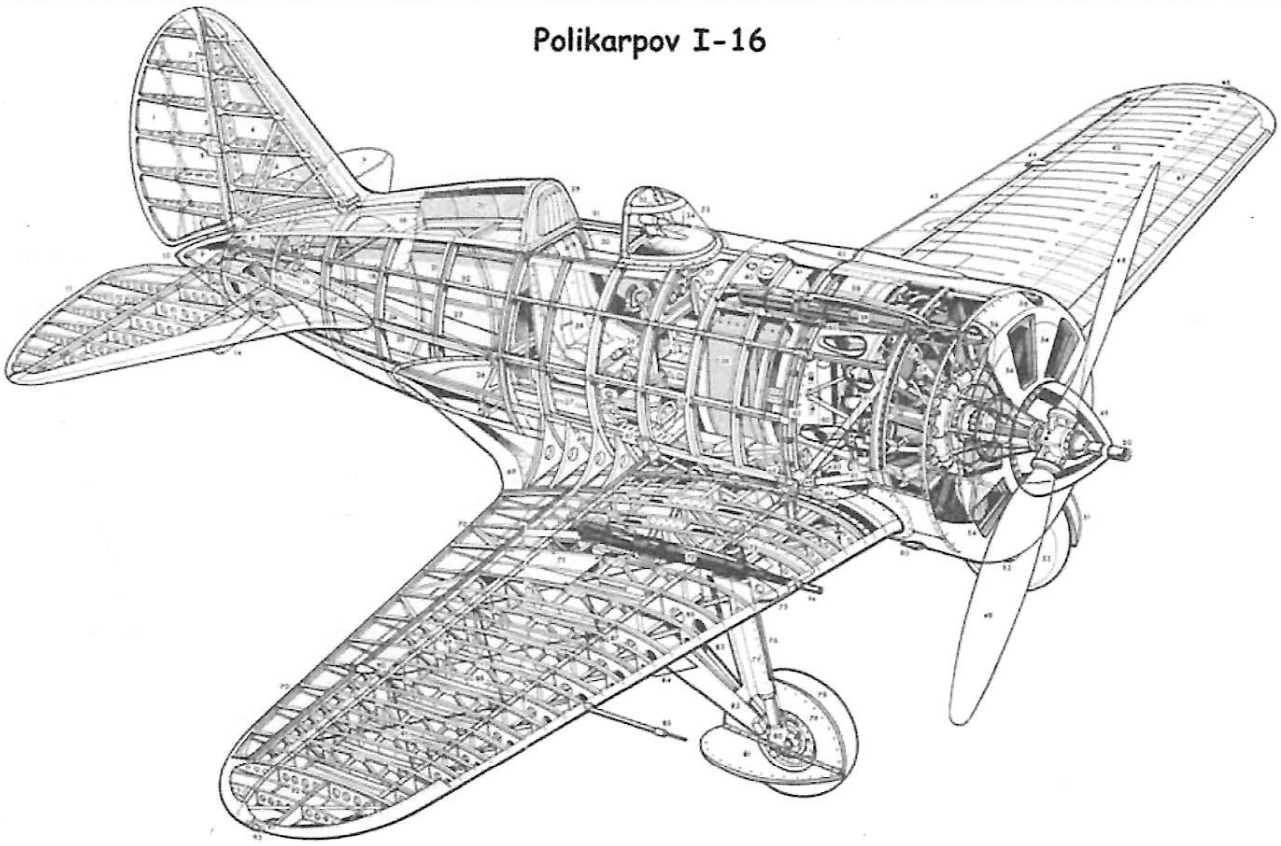
MAXFAX

Journal of the D. C. Maxecuters

... home of the dreaded POTOMAC PURSUIT SQUADRON of the Flying Aces

Editor: Stew Meyers 2012-6 (NOV-DEC)

Polikarpov I-16



COMING ATTRACTIONS

National Building Museum Flying Fun
Sunday 4/7/2013
10:30 am to 4 pm Indoor Micro R/C and Free flight
Contact Glen Simpers grfreeflight@hotmail.com
301-834-2896

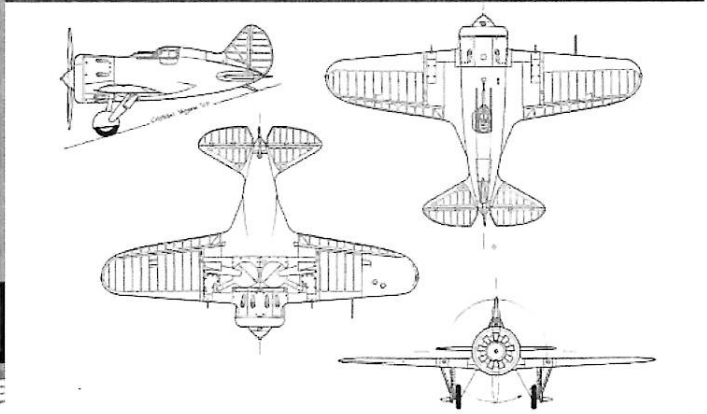
INDOOR FLYING Bauer Community Center
Mondays and Wednesdays 12:45 to 2:15 pm

West Potomac High School Fun Fly
Sunday February 9th 8 am to 2 pm
Joseph Franco 703-718-2574


ANDREAS ZEITLER


SOVIET MODELER


THREE ON TEST
HOT P.A.W.
DIESELS ASSESSED
R.T.P. CESSNA 172
Scale plans for round-the-pole electric
PEANUT POLIKARPOV
Superb indoors or out
За СТАЛИНА
Polikarpov I-16
GET BUILDING!
50 YEAR FLASHBACK
With our 3 full-size plans
asp
BRITAIN'S ORIGINAL MODEL AIRCRAFT MAGAZINE


POLIKARPOV I-16 TYPE 5

MaxFax 2012- 6
(NOV-DEC 2012)

Stew Meyers Editor
RATA Issue

This is the last issue of 2012 albeit a bit late. (We are trying to catch up.) When the last issue went to the printer, he sadly told me the press he used for the newsletter was broken and suggested we use a different printer. We had used Beach Brothers since 1972 when Pat Daily set it up. Our new printer prints the labels on the covers and mails the issues. There was a failure in collating and the one that I sent to myself had a second addressed cover inside. Fortunately this was addressed to a local Maxecuter and I gave him a copy at our indoor flying session last week. If you receive a double addressed issue please notify me so I can get an issue out to the proper recipient. Thus ends the 40 year ritual of gathering to stuff envelopes, address, and mail the newsletter. Dan, Ray and I will have to have a building session instead.

I have always been fascinated by the Polikarpov I-16. This Soviet fighter aircraft of revolutionary design was the world's first low-wing cantilever monoplane fighter with retractable landing gear to have attained operational status and as such introduced a new vogue in fighter design. The I-16 was introduced in the mid-1930s and formed the backbone of the Soviet Air Force at the beginning of World War II. The diminutive fighter, nicknamed "Ishak" ("donkey") by Soviet pilots, prominently featured in the Second Sino-Japanese War, and the Spanish Civil War—where it was called the Rata ("rat") by the Nationalists or Mosca ("fly") by the Republicans. The Finnish nickname for I-16 was Siipiorava ("Flying Squirrel").

Ray supplied plans for the RATA from the Aug 1942 issue of AeroModler and a more scale peanut version from the Sept 1994 issue of AeroModler. For good measure Dave threw in a larger "Death Trap" I-16 from his collection.

There is no dearth of color information. The First issue of Air Enthusiast Quarterly has an extensive spread on the Spanish War Mosca/Rata. Profile #122 covers more of it's history and at least one is still flying.

Don Srull presents a nifty peanut Morane 234 plan from his pen pal Roger Aime. Finally we have the results from the January NBM Flying session.

PAGE 2 PHOTOS

The currently flying Polikarpov I-16 RATA --photos culled from the net.
The cover photo from the Sept 1994 AeroModler.
Plus a 3-view.

MEMBERSHIP - Dues for membership in the DC MAXECUTERS are $20 per year for residents of the USA, Canada, and Mexico, and $25 for all other countries. You may now use PayPal at the website: www.dcmaxecuter.org
Your mailing label indicates the year and month of the last issue of your current membership. A red "X" in the box below is a reminder that your dues are due. Send a check, payable to the"D.C. MAXECUTERS", to the treasurer, Stew Meyers.

PUBLISHING DATES - Six issues of MaxFax are sent each year as close to the nominal dates as possible, but since this is a volunteer publication nothing is guaranteed except that six issues will be sent to all members.

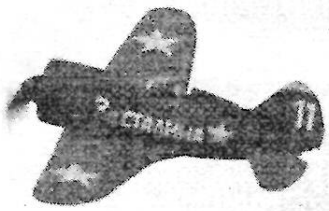
CONTACTS - Material for the newsletter and membership questions should be addressed to Stew Meyers phone 301-365-1749. Email gets immediate attention. stew.meyers@verizon.net

Dave Mitchell has made some progress on the stash of Dave Rees plans. Some drawings are mere pencil sketches others are fully done.

Free downloads of the PDFs are now on the http://www.hippocketaeronautics.com Builders Plan Gallery. Of course none of the published plans owned by Carstens are there.

Paper copies will be made available for a nominal fee to cover printing and mailing. Source TBA.

BUILD FROM OUR FULL SIZE PLANS



Flying shots of Peanut models are very, very difficult so this one of the Polikarpov climbing away is truly remarkable - and extremely realistic.

Polikarpov 1-16

Richard Crossley chose a very unusual subject for Peanut Scale - but it flies remarkably well

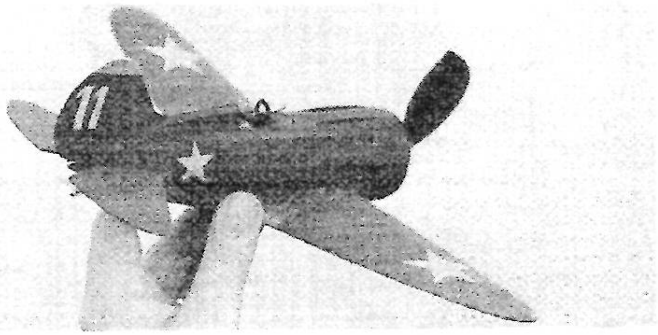
Introduction

This bizarre looking little fighter was actually quite a step forward when it first flew in 1933, being the first cantilever monoplane with a retractable undercarriage to enter service.

The 1-16's ailerons were very light and the roll rate was rapid. however, it tended to stall out of a glide, no doubt due to the drag from the massive frontal area of its hp Shvetsov radial engine!

The virtually non-existent nose and short coupled nature make it seem an unlikely choice for a rubber powered model but don't be put off, mine has a great performance, being capable of remaining airborne at low speed and low power, making it possible to use a long length of rubber motor.

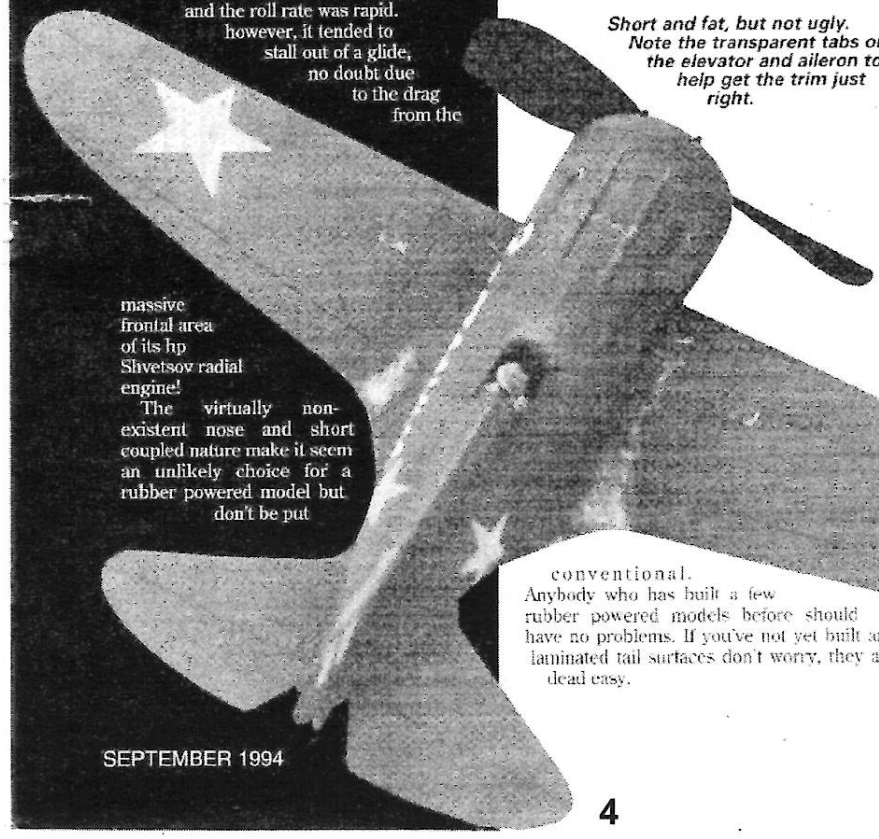
Bear in mind that you must keep all of the structure behind the point of balance as light as possible. I did this and found that no extra nose weight was needed.



A real bruiser of an aircraft, the Polikarpov was advanced technology for 1933 with cantilever wings and retracting undercarriage.

Construction

This is a very easy model to build with all aspects of construction being relatively conventional.



Short and fat, but not ugly. Note the transparent tabs on the elevator and aileron to help get the trim just right.

Anybody who has built a few rubber powered models before should have no problems. If you've not yet built any laminated tail surfaces don't worry, they are dead easy.

Wings

Cut the ribs from lightweight 1/20" or 1/16" sheet balsa. The leading edge needs hard 3/32" square balsa and the 1/8"x1/16" trailing edge and 1/16" tip pieces are from medium sheet. The top and bottom spars should be fairly firm. Build the wing directly over the plan, incorporating 3/4" dihedral under each tip. Don't forget the 1/16" sheet spar webbing between R1 and R2. (Do not worry about washout at this stage).

Fuselage

Cut out F4-F9 from soft 1/32" sheet balsa and F3 from 1/16". Cut the keels from soft 1/32" sheet. Construct the fuselage in the traditional way, over the plan side view. Note that the two lowest stringers are added after the wing has been glued in position. F1 and the two F2s can be fairly firm sheet to give nose weight. All the stringers are 1/20"x1/16" cut from 1/16" sheet balsa. Due to the consistent curve of the fuselage the stringers can be cut from

surprisingly light wood and still be sufficiently strong.

Tail surfaces

These are constructed directly over the plan. The 1/16"x1/32" balsa strips that form the curved outlines should be cut over length and soaked in warm water. Make a template from balsa or thick card the same shape as the inner edge of the curved portions and curve the damp wood around them, gluing together with PVA wood glue and holding with pins. Construct the remainder of the tail in the normal manner.

Covering and assembly

Sand smooth and cover the wings and tail surfaces with tissue. I prefer to use Early Bird tissue on small models (available from SAMS Model Mail Order, tel.0763 288490). When covered, water shrink the tissue and pin down the components on a flat surface to prevent warps as the water dries. When you pin the wing down add scraps of balsa under the trailing edge tips to get the correct washout. When dry remove from the board and apply thinned dope. Sand the fuselage smooth rounding the nose as shown. Glue the wing into position and add the lower rear stringers from the trailing edge back. Add the scrap balsa wing fillet outlines and the three 1/32" sheet sub keels. Now glue into position the bond paper wing fillets. Tissue cover the fuselage, water shrink and dope.

Glue into position the tail surfaces. Add various details as shown on the plan. Cut the windscreen frame from 1/32" balsa or ply and fold or mould the screen from thin acetate. Make up the nose plug, prop and spinner as shown. (I used a cut down Tern propeller available from SAMS). Spray the model very lightly with matt paints to your chosen colour scheme. Panel lines were applied with a Rotring pen and the pilot was carved from expanded polystyrene. Ensure the model balances where shown on the plan.

With generous frontal area the real Polikarpov was not attributed with a good glide - but the model performs well.

Flying

Obviously choose a nice calm day for test flying. As these never occur within two weeks of finishing a model I always end up launching my model indoors into something nice and soft like a sofa, which then bounces them backwards straight onto the coffee table. Trim the model to fly in left hand circles. You may need to add a tab to the left wing and bend it down to hold the wing up in flight. For flying outdoors you will need slightly thicker rubber and probably some right thrust. Watch out for thermals, though, as the performance can be stunning.

Roger's Morane

Don Srull

Who would have the best connection to a French golden age classic?
A French modeler of course. Here's proof.

You get to meet and know the most interesting people through this amazing model airplane compulsion we share. Roger Aime is one of those modeling friends I was lucky enough to run into. I've never met Roger face to face, he lives in France, but we have corresponded for years by post and e-mail – sharing modeling stories, plans, photos, paintings, journals – even models. Roger, for the few of you who may not know of him, is a talented and prolific scale model designer and builder. He is best known for his peanut and walnut size model designs, both rubber, and recently also electric powered. We are happy to share one of his fine designs, in this case of the colorful Morane 234-2 , as flown by the champion aerobatic pilot Michel Detroyat in 1931. The model was also featured in the -2013 winter, number 68 issue of the impressive French model journal Les Cahieres du C.E.R.V.I.A.

The model has a 14.5 inch span and is intended for electric power. Due to its clean and lightweight structure, however, it is also well suited for conversion to rubber power. Enlarged to double size, it would make a gorgeous scale model in its red white and black color scheme, and with great flight potential! Locating the rear motor peg at the middle of the "F" of the fuselage registration should be about right.

Keep in mind that for FAC contest use, the wing undercamber would have to be removed. As an aside, I think the rule forbidding the use of non-scale undercambered wings on FAC scale models is misguided, as well as inconsistent with other FAC scale rules. It comes from the belief that undercamber has a tremendous beneficial effect on scale model performance. In fact, it might help somewhat in some cases - but certainly less beneficial than other changes which are allowed; for example, the thinning of very thick, bulbous scale airfoils (think of Junkers) to thin model types. The logical change would be to allow such variations, but reduce the scale score for any change that visibly affect the model's scale appearance.

Roger's attractive plans and scale info remain in French, along with metric units. A chance for some learning and cultural expansion.

I 16b RATA

By J. A. F. HALLS

DETAILS of the Rata were given in the November, 1941 AERO-MODELLER, and readers who would like to try a model a little out of the ordinary should build this one. It is a very fast flier, fairly heavy (the original weighed about 3 ozs.), and thus balsa is not essential. Approximately 75 per cent. substitutes were used in the original model which, however was too nose heavy with the undercarriage attached. This was removed for flying and, using a hardwood propeller, the model was strong enough to take the strain of belly landings although it would be better to fly it over long grass. By careful choice of materials, this unbalance could be remedied and an undercarriage permanently fitted.

Fuselage.

Cut out the keels from 3/32 in. balsa or 1/16 in. sheet substitute. As shown in the plan, the bottom keel is made from two parts which should be stuck together and allowed to set on the plan.

The formers are cut from 1/16 in. sheet and slotted to accommodate the 1/16 in. square balsa stringers. A large diameter dowel is used as a building jig—a broom stick will do the job nicely—and the formers are mounted on this in their respective positions. Add the keels and stringers, taking care to get the line-up accurate. For hardwoods, a rather slower drying glue is better than balsa cement.

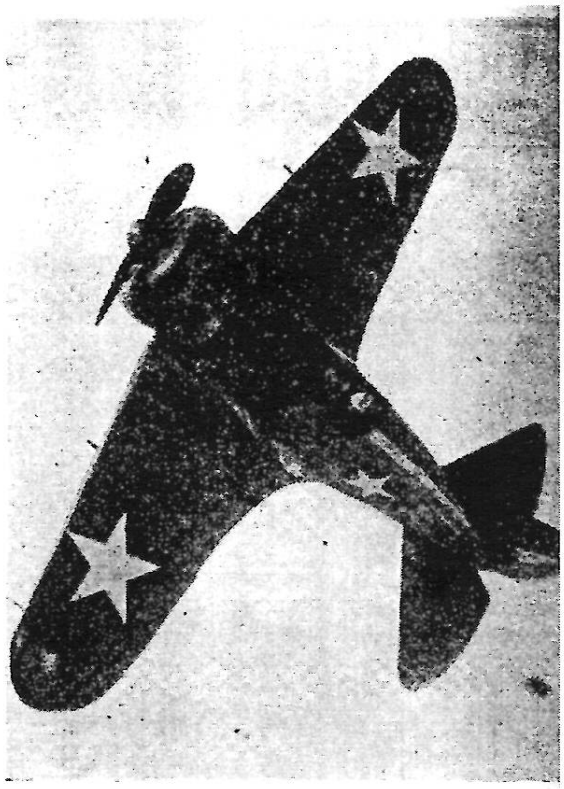
Wings.

Rib A is cemented to formers 1, 2, 3, 4 and 5 on the fuselage. Build up the rest of the wings on the plan, firstly pinning the spars in their correct positions. Notch the ribs as shown and cement in position on the plan. Finally, add the leading and trailing edges which should be raised slightly by inserting small pieces of balsa between them and the plan. The wing tip is added after the wing has been removed, but be sure to get this true.

Tail Unit.

Layout and cement together the fin outline on the plan and while this is setting, cut out R1, R2, R3, and cement them in position on R4. When the outline has set, remove from the plan and cement in this other framework. Finally add R5, clean up with sandpaper, cover and cement to the fuselage.

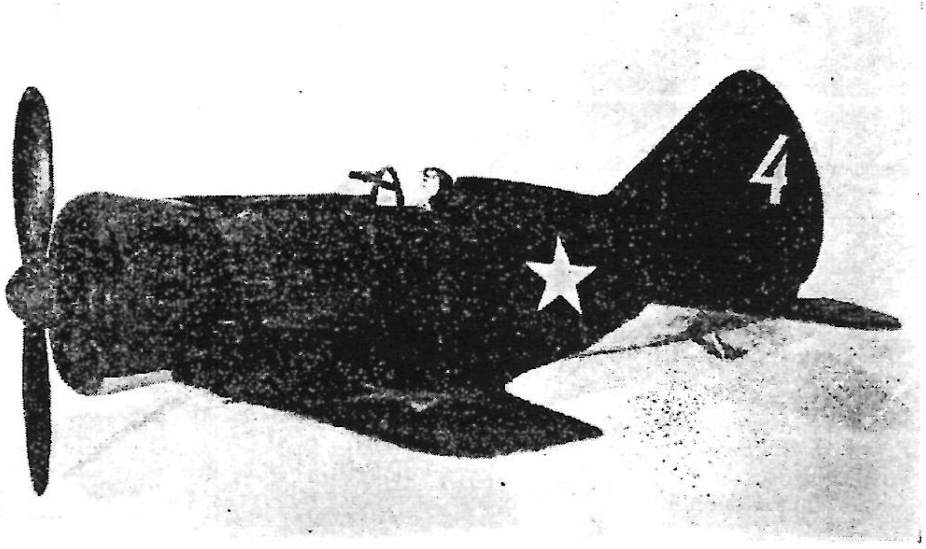
The tailplane is built up in an exactly similar manner and each half is cemented to the fuselage in the correct position.



THE I–16 " RATA "

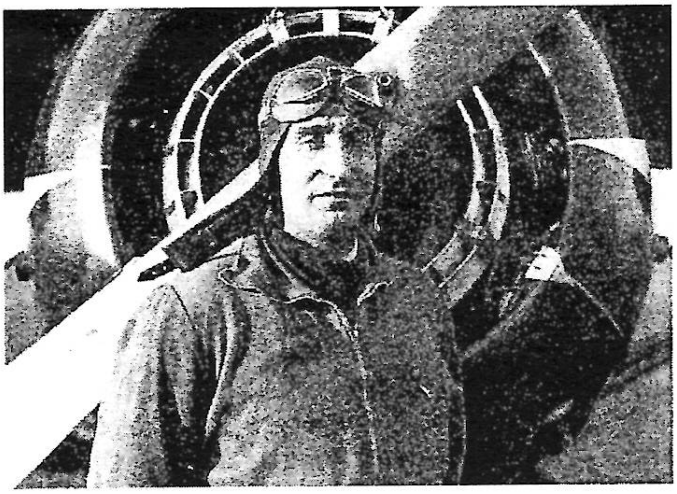
Span : 31 ft. 3 ins. Length : 21 ft. 11 ins.
Height : 10 ft. 4 ins.
Wing area : 204 sq. ft. (approx.)
Weights : Empty 4,910 lbs.
Loaded 6,100 lbs.
Loadings : Wing 30 lbs. sq. ft.
Power : 5·5 lbs./H.P.
Engines : I–16 — M.25 (Wright Cyclone).
I–16b — M.63 (Wright Cyclone).
Armament : Two machine guns in fuselage and two in wings.

Reprinted from Aircraft of the Fighting Powers, Vol. II.



Mr. Halls is to be congratulated on the excellence of his photographs, which are remarkably fine efforts. Although no great durations are to be expected from a model of this type, it makes a fine, speedy scale flier, fit to add to any collection. Colouring is dark green top surfaces with silver undersides.

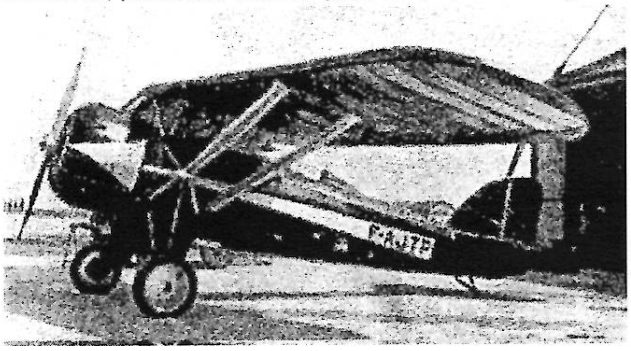
Le Morane de Michel Détroyat

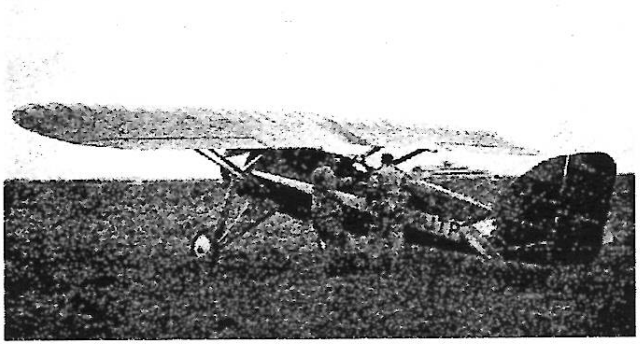


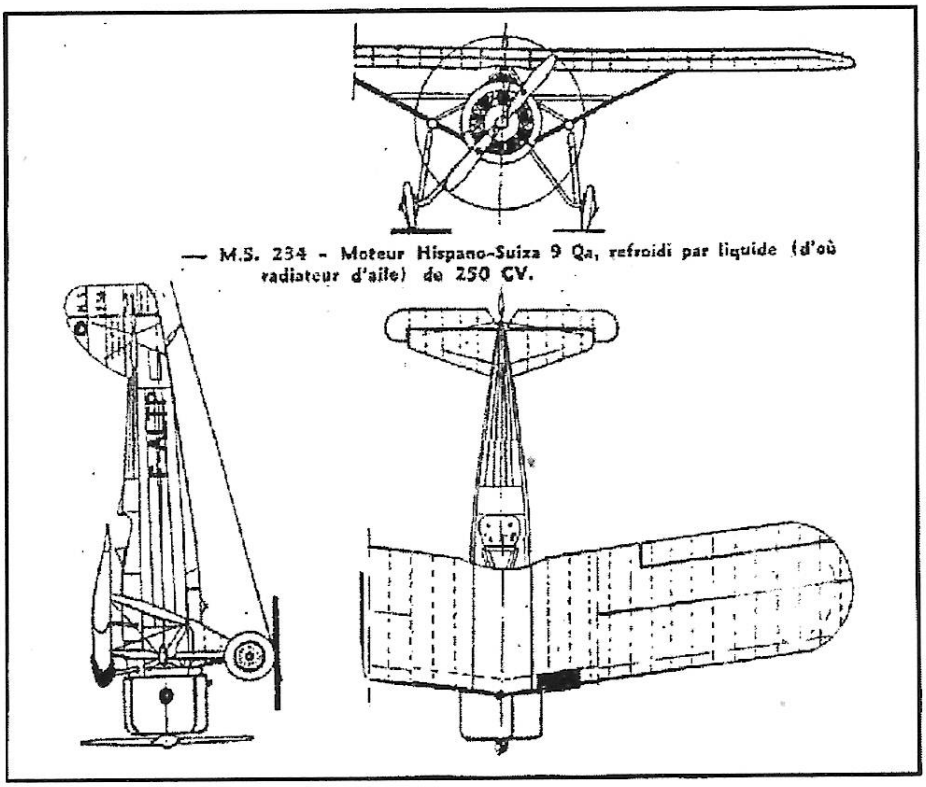
Bien sûr, Michel Détroyat a piloté des tas de Moranes, mais celui-ci a marqué les foules, par sa relative longévité, et par le retentissement des matchs d'acrobatie contre Doret et Fieseler (premier Championnat du Monde d'Acrobatie Aérienne en 1934).

Il s'agit d'une version du bien connu MS-230 (MS234-2), peut-être unique (mais il parait que l'attaché militaire d l'ambassade US en possédait un).

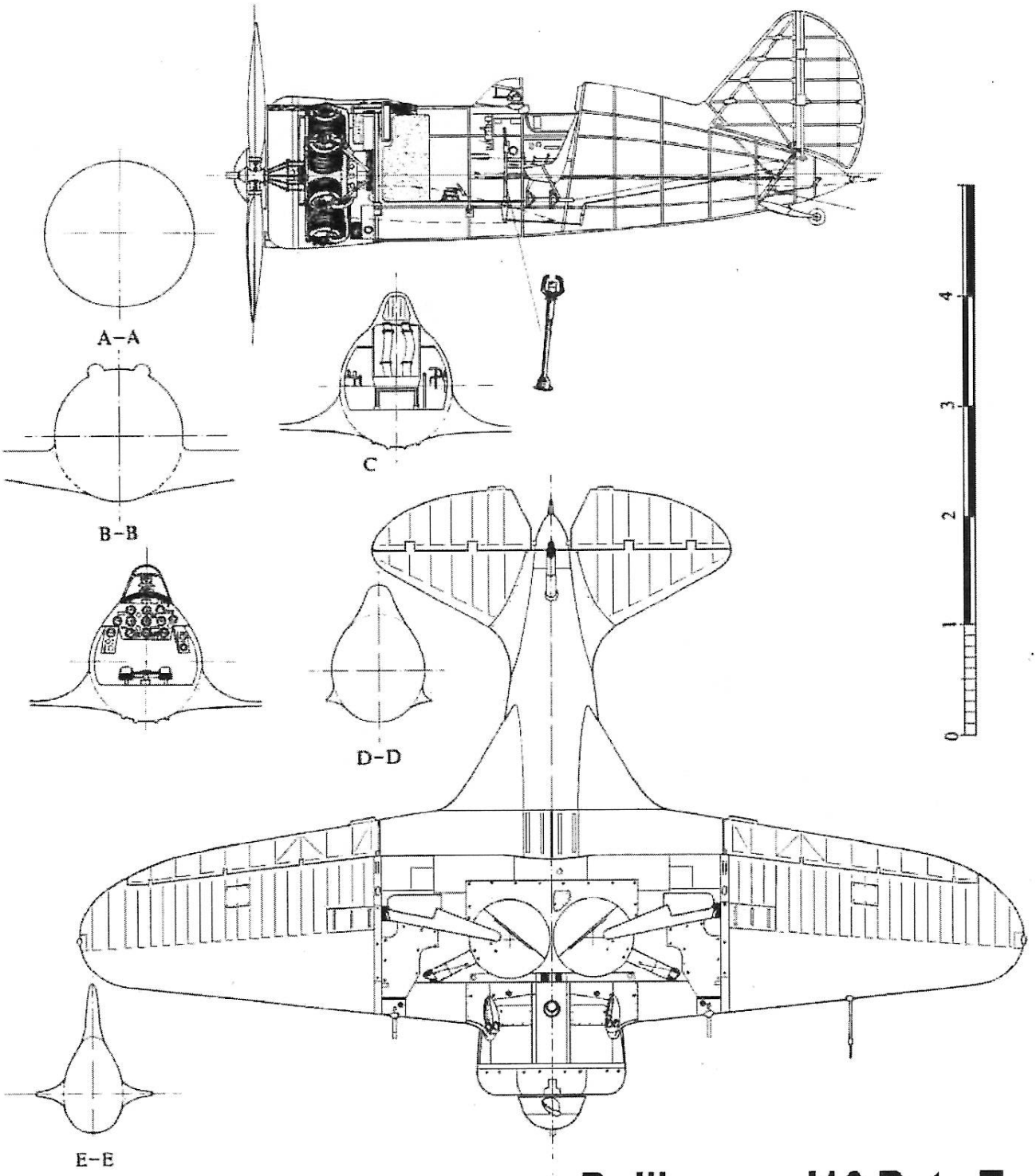
Il a subi de nombreuses modifications au cours de sa carrière. Au départ, le moteur Hispano-Suiza 9Qa de 230 ch n'était pas caréné, et l'avion pas décoré. C'est probablement dans cette forme qu'il a participé à la Coupe Michelin 1933. Devenu ensuite l'avion personnel de Détroyat, il acquit sa célèbre décoration et des moteurs de plus en plus puissants, Hispano 9Qc de 300 ch puis 9Qd de 350 ch, puissance énorme pour un avion de voltige de l'époque.



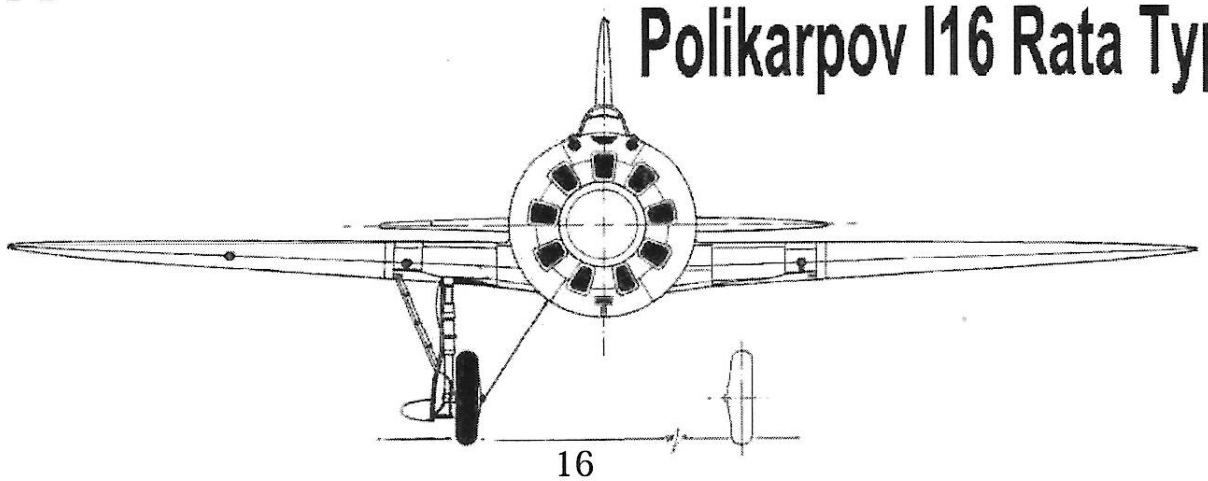


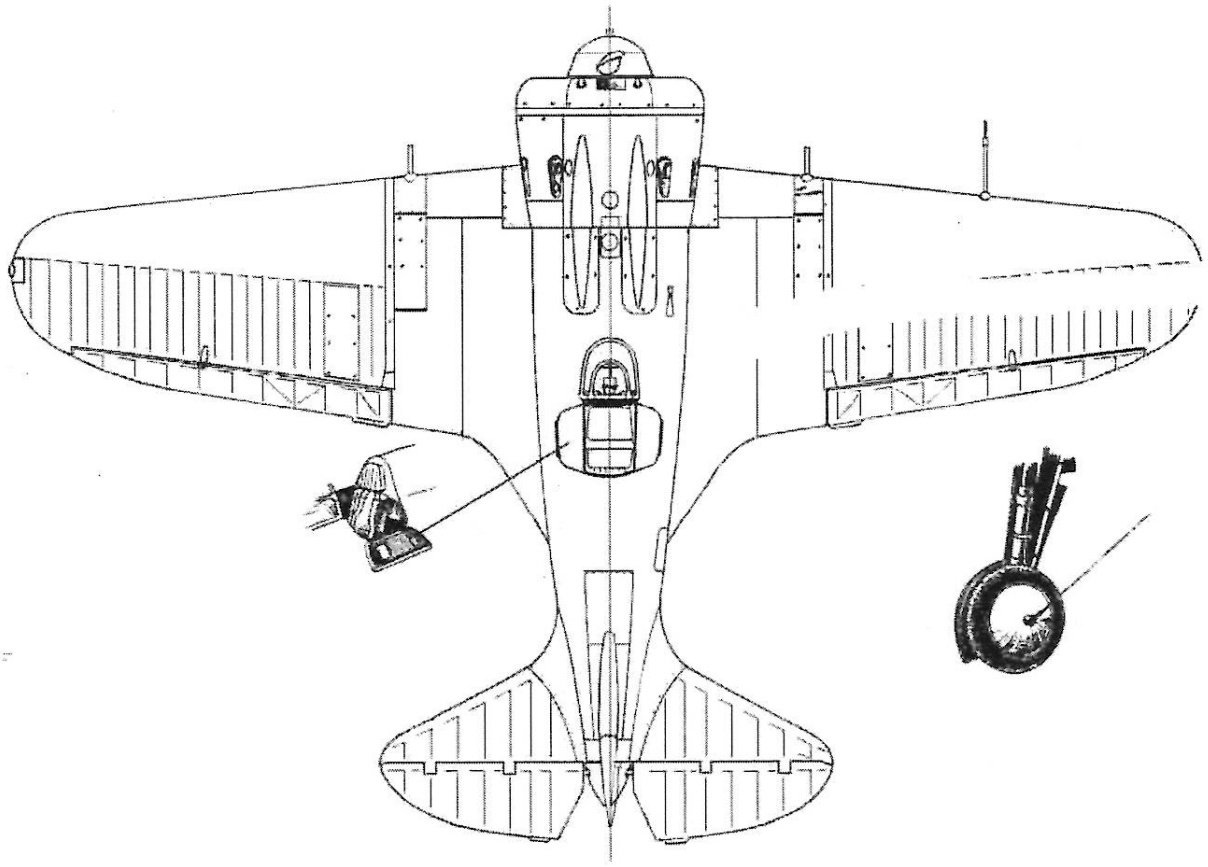


— M.S. 234 - Moteur Hispano-Suiza 9 Qa, refroidi par liquide (d'où radiateur d'aile) de 250 CV.

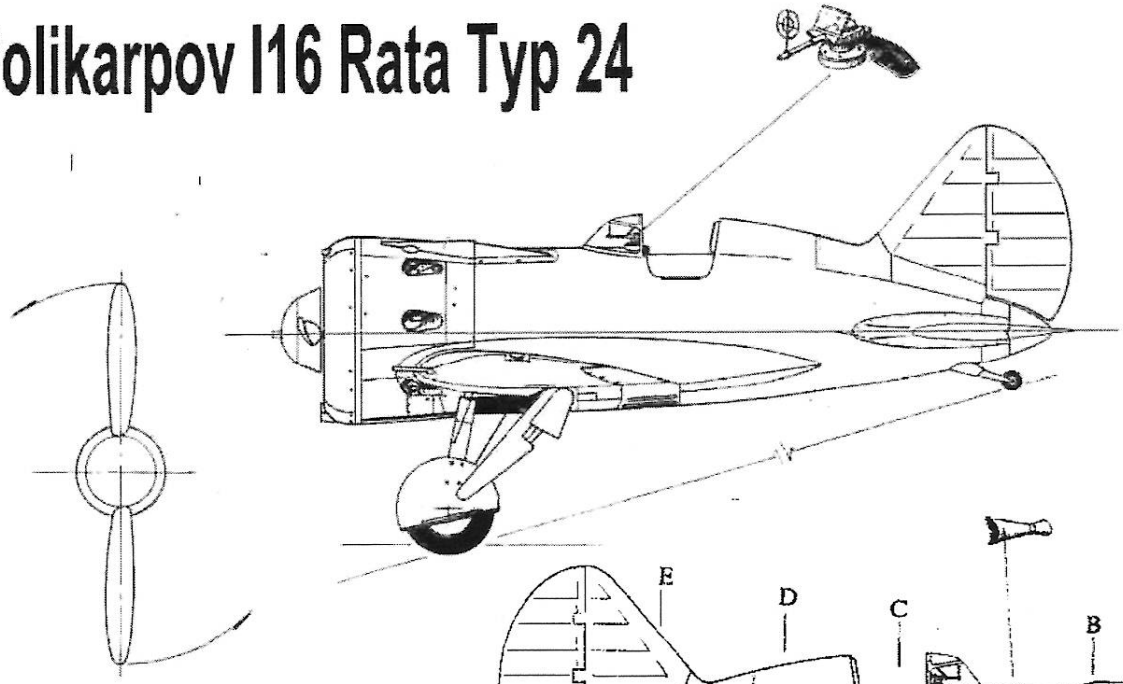


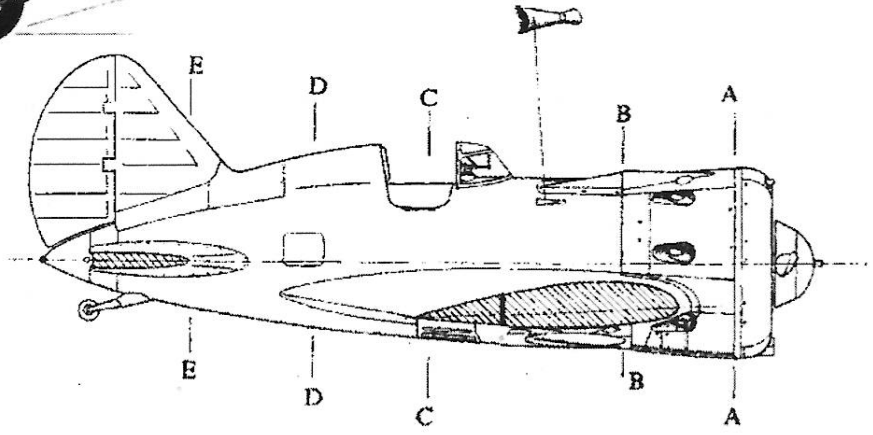
Polikarpov I16 Rata Typ 24





Polikarpov I16 Rata Typ 24





National Building Museum Results

14g. Bostonian ML		(4 entrants)
	1	Henry Guth
	2	John Murphy
	3	Paul Spreigen
Peanut Scale ML		(4 entrants)
	1	Doug Griggs
	2	Mike Escalante
	3	Henry Guth
Phantom Flash ML		(8 entrants)
	1	Mike Escalante
	2	Timothy Thompson
	3	Henry Guth
WW II No-Cal ML		(7 entrants)
	1	Tony Pavel
	2	John Appling
	3	John Murphy
Parlor Fly ML		(8 entrants)
	1	Erich Schlitzkus
	2	Doug Griggs
	3	John Murphy
ZAIC Z-15 ML		(5 entrants)
	1	Erich Schlitzkus (proxy for Randy Kleinert)
	2	Al De Renzis
	3	John Appling
Limited Pennyplane		(3 entrants)
	1	Brett Sanborn
	2	Tony Pavel
	3	Paul Spreiregen
Helicopter		(1 entrant)
	1	Jim Coffin
A-6		(2 entrants)
	1	Brett Sanborn
	2	Paul Buck

National Building Museum

January 6, 2013

We had 15 flyers for Freeflight, and 13 for RC. There was a lot of visitor interest in the flying and some new fliers. For a variety of reasons there were fewer fliers than in past events, but we are looking forward to a larger crowd at the next NBM flying on 4/7/2013.

Grand Champ was calculated using a new system that awarded points to every flier based upon how many others they bettered. This made the results very close and emphasized participation in busy events. Doug Griggs and Henry Guth tied, with Henry graciously allowing Doug to carry home the trophy (Henry will be sent a virtual trophy). Two trophies were awarded for Phantom Flash with one going to Timothy Thompson as the highest ranking flier who had never won the event previously. Phantom Flash, Parlor Fly, and the RC Tortoise and Hare events were the most popular with each having eight entrants. Dime Scale ML with only one entrant was not flown.

We had four events for the radio control end to keep things interesting. Two were for the slowest flying model (figure 8 and the DRAG), one was for the most unique or creative airplane to make a figure eight flight, and one was for the most beautifully crafted model. John Krouse, our creative winner used an egg crate wing, soda straw twin booms, and a paper clip adjustable motor mount. Pete Schuman won the Best Craftsmanship trophy with his DR-VII,any one of his whole fleet of museum quality scratch built WWI plane would be a candidate for the prize.

Both slow races,(the figure 8 one and the DRAG race) were very exciting and both were won by pilots who flew the mini vapors!!!!! Even Jin's RC Bull Dog came in third (to my surprise as he WAS really slow, but still fast LOL) All in all it was fun and exciting and I enjoyed being part of it. Everyone that was there told me they had a great time and can't wait for the next time there. Hopefully more will turn out.

PHOTOS PAGE 19

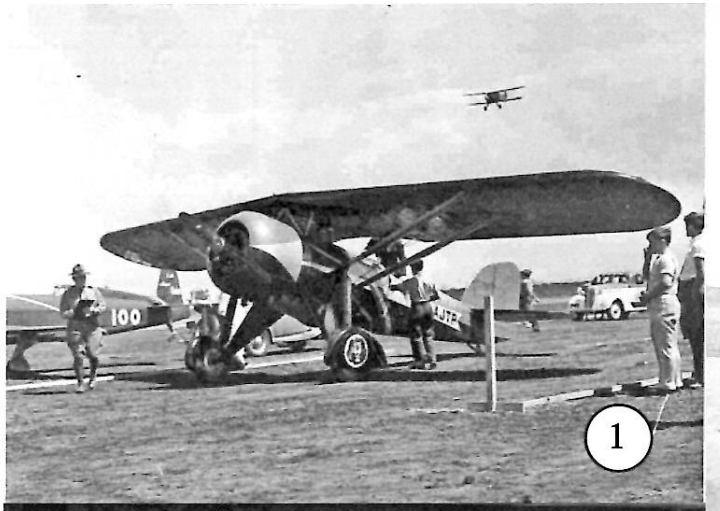
1. Detroytat's Morane at the 1937 races in the US judging by the Waco flying over, Caudron, cars and uniform.
2. You can see the color separations much better in this photo. I sure would choose the earlier (1933-34) color scheme without the sash and wheel pants of the 1937 version.

No photos from the R/C end at the NBM.

3. But here is a photo of John Krouse gave me a picture of his winner.
4. Photo of Pete Schumann's winning Fokker D-7 under construction.

Tony Pavel did get some pictures from the Freeflight end.

5. The Guth's getting ready for a flight.
6. Penny plane cruising overhead. Stew's Phantom Flash is pearched on the top of one of those columns.
7. Randy Kleinert talking to the Applings.
8. WW II No-Cal mass launch round two. Note the reaction times of the pilots. Stew Meyers photo.



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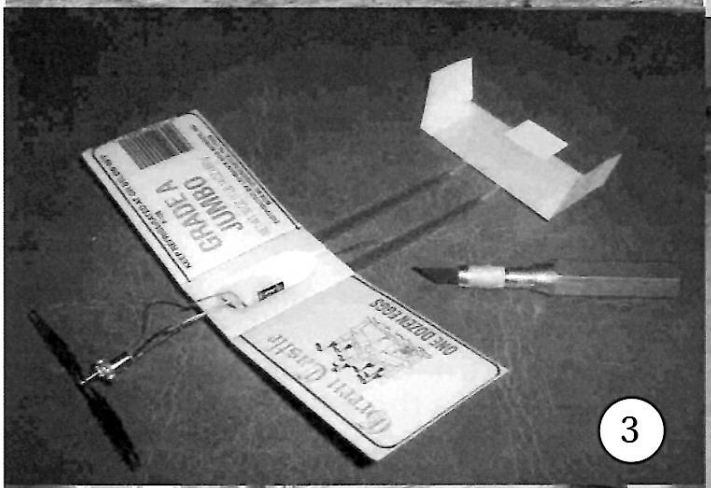

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CONTENTS:

Rata issue -3 sets of plans

Morane 234 peanut

NBM results.

2*4**********ALL FOR ADC 210
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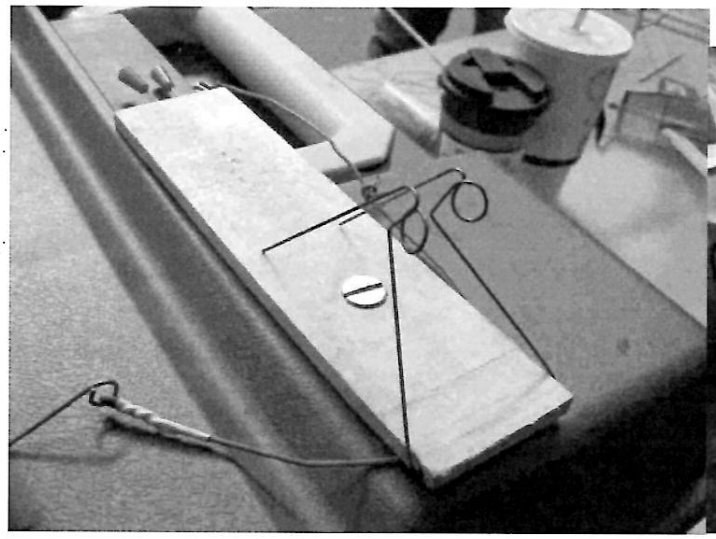
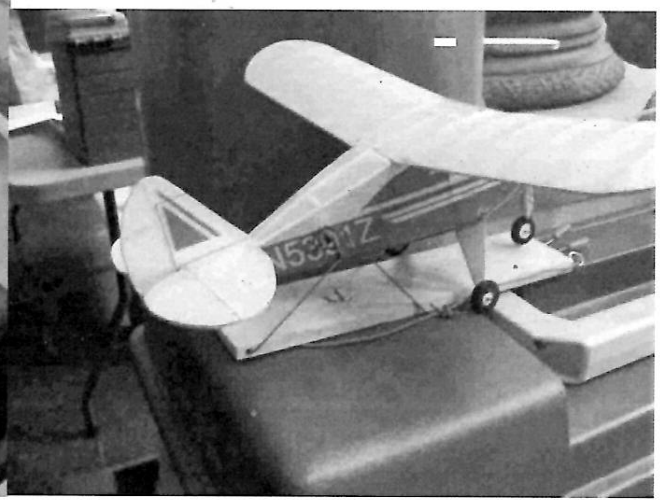
The red, white, and back color scheme of Michel Detroyat's Morane 234 shows up much better on this poster than in the black and white photo. The film in use darkens the red to the point that there is little or no contrast with the black.





Doug Grigg's music wire Stooge adapts to almost any fuselage width.
It is screwed to to the top of his tool box.

LEFT WING REQUIRES 1/16" WASH-OUT

3/32" SQ HARD BALSA LEADING EDGES

RIGHT WING REQUIRES 1/8" WASH-OUT

SECTION THROUGH TIP

R4 R3 R2 R1 R2 R3 R4

BALANCE POINT

TOP AND BOTTOM SPARS 1/16" SQ BALSA

1/16" SHEET WEBBING BETWEEN SPARS FROM R1 TO R2

RED STARS TOP AND BOTTOM

FILLET LINE

1/16" SHEET TIPS

MAKE RIBS FROM LIGHT 1/20" OR 1/16" SHT.

1/16" X 1/8" TRAILING EDGES

ALL-UP WEIGHT OF PROTOTYPE MODEL WAS 13·1 GRM. POWER: 1 LOOP OF 3/32" FLAT RUBBER 13" LONG. BEST FLIGHT INDOORS 41 SEC.

DIHEDRAL 3/4" UNDER EACH TIP

R3

R2

'TERN' PROP CUT DOWN TO 5" (SEE BELOW)

FILL WITH 1/16" SHT BALSA

VAC-FORM OR FOLD WINDSCREEN FROM THIN ACETATE

1/32" SHEET SIDE KEELS

SCRAP HEADREST

GLUE TOP EDGE OF FILLETS TO SIDE KEELS

GLUE TO F8

FORWARD

AFT

BOND PAPER WING FILLETS (NOTE GRAIN)

CUT OUT ENGINE LOUVRES ONLY ON F1

F1, F2 (X2) 1/8" SHT

ALL STRINGERS LIGHT 1/20" X 1/16"

F3 1/16" SHT

F4 F5 F6 F7 F8 F9

F4 - F9 1/32" SHEET BALSA

1/32" SHEET SUB-KEELS

SCALLOP ALL FORMERS WITH SANDPAPER AFTER CONSTRUCTION

2 LAMINATIONS OF 1/8 BALSA

DETAIL OF NOSE PLUG

BEND 'S' HOOK

DECK BEARING

1/16" PLY

1/16" SQ CROSS-BRACES TO FORM FRONT OF COCKPIT

WING FILLET OUTLINES SCRAP BALSA

CUT THIS PORTION OF UPPER KEEL AWAY AFTER ASSEMBLY

1/32 SHT KEEL

CARVE GUN COVERS FROM BALSA

F1 F2 F3 F4 F5 F6 F7 F8 F9

1/16" SQ BALSA

1/16" SHT.

1/16" DOWN-THRUST

SIDE KEEL

IMPORTANT BUILD TAIL SURFACES FROM LIGHT BALSA

1/16" SQ. BALSA

WINDSCREEN FRAME 1/22" BALSA

LAMINATE TAIL CURVES FROM 2 PIECES OF 1/16" X 1/32"

1/32" KEEL

LAMINATE SPINNER FROM 1/8" HARD BALSA DISCS

1/32" SHT KEEL

R4

1/32" SHT. SUB-KEEL

FILLET LINE

1/16" SHT. MOTOR SUPPORT

TAILWHEEL LAMINATED FROM 3 PIECES 1/32" SHT.

R1

Polikarpov I-16

PEANUT SCALE

— BY RICHARD CROSSLEY —

Tips—Fate's Favorite!
"Walk" 1/8" stock around Outline,
Cut & Glue as you go,
Sand to Shape

5
4
2
1
3/32 Sq. L.E. Stock
Tapered to .050" x .085"
at Tip
3

1/32 Ply
Faceplate

Windscreen

Dihedral 1⅛"/side

Cp

Fillet

6" Tern
Prop

A
B
C
D
E
F

Stab Pocket
on Outside
Stringers

Fillet

All 1/16" Stock
Except:
Nose Block 1/32 Ply/1/8 Balsa
Front Plate 1/32 Ply
Wing L.E. 3/32 Sq.

Headrest
Stringers
All Tuck In
Here

Ends
Here

Ends at
"C"

"C" Only
to "D"

B/C

mjh '04

Deathtrap
Squadron
Special

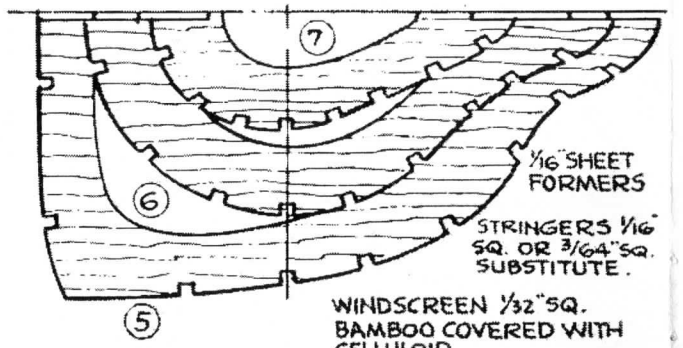
POLIKARPOV
I-16

Airframe &
Research
Rockland F. Russo
Drafting &
add'l Engineering
Michael J. Heinrich

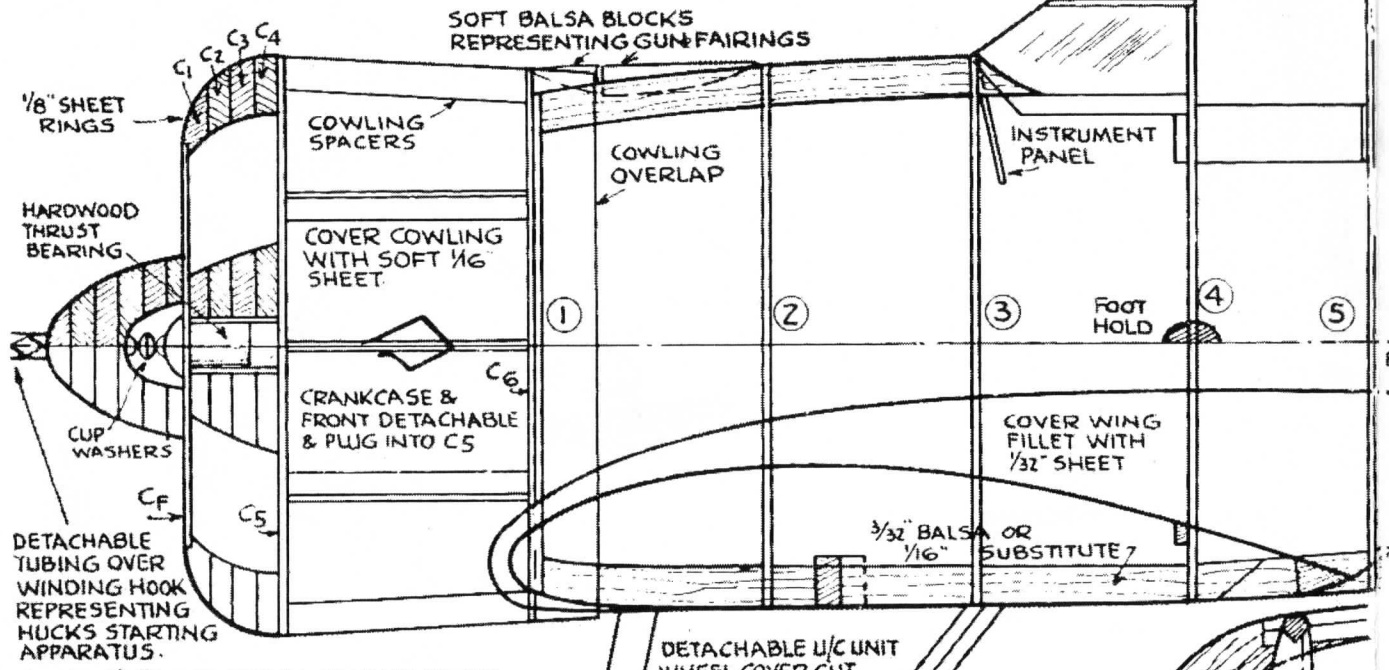
116B. "RATA".

DESIGNED BY J.A.F HALLS — DRAWN BY A.H.S

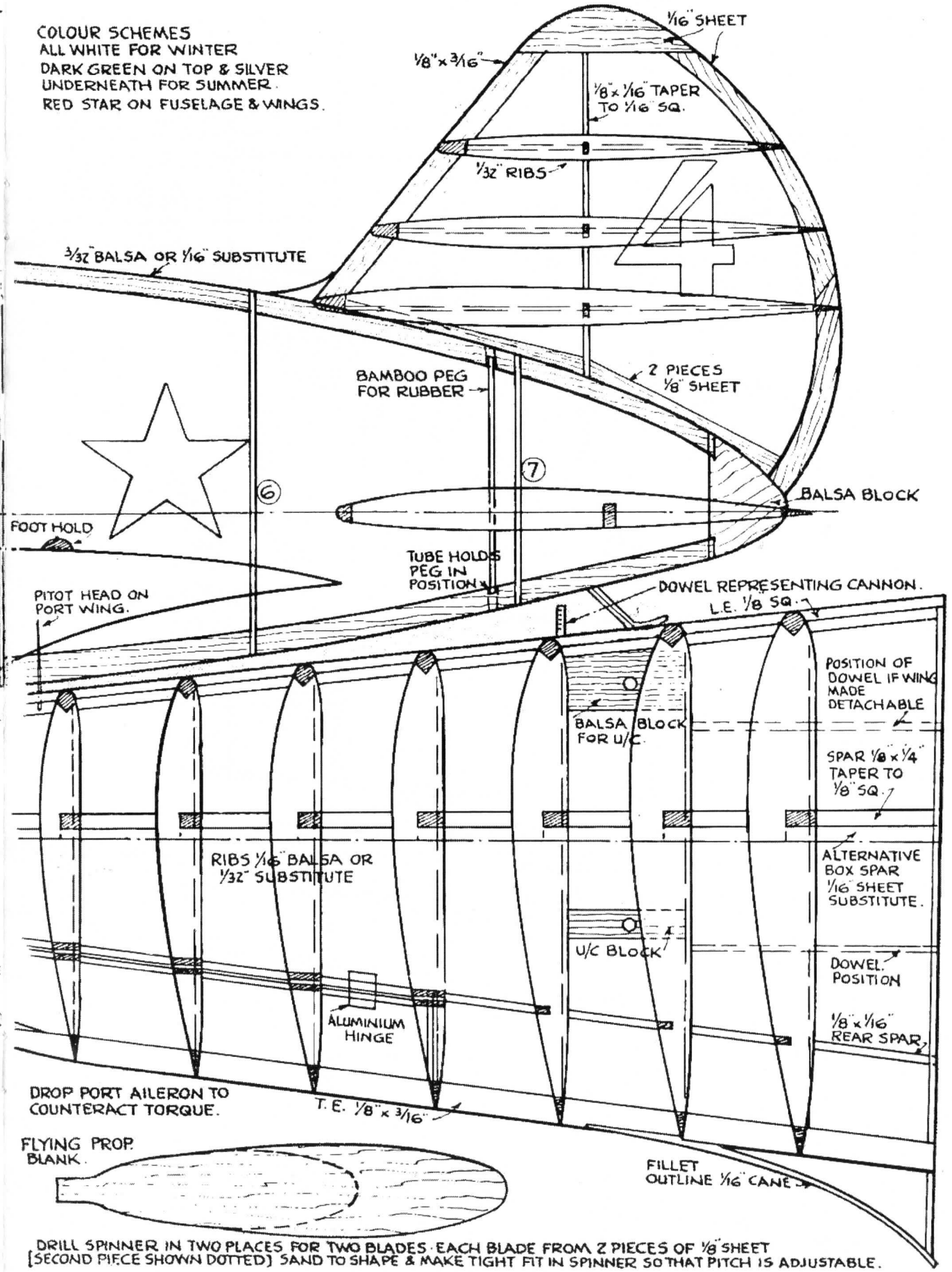
SCALE : FULL SIZE.



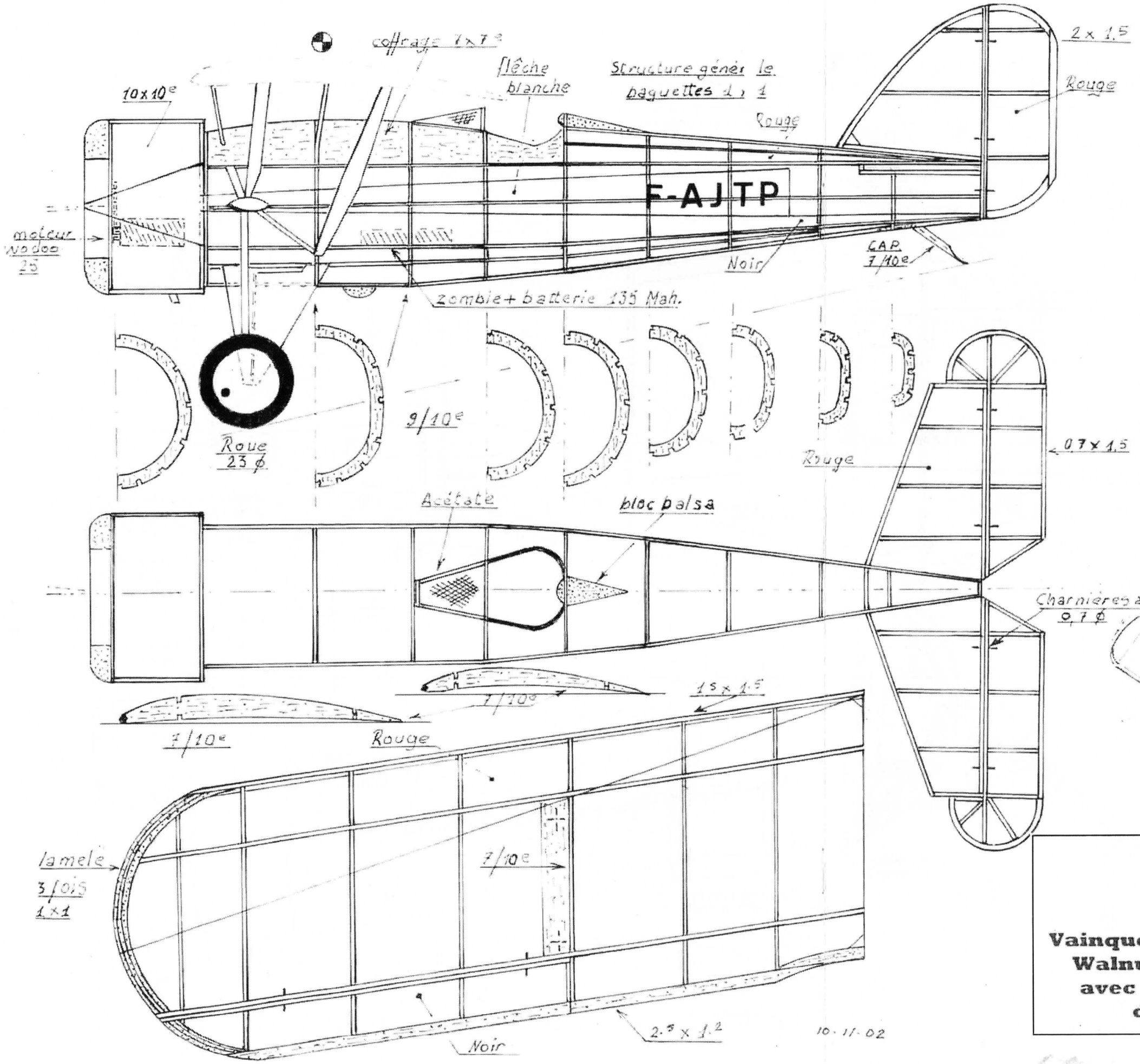
9 DUMMY CYLINDERS CUT FROM 1/8" SHEET ADDED TO DUMMY CRANKCASE BEFORE CEMENTING ON CF.

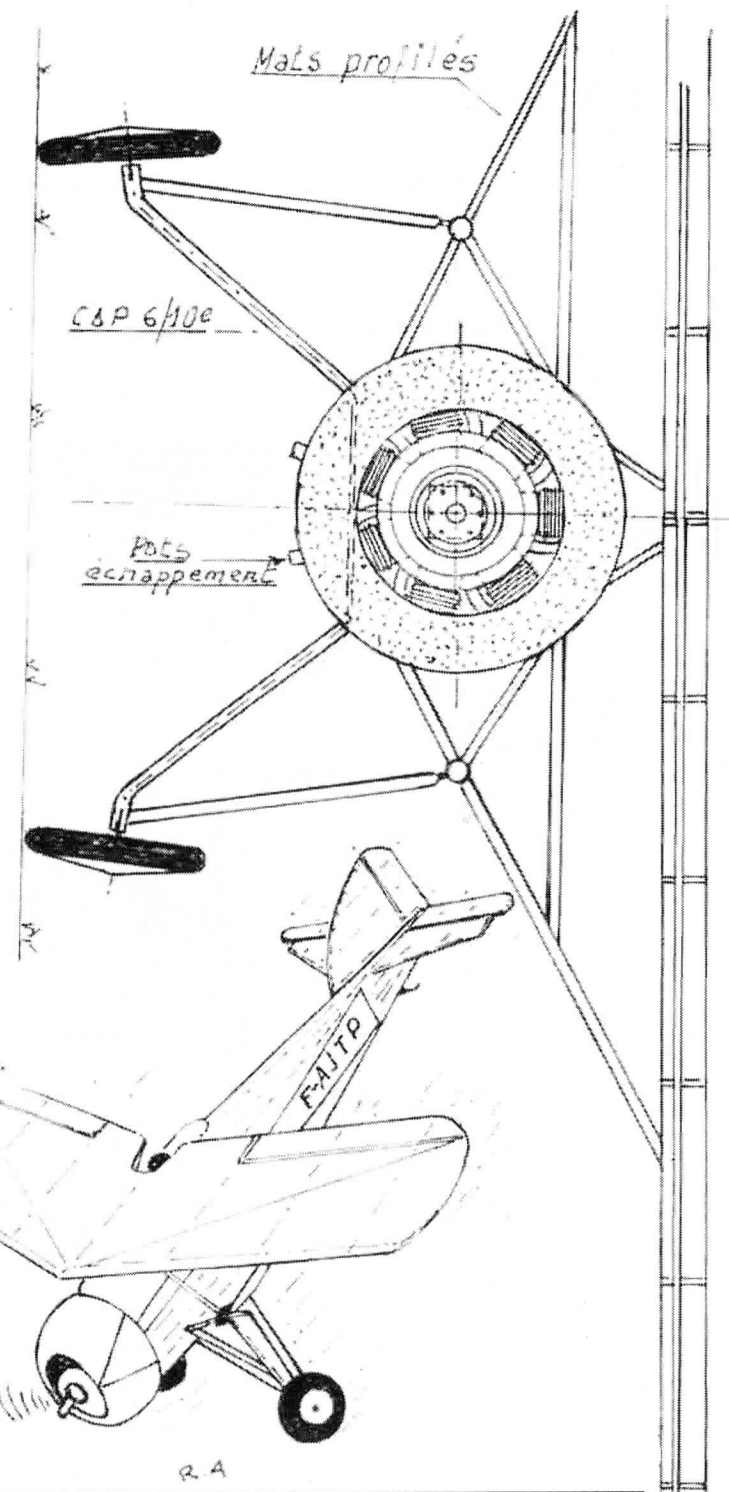


COLOUR SCHEMES
ALL WHITE FOR WINTER
DARK GREEN ON TOP & SILVER UNDERNEATH FOR SUMMER.
RED STAR ON FUSELAGE & WINGS.



DRILL SPINNER IN TWO PLACES FOR TWO BLADES. EACH BLADE FROM 2 PIECES OF 1/8" SHEET [SECOND PIECE SHOWN DOTTED] SAND TO SHAPE & MAKE TIGHT FIT IN SPINNER SO THAT PITCH IS ADJUSTABLE.





Morane 234-2

de Michel Detroyat
Vainqueur de la coupe Michelin 1931
Walnut électrique de Roger AIME
avec 1 woodoo 25 + batterie lipo
de 135 Mha et 1 zombie