

# Seattle Chapter News



Seattle Chapter IPMS-USA  
February 1999

## PREZNOTES



Vacuforms. Most modelers shudder or recoil in fear when they hear the V-word. Contrary to popular belief, the fact is that vacuforms just aren't as difficult as their reputation would have you believe. Probably, the fear of vacuforms is based on their early history - they were **horrible**. Most were done over crudely done male molds, accuracy was questionable, there were few if any detail bits (vacuform landing gear struts?), and parts fit was sometimes atrocious. With a large amount of work you could make a half-way decent replica that would draw a lot of interest at a model show. A few decades ago, I remember Gerry Nilles' C-124, my own Martin SeaMaster, and Larry Templeton's C-121 models that drew a great deal of attention because they were not just another Messerschmitt or Phantom. The big boys at the time - Revell, Airfix, Frog, Aosima, Hasegawa, and Monogram - were never going to release a SeaMaster or C-124 as an injection molded kit so your only recourse was to build a vacuform (or scratch build!). Today, with short run companies and even the major manufacturers producing kits of limited production types, vacuforms may seem to be diminishing in interest, but they are still here. And some of the vacuform companies are producing models with a quality that surpasses some of the short run injection molded kits!

So what's the big deal about vacuforms? Most modelers believe that they are too labor intensive - that it takes too much work to get to the assembly. That may be true to a certain extent but basically the laborious part is removing the parts from the sheet and sanding the mating edges. Cutting a part from the sheet of plastic is simple. Score around the part with your Xacto knife, then "snap" the part from the sheet. Then sand the mating edge of the part with coarse sandpaper mounted on a sanding block, or scrape the edge with your Xacto. I sometimes use my Dremel with a sanding disc. If you are careful with your sanding, you should not require

volumes of putty. You have to add tabs to make fuselage parts align, and that's basically it. You have to do the same with many of the short run kits too! Most vacuforms today come with resin, white metal, or photoetch detail parts and most of us have worked with those. After you've cleaned up the parts you are ready for assembly.

My last vacuform, the Dynavector Skyshark, went like a breeze. The first evening was spent cutting out the parts, the second was cleaning up the parts and by the third evening I was well into assembly. After a few more days it was in paint! (My review of the Skyshark kit is on page 10 of this issue). It is true that a vacuform model requires a lot of work up front, but once it is finished you'll have a subject on your model shelf that Tamiya or Revellogram won't be doing. Then again, sometimes Jeff Smith's Fifth Law of Modelling comes into effect, which indicates that the closer one comes to completing a vacuform model, the more likely it is that Hasegawa or Airfix will announce the same subject as a new release for later this year!

See you at the meeting,

*Terry*

### In This Issue

A Muddle of MiGs	3
American Spitfires Book	8
Modelcraft Shackleton	9
Dynavector Skyshark	10
Condor A-36A Apache	11
A-20/DB-7 Conversion	12
Modeling Tips and Ideas	14
Toko Snipe & Salamander	15

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NEW IPMS Seattle Web Site (Webmasters, Tracy White & Jon Fincher): <http://www.blarg.net/~ipmssea.html>

**Public Disclaimers, Information, and Appeals for Help**

This is the official publication of the Seattle Chapter, IPMS-USA. As such, it serves as the voice for our Chapter, and depends largely upon the generous contributions of our members for articles, comments, club news, and anything else involving plastic scale modeling and associated subjects. Our meetings are generally held each month, (see below for actual meeting dates), at the Washington National Guard Armory, off 15th Ave. NW, just to the west side of Queen Anne Hill in Seattle. See the back page for a map. Our meetings begin at 10:00 AM, and usually last for two to three hours. Our meetings are very informal, and are open to any interested plastic modeler, regardless of interests. Modelers are encouraged to bring their models to the meetings. Subscriptions to the newsletter are included with the Chapter dues. Dues are \$24 a year, and may be paid to Norm Filer, our Treasurer. (See address above). We also highly recommend our members join and support IPMS-USA, the national organization. See the form below for further details. Any of the members listed above will gladly assist you with further information about the Chapter or Society.

The views and opinions expressed in this newsletter are those of the individual writers, and do not constitute the official position of the Chapter or IPMS-USA. You are encouraged to submit any material for this newsletter to the editor. He will gladly work with you and see that your material is put into print and included in the newsletter, no matter your level of writing experience or computer expertise. The newsletter is currently being edited using a PC, and PageMaker 6.5. Any Word or WordPerfect document for the PC would be suitable for publication. Articles can also be submitted via e-mail, to the editor's address above. Please call me at 425-823-4658 if you have any questions.

If you use or reprint the material contained in the newsletter, we would appreciate attribution both to the author and the source document. Our newsletter is prepared with one thing in mind; this is information for our members, and all fellow modelers, and is prepared and printed in the newsletter in order to expand the skills and knowledge of those fellow modelers.

**UPCOMING MEETING DATES**

The IPMS/Seattle 1999 meeting schedule is as follows. To avoid conflicts with previously scheduled IPMS events and National Guard activities at the Armory, please note that some of our meeting days fall on the third Saturday of the month, not the traditional second Saturday. We suggest that you keep this information in a readily accessible place. All meetings begin at 10:00 AM.

**FEBRUARY 13, 1999 (2nd Saturday)**  
**APRIL 17, 1999 (3rd Saturday)**

**MARCH 13, 1999 (2nd Saturday - SPRING MEET)**  
**MAY 8, 1999 (2nd Saturday)**

**IPMS/USA NEW MEMBER APPLICATION**

IPMS No.: \_\_\_\_\_ Name: \_\_\_\_\_

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Address: \_\_\_\_\_

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Signature (required by PO): \_\_\_\_\_

- Adult: \$19       Junior (17 years old or younger): \$9
- Trade Member: \$19       Canada & Mexico: \$25       Other Foreign: \$28
- Family (Adult dues + \$5, one set magazines, # of membership cards required: \_\_\_\_\_)
- If recommended by an IPMS member,  
list his/her name and member number \_\_\_\_\_ (name) \_\_\_\_\_ (IPMS#)

**IPMS/USA**

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## A Muddle of MiGs: A Modeler's Guide to 1/72nd MiG-3 Kits and Their Reissues

by Greg Reynolds

Like most of my articles, this one was touched off by someone asking a simple question. Several months ago, Keith Lew innocently asked if the Encore MiG-3, with its cool resin parts, was worth building. At the time I had ten MiG-3 kits in my collection and I couldn't answer the question! I really didn't know what was in the Encore box. Worse, when I went on the Internet, I got conflicting answers about the identities of all the reissues. By the time I was ready to start writing, I had bought four "new" kits, borrowed four more from Tom Young's collection and still haven't accounted for all of them. I'll skip lightly over the resins and the vacs and concentrate on the injection molded kits. But, counting all media, issues and reissues, there are at least 23 1/72 "kits" of this forbear of the MiG fighter dynasty.

### Resin and Solid Models

The MiG-3 was included in the WWII Recognition Model series produced by the **Cruver Company** of Chicago. These well-known "ID models" were solid models molded in cellulose acetate. Unfortunately, this material has deteriorated with time, prompting **Classic Aircraft Collections** of Fort Worth to market modern reproductions. The MiG-3 is their model #R-1.

**SkyBirds** also included the MiG-3 in their line of early wood and metal kits.

In the early 70's the **Guano Aeroplane and Zeppelin Works** produced a small number of polyurethane resin MiG-3 kits. It included two solid fuselage halves with integral inner wing stubs and a canopy plug on which to vacuform your own canopy. The wings were to come from the Airfix Yak-9 and other bits from that old MPC chrome accessory tree. (Who remembers those?)

By the mid-70's the "**Czechmasters**" added the MiG-3 to their line. There were several groups producing resin kits in

Czechoslovakia at the time, so quality varied widely. The sample from Tom's collection (KPM kit #7) is of pretty fair quality and features a separate wing, partially hollowed out wheel wells and cockpit and numerous fiddley bits. A vac canopy and, unusual for Czech resin kits, full instructions with color schemes.

### Vacuforms

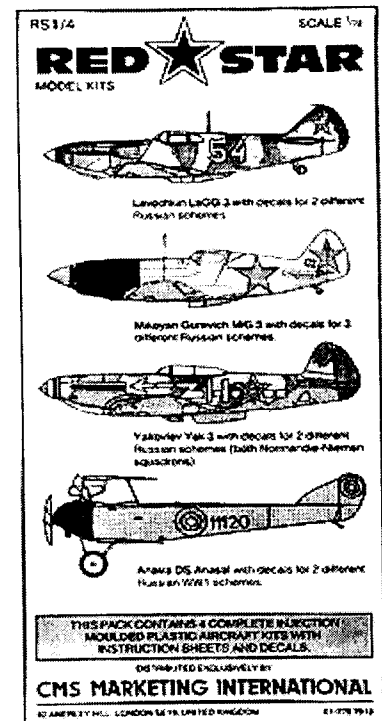
**Formaplane** produced a MiG-3 (kit #3), but it is an early effort that suffers from poor molding. **KPL** is reported to have made a MiG-3, but if it is like the other KPL kits I have seen, its quality is worse than a **Combat Models** kit. The Czech group known as **KPM / Kocise** made the MiG-3 their first effort (kit #1) in 1976. Their crisply molded vacuforms are still some of the best produced. Unfortunately, their MiG-3 suffers from some basic shape problems. The KPM MiG-3 was briefly distributed by **Victoria Products (VP)** without repackaging. **Wings 72** sold the KPM kit with their own header card and instructions as kit #VW727. **Eagles Talon** sold the KPM kit as their kit #ET 105.

In the early 90's a Russian made vacuform of the MiG-3 appeared under the labels **Acoustic** and **Aviastend** (kit #AS-08). The kit has the best shape of any vac MiG-3. It features some interesting wheel well detail and (poor) decals, but it suffers from heavy-handed detailing and thin plastic.

### Injection Molded Kits "Frog", kit #F308

If memory serves, the first injection molded MiG-3 kit was from Frog. Unfortunately, it was never actually produced under the Frog label, but it had been assigned a Frog kit number (which still appears on the Emhar issue trees!) and test shots were in circulation among collectors, at highly inflated prices, shortly before Frog's demise, c. 1975. Although it is a typical Frog kit, simple to the verge of being crude, the 27 medium gray parts, clear

canopy and landing light, are reasonably accurate and it is really quite buildable. The molding is very clean with fine raised panel lines and a generally pleasing shape. The cockpit area and canopy are well proportioned. On the negative side, the trailing edges are a little thick, the wing root fillet undersize, and the middle gun trough should be offset to port rather than on the fuselage centerline. The radiator is square and box-like. The wheel wells are detailed, but they are shallow and do not match the shapes shown in recent drawings. The most difficult problem to fix is the shape of the forward cowl. The bulging to enclose the upright V engine is much too exaggerated. It looks a bit like the Supermarine S.6B. If we had no alternative, with some effort, a respectable MiG-3 could be built out of the Frog kit.



### Red Star, kit #RS1/4

The first commercial appearance of the Frog kit came several years after the test

shots. It was boxed (a corrugated cardboard box!) by Red Star with three other unissued Frog kits, the LaGG-3, Yak-3 and Anatra DS. The instructions covered all four kits, but they did not have any assembly drawings. The decals (again, all four subjects on a single sheet) were typical Frog quality and include markings for a white Moscow Air Defense aircraft red "02", and two camouflaged aircraft white "04" and white "7".



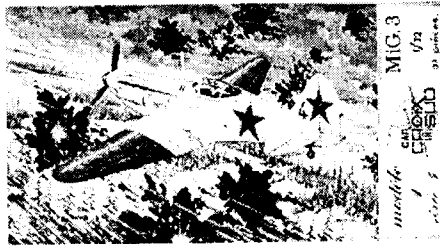
#### Red Star, kit #RS101

This time the MiG-3 (as well as the other three kits) was individually and more attractively packaged, in a bag with a full color header card. This time an assembly drawing was provided. The decals were unchanged.



#### Emhar, kit #EM2001

The Frog MiG-3 is currently available (as well as its three stablemates), after an absence of over decade, under the Emhar label. The only alteration to the MiG-3 kit is the addition of "Emhar" and "EM2001" to the inside of the upper wing halves. New decals are provided for markings for a winter aircraft "For Stalin" black "7", and a camouflaged aircraft white "04".



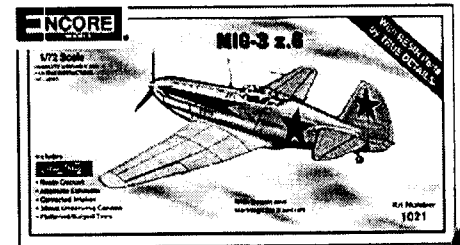
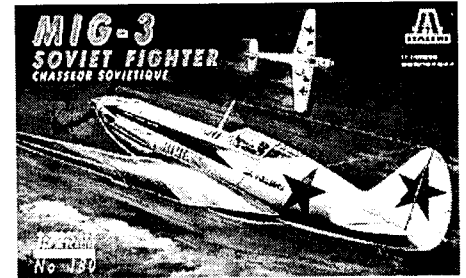
#### Cap Croix du Sud, kit #1

The first widely available injection molded kit of the MiG-3 was issued by the French company Cap Croix du Sud (Cape Southern Cross). It appeared in the interval between the Frog test shots and the Red Star issue. The CCS kit features 37 delicate flash free parts molded in ivory colored plastic with fine engraved lines. Decals provide for two winter schemes, red 4 and red 12. Unfortunately, the kit is a tragedy on two counts. First, it was the only kit ever produced by CCS and second their MiG suffered from some very serious accuracy problems. The whole kit is a little undersize: the rudder is a too small, the spinner is dinky, the prop blades mere sticks, and the landing gear and doors are pygmies. In addition the radiator is square and tapered and the exhaust and carburetor intake details are very crude. The worst, and nearly uncorrectable, problem is the shape of the cockpit and canopy. It is too narrow and horribly tapered. Of engineering necessity, the canopy rails should be parallel. Before the Frog kit surfaced as Red Star, this was the only available MiG-3 kit and some reviewers suggested saving it with elaborate shimming in the cockpit area and carving a replacement canopy. Fortunately, we now have good alternatives.

#### Italeri, kit #180

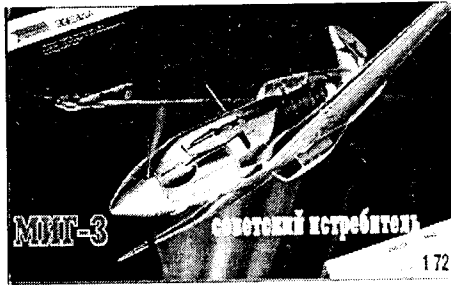
Italeri re-issued the Cap Croix du Sud MiG-3 a dozen years after it vanished and was considered rare. The Italeri issue is distinguishable from the CCS by being molded in white and has a few minor modifications to the molds to improve the plastic flow. Close examination also reveals new engraved dials on the instrument panel, detailing the control column and the letters "CCS" inside the cowl. Oddly enough, they also renumbered the parts on the trees. Italeri appears to have made a

new canopy mold, but it is just as bad as the original. Italeri's decals are for three aircraft, two winter aircraft "For the Motherland" and red "02", the third for camouflaged white "42".



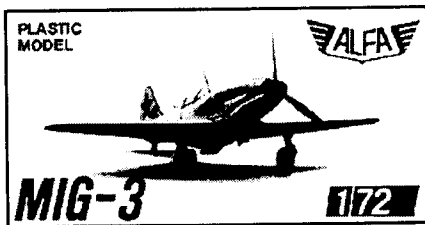
#### Encore, kit #1021

Encore is Squadron Shop's private label. They have reissued kits from a variety of manufacturers. Appearing two or three years ago, the ivory colored plastic, the inclusion of the original decals and even the same cellophane bag, indicate the Encore issue is simply a new box around old Cap Croix du Sud stocks. These parts were clearly produced before Italeri modified the mold. Encore added some very nice True Detail resin parts. These include a full cockpit, exhaust stacks, oil cooler scoops, main wheels and the underwing UBK 12.7mm machine gun pods for the MiG-3P. These parts are really very nice. Although they are designed for the narrow fuselage of the CCS kit, they should be easily adapted to the Plastic Air Kits MiG-3. As with other Encore kits, they have produced their own set of decals. These are also well done and include markings for three winter aircraft, "For the Party of the Bolsheviks", "For the Motherland" and black 7 "For Stalin".



#### Zvezda, kit #7204

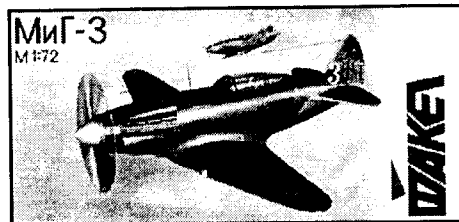
Incredibly, the CCS kit has recently made yet another resurrection, this time by the Russian firm "Zvezda" (Star). It is being imported into the US by MMD (the wholesale distributor side of Squadron Shop). Although it is labeled "Made in Russia by Zvezda for MMD, USA", the packaging is entirely in the Russian language. The kit itself is identical to the Italeri issue, save the olive drab color of the plastic. The decals are crude, providing markings for the white Moscow Air Defense aircraft "For the Motherland" and a camouflaged aircraft with the inscription "Death to the German Occupiers". The MiG-3 kit sold by Squadron shop as "Zvezda" with a Squadron stock number ZV2002, is not this kit. See "Plastic Air Kits".



#### Alfa

Even before the collapse of the Soviet Union, there were sparks of private enterprise. One of these was the company "Alfa" which started in 1987, later shut down by the authorities c.1990. The first series of kits were crude limited run kits. The copy examined for this article has 34 dirty white plastic parts plus clear canopy. The Alfa MiG-3 suffers from very thick fuselage walls, canopy, trailing edges and sprue gates. The surface detail is all raised and quite heavy-handed. The main gear doors are molded closed, although another "gear down" set is provided. Another

peculiarity is the main gear struts are split in half lengthwise. The most serious error is that the wing sits too low on the fuselage. Remarkably, the Alfa kit is more accurate than either the Frog or Cap Croix du Sud, but refining it would be a chore. No instructions are provided except a copy of scale drawings from *Modelist Konstruktor*. The decals provided are only six generic red stars. The best of the Alfa kits, such as the Yak-6, reappeared and are still available under the "Alpha" label, but their MiG-3 is not among them. The MiG-3 sold by Squadron Shop as "Alfa" with the stock number ZV2002, is not this kit. See "Plastic Air Kits".



#### Fakel

This Russian short run injection molded kit appeared after the Alfa issue disappeared. The kit breakdown is identical to the Alfa and the major parts have the same outline, but the arrangement of the trees is totally different. There are fewer and different small parts, only a total of 25 streaky gray and one clear part. The surface detailing is also different but I suspect that the Fakel is based on the Alfa. It is packaged in a bag with a full color wrapper and instruction sheet. A color scheme for a camouflaged "yellow 3" is shown, but no decals are provided.

#### Plastic Air Kits aka: Squadron Shop "Alfa" and "Zvezda", stock number ZV2002

This is by far the best 1/72 MiG-3 kit available. Unfortunately, it's a little difficult to tell who makes it. I have three copies of it (not counting the RPM issue) with minor variations in packaging and box size. Although clearly of Russian origin, neither the box, nor the instructions give any hint at a company name or logo. The closest thing I can find is the phrase (in English) "Plastic Air Kits" on the side of the boxes.

In the US, there has been additional confusion because Squadron Shop has listed this kit in their monthly flyers at various times as being from "Alfa" and "Zvezda", although it is clearly neither the Alfa nor Zvezda kit listed above. In both cases the Squadron stock number ZV2002 has been affixed to the box by Squadron. This is a complex kit, full of small detail parts, marred somewhat by excessive flash. I count 56 medium gray parts plus the clear canopy. The parts are thin, trailing edges sharp and the surface detail (both raised and recessed) is crisp.

The kit is dead-on according to scale drawings of the MiG-3 from recent Russian sources, with the exception of the cockpit width noted below. The cockpit alone contains 12 parts which include the structural framing of the side walls, gunsight, radio bay and two piece seat. The both the wheel wells and the insides of the gear doors are detailed. The main wheels are as finely detailed as any True Detail resin set. A nice extra is the underwing racks and six RS-82 unguided rockets. Of my three samples, one came with generic Soviet stars and numbers, one with decals for the LaGG-3 and one without decals at all. Go figure.

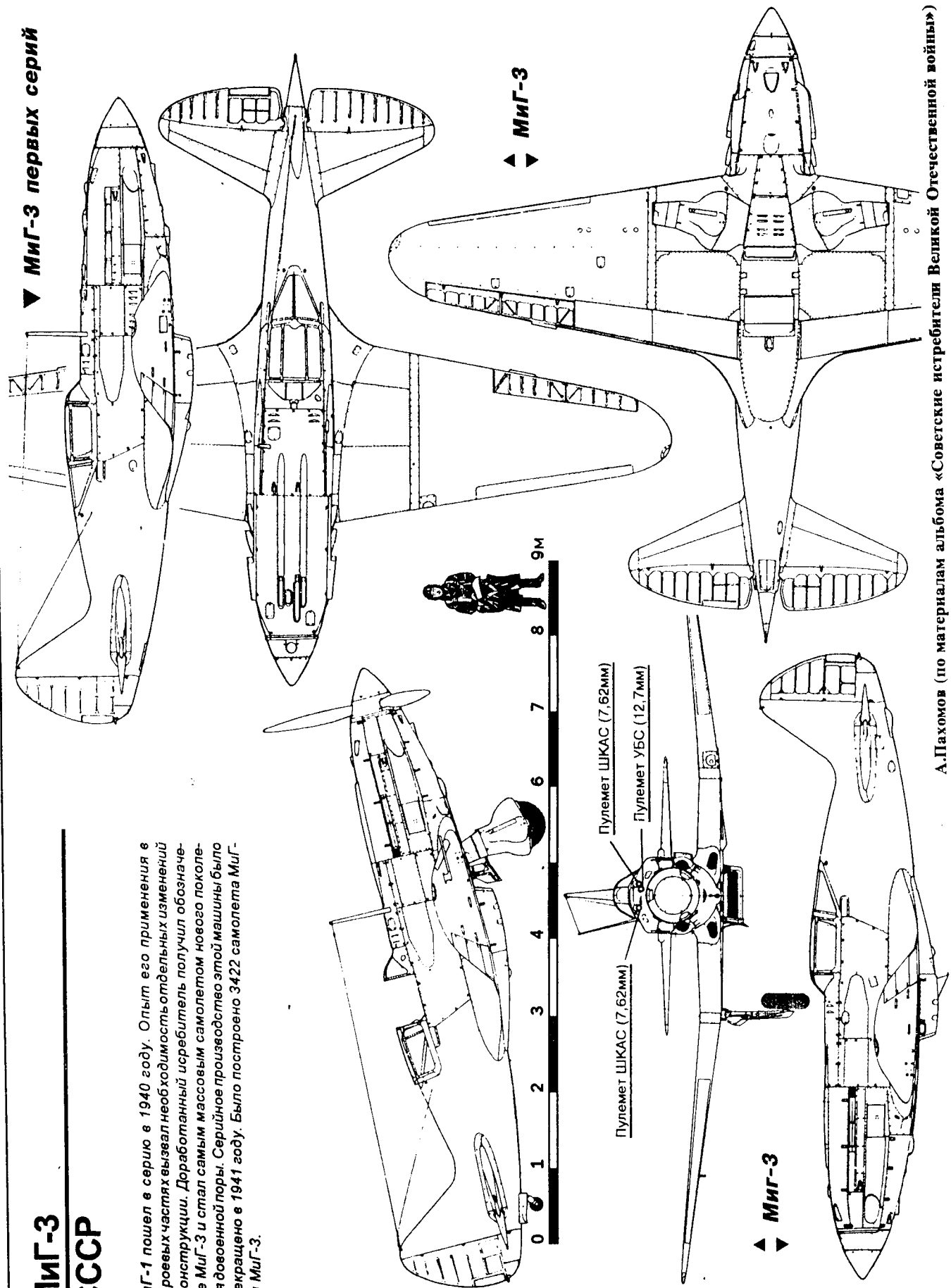


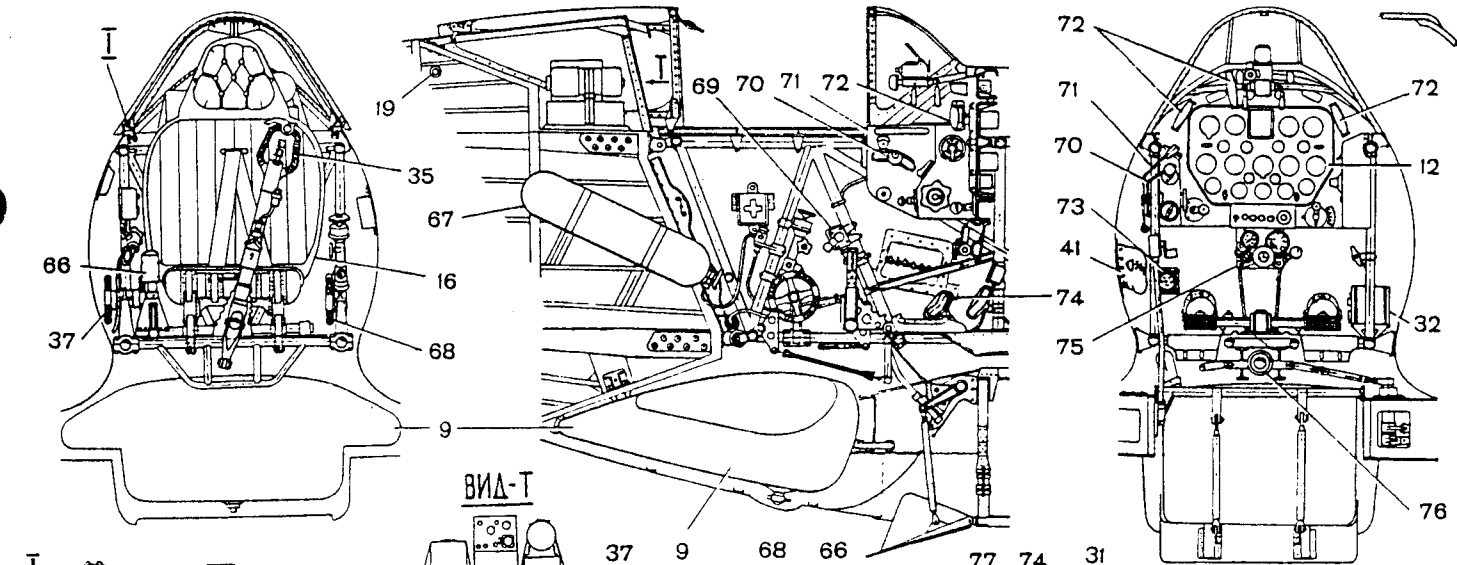
Not all of the detailing is good, however. The instrument panel is crude and wrong. Also, I find the representation of the fabric covered control surfaces overstated, they look like uncovered ribs. Some light sanding, extra paint, or even metal foil might mute the excess relief. The only serious defect is the cockpit width, which is about 1mm (.040") too wide. With some

*text continued on page 8*

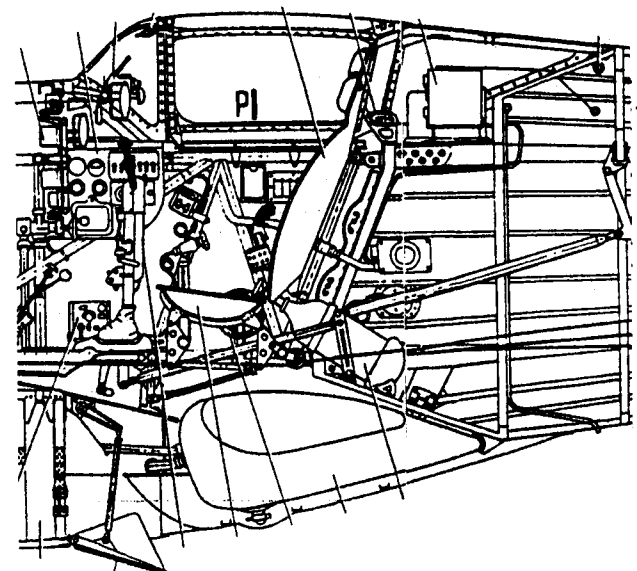
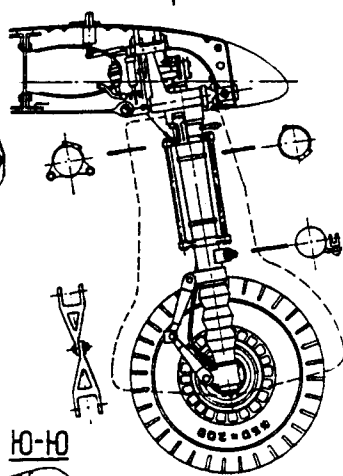
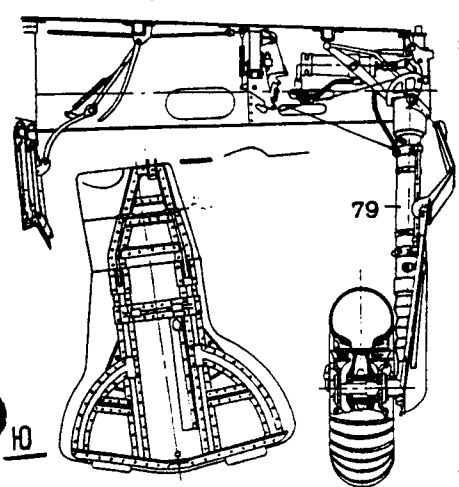
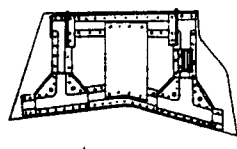
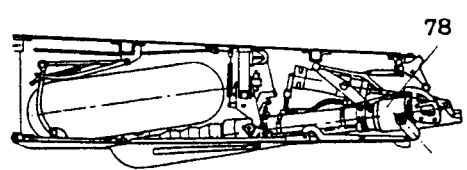
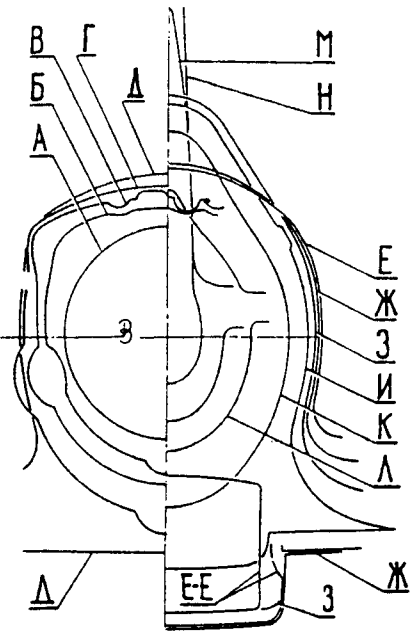
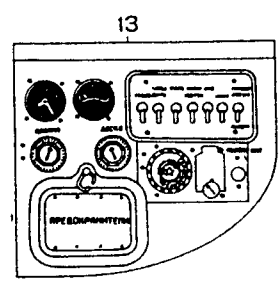
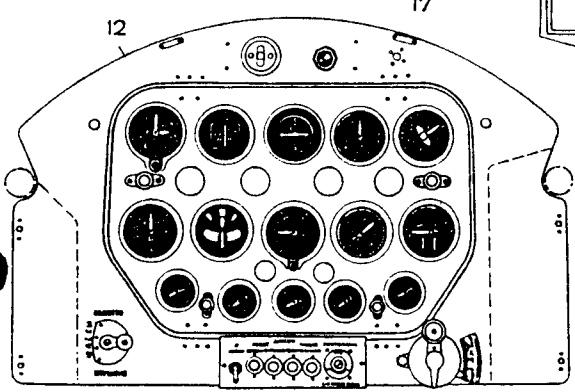
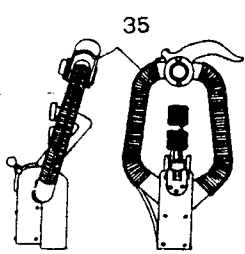
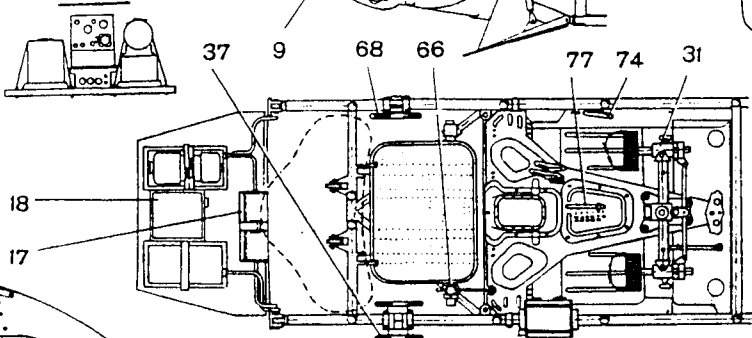
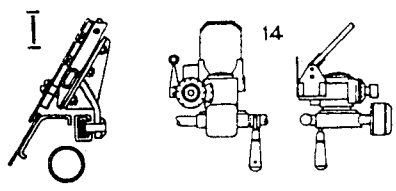
# МиГ-3 СССР

МиГ-1 пошел в серию в 1940 году. Опыт его применения в строевых частях вызвал необходимость отдельных изменений в конструкции. Доработанный истребитель получил обозначение МиГ-3 и стал самым массовым самолетом нового поколения довоенной поры. Серийное производство этой машины было прекращено в 1941 году. Было построено 3422 самолета МиГ-1 и МиГ-3.





ВМД-Т



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## Book Review:

### *American Spitfire Camouflage And Markings* by Paul Ludwig and Malcolm Laird

by Jim Schubert, IPMS 2159

As a reviewer of this title I must admit to a bias; Paul and I have been friends for almost 30 years.

This beautifully illustrated 72-page book is the first product of many years of research on Spitfires by IPMS-Seattle member Paul Ludwig. Paul's co-author, Malcolm Laird, the owner of Ventura Publications, created the ten pages of color illustrations used in the book. The eight color and 98 black and white photos are mostly from Paul's extensive collection.

What makes this book valuable to the modeler and historian is that it provides exposure, for the first time, to the extensive use by the USAAF of foreign designed and built fighter planes and explains the need to do so. The facts of this reverse Lend-Lease were actively played down by the US government by providing little in the way of official acknowledgment of the exploits of USAAF units using foreign equipment whilst widely publicizing the activities of units using home grown products. With this book Paul and Malcolm have taken a large step toward correcting that distortion and lack of information.

The second area in which this work is of value is its thorough depiction of the great variety and creativity expressed by USAAF mechanics in applying US markings to their British airplanes. There is a lot of material here of interest to enthusiasts of unusual markings.

The story line of the narrative follows the 31st Fighter Group (FG) from its formation in Michigan in 1940 through its use of Spitfires in Europe and North Africa up to its conversion to Mustangs in Italy in 1944, but the book is primarily about the

markings and camouflage of the unit's Spitfires.

My only quibble, and it is a pet peeve, is that although two maps are provided to illustrate the many locations at which the 31st FG was based, two bases, "Ponte Olivo North of Gela, Sicily" and "Pomigliano airfield near Naples", mentioned in the text are not shown on the map of Italy and Sicily.

Taken on balance this is a satisfying book of good value, much in the manner of the well known Osprey *Aces* series, but with much more color. The authors will publish another book of this type later this year, relating to the 52nd and 4th US Fighter Groups' Spitfires as well as the USAAF's PR.XI s.

Ventura Publications,  
Wellington, N.Z. 1998. ISBN 0-9583594-3-1.  
Retail price: US\$15.95.

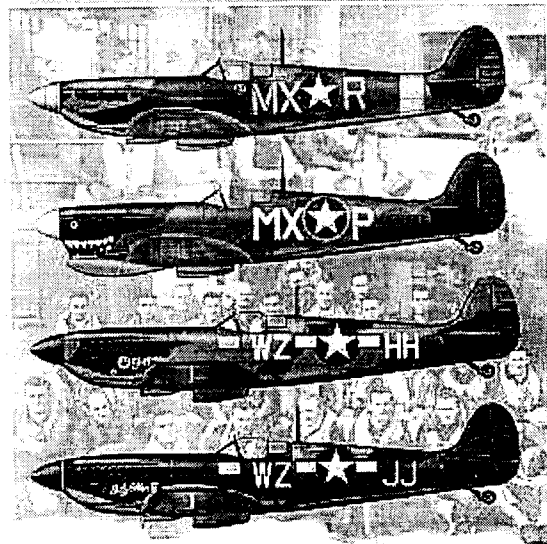
### *A Muddle of MiGs*

*text from page 5*

judicious trimming of the fuselage and bulkheads, you might suck this in. It will be difficult to spring in the kit's windscreen, so you might either make a vacuformed copy or use the Frog/Emhar canopy.



## VENTURA PUBLICATIONS SPITFIRE CAMOUFLAGE AND MARKINGS



Paul Ludwig and Malcolm Laird

### RPM, Squadron Shop stock#MK72042

Last year the Polish company RPM issued the Plastic Air Kits MiG-3. If you have a choice, this is the issue to buy. It is a little better molding than the Russian issue, but more importantly, it has a fantastic decal sheet. The decals and highly detailed instruction sheet gives 13 color schemes and Humbrol color equivalents. The most exciting set of markings is for the Rumanian "white 2".

*The general arrangement drawings of the MiG-3 on page 6 are from the Russian magazine Aeroplan, #2/94. The detail drawings on page 7 are from Soviet Fighters of the Great Patriotic War: MiG-3, LaGG-3, La-5, c.1986, Moscow.*



## Modelcraft 1/72<sup>nd</sup> Avro Shackleton MR.3

by Wayne Hill

The “new” offerings from Modelcraft and Revell Germany have been around for a while now, and despite the anticipation and its popularity, reviews of this kit have been conspicuous by their absence. I have no idea why.

I have been a huge fan of the Avro Shackleton ever since I was eight or nine, when my folks gave me an AMT/Frog kit for Christmas. I’m sure if they had known the obsession that gift led to, they would have found one more practical. I spent a good part of my adult life looking for a replacement for the “Old Growler,” even flirting with vacuforms.

At any rate, I was one of those delighted with the news of the simultaneous re-release of the kit by Modelcraft and Revell Germany. It’s a good thing I had a lot to do in the interim, due to the production delays that frustrated everyone involved. As soon as I could, I grabbed two, the second for a future conversion to an MR.2. Imagine my bliss when Aeroclub released their conversion kit. I originally thought I would have to do it on my own.

My first thought when opening Modelcraft’s hinged box was: “Yippee! I’m finally building a Shackleton!”

My second thought was a final understanding of why kit reviewers make such a big deal about packaging. The kit was molded in hard white and clear plastic. The main trees were tossed into a bag that was tied with the equivalent of a Hefty bag tie and tossed into the box for its journey to my model table. The clear parts, which comprise the windshield, nose and tail blisters, and fuselage windows, were thick but very clear, and fortunately escaped damage while the contents settled during shipping.

The rest of the parts were a different story. There is no parts count on the box, which

is fine because there were considerably more parts in my box than would have been advertised. The breakage was repairable, but many parts were separated from their trees and took on a life of their own around my model table. This was the only real disappointment of the kit.

The kit included multilingual instructions and a very well thought-out (albeit in black and white) painting guide for either an RAF 206 Squadron or South African Air Force version. After looking through my reference material – *Shackleton, Avro’s Maritime Heavyweight* by Chris Ashworth and *Avro Shackleton, Warpaint Series No. 6* by Alan W. Hall – I couldn’t verify the accuracy of the RAF scheme, but the South African is correct. The best I could tell, the only thing missing from the RAF version is a pair of fuselage roundels, and you can’t very well call yourself a modeler if you don’t have a spare pair of RAF roundels lying around. The decals look excellent and are in register.

The surface detail of this kit will prove a boon to all the rivet counter among us. Rivets! This kit was first manufactured in the ‘60s when rivets were king. This wasn’t the only model of that era representing the idea that the last step in the Avro (or Boeing, Douglas, Consolidated...) production line was to glue about \$10,000 worth of quarters in neat grid patterns along the airplane. You’ll give your sanding sticks a workout with this kit. I didn’t compare the kit to any plans or measure it to determine whether it is six scale inches too short here or eight scale inches too long there because I really don’t care about that sort of thing when the kit looks all right. And this kit looks all right. Cockpit details consists of a couple of seats and control columns, and two pilots resplendent in flight helmets that makes them look like Atom Ant. The only other interior details consists of bomb bay roof detail, which hides the slot for the display stand. Remember those?

Molding of the parts that remained unbroken left a little to be desired. To say that there was a little flash is like saying that the *Titanic* was hit by a little piece of ice. The only kits I’ve seen with more flash

are vacuform kits. Despite my ranting, the flash in no way affected the detail. On one of my engine nacelles, the plastic didn’t make it to the end of the mold, leaving a gap too big to be filled with putty. It was fixed with some effort and inspiration.

The instructions were clear and easy to follow despite being multilingual – there were plenty of drawings for each step, and “Don’t sniff the glue” warnings in fourteen different languages. I did not follow the assembly steps in order simply because I wanted to assemble the small parts that broke off the sprues before they made good their escape attempts from My Disorganized World.

Detail throughout the kit is good. There are optional position flaps with good flap detail, but no flap well detail. I have not seen too many pictures of Shackletons on the ground with flaps extended. Airwaves has released a flap detail set for this model. Landing gear is also two-position. When I built this kit as a youngster, I left the landing gear doors off and left the struts unglued in the wheel wells, leaving retractable landing gear. These things were a little more important to me then.

The model was originally made when the airplane models that we build were called “solid models.” (Remember that?) In the case of this kit, that moniker wasn’t used because they ran out of words. In spite of the scale and the level of detail, this is a pretty stout kit. Horizontal stabilizers are slotted so that they reinforce themselves in position, and the wings have a common spar that adds strength. With these features and the heavy landing gear (like in the real airplane,) this model will survive many visits by The Cat. Somehow they managed to “idiot proof” the nacelle halves, ensuring that they would fit correctly on the wings in spite of my best efforts to get these things backwards. Fit ranges from good to great throughout. You will use some of your favorite gap-filler throughout the model, mostly around the engine nacelles, but not much. Most gaps can be corrected by gap-filling superglue.

*continued on page 10*

## Dynavector 1/48<sup>th</sup> Douglas A2D-1 Skyshark

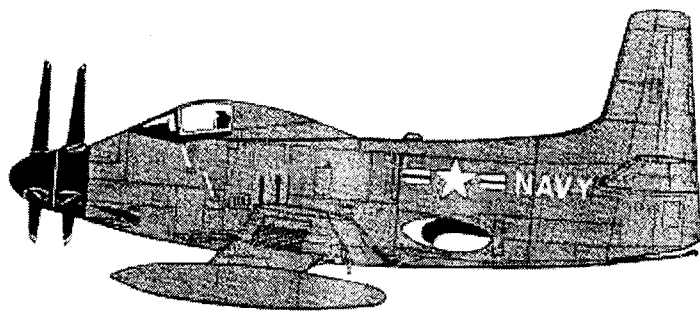
by Terry D. Moore

The Douglas A2D-1 Skyshark is one of those "neat" airplanes that I have always wanted in my model display case. I have had the old Microscale re-release of the old Allyn kit on my shelf for decades and have hesitated on starting it because it would require scratchbuilding landing gear and cockpit, plus scribing panel lines and control surfaces. I could have used parts from a Skyraider kit but there are enough differences in the two aircraft types to make it more work than worthwhile. When the Dynavector kit was released I grabbed one and actually started it the same day I brought it home.

The kit represents the production variant of the Skyshark and is molded on two imposing sheets of plastic, with a box containing a large heavy handful of white metal detail bits and another box with two canopies. It is complete with decals for three of the production aircraft. The instruction sheet is well done and easy to

White metal bits are provided for the props, landing gear, cockpit, tailwheel, guns and missiles. Most of the metal parts were well detailed with a minimal amount of cleanup. The prop blades on my sample were somewhat pitted but with a little sanding the problem was eliminated. One thing that worried me during assembly is that with all the heavy metal propeller parts and cockpit in the nose that a weight in the tail would be required to hold it down! Fortunately, that problem did not come up, but it did have me going for a while. The interior consists of white metal instrument panel, side consoles, stick, and ejection seat. I needed to add only a few small details to the seat as the cockpit is fairly well detailed. Two vacuform canopies are provided so if you screw up one you have an available spare. The instruction sheet warned that the decals would have a tendency to stick where they were applied and it proved to be true. I had to make sure they were in the right place when first applied.

This is one of the best vacuforms that I have ever built. It took only two evenings of prep work and assembly was a breeze. Excellent parts alignment and fit, especially the wing/fuselage joint, and I had a coat of paint on the model within a few days of starting! I am looking forward to their next release.



gently with a hammer through a piece of tubing around the shaft and left it alone when it was correctly set.

The instructions call for 45 grams of weight in the nose to prevent the model from becoming a tail-sitter. (For all United pilots: This is not necessary for the Mk.2 conversion). I thought I could get away with a little less weight to spare the nose gear. The bad news is that you need all 45 grams. The good news is that the nose gear can handle it.

With the wait for the kit's release, and because there are no significant changes from the original kit, there has been a little grumbling about this kit. Revell has gone so far as to print an apology that it may not be up to expected standards. No apologies are necessary. To those who think that the re-engineering of the kit should have included engraved panel lines and no rivets I say this: "Be a man, and inscribe your own panel lines!"

Furthermore, they could have corrected all the "faults" of the original kit – and doubled the retail price in an attempt to make a profit. This is by no means a "shake the box and an airplane comes out" kit. As a matter of fact, **do not** shake this box. It is a fine kit with few aggravations in terms of ease of building. It provides a great canvas for the superdetailer, and a good project for the intermediate modeler to learn some advanced techniques before taking the plunge to vacuforms or other (aftermarket) kits.

This is a fun kit to build. It's a good place to start for a detailing project without any basic construction projects, and a good first kit to try some new techniques. The only groups this kit would not appeal to

## Condor 1/72<sup>nd</sup> North American A-36A Apache

by Bill Osborn

Well, here we go again Martha! The kit comes with three sprues of parts, two in a light grey and one clear. Instructions are the multi-language exploded view type. There are two aircraft markings. One is for the 524<sup>th</sup> Fighter Bomber Squadron in late 1943. The other is for the 86<sup>th</sup> FBG in Algeria. Decals look very good; there are two sheets, one a color correct on the Stars and Bars.

The parts looked good with fine scribed detail. There are a few unused parts that could be for a P-51A, but I've not seen anything about it. [*Condor has indeed recently released a P-51/ Mustang I kit - ED*]



North American A-36A Apache 1/72

The first thing needed when I started to assemble the kit was to remove the index pins, as they didn't match. I had to sand off the end of the right body half to get the lower end of the rudder to fair in. With the body glued together, the cockpit floor, stick, seat, and control panel were installed. The exhaust stacks were inserted from the inside. These required the base to be thinned down to allow the stacks to protrude far enough.

The next step was to fit the bottom half of the wing to the body. It needed some minor work but finally went in. Then the top wing sections were added. This was the first glitch. The top sections didn't match the lower section very well. When the sections lined up in planform, there was a .025" to .03" gap at the root with the same overhang at the tip. The story of my life - fill and sand!

As I waited for the filler to dry, I started on the prop and spinner. The assembly is a two-part spinner with three plug-in blades that are not too bad. I glued the two halves of the spinner together, but it just didn't look right - too fat! It chucked it in my Dremel and started with a sanding stick. Fortunately, the plastic is thick enough.

Now came the small parts - a two-part belly scoop, horizontal tail surfaces, and the canopy. No problems here that a little light sanding didn't fix. The canopy is very

nice. It's clear and very thin.

Everything was going great. It was too good to last. Something just didn't look right. What was the problem?

Get out the reference books and check - oh poop, they've done it again. It's a P-51D wing. Research, people, research. Out came the files, filler, superglue and sandpaper. It's going to be a bit of work, but I won't stop now.

Back to the rest of the model. The landing gear doors are three-dimensional and medium thin. The gear struts are crisp and in register. Wheels are another matter. They are off-register, and a little bland. A set of wheels from the Monogram P-51B might help. The cheek guns are dimpled to look like cooling holes. Bomb racks are not too bad, but the bombs themselves are too pointed. The landing light lens in the wing leading edge is very much oversized and needs to be worked down. I did this after gluing it into the wing.

This should be a very colorful model, as it is Olive Drab over Neutral Grey. However, there are two yellow stripes, one on each wing, a small white stripe on the vertical tail, and a red spinner. Wow!

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## What Was the P-322?

by Greg Reynolds

In my article on the P-39 (*Seattle Chapter News*, November 1998), I pointed out that the designation type "P-400" was not unique and I posed the question, "What was the P-322?"

This trivial pursuit was the ex-RAF Lightning I. In April 1940 the Anglo-French Purchasing Committee placed a contract for 667 aircraft for the French and British air forces. To standardize on the powerplant used in the Curtiss H-81A (the P-40 version for the Armee del' Air and RAF) they specified their P-38s to be built without the turbo-superchargers, without the opposite rotating propellers and with the earlier Allison V-1710-C15 engine. This went against Lockheed's recommendations, who referred to the Lockheed model 322-61 as the "Castrated" Lightning. Two such aircraft were delivered and tested at Boscombe Down in spring of 1942. Like the Airacobra I, they were found to be unsuitable for combat and the remainder of the order was canceled. The 143 aircraft already completed entered AAF service as the P-322. The Army likewise found them to be unsuitable for combat and they were used Stateside for training and testing.

## Converting the 1/48<sup>th</sup> Scale AMT A-20 to a DB-7

by John Greer

The Douglas DB-7/A-20/Boston/Havoc/P-70 was one of the more widely used medium/attack bombers of World War II. On a par with the ubiquitous Junkers Ju 88, and only a step or so behind the superb de Havilland Mosquito, the A-20 served on every front and with several Allied air forces. From the early French DB-7s to the A-20Gs and -Js of the Fifth and Ninth Air Forces, and the Soviet Air Force, the Douglas design evolved into a very competent aircraft.

When AMT released their first 1/48<sup>th</sup> scale A-20 kit, I was elated (and also totally ticked off – I was about 30% done with Koster's excellent vacuform). Then AMT released other versions; we now have a -B/C, a -G, a -J, and a P-70. WOW! However, there was one serious omission – the French DB-7 – the most colorful of all the A-20 variants (and if you don't believe that, just check the back cover of Squadron Signal #144, *A-20 Havoc in Action*.)

On closer examination, this omission makes a lot of sense, as I'm sure it did to AMT. Although the "French pattern" DB-7 and the A-20 series are obviously of the same family, there are certainly major differences. A conversion project to backdate the AMT kit has long been on my "dream list." However, I'm at least a year or two away from even starting it – you know the line, "so many models, so little time."

Anyway, I thought I would plan it and write it out, and then scream for help. This is an open invitation for you to try it yourself, and let me know it works – or where it doesn't work. Is there perhaps an ulterior motive here?

For what it's worth, here goes! Where to start? I used the excellent Paul Matt A-20 drawings from *Historical Aviation Album* as a basis, and then gathered just about every decent set of DB-7/A-20 drawings I

could find – everything from the *In Action* book mentioned above to the old Ducimus *Camouflage & Markings* series. After a lengthy session with a calculator, and an even more lengthy session at Kinko's, I had all of the drawings equalized at 1/48<sup>th</sup> scale. Not that drawings are the be-all and end-all of such a project, but you have to start somewhere.

When everything is laid out, the complexity of the project becomes more evident. Generally, construction should break down like this:

### Fuselage

There are two areas to deal with here, the nose and the vertical tail. It looks like the rest of the fuselage is OK and can be built as per the AMT kit, using the A-20B/C version. Dealing with the easiest part first, the fin and rudder must be reshaped. I think the kit's hinge line can be used, thus saving a bunch of work. Obviously the leading and trailing edges of the tail will have to be thinned down after the cutting, preferably from the inside to save surface detail. See Drawing 1.

The nose is a different matter. Although the DB-7 transparency looks like the A-20B, it is not identical. Drawings may vary, but it looks like the major problem may be with parts 72 and 73, and the clear nose transparency, part 512. Parts 72 and 73 can be reshaped fairly easily. See Drawing 2A. However, building a new transparency to replace part 512 really has me stumped. Perhaps rectangles of clear plex or thick clear styrene could work. See Drawing 2B. I doubt if it can vacuformed, unless you have a really humongous vac set-up. Note also that the frame locations on the DB-7 are different from the A-20B, especially in the first row of clear panels behind the nose cone. Do the terms file, sand, and polish seem appropriate here? In addition, the bottom centerline window does not exist on the DB-7. This is a simple fill, sand, and paint operation.

On a personal note, this nose problem is what stopped me from building this airplane in 1/72<sup>nd</sup> scale 25 years ago, when I still had eyes and a steady hand. If anyone has ideas on how to deal with this "nose job," please let me know.

### Wings

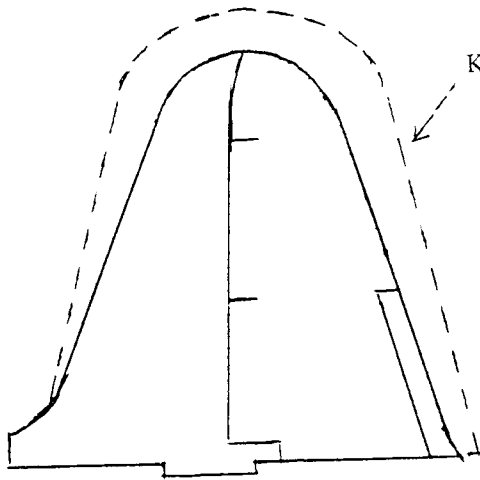
The only problem with the wing itself is with the carburetor intakes, parts 57 and 58. They simply do not exist on the DB-7. The openings on the upper wings, parts 23 and 25, need to be filled and cleaned up. I didn't include a drawing for this, because if you have the skills, and mental imbalance, to take on this project, you don't need one.

The nacelles can be fitted to the wing as per kit instructions. First though, two modifications need to be made. 1) The nacelles need to be shortened, and 2) the oil coolers on the inside nacelle halves (parts 28 and 31) need to be removed, and the resulting holes filled and cleaned up. See Drawings 3A and 3B.

Finally, and I saved the best for last, the engines and cowlings. The basic cowling shape seems OK, but there are a number of detail changes throughout this area. Although the engines used in the DB-7 were totally different from those in the A-20, unless you're planning on opening up the cowlings, the differences will not be visible. You can build the engines as per the kit.

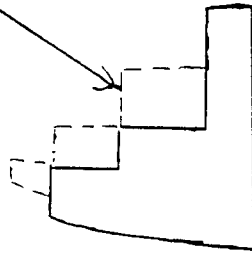
The main modifications come on the cowlings themselves. First, the exhaust stacks on the bottom must be filed off. Then the strange little flanges near the cowling/wing joint need to be removed, filled, and cleaned up. Cooling gills need to be added on – scribed on, or by whatever method you choose. See Drawing 4A. Finally, new air scoops, both upper and lower, need to be constructed and glued on, and new exhaust stacks produced and attached. See Drawing 4B.

That about covers it, as far as I can find at this time. If it works, there will be numerous color options, including French, Vichy French, and British. Two schemes that especially interest me are the previously mentioned Vichy machine on the back of *A-20 Havoc in Action*, and the British Havoc I (Intruder) shown on pages 226-9 of *Camouflage and Markings* #10.

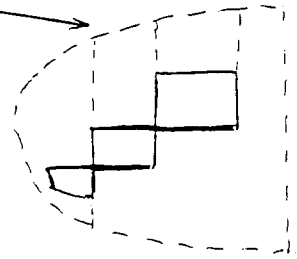


Drawing 1

Kit Outline



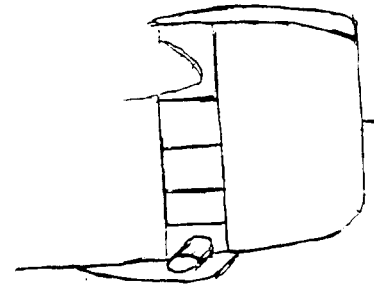
Drawing 2A



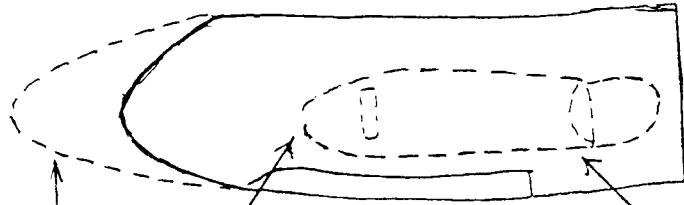
Drawing 2B

DB-7 Cowling

Kit Cowling

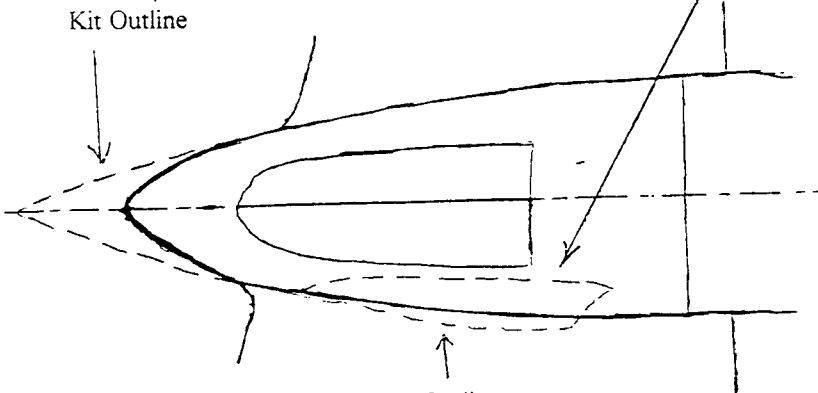


Drawing 4A



Drawing 3A

Remove. Fill.  
& Clean Up



Drawing 3B

Kit Outline

Kit Outline



Drawing 4B

## Modeling Tips and Ideas

### by IPMS "Buzz" Beurling Chapter

The following are various modeling tips and ideas from the members of IPMS "Buzz" Beurling. As far as we are aware, these are all original, and anyone is free to use them to their hearts content. That said, there is no doubt that good ideas can and do occur to people all over the world at about the same time, so if someone else says they came up with one of these, tell them they're smart and have good ideas!

#### Fine detail painting

Check in arts supply stores for something called a 'Pigma brush.' This is a device like a disposable pen, but with a sharply pointed, flexible, brush like tip. It's ideal for touching up or other fine work. There's no need to worry if you've got enough or too much paint on your brush, and because the tip isn't made of separate hairs or fibers, it keeps a sharp point and doesn't bush out. - Brian MacNamara

#### Masking over delicate surfaces

3M makes a tape called "Post-it Correction and Cover-up Tape" which is designed to temporarily cover places on a page while photocopying. This is essentially a tape form of their Post-it notes. The adhesive covers the entire undersurface as with any tape, unlike standard Post-it notes, so you can cut a piece whatever size you want, and it even comes in many different widths from thin enough to follow curves, to wide enough to cover large areas and be cut to shape.

The gentle adhesive works well for things like masking over natural metal finishes, and can likely be used to provide a soft edge, just by adding a gentle curl to the edge of the tape mask. - Brian MacNamara

#### Use gloss varnish / Future/ Klear as photoetch glue

When gluing photoetched parts to a model, especially things like instrument

bezels, I find using clear gloss varnish (I use Xtracolor, though even the ubiquitous Future/Klear would likely work) works really well.

It gives you time to move the part into place, unlike superglue which often locks the part instantly to where it first touched, and it is much thinner than epoxy, so it doesn't obscure details. **Note:** It doesn't necessary work well for parts that are butt-joined or attached at a very small point such as an antenna, but for most flat photoetch parts varnish is much easier to work with. - Brian MacNamara

#### Use artist's watercolors in tubes for washes and weathering

You can get artist watercolor paints (not acrylics) in tubes at most art and craft stores that work well for doing washes and weathering.

A set of three colors (**Black, White, and Brown**) will let you make just about any colour you might need (grey or brown washes usually look more realistic than straight black).

Mix then with just enough water, and a tiny drop of liquid soap to cut the surface tension, then flow them into recessed panel lines, or along raised panel lines.

The best thing about using watercolors, is that any mistakes are easy to wipe off, and start again. A dampened Q-tip, or cloth will let you clean away overflows, or entirely remove areas to be redone. - Dave Askett

#### Use calligraphy "scratch knife" as inexpensive, excellent scriber

A calligraphy scratch knife makes for an excellent scriber. It produces amazingly fine lines (actually removing a fine hair of plastic, rather than plowing a furrow), and due to its shape, and unlike even most expensive and purpose designed scribers, allows you to produce scribed lines for things such as ailerons with one edge vertical and the other beveled (e.g. //).

It also has the added advantages of lasting longer than other scribers, and being very inexpensive to replace the tip should you

ever wear it out. For that matter, the entire cost of the handle and tip is very inexpensive.

Calligraphy "scratch knives" are simply a sharp triangular tip designed to fit into a 'standard' calligraphy pen handle. The actual "scratch knife" tip is intended for use as an 'eraser' to scratch away the inked part of the paper to remove the mistake. You can get a Calligraphy pen "handle" and "scratch knife" for about \$2.50 and \$0.50 respectively at most arts stores which carry calligraphy supplies. Buy yourself a few "scratch knife" tips and you'll have a lifetime supply for far less than the cost of a more expensive scriber. - Dave Askett

#### Limit or avoid wing-root join problems

Wing root joins, especially when there is a smooth fillet at the wing root are often a source of problems. By the time you have put the top and bottom of the wing together, and attach it to the fuselage, you often find you're faced with a step either above or below the wing.

While cases where the wing is thicker than the fuselage attachment, can't be helped by other than thinning down the wing before you join the halves together, if it's the other way around, you can try this:

You can often make your life simpler by attaching the top of the wing to the fuselage before putting the wing top and bottom together.

This let's you carefully align the join to get the best possible fit in the area that is hardest to fix.

Once that join is dry, you can attach the bottom wing, again taking care to align it with the fuselage at the wing root, rather than the top wing. Small gaps between the top and bottom wing are much easier to fix (and to have look good) than wing root problems. Just fill using your favorite putty, or if it's large enough, add a piece of plastic stock, and then putty and sand as you would normally. - John Sproatt

## Toko 1/72nd Sopwith 7F.1 Snipe & Sopwith TF.2 Salamander

by Robert Allen

There have been several limited-run kits from manufacturers such as Pegasus and a few one-offs from Eastern European manufacturers, but Toko's series of 1/72 scale WW1 kits is by far this decade's most exciting development for divine scale Great War modelers. Not only are Toko's kits buildable and inexpensive, the line is, so far, exclusively made up of types that haven't been previously available as mass-produced injection molded kits. Two of the recent releases are of related aircraft; the Sopwith Snipe, and Sopwith Salamander.



The Snipe is often cited as being the finest Allied fighter to see combat in WW1; although it saw action for less than two months, it built up quite a reputation. It served as the RAF's standard fighter for several years after the end of the war, being used operationally in Turkey, Iraq, Ireland, and Russia. The Salamander was developed concurrently with the Snipe as a dedicated ground attack aircraft, the TF in the designation standing for Trench Fighter. Although 526 were produced, they were never the sole equipment of any RAF squadron. They are probably best known today for the experimental segmented camouflage tried on a few Salamanders in late 1918.

Toko's kits of the Snipe and Salamander use many common parts. Both are molded in a light grey plastic, with no clear parts.

The Snipe kit has 37 finely molded parts, with an additional tree in the Salamander giving that kit 47 parts. Each kit comes with two decal options, and the instructions are of the exploded view type, with Humbrol numbers being used to identify the paint colors. The Snipe includes decals for Billy Barker's famous aircraft (although you'll have to paint the five fine white fuselage stripes), and a captured Soviet example from the Russian Civil War. The Salamander includes one aircraft in standard RAF camouflage, and one in the aforementioned experimental scheme. One omission is the lack of a rigging diagram.

Cockpit detail in both kits is suitably sparse for the period, consisting of a seat, instrument panel, control stick, and rudder pedals. Each of the struts in the two-bay wing and all four fuselage/ wing struts are separate, meaning that all twelve struts must be lined up individually when gluing the upper wing. The rotary engine is fairly simple, as are the two machine guns.

The kits differ in a few aspects. The Salamander's fuselage is slab-sided, with heavy armor giving the front of the plane a flared-out look. A different cowling, undercarriage struts, and top fuselage deck with staggered guns are also included for the Salamander, as are four crude bombs. An early-style fin and rudder is included, the importance of which we'll get to in a moment. With the exception of the rounded Snipe fuselage, all the corresponding parts for the Snipe are also given in the Salamander kit, so care must be taken to use the right part.

There is one major problem with the Snipe, at least if you wish to model Barker's aircraft. There were two primary modifications that distinguished early and late Snipes and Salamanders. One was the fin and rudder; early production aircraft had a tiny fin, giving the tail a stepped look. Later ones had a larger, rounded fin and rudder. Early aircraft of both types also had plain ailerons, while later ones had horn-balanced, inversely tapered, ailerons with a noticeable overhang at the wing tip. The wings for both kits are of the later type; the Salamander kit includes

both tails, while the Snipe only has the later one. Barker's fighter, an early production Snipe, had plain ailerons and the small fin (Don Greer's painting on the cover of the Squadron/ Signal *Sopwith Fighters in Action* has the wrong ailerons). You could swipe the tail from the Salamander kit, but you'd have to reshape the ailerons to accurately portray Barker's aircraft. An excellent picture of Barker's Snipe, clearly showing the configuration, is on page 52 of J.M. Bruce's *The Sopwith Fighters*.

The same modification to the wing would have to be made to model E5431, the Salamander in the segmented camouflage scheme included in the decal options. A picture on page 56 of Bruce's book shows the top surfaces of that very aircraft quite clearly.



The configuration of the Snipe kit is correct for most post-war Snipes. The Snipe was the first fighter to receive the post-war silver dope finish and full squadron markings, so several attractive schemes could be made by slicing and dicing the Modeldecal and SuperScale sheets for between-the-wars RAF fighters.

This minor sniping aside (sorry), both of these kits are welcome additions. The Snipe in particular has been a gaping hole in any collection of RAF fighters. As long as care is taken, and references checked, either of these kits should build into delightful models.

continued on page 16

## Upcoming Vancouver, BC Car Model Show

My name is Seymour Douglass. I have recently taken over as president of the Automotive Model Builders of Greater Vancouver. We are located up north from you in British Columbia. Our club has a good relationship with the local IPMS chapter of Vancouver, B.C. (Scott Hall, Kevin Brown, etc.).

We are having our 16th annual model car contest on **March 14, 1999**, the day after your Spring show. The format of our show has reverted to a contest with many categories, as opposed to a non-competitive NNL style event. Our show starts at 9 am on Sunday, March 14th at the Sheraton Inn Guildford in Surrey, B.C. We will have a swap meet and giant raffle. We are involved in a great hobby and we should make an effort to promote each others activities. Good luck with your contest!

For more information, contact me at:

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## Help Needed For IPMS Seattle Spring Show!

The IPMS Seattle Spring Show is coming up on Saturday, March 13, and we need your help to make things runs as smoothly as the have in the past.

Help is needed in a couple of areas. We need volunteers to help Friday afternoon (usually at about 3 pm) at the Armory with putting up tables, and preparing them for the show. We also need volunteers on Saturday after the show when the tables need to come down.

We will also need volunteers during the show itself, to assist with model registration, and to act as hosts to guide modelers to the right tables.

You can't really call yourself a true member of IPMS Seattle unless you're willing to pitch in, can you?

If you'd like to volunteer, call **Terry Moore** at (425) 774-6343, or **Keith Laird** at (360) 854-9148. It would be much appreciated (and you'd get your name in the newsletter!)

## Officers Re-elected

IPMS Seattle President Terry Moore, Vice-President Keith Laird, and Treasurer Norm Filer were all re-elected for 1999 during the January meeting. Congratulations, guys!

## Toko Sopwiths

from page 15

### References:

*Windsock Datafile No. 46: Sopwith Snipe* would be the best single reference to have. Unfortunately, don't have it, but I can recommend these as useful:

*Vintage Warbirds No. 5: The Sopwith Fighters*, J.M. Bruce, Arms & Armour Press, 1986.

*Sopwith Aircraft 1912-1920*, H.F. King, Putnam, 1980.

*Profile Number 50: The Sopwith 7F.1 Snipe*, J.M. Bruce, Profile Publications, 1966.

*Sopwith - The Man and His Aircraft*, Bruce Robertson, Harleyford, 1970.

*Sopwith Fighters in Action*, Peter Cooksley, Squadron Signal #110, 1991.

## Meeting Reminder:

## Saturday, February 13, 1999

### 10:00 am

**National Guard Armory, Room 114**  
**1601 West Armory Way, Seattle**

**Directions:** From North or Southbound I-5, take the 45th St. exit. Drive west on 45th, crossing under Highway 99 (or Aurora Ave. North) toward N.W. Market Street in Ballard. Continue west on Market St. toward 15th Ave N.W. Turn left (south) onto 15th Ave N.W. and drive across the Ballard Bridge until you reach Armory Way (just as you see the Animal Shelter.) Watch for signs. Park in the Metro Park & Ride lot.

If coming from the South, take Highway 99 onto the Alaskan Way viaduct to Western Avenue. Follow Western Ave. north to Elliot Ave. until it turns into 15th Ave N.W., then to Armory Way itself.

