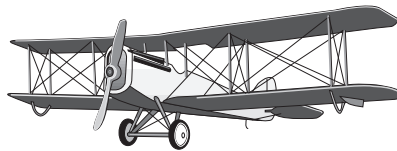


REPLICA

MAY
JUNE
2004

Newsletter of the National Association of Scale Aeromodelers [NASA]

PRESIDENT'S NOTES



NASA'S SCALE RESOURCE GUIDE 2004-05

If you've been a NASA member for more than a few years you remember the Scale Resource Guide, right? Well we've had a heck of a time getting a new one out over the past 4 years or so. We had one member **Gerald Deneau** who was working on this for us and had all of the files. He passed away and we weren't notified of this for several months. Another member was working on the Guide the next year after that and due to family health problems this was a on again and off again thing too. We have had several suggestions, most of which wouldn't work. In talking to some of our membership about the problem after awhile **Gary Parenti** volunteered to edit and update the guide for the NASA membership and he's been working on it for the past year.

Soon the new guide will be published and we will be either sending it to you by mail or delivering it to you at a NASA function like the Nationals or a trade show. Gary has had his hands full with the new guide and his wife has been a great help tracking all of the companies that have went out of business or moved and the forwarding address has expired. The new one is all computerized and will be printed on 8½ by 11" format with a spiral binder. It will not be available on the net or NASA's website. But for those of you who have been looking for it, after all this time it's sort of in the mail, if not it's definitely getting there!

SCALE NATIONAL CHAMPIONSHIPS 2004

We've had a great turnout in sponsors this year for the Nationals and we should all thank these companies very much and let them know how much we appreciate them. **Airtronics, Great Planes, Powermaster Fuel, Brodak, SIG, Skyshark RC, Testors Paint Co., Aeroplane Works, RC Report, Model Airplane News, and Airborne Media.**

For the most current list of sponsors, visit our web site sponsor page:

http://www.scaleaero.com/04_nats_sponsors.htm

NASA SHIRTS AT THE NATIONALS THIS YEAR!

NASA has it's own shirts for the Nationals this year which are being sponsored by **Pacer Technology, Airborne Media** and **Flite Metal**. These companies went the extra mile and have seen to it that everyone who is a competitor or judge receives a shirt this year at the Nationals. **THANKS EVERYONE!**

RULE PROPOSALS 2005-2006

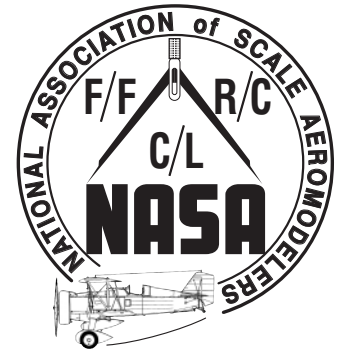
AMA is going to a two-year cycle now instead of the three-year cycle and have new policies which should speed up needed changes in the Competition Regulations which will be effective for 2005-2006. So if you want to make a change for the 2007-2008 rules cycle **NOW!!! Is the time to start** working on those changes for the rules cycle. If you would like to work on this within a committee, contact NASA. Free Flight Scale needs this very badly. Let's use the NASA website and the newsletter and get the word out. If you are interesting in chairing a committee to work on rules or want to hold a contest contact the NASA officers, newsletter editor, webmaster etc. and crank it up! The worst thing we could do is to just sit there with another cup of coffee and do nothing. If there isn't a CL or FF contest in your area why not hold one? NASA will help you promote it through the website, newsletter as well as we can offer mailing costs at a lesser rate than you can get at the post office, through bulk mailing, but you need at least 200 pieces which with the current NASA membership and a mailing list should be no problem.

It takes time and a great deal of planning to make this come off. I like to say plan your work and work the plan. More often than not this does work.

FAI UPDATES!

72 volts for F4C scale models PASSED! Beginning January 2005.

33.033 lbs. PASSED for F4C Models Beginning January 2005* here in the USA we can currently run all FAI class events up to 33.033 lbs. or 15kg.



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TOP GUN INVITATIONAL 2004

Look for coverage on the 2004 Top Gun Invitational this year in *Model Aviation* magazine in the September issue. All of the contest results are available at www.franktiano.com Go to Top Gun and you'll find all of the results there.

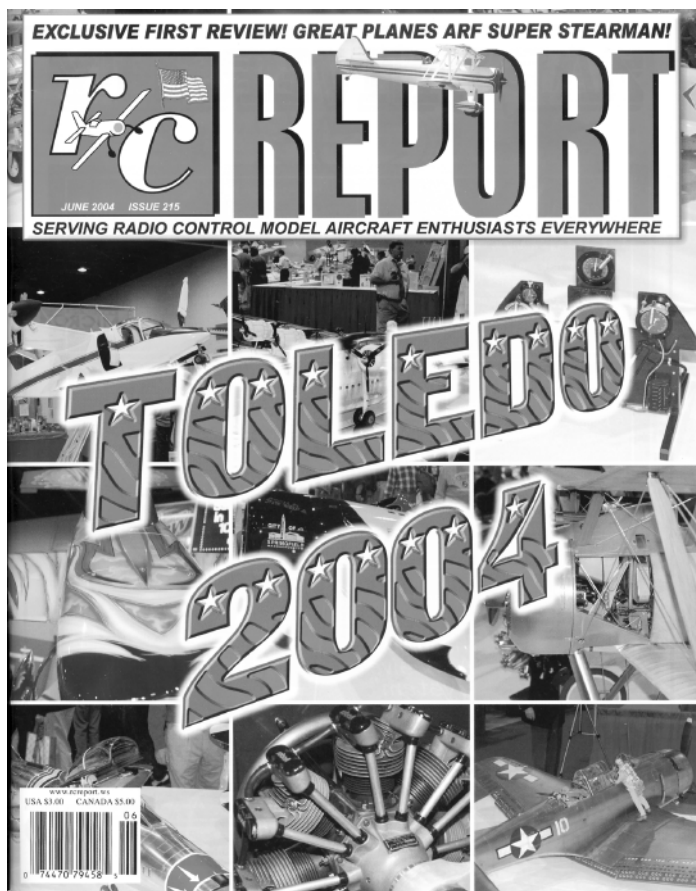
It's always interesting to me to see all of the different types of equipment at a scale meet used by modelers from all over the world or the country. Top Gun is no different. Most of the modelers are using equipment they are familiar with and comfortable with. One example is our own **Bob Underwood**. Who else uses a K&B100 to power their scale model? I don't know, but I do know Bob's never lost the engine on this one while in flight. Reliability of engines and radio equipment are primary concerns in RC Scale competition or any other scale model. The vast majority of modelers at Top Gun this year used JR radio systems. I'm guessing that they enjoy the ease of programming. The 2nd largest group used Futaba and 3rd largest group was Airtronics radios.

Fair Skies & Tail Winds,

Stan Alexander

Cyanoacrylate: Special glue, designed to instantly glue fingers to balsa structures. Also—special glue, instantly curing when parts are misaligned, will hardly (if at all) cure when parts are correctly aligned. Also—substance used to make eye water profusely at critical points in construction.

NASA'S OFFICIAL MAGAZINE



EMERGENCY SAFETY ALERT LITHIUM BATTERY FIRES

Lithium batteries are becoming very popular for powering the control and power systems in our models. This is true because of their very high energy density (amp-hrs/wt. ratio) compared to NiCads or other batteries. With high energy comes increased risk in their use. The, principal, risk is FIRE which can result from improper charging, crash damage, or shorting the batteries. All vendors of these batteries warn their customers of this danger and recommend extreme caution in their use. In spite of this many fires have occurred as a result of the use of Lithium Polymer batteries, resulting in loss of models, automobiles, and other property. Homes and garages and workshops have also burned. A lithium battery fire is very hot (several thousand degrees) and is an excellent initiator for ancillary (resulting) fires. Fire occurs due to contact between Lithium and oxygen in the air. It does not need any other source of ignition, or fuel to start, and burns almost explosively.

These batteries must be used in a manner that precludes ancillary fire. The following is recommended:

1. **Store, and charge, in a fireproof container**, never in your model.
2. Charge in a protected area devoid of combustibles. Always stand watch over the charging process. **Never leave the charging process unattended.**
3. In the event of damage from crashes, etc, carefully remove to a safe place for at least a half hour to observe. Physically damaged cells could erupt into flame, and, after sufficient time to ensure safety, should be discarded in accordance with the instructions which came with the batteries. **Never attempt to charge a cell with physical damage**, regardless of how slight.
4. Always use chargers designed for the **specific** purpose, preferably having a fixed setting for your particular pack. Many fires occur in using selectable/adjustable chargers improperly set. Never attempt to charge Lithium cells with a charger which is not, specifically, designed for charging Lithium cells. **Never use chargers designed for Nickel Cadmium batteries.**
5. Use charging systems that monitor and control the charge state of each cell in the pack. Unbalanced cells can lead to disaster if it permits overcharge of a single cell in the pack. If the batteries show **any sign of swelling**, discontinue charging, and **remove them to a safe place** outside as they could erupt into flames.
6. Most important: **NEVER PLUG IN A BATTERY AND LEAVE IT TO CHARGE UNATTENDED OVERNIGHT.** Serious fires have resulted from this practice.
7. Do not attempt to make your own battery packs from individual cells.

These batteries CANNOT be handled and charged casually such as has been the practice for years with other types of batteries. The consequence of this practice can be very serious resulting in major property damage and/ or personal harm

Safety Committee
Academy of Model Aeronautics
5161 E Memorial Drive
Muncie, IN 47302

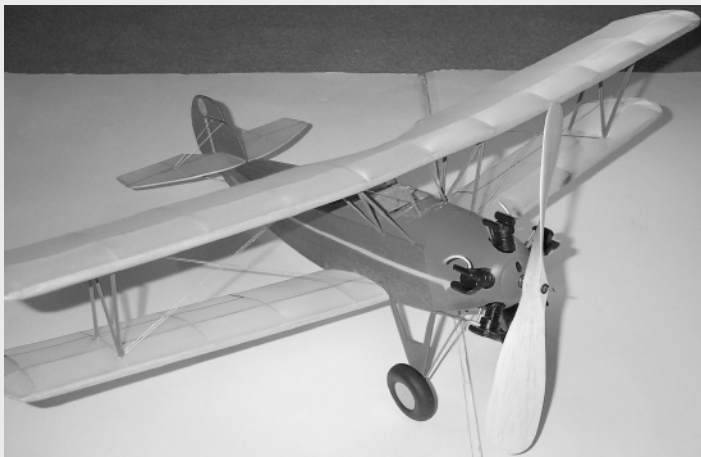
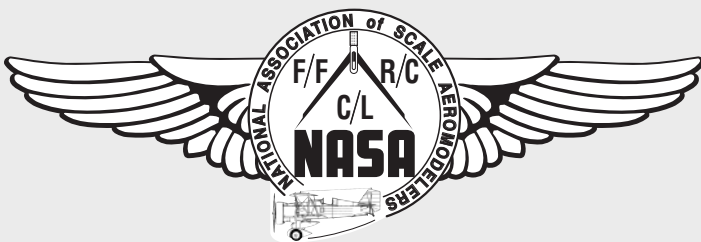
FROM THE FIELD...



Here is my freshly completed T-28 which is a Pica kit that I finished after Toledo. I took this with the tower's permission at Hawkins Field, and I thought the background helped to make the plane look full scale.

You can see the clevises and the SuperTigre intake. I left the antenna wire inside so it would not give a clue. I weathered it heavily with exhaust and corrosion at the panels. It has a thousand or so rivets, drops of glue via hypodermic needle, one at the time. Took a year to build, 8 flights so far. Working flaps.

William H Cox Jr
whc@jam.rr.com

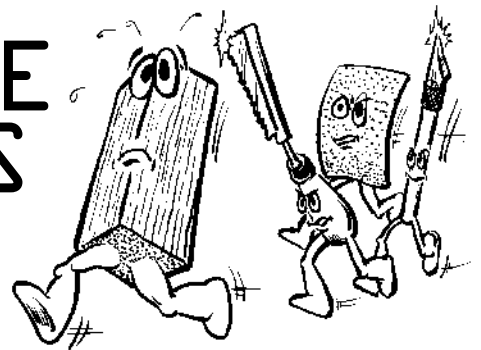


Here are photos of a just finished Fleet Model 2. Documentation photos are from Williams vintage A/C site.

Model is from Peerless Model Co. Plans that were modified to be a little more scale. Span is 24 inches, weight is 52 grams and the prop is carved from a Superior Prop blank. Engine cylinders built up from balsa, 20 lb. Monofilament, aluminum tubing and remolded plastic tube. The instrument panel has clear lenses over gauges.

Mike Welshans
Mbwelshans@aol.com

SCALE TIPS



COLORED EPOXY

Have you ever wished epoxy could be purchased in colors to match your aircraft? It can!

After you have mixed your epoxy, small amounts of paint can be added to the mix. After the epoxy has cured, it will match the finish of your aircraft. Mix the epoxy/paint combination thoroughly before applying.

Don Helps
Flying Tigers RC Club

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NATS Horizon Center Indoor R/C Meet

June 25, 2004



INDOOR R/C FUN SCALE

Rules for R/C FUN SCALE and R/C SPORT SCALE events at the Horizon Center

Model Requirements (both events):

- 1) Models must be powered with electric, CO₂, or compressed air motor(s). No other type of power plant is permissible for indoor flying.
- 2) Models shall weigh no more than 12 ounces ready for flight, including fuel or batteries.
- 3) Maximum wing loading of the model, ready for flight, shall not exceed 6 ounces per square foot.

Maneuver Descriptions (both events):

Because of the size restrictions that indoor flying naturally imposes on the flight of a model, some of the maneuver descriptions in the AMA Radio Control Scale Flight Judging Guide (page 169 of the 2002-2004 AMA Rule Book) may be altered slightly to fit the size of the facility. For example, the Judging Guide says that the Fly-Past should be flown between 10 - 20 feet altitude for at least 5 seconds. We will change that to 5-15 feet altitude for a distance of at least 25 feet. Other maneuver descriptions in the Judging Guide that may need to be adjusted are Straight Flight Out, Straight Flight Back, Flight In A Triangular Circuit, Flight In A Rectangular Circuit, and Traffic Pattern Approach To Landing. These maneuver descriptions all contain references to distances that are not practical for indoor flying. If you intend to do any of these maneuvers, be sure to attend the Scale Pilot's Meeting before flying starts so that we can discuss changes in maneuver descriptions.

Indoor R/C Fun Scale

This event will be flown in accordance with AMA rule book event #520 RC Fun Scale.

Highlighting the basic rules for this event...

- 1) Open to modeler-built or factory-built models. In other words, no builder-of-the-model-rule! Factory-built ARFs (like the GWS Tiger Moth) and team-built models can be flown in Fun Scale. Also, "profile" fuselage (road-kill series) airplanes are allowed.
- 2) Static scale score will be zero (0) OR five (5) points. Five (5) scale points will be awarded to contestants who show proof that a full-size airplane of this type, and in this paint/markings scheme, did exist. Proof is limited to a single 8-1/2x11 sheet maximum. Proof can consist of as little as one photograph, profile painting, or plastic model kit box. If the photograph is b&w, other written documentation of color is required

also. If no proof of existence is shown, no scale points will be awarded.

- 3) Flight rules are the same as for R/C Sport Scale. The contestant will fly ten (10) maneuvers; five (5) mandatory and five (5) optional. The mandatory maneuvers are: Takeoff, Figure 8, Fly Past, Landing, and Realism In Flight. The optional maneuvers can be any flight maneuver or scale operation typical of the subject aircraft. All maneuvers will be scored 0-10 points. Maximum possible flight score is 100 points.
- 4) The contestant's score shall be the total of the static scale points (5 points max.) plus the average of the best two flight scores (100 points max.).

Indoor R/C Sport Scale

This event will be flown in accordance with AMA rule book event #513 RC Sport Scale.

Highlighting the basic rules for this event...

- 1) A builder-of-the-model-rule applies to this event. No factory-built or team-built models allowed. Kit-built (non ARF) models are allowed.
- 2) Static scale judging will be done as per regular Sport Scale rules, except that the judging will be done from a distance of 10 feet, instead of 15 feet, due to the small size of most indoor models. The model will be judged in the following categories:
 - Accuracy of Outline 40 points max.
 - Craftsmanship 30 points max.
 - Finish, Color & Markings. 30 points max.
 - Total static scale score 100 points max.
- 3) Flight rules are the same as for R/C Sport Scale. The contestant will fly ten (10) maneuvers; five (5) mandatory and five (5) optional. The mandatory maneuvers are: Takeoff, Figure 8, Fly Past, Landing, and Realism In Flight. The optional maneuvers can be any flight maneuver or scale operation typical of the subject aircraft. All maneuvers will be scored 0-10 points. Maximum possible flight score is 100 points.
- 4) The contestant's score shall be the total of static scale points (100 points max.) plus the average of the best two flight scores (100 points max.).

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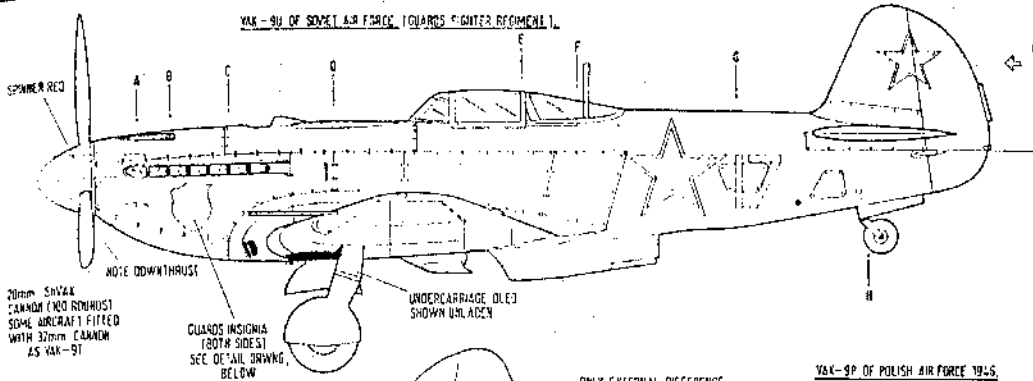
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YAK-9U OF SOVIET AIR FORCE (GUARDS REGIMENT 1)

CAMOUFLAGE IN SIMILAR SCHEME AS YAK-9U YELLOW EDGING TO STARS, AND WHITE NUMERALS.



20mm SHAKK CANNON (NO REDUCTION) SOME AIRCRAFT FITTED WITH 37mm CANNON AS YAK-9I

NOSE DOWNTHRUST

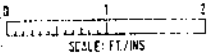
UNDERCARRIAGE (OLEJ) SHOWN UNLADEN

GUARDS INSIGNIA (BOTH SIDES) SEE DETAIL DRAWING BELOW

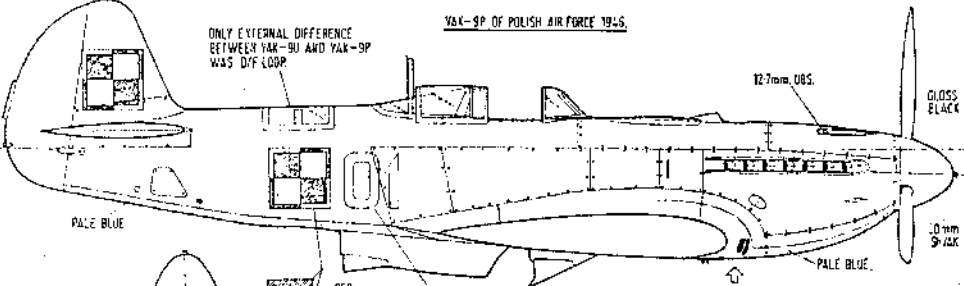


GUARDS REGIMENT INSIGNIA

RED - FLAG AND STAR.
 WHITE - STAR BACKGROUND.
 GOLD - LAUREL LEAVES, FLAG LETTERING, FLAGSTAFF TASSELS AND ROBONS, SCROLL, STAR AND FLAG EDGING.
 'СССР' ENGRAVED ON SCROLL.



YAK-9P OF POLISH AIR FORCE 1945



ONLY EXTERNAL DIFFERENCE BETWEEN YAK-9U AND YAK-9P WAS DIFF LOOP

PALE BLUE

12.7mm ODS

GLOSS BLACK

10mm 9-JAK

RED WHITE

WHITE NUMERALS

UPPER SURFACES OLIVE GREEN OVERALL

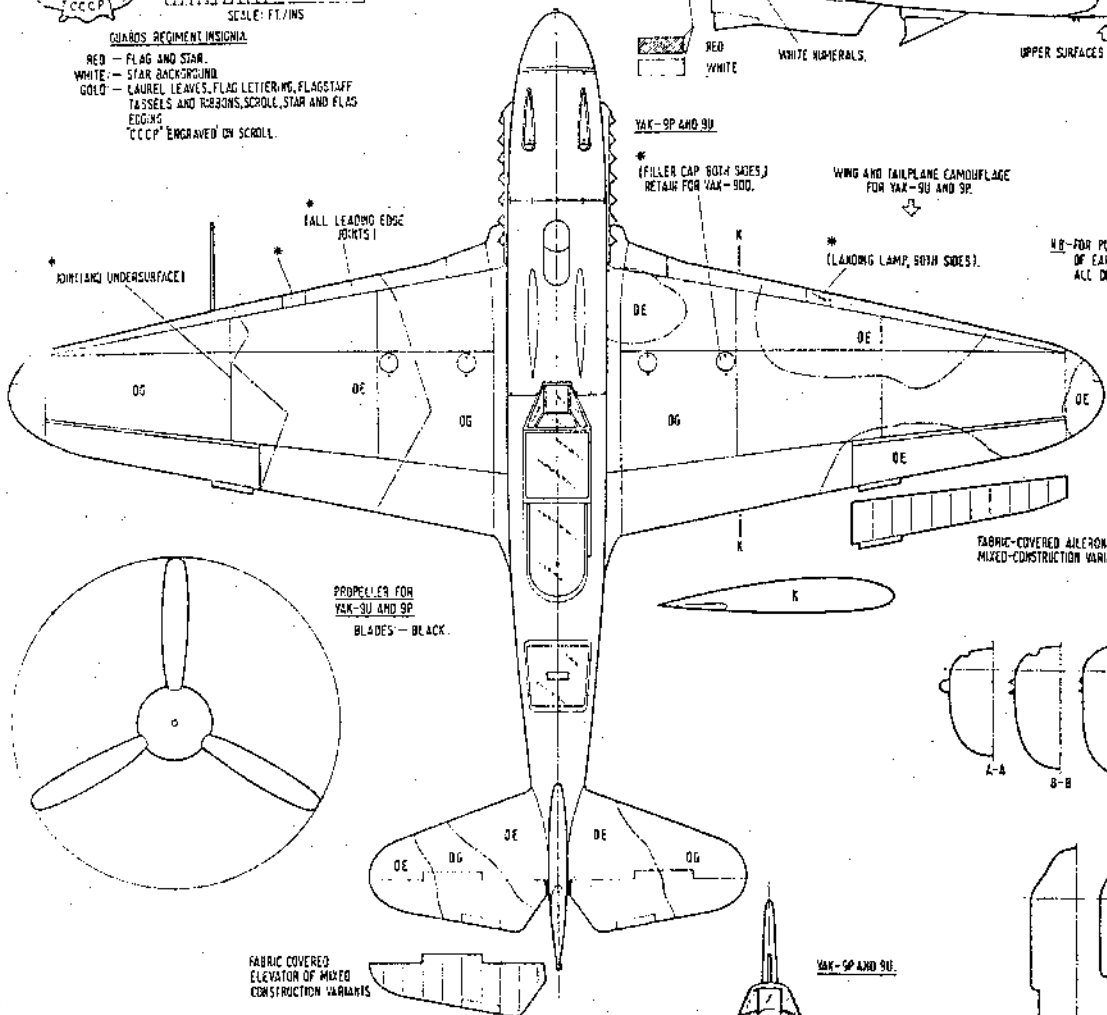
YAK-9P AND 9U

* (FILLER CAP BOTH SIDES) RETAIN FOR YAK-9DD.

WING AND TAILPLANE CAMOUFLAGE FOR YAK-9U AND 9P.

* (LANDING LAMP, BOTH SIDES)

* (FOR PLYWOOD COVERED WINGS OF EARLIER VERSIONS, DELETE ALL DETAIL MARKED *).



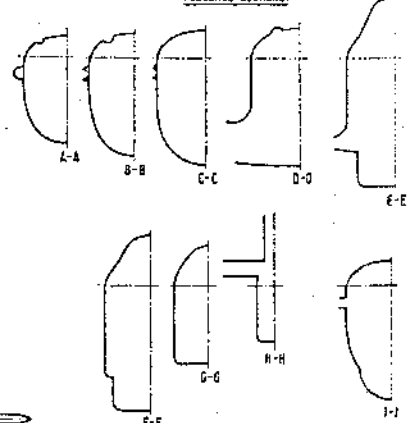
* (HORIZONTAL) UNDERSURFACE

* (TALL LEADING EDGE PORTS)

PROPELLER FOR YAK-9U AND 9P BLADES - BLACK

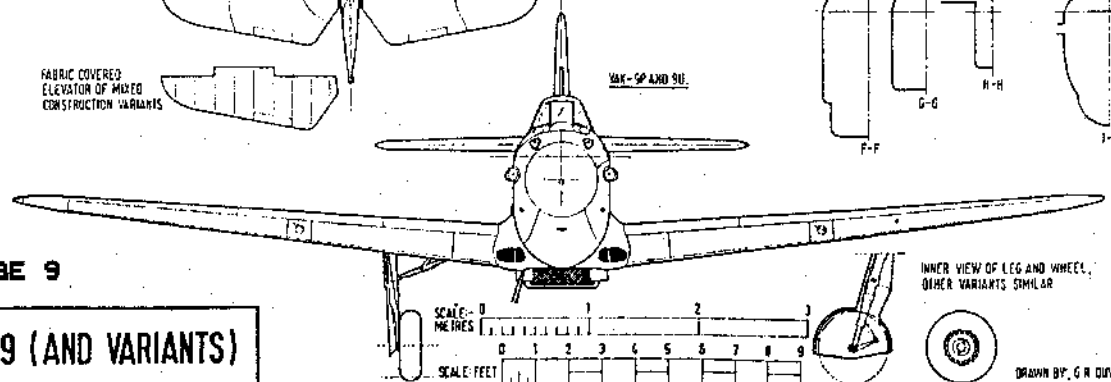
FABRIC COVERED AILERONS OF MIXED-CONSTRUCTION VARIANTS.

FUSELAGE SECTIONS

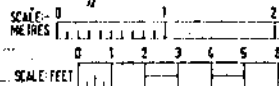


FABRIC COVERED MIXED CONSTRUCTION VARIANTS

YAK-9P AND 9U



INNER VIEW OF LEG AND WHEEL. OTHER VARIANTS SIMILAR

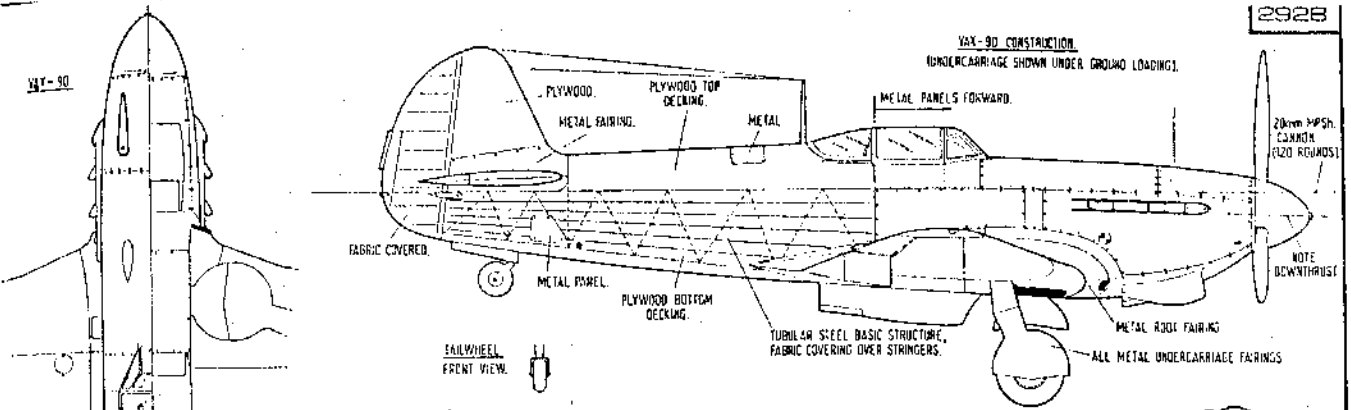


DRAWN BY: G. R. DUVAL

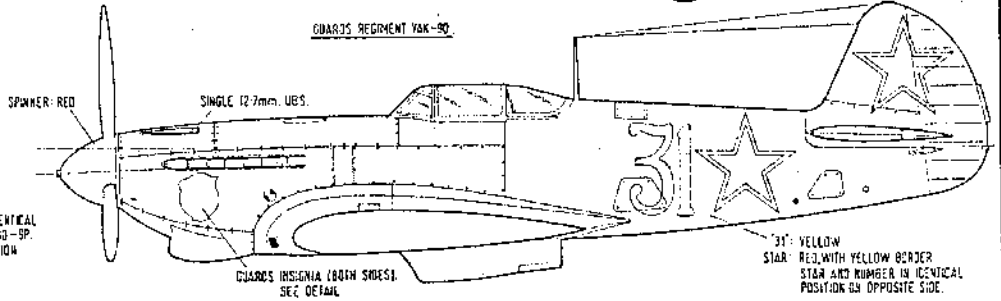
YAKOVLEV YAK-9 (AND VARIANTS)

YAK-90

YAK-90 CONSTRUCTION
(UNDERCARRIAGE SHOWN UNDER GROUND LOADING)

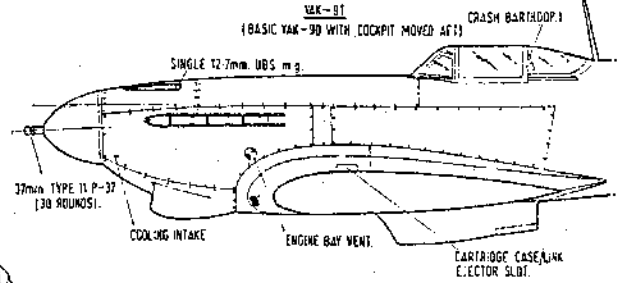
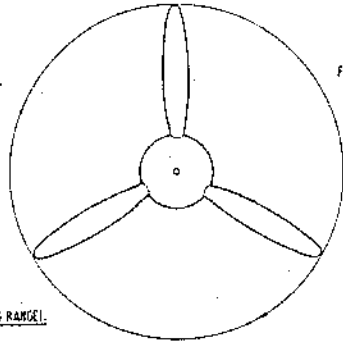


GUARDS REGIMENT YAK-90

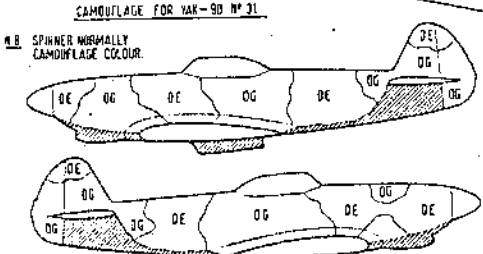
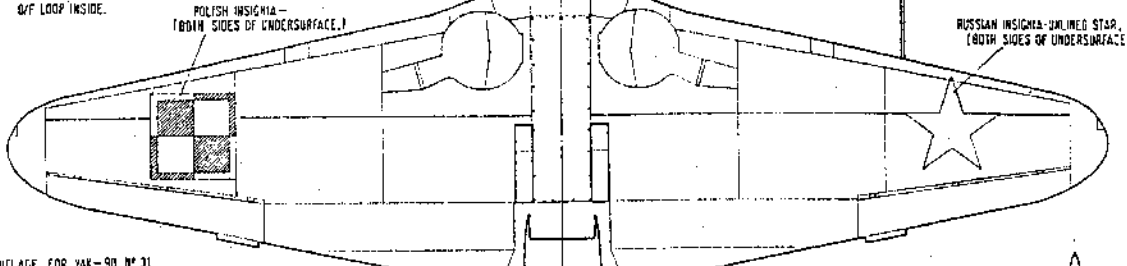
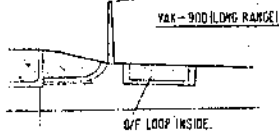


YAK-9, -90, -900 AND -91
WINGS AND TAILPL. ARE IDENTICAL IN OUTLINE TO YAK-90, AND -91, BUT OF MIXED CONSTRUCTION AND PLYWOOD-COVERED

PROPELLER FOR YAK-9, -90, -900 AND -91. BLADES-BLACK.



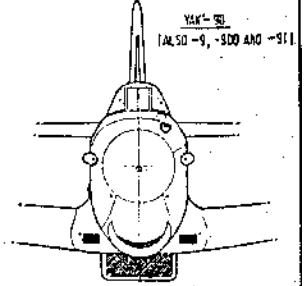
YAK-90 AND-91
BOTH RUSSIAN AND POLISH AIRCRAFT HAD PALE BLUE UNDERSURFACES.



OG - OLIVE GREEN SIMILAR TO U.S. A. F. COLOUR USED IN EUROPE IN 1944.
 DE - IDENTICAL TO R.A.F. COLOUR DARK EARTH.
 W - MIX TWO PARTS MATT WHITE WITH ONE PART HUMBROL NO. 76 BELORAU.
 NB - MANY VARIATIONS OF ABOVE SCHEME EXISTED. PRIOR TO 1944, MOST YAK-9'S WERE OVERALL OLIVE GREEN ON UPPER SURFACES, BUT PALE BLUE UNDERSURFACES WERE STANDARD.

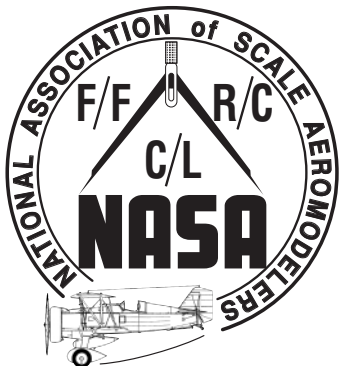
YAK-9
AS YAK-90 No. 31 BUT WITH FIXED TAILWHEEL.

YAK-9M
AS YAK-9 BUT WITH TWO 12.7mm GUNS.



YAKOVLEV YAK-9 (AND VARIANTS)





In This Issue:

- **AMA Emergency Safety Alert • YAK-9 3-view**
- **NATS 2004 Indoor R/C Scale Info & Rules.**
- **The Latest in Scale News.**

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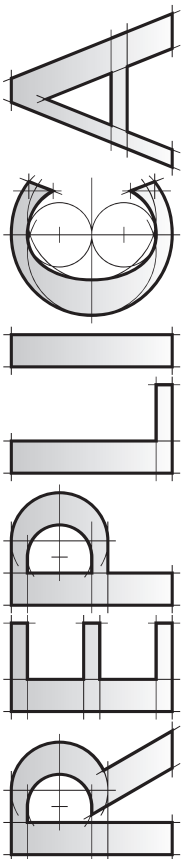
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Area of Interest: Free Flight Control Line Radio Control Giant Sailplane Electric

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