

Seattle Chapter IPMS-USA March 2000

## **PREZNOTES**



WOW! And other expletives. To say the least, the McCarty collection auction was an overwhelming success. We sold everything in the collection and raised well over \$1600 for the McCarty estate. I would like to thank everyone that participated in the event, especially Jim Schubert and Bill Johnson who spent weeks sorting and organizing everything into some semblance of order, Ted Holowchuk for the use of his shop so Bill and Jim could organize everything, the two Andrews, Birkbeck and Bertschi, who did a magnificent job as auction clerks, Don Lake and Keith Laird who made sure everyone's purchases ended up in the right place, and Norm "money guy" Filer for making sure everything was paid for. Last but not least, all of you that spent money so freely as bidders. Thank You!

I had fun, too. I hope you found all of your new treasures to your liking. My few purchases were most interesting. Of the three models I bought one was complete, one had lots of extra parts and one is unfinishable in its present state. My extra parts kit (Airfix Mk 46/47) had parts from a Tamiya Spitfire: stabilizers, canopy, etc, but was missing the Airfix canopy (!). Elsewhere in this and for the next few issues I will compile a list of "need" and "found" items so that we may be able to make your McCarty kits more complete. Please give me a call or e-mail with what you are looking for or what you have found and don't need.

The other exciting aspect of our February meeting was seeing Brian Mulron in attendance. WELCOME BACK BRIAN!

This next meeting is our annual Spring Meet. For those that have volunteered for setup, we'll start about 2:30-3 pm on Friday the 10th. Setup will take about an hour or two. If you are working on show day, try to get there before 9am to get ready (and to have time to enter your models!). Oh yes, if you can stay at the end of the day to help clean up.... thank you in advance. I now

also have the combination to the gate locks, so we can load and unload easier (blame WTO for the locked gates at the February meeting).

"To speak of the dead is to make them live again" - ancient Egyptian saying.

I was recently sorting out one of my closets. You know, the one with all the dead projects in it - just like you have. Anyway, I came across a model that I had stopped working on ten or more years ago because I was afraid of taking the next step in the project, painting. It was an SP-2H Neptune in Aero Union fire bomber colors. Not that the scheme was too difficult, it was just a gloss white/red/black color scheme. A gloss finish. I'll just set the model aside and paint it later...

Finding the model in reasonably good condition despite the way it was stored for over a decade was an exciting find. Not only is it ready for paint, it is a model that I can paint now. Ten years ago, I did not have the knowledge (or confidence) to attempt such a color scheme. Oh, I could have done it, but it would probably not have been one of my better looking models, resigned to sit out its life at the back of my darkest display case, never to see the light of day at a contest or display.

continued on page 15

### In This Issue

Spring Show Information	3
<b>Upcoming New Releases</b>	4
McCarty Parts Exchange	4
NWSM/MOF Show Report	5
<b>Book Review</b>	6
Craftworks Update	7
Classic Airframes Battle	7
<b>Acrylic Lacquer Application</b>	8
<b>Highway Scenes Corvette</b>	9
Modeling the Cheetah	<b>10</b>
Frems MB.339A	13

#### SEATTLE CHAPTER CONTACTS

President:Vice President:Treasurer:Editor:Terry MooreKeith LairdNorm FilerRobert Allen

3612 - 201st Pl. S.W. 528 South 2nd Ave. 16510 N.E. 99th 12534 NE 128th Way #E3

Lynnwood, WA 98036 Kent, WA 98032 Redmond, WA 98052 Kirkland, WA 98034 Ph: 425-774-6343 Ph: 253-854-9148 Ph: 425-885-7213 Ph: 425-823-4658

moorethan4@worldnet.att.net nfiler@wport.com baclightning@yahoo.com

IPMS Seattle Web Site (Webmasters, Jon Fincher & Tracy White): http://www.ipms-seattle.org

### 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 below for form. 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. Deadline for submission of articles is generally twelve days prior to the next meeting. 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 1999/2000 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 accessable place. All meetings begin at 10:00 AM.

March 11, 2000 (2nd Saturday) SPRING MEET! May 13, 2000 (2nd Saturday) April 8, 2000 (2nd Saturday) June 10, 2000 (2nd Saturday)

IPMS No.: (leave blank) Address:	Name:	FIRST	000 M		LAST
City:		St	ate:	Zip:	
Signature (requi	red by PO):			5	
☐ Trade Membe	☐ Junior (17 er: \$19 ☐ Canada & dues + \$5, one set m led by an IPMS memb me and member num	Mexico: \$25 agazines,# of r per,	☐ Ot membershi	her Foreign p cards req	uired:
			(name	1	(IPMS#

### **Spring Show Staffing Schedule**

#### **Model Contest Room**

9:00 - 10:45 10:45 - 12:30

Steve Holmes Jeff Smith John Amendola Paul Youman Don McBean George Haase Steve McKinnon Lamar Fenstermaker Jon Fincher Paul Peterson John Cate Donald Lake David Whitmore John Frazier Scott Taylor Tracy White Les Knerr Stephen Tontoni Mike Medrano Matthew Birchette Paul Ludwig

Please arrive at least 15 minutes before your start time and report to ROBERT ALLEN or TERRY MOORE to receive your assignments. Your main task will be to meet contest entrants, and help them quickly and safely find their categories on the tables. You will have table layout maps at your disposal. A secondary task is to keep a general lookout for children and adults who by their actions are risking damage to the models. Ask them in the most friendly of ways to KNOCK IT OFF!

#### **Registration:**

<u>8:45 - 10:30</u>	<u> 10:30 - Noon</u>	Noon - 1:30	
Jill Moore	Jill Moore	Jill Moore	
Bill Johnson	Bill Johnson	Bill Johnson	

Bill Johnson Bill Johnson Brian Cahill Brian Cahill Norm Filer Norm Filer

Will Perry

**Spring Show Entry Fees:** Door Prize Draw + Vendor Room:

Norm Filer

Adult Contest Admission: \$5 Andrew Bertschi Nick Ferruiolo \$2 Junior Contest Admission: Keith Laird \$2

### **Other Upcoming Shows**

Spectators:

March 31-April 2: Sakura Con 2000: The Pacific Northwest Japanese Animation, Manga, Gaming and Asian Culture Convention, Double Tree Inn at the Southcenter Mall. Web site: www.sakuracon.org

April 1: Hobby Town USA National Model Contest. Check with your local store for details.

July 17: RECON 7, 2000, presented by IPMS Aces Wild. German American Society Hall, 25 W. 3rd Avenue, Spokane, Washington. Theme: Pioneers of the 20th Century. Contest chairman, Mike Tsoumpas at mdt@ior.com Web site: www.users.uswest.net/~clarkmonster/Recon2000.htm

### A Mountain of Door Prizes!

Everyone who brings at least one model to the March 11th Show for either the competition tables or the Exibition/Display Only tables has an excellent chance of picking up some superb door prizes.

As an added incentive for modelers to bring in their latest works of art to our Show, we have decided to offer a huge pool of spectacular door prizes, available only to those who bring completed models to the show. These prizes, valued at a total of over \$2,000, will consist of the latest kits from Tamiya, Hasegawa, ProModeler, Accurate Miniatures, Revell, Monogram, and a host of others. As Grand Prizes, we will have two airbrushes to give away, one each from Aztek and Paasche. These are on top of the normal First, Second, and Third place awards given out in the Competition classes.

The rules are simple: for every model you bring to the show, we will give the builder a door prize ticket, up to a maximum of ten tickets for ten models (though feel free to bring more models, if you wish!). Throughout the day, tickets will be drawn for the prizes, and winners get their choice from the prizes available. At the end of the day, the two Grand Prizes will be drawn from all tickets, whether that ticket has already won a prize or not.

Whether you think your model is destined for contest glory or not, we wish to see it displayed at our show! The more models that participate, the better for everyone. If you have never won anything at a model show before, now is your big chance. These prizes are awarded based on having a model in the show, not on how well you filled a seam line, or applied your decals!

#### **Contest Schedule:**

Registration: 9:00 AM to 12 Noon Public Viewing 10:00 AM to 3:00 PM Judging (Contest Room Closed):

3:00 PM to 3:45 PM

Awards (Contest Room Open):

4:00 PM

Models may be removed after 4:00 PM, and must be removed by 5:00 PM.

### The McCarty Collection Parts Exchange

### Upcoming Sword, Attack, and AML Kit Releases

### by Norm Filer

### by Terry D. Moore

Most of you that purchased kits at the February auction have terrific new treasures. Some of you have...well, lots of parts. Due to circumstances beyond our control, some models ended up with parts from other kits in their boxes. Before you consign your stack of auction kits to the back of your closet, or elsewhere, go through them and if you have parts that don't belong, give me a call at 425-774-

6343 or e-mail me at moorethan4@worldnet.att.net and we will try to track down the missing parts. I am going to run this column for a few months if demand warrants. Do it right now. You have this article in your hand right now. Check your kits now! If you are reading this at 2am, wait until morning.

This is what I have so far:

### FOUND:

"A" sprue with most parts for 1/48th Tamiya Spitfire, Terry Moore, 425-774-6343

Canopy sprue for 1/48th Spitfire (Tamiya?), Terry Moore

Mig Jet (?) 1/72nd scale windscreen, Terry

(2) Zero canopies, 1/72nd, Terry Moore

Stabilizer for 1/48th Zero, Terry Moore

Bomb bay door for 1/48th He-111, Terry

NEED:

Moore

Moore

Classic Airframes MiG-3 canopy, 1/48th, John Greer, 253-964-7762

Instruction sheet for Airfix 1/24th P-51D, John Greer

AMT B-52 windscreen, 1/72nd, Carl

Broberg, Bremerton

Airfix Seafire 46/47 canopy, 1/48th, Terry Moore, 425-774-6343

#### Sword Kit Releases for 2000

SW48001 Northrop N9 MA Flying Wing

Plastic parts, polyurethane resin interior & wheels, injection canopy

SW72006 Grumman F8F-1 & -2 Bearcat (see below)

Plastic and polyurethane resin parts, injection canopy.

Decals for three versions (US, French)

SW72007 Beechcraft T-34C Turbo Mentor

Plastic and polyurethane resin parts, injection canopy

Decals for two versions (US, Argentina)

SW72008 Curtiss SB2C-4 Helldiver

Plastic and polyurethane resin parts, injection and vacuformed canopy

Decals for three versions (US)

SW72009 Focke Wulf Fw190A-1

Plastic and polyurethane resin parts, injection and vacuformed canopy

Decals for two versions (Germany)

SW72010 Beechcraft D-17S Staggerwing

Plastic and polyurethane resin parts, injection canopy

Decals for two verions (US)

SW72011 Grumman G-21 Goose

Plastic and polyurethane resin parts, injection canopy

Decals for three versions (US, UK)

### Attack Hobby Kit Releases for 2000

72801 Grille Ausf. H

72802 Munitionsfarhzeug 38(t) 72805 Aufklärungspanzer 140/1

72806 Tatra T-87

72807 LTvz.38 / PzKpfw 38(t) Ausf. A

72808 PzBefWg 38(t) Ausf B. 72809 PzBefWg 38(t) Ausf F.

72810 Tatra T-111 Kundendienstruppwagen

#### **AML Kit Releases for 2000**

72009 Curtiss H-75
Mohawk IV
72010 Bristol Blenheim
Mk. IV/IVF

72011 Nakajima C3N1

72012 Bristol Blenheim Mk. IV

48001 North American

O-47



### Northwest Scale Modelers/ Museum of Flight Model Display and Workshop

### article and photos by Jim Schubert

This annual event was held Saturday and Sunday February 5 and 6 in the East Gallery of the Museum of Flight. It is usually held in January, but the MOF's schedule was too full in January this year so the event was, by mutual agreement, rescheduled for later.

This was originally advertised as a tripartite affair by NWSM, IPMS-Seattle, and the MOF. Lamentably the IPMS-USA national organization objected and we had to drop IPMS-Seattle from all mention of the event to avoid sullying IPMS' purity. What a lot of petty balderdash! It's this kind of nonsense that led directly to the creation, several years ago, of the NWSM outside of IPMS.



Ned Shaw working, this year, to repair models damaged when a wind gust flipped his model boxes whilst he was leaving the museum after last year's display.

The display, with full local IPMS participation, but no publicity, was a success and, as always, good fun for the participants. It's rather like a contest without the angst of judging or being judged. A number of

tables were set up along the east window wall of the gallery so that those who wished to do so could work on their current project whilst chatting with museum visitors and with one another. We had 420 models on Saturday, excluding those brought up by the **IPMS-Portland** delegation as they had left with their

models before I thought to count the house. Bill Johnson counted 450 models on Sunday. Last year, under Steve Holmes' guidance, we really worked the problem of turning out a large number of models and got 1,200 for the "Decade-By-Decade-Through-The-20th-Century" theme. Nobody wanted to work that hard this year, so Will Perry wisely scaled it back to a more relaxed undertaking.

The MOF, in the person of Jake Schulz, arranged a free "Make-and-Take" program for kids as part of the display. Our guys enjoyed helping the kids build their Lindberg 1/144th scale snap-together kits of the Space Shuttle. About 150 kits were thus consumed. Jake also had a display of significant models drawn from MOF



Model talk during the display at the MOF; L to R: Keith Laird, Shawn McEvoy, Andrew Birkbeck and Andrew Bertschi.

storage and several display and wind tunnel models loaned by Boeing along with their Steve Cox, who gave a talk about professional model making. He also arranged a presentation by our own John Alcorn on researching model projects and scratchbuilding. After his talk, John signed copies of his most recent book, *The Master Scratchbuilders* (Cf. this newsletter for July, 1999).

If you were unable to participate this year please try for next year; it's good fun.

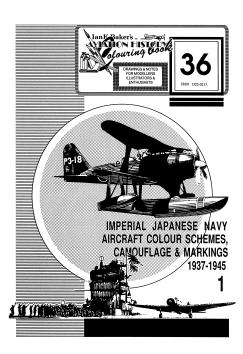


Some of the models in the 1/48th scale aircraft section.

### Book Review: Aviation History Colouring Book

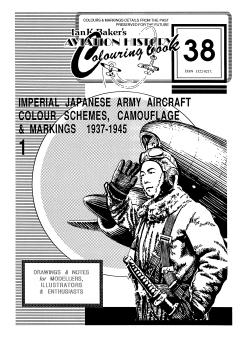
### by Terry Clements

Ian K. Baker, Aviation History Colouring Book: Parts 36 and 37, Imperial Japanese Navy Aircraft Colour Schemes, Camouflage & Markings, 1937-1945; Parts 38 and 39: Imperial Japanese Army Aircraft Colour Schemes, Camouflage & Markings, 1937-1945; and Part 40: Imperial Japanese Aircraft Wartime Colours (20 annotated color chips). (Queenscliff, Victoria, Australia, the author, 1999). Card covers, 8.5 x 11.75 in., 84 pages total, 35 pages with ink drawings, 10 pages with color matching tables, 9 photos, 20 paint chips, no index. I don't know the price, but these are generally available from Aviation Usk and other retailers.



With his most recent installments of the terrific "Colouring Book" series Ian Baker returns to the camouflage and markings of Imperial Japan, subjects he first covered some ten years ago in two now-rare volumes. The Imperial Navy is covered in numbers 36 and 37, while the Army is covered in 38 and 39. Number 40 contains twenty color paint chips to accompany the

series. One book of each two-book set is comprised primarily of text, and the second of illustrations in Baker's delightfully oldfashioned style. Every aspect of these subjects is covered by Baker's concise and common-sense text: primers, color schemes, insignia, markings, and even bomb colors and markings. And yes, thorny topics like the "brassy" clear coat on some A5M Claudes and the so-called ame-iro caramel-gray finish common on early-war A6M Zeros are fully covered. There has been a lot of recent research in this field, and new discoveries almost weekly, and Baker does a good job in sorting it all out.



The color chip set includes seven different light grays (including several different ame-iro alternatives), six browns, five greens, dark gray, and dark blue. As Baker notes, if you open the color folder expecting to see the "same old" colors you've grown used to over the years, you may be in for some surprises. But he's quick to point out that these colors "DEMON-STRATE [the] colours discussed, explained and described in the other booklets. They have been chosen, matched and mixed with great care, but that does not mean other variants might not be equally

valid." Ten additional colors will be featured in a future number of the series.

This is the best short survey of these subjects you can find in English these days, and the paint chip set is being produced only in small numbers, so don't hesitate if you have any interest at all in WW II Japanese subjects.

[Journalistic full disclosure note: Ian Baker and I frequently correspond and share information on topics of mutual interest. We are collaborating on a future article for the newsletter, and I get my copies of the "Colouring Book" gratis from the author.]

### Attention Modelers: An Ideal Display Case for Your Models at Home

The following *museum quality Plexiglas cases* are available at very, very reasonable prices.

8 X 12 X 8H	\$28.00
18 X 33 X 14H	\$83.00
18 X 22 X 16H	\$58.00
22 X 40 X 24H	\$90.00
26 X 40 X 24H	\$127.00

The above prices are nearly one-third of present retail prices.

Please call Mrs. Mieko Hayes at 360-779-9394

(The museum quality cases were originally made to display a wide variety of artificial flower arrangements).

### **STOP PRESS:**

Snacks and lunch will be available at the Spring Show!

### CraftWorks Update

### by Shawn McEvoy

It's been a very busy time at CraftWorks, Inc. lately; we have so many 1/32<sup>nd</sup> scale projects in progress that it's like watching a horse race to see which one will finish first. This spring will finally see the release of the Mitsubishi A5M4 "Claude," followed by the Lavochkin La-5/-5F/-5FN, North American AT-6C/D/G Texan, Messerschmitt Bf 109K, and the Heinkel He 162 Salamander (see photo). We also plan to release two new detail sets for the Revell Beaufighter, the engine cowl/exhaust ring set, and the fuselage interior set.

We invite you to check out our web site at www.craftworks.com and/or e-mail us at staff@craftworks.com

I would like to extend a special thanks to the many fellow modelers at the Seattle chapter of IPMS for their help – from providing blueprints and detail info, including rare photos, to actually working on box art, painting, and even making some of the model masters for many projects. I thank you, and the modeling world thanks you.



The Arado Ar 234B could be released by Christmas (followed by the Ar 234C conversion set, and possibly the Ar 234D conversion set). Work is underway on the Aichi D3A1 Type 11 "Val," Westland Whirlwind, and Hawker Tempest (and maybe a Sea Fury to follow?!)

We're nearly complete with plans for the Kawasaki Ki-100 Goshikisen ("Tony II") fastback and bubbletop. Finding accurate plans was complicated by the fact that Kawasaki burned virtually all of their information before the end of the war to keep it out of Allied hands.

Sales continue strong for the Curtiss P-40C, Curtiss P-36, Macchi C.202/205, and Macchi C.200, as well as our five excellent standing fighter pilot figures, and the Beaufighter flame dampened exhaust and exits conversion set.

### Classic Airframes 1/48<sup>th</sup> Scale Fairey Battle

### by Donald Junis via IPMS Quad City Scale Modeling Society

I've been working on this one since about the 20th of December. I can define problems in some specific areas:

Lower Wing: I completed the three-piece lower wing with dihedral before anything else. I suggest you do this it will help with the upper wings later. Don't forget to thin the trailing edges. This assembly is a bit difficult but with your dihedral blocks handy and a flat surface it'll be OK.

Fuselage: I also have the fuselage completed. The interior resin parts fit together

well but you will have to trim them to fit properly in the fuselage, especially the lower front of the pilot's assembly and the aft lower section of the aft cockpit. Constant test fitting is the only way to go here. There is a guideline on the interior left side of the fuselage for the pilots resin assembly but not for the gunners/bombardiers area. I located the upper shelf (plastic part) on the aft cockpit area with 1/8" overhang. I then located the whole assembly 15/16" aft of the forward cutout for the turtle deck. This should give you a decent placement for both cockpits. I placed the radiator about 3/32" aft of the lip. You'll have to thin down the inside of the sides of the fuselage to fit it in. It looks good when fitted though. Obviously all the dry fitting and such should be done prior to gluing the fuselage together. The aft cockpit shelf sits on top of the turtle deck gluing surfaces. You'll see what I mean when you dry fit the cockpit in.

The turtle deck is the worst fitting part of the kit. It's oversized compared to the fuselage sides but don't fret it's easily sanded down and there's enough plastic there so there's no fear of sanding through. You'll have to rescribe some lines in any case.

Horizontal Stabilizers: No problem, just thin the trailing edges.

Upper wings: With the fuselage complete along with the lower wing and horizontal stabs I set about checking squareness and such. I set the wings on a flat table and temporarily secured the fuselage to them. Checking the dihedral and dimensions of wings to tail, everything is OK. When I placed the left upper wing on it fit very well; excellently in fact. The right wing needed about .03 strip of filler to extend the wing where it mounts to the fillet. Do this to avoid a gap at the fillet later. The wheel wells are provided but forget about using the small pieces to enclose the well. They are undersized. Make your own from card. The resin pieces that fit between the well sides are also undersized. I just added

continued on page 14

### Acrylic Lacquer Application Checklist

### by Leon Tefft, IPMS/CARS In Miniature

### **Preparation**

1) Make sure you have proper ventilation and/or a chemical cartridge facemask. 2) Room temperature (65-75 degrees) is optimal for spraying acrylic lacquer. Cooler is better than warmer. Applications below 60 and above 80 degrees are not recommended. 3) Make sure your primer/paint is adequately thinned to suit your method of application. 4) Have the mold lines been removed? Sink marks filled? Do any panel lines need to be rescribed? Is the surface scuffed for primer adhesion? Has the material been washed with a detergent soap and thoroughly dry? Is the surface free of dust and other contaminants?

#### **Primer Application**

Agitate the primer prior to any application

1) Apply one or two moderate coats, let dry, check for surface area flaws. Repair if necessary and repeat. 2) Once satisfied with the surface area, apply a heavy coat, let dry, lightly sand with 3600 grit cloth. 3) Apply a heavy coat, let dry, lightly sand with 4000 grit cloth.

Remember, the primer is there to protect the surface area from the lacquer's hot solvent base. No surface area should be exposed at this time. If so, repeat step 3 until sufficiently covered. Remember to spray the underside of edges (body panels, wheel wells, etc.) to help prevent chipping or flaking of paint during later stages of polishing and assembly.

#### **Colorcoat Application - Solids**

Agitate the paint prior to any application

1) Apply two to three light coats. Check for etching. If etching occurs, you do not have a sufficient primer coat. Apply more primer before restarting the colorcoat application. Etching cannot be masked with lacquer. 2) Apply two to three gradually heavier coats allowing at least 15-20 minutes drying time between each. 3) Apply a heavy wet coat, let dry overnight, lightly sand with 3600 grit cloth. 4) Apply four to six more heavy coats, two at a time if desired. Check for contaminants and orange peel and sand away if necessary. Final coats should be sanded smoother than earlier ones (3600, 4000, 6000 grits). 5) If satisfied with the appearance of the color, spray one final light to moderate coat to balance the overall coverage. Let dry overnight.

Remember to spray the underside of edges to help prevent chipping or flaking of the paint during later stages of polishing and assembly.

#### Colorcoat Application - Metallics and Pearls

1) Apply metallics and pearls in the same manner as above with special attention to the following:

Metallic and pearl components settle quickly. Agitate the paint frequently to achieve a uniform appearance. Vary your spraying pattern (front-back, back-front, etc.). Spray adjacent surfaces whenever possible on separate parts (top of fendershood, body panels-doors, body-convertible hardtops, etc.). Try to avoid runs during heavy coats. Metallic and pearl components will settle within runs and distort the appearance. Let dry and sand if extreme, otherwise cover with further coats. Orange peel is far more noticeable with metallics/pearls. While applying heavy coats, let dry and sand as needed to smooth the surface. Once satisfied, apply light mist coats (as needed) to balance the overall finish. At this time there should be no surface contaminants, orange peel, or sanding marks. The finish should look even throughout.

### **Colorcoat Application - Candies**

Candies are translucent colors applied over basecoats. Use colorcoat application methods to achieve a suitable base prior to the candy application. Removing orange peel and surface contaminants from the basecoat are critical prior to application of a candy finish.

1) Apply two to three light candy coats over the base color concentrating on the uniform use of your airbrush. Try to maintain an even amount of spray, even speed of coverage, and an even spraying distance from the surface area. Spraying adjacent parts is critical to maintaining the overall balance to the depth of the finish.
2) Apply heavier coats as necessary to achieve the color effect you want, two at a time if desired. Let dry sufficiently between applications. Orange peel is not of significant importance.

Dust particles and contaminants must be removed as soon as they appear. If not, they will attract the candy color pigments and form dark spots. These cannot be masked with further candy coat applications. The more coats applied, the more easily evenness and depth of color are achieved. The trade off is the darkness level of the color increases, but the effect is gradual. Expect to apply six to eight coats to achieve a good balance of evenness and depth of tint. Lightly tinting a surface (fades, highlighting, shadowing, etc.) requires good airbrush technique to achieve uniformity of the finish.

#### **Clearcoat Application**

The real appearance to what your finish will look like is already done. Clearcoat seals and enhances the basecoat, provides gloss, and, to a certain extent in most cases, increases the depth of the finish. Prior to clearcoat application, consider if you want to perform any detail painting, shadowing of panel lines, application of foil trim or decals, etc. If applying any type of paint or decal, let dry overnight before proceeding with the clearcoat application. Patience is critical! Lacquer applied heavily too early could cause etching, blotching of metallics/pearls, running or distortion of detail paint, and bubbling of decals.

1) Apply two to three mist coats. Let dry for 20-30 minutes. Contaminants must be

sanded off at each coat application or they will forever be sealed in and visible. 2) Gradually apply two to three more moderate coats. Let dry for one hour. 3) Begin applying heavy coats two at a time if desired. After each one to two coat application, let dry for at least two hours. 4) Repeat step 3 for a total of six to eight heavy coats, or more if desired. 5) Apply one final heavy coat. Identify areas that you anticipate will be difficult to rub out and polish (extractor vents, engine bays, deep recesses, etc.) and spray these areas last to help minimize texturing of the surface with overspray. Allow a drying time of about two weeks.

Again, remember to spray the underside of edges to prevent chipping and flaking during later stages of polishing and assembly. Remove surface contaminants between applications by sanding only. Using a hobby knife or other tool to pick these out of the surface will most likely result in a permanent pockmark depression. Remember to apply enough clearcoat to sufficiently protect the colorcoat from sanding if you will be using a polishing kit to rub out the finish. If you sand completely through a clearcoat into a metallic or pearl base you must repaint the colorcoat. Reapplying the clearcoat will not repair this problem. Sanding into a candy coat could result in an uneven finish. Sanding into a solid is generally not noticeable.

My finishes are applied primarily with a Paasche VL airbrush, #3 needle, #3 tip. Primer is DuPont Variprime thinned with 616S Converter. Clearcoat is PPG Duracryl DCA 468 Hi-Performance Clear thinned with Duracryl DTL 105 thinner. Colorcoats are PPG formulas whenever possible.

I don't wet sand anything because it makes it more difficult to see the area I'm working on. Each sanding cloth in a polishing kit will eliminate the fine scratches from the cloth used before it if used properly. Swirl and haze remover and polish will finish the job. Novus # 1 Plastic Clean and Shine is outstanding for a final polish.

### Revell Monogram 1/25<sup>th</sup> Scale Highway Scenes 1960 Corvette With Coral Court Motel

### by Wayne Hulsey, IPMS Craig Hewitt, Phoenix

This is one of the Highway Scenes kits from Revell-Monogram. These are reissues (so far) of existing kits with added diorama elements with a Route 66 theme. The one I checked consists of a old friend, the '60 ('59) Corvette with pieces for the Coral Court Motel. The Corvette itself harkens back to Revell's multi-piece body days in the late '50s when it was originally issued as a '59. When AMT issued their Trophy Series '59, Revell started calling the kit a '60. The easy clue is the upholstery pattern, the pleats on the seats are horizontal on the '59 and vertical on the '60. Also, the door insert pattern is different between the two years. The kit is fairly simple and the tooling has held up well. Even with the multi-piece body it goes together and produces a simple but nice little model. My one gripe on it would be the lack of stock wheel covers. This issue has a chrome reversed with baby moon hubcap. The last issue I have had Cragar Mark wheels and I think you have to go back to the original issue to get stock wheels covers. But to be fair to Revell-Monogram, except for the very rare knock off wheels on the early Sting Rays and on the Route 66 TV series, I don't remember ever seeing a Vette with stock hubcaps back in the 60's.

On to the diorama pieces. The design is credited to former AMS member Dean Milano who likes vintage architecture as much as vintage cars, so I was really looking forward to them. The motel consists of several die cut and scored pieces of heavy card stock with the designs printed in four-color process. On the base, I could notice some dot patterns in the blacktop. There are no molded pieces, which I find a major disappointment. Printed backdrops can work real well

in model railroading where you have 3-D elements up front. As it stands right now, other than a little better color and printing, the pieces really aren't anymore than the cardboard cutouts that AMT had in some of their kits in the early 70's. Even a small tree of parts with a few pieces such as roof ventilators, door handles, and window molding would have helped greatly.

There is some potential there. For example, the signage for the motel right now is a single piece that folds over to create the two sides. If you cut it apart, then glue the rock-surfaced base onto a block of wood and do a little painting; use Plastistruct or Evergreen beams for the supports; add a spacer between the two sides of the marquee; a touch of weathering; and you would have a pretty nice sign then. But if you're going to have to do all that work, why have to pay for that die cut board? Just print the stuff on some good quality paper and let your knife do the scoring. Some information on the original hotel and maybe a photo or two on the instruction sheet would have been interesting and helpful. The building is of the building block-glass block construction in the art modern or streamlined style popular in the mid and late 30's. This is one of my favorite periods so would have liked to have known more about the prototype. There is also a decal sheet with some vintage signs, a New Mexico banner, a radiator water bag and several vintage plates. On the black Cal plates, I think the yellow numbers are a little too orange. Other then that, the decals are really neat. Especially like the Nehi one (is that still being bottled?) Also available in the series is the Monogram 1:24th '57 Nomad with a gas station scene.

To sum up; the last version of the Vette I have was in a small box about 4x7 and 2 inches high for \$3.00, a good little kit for a fairly reasonable price at the time. Just what we need now, especially for the less experienced (kids) modelers. To pay 11 dollars more, for a big, mostly empty box, a nice decal sheet and a couple of sheets of printed cardboard? No.

# Modeling the DENEL Aviation Cheetah

### by Anton Dyason, IPMS Northern Cape, South Africa

#### **Background**

The Cheetah programme was South Africa's answer to the United Nation's strict Arms Embargo against SA. The Embargo lasted from 1977 till 1994. The last new fighter type to be delivered was the venerable Mirage F1 in the mid '70's. The local aviation industry produced Impala light fighter aircraft as well as Kudu, Bosbok light transporters, Alouette III and Puma helicopters, under license. Sanctions forced the local industry to be entirely selfsufficient in producing very high tech products for the SAAF. This experience paid off when the local industry was asked to rejuvenate the Mirage III and convert them into what became the Cheetah. This programme resulted in a modern strikefighter that would serve with the SAAF until 2000 and beyond.

In order to achieve an effective strike fighter, five key areas of the basic Mirage concept were identified for significant improvements. The five key areas are: the aerodynamic refinement of the aircraft, upgrading of the avionics suite, installation of a new generation navigation/ attack system, addition of in-flight refueling and the installation of a new electronic warfare system.

#### **Aerodynamic Refinements**

The airframe was re-worked down to zero hours, with faulty parts of the structure replaced or re-manufactured. A plug between the cockpit and the new nose cone provides space for new systems.

The Wing. The wing was the main area of aerodynamic improvement. New sharply drooped leading edges with "dog tooth" extensions were fitted. This resulted in improvement of the sustained turn rate (15%), improved handling, and an increase in the maximum take-off mass (700kg). The

increased drag reduced maximum level speed and acceleration by a marginal factor (5%). The internal structure was refurbished and the main spar replaced. Bottom of the wing was re-skinned to solve the cracking problem around the fuel drain outlet.

Canards. The new long nose upset the center of gravity and was a contributing factor for fitting the aircraft with canards. However, the aerodynamic improvements were impressive - increased the maximum instantaneous turn rate, improved lateral stability, increased the angle of attack and

In-Flight Refueling. A fixed in-flight refueling probe connected to a new pressure refueling system takes less than seven minutes for refueling a Cheetah with drop tanks.

EW system. These new systems fitted to the aircraft consist of radar and missile warning, jamming and flare/chaff dispensers.

Weapons: The various types of weapons carried by the Cheetah have not been published. The list would probably include the following:



reduced the minimum airspeed to 100 knots. Two new weapons pylons can now be carried below the air intakes. Small strakes were added on both sides of the nose.

Avionics, Navigation, Attack systems. The upgraded avionics gives the Cheetah inertial navigation system an accuracy greater than one nautical mile per hour, with in-flight update ability to enhance accuracy. The cockpit features the HOTAS (Hand On Throttle And Stick) concept to operate the fully integrated HUD (Head Up Display), computer terminal, armament and display panel. The pilot's helmet is fitted with a sight system for acquiring targets and can also display key flight data! The helmet sight work with the V3B Kukri and V3C Darter air-to-air missiles. The electronic suite gives the pilot a very user friendly interface and improved his fighter pilot skills considerably.

2 x 30mm DEFA cannon (internal); Air to air missiles; Various types of conventional bombs; PGM - precision guided munitions; Extra fuel tanks, including the combo units - fuel and bomb dispenser combined

#### The Future

The Cheetah is currently operational with the SAAF as South Africa's front-line multi-role fighter-bomber. (The Mirage F1, Mirage III and Buccaneer have all retired). Despite the Gripen's entry to the SAAF from 2002, the Cheetah should be around for quite a few years. Based on their experience with the Cheetah, DENEL aviation has created a number of upgrade packages for the Mirage III. This generated considerable interest from various customers. The advantage was that a certain combination of packages or the complete package could be fine tuned on SAAF Cheetahs to the exact specification

of the potential customer. DENEL Aviation also developed a "Advanced Combat Wing" - it is a modular upgrade package for either the Cheetah or the Mirage III. The wing completed flight testing and exceeded all expectations. Extra fuel is carried and the wing has a slightly shallower sweep angle over the outer 20% of its leading edge, accommodating a wing-tip launched short range air-air missiles.

### Building the Cheetah in Model Form

#### Overview

There are no model kits of the Cheetah made by the popular model kit manufacturers. This, coupled, with the security surrounding the aircraft, made modeling the Cheetah a very long and difficult conversion process. This didn't stop IPMS members and other model kit builders in South Africa. Over the years excellent reproductions in model form were seen at various competitions. In recent times most of the security surrounding the aircraft was removed from classification. This brought about a flood of information and photographs on the Cheetah and explains why the Cheetah subject is currently so popular with modelers around the world. A few months ago, Eagle Designs released two conversion kits for the Cheetah D in 1/72 and 1/48 scale - a big bonus for modelers. In this section you will find detailed info on the aircraft for modeling purposes, a description of the earlier conversion process, and info on the latest conversion kits and Cheetah model kits.

Building the Cheetah E (kit bash in 1/48). The easiest model to build would be the Cheetah E, due to the availability of basic kits. Basic kits required are the Mirage 5 or Mirage III E (Note: not the C, the engine intakes are in the wrong position and the fuselage too short) and Kfir C2 or F-21 Lion. ESCI used to make all these kits in 1/48 scale, but they are difficult to obtain in the late 90's. [Note: A few ESCI aircraft kits are slowly coming back into production. The Mirage IIIC is scheduled for re-

release shortly; perhaps the applicable Mirage/Kfir kits will follow - ED] The Mirage 5 kit features the 1300 liter fuel, drop tanks and central weapons pylon as depicted in Air International (Vol 36 No4 -April '89, pg. 182 and 183) and *Jane's* World Aircraft Recognition Handbook by Derek Wood (4th edition, '89, pg. 195). ESCI feature the wrong Kfir C1, as acquired as a interim aggressor training fighter until the F-16N became available for the aggressor squadrons of the US Navy and Marines. This is however to the benefit of the scale modeler as a Cheetah and F-21 can be built from the kits. You will find that the Kfir/F-21 panel detail is not of the same quality as either of the Mirage kits.

To build the Cheetah the following is required from the two kits: 1. Mirage 5/ IIIE fuselage halves; 2. Mirage undercarriage (better quality and more accurate); 3. F-21 / Kfir main wing assembly; 4. F-21 / Kfir canards; 5. F-21 / Kfir nose assembly.

Note that there are a couple of detail differences between the Kfir and Cheetah. The most obvious difference is the length of the nose. On the Cheetah a 650mm (approximate) nose plug is used, which does not show on the F-21 / Kfir. Apart from this, the profile is the same. Although not obvious, there is a difference in the main undercarriage door layout. The Mirage door layout is the more correct of the two kits. Furthermore, the canard span is somewhat less than the Kfir. By trimming approximately 1.5 - 2mm of each canard, the correct span is achieved. The Kfir-type ram-air inlet is featured on the port side, while the ordinary Mirage type ram air inlet is featured on the starboard side on top of the fuselage. The flare/chaff dispenser at the end of the central fuel tank fairing must be transferred from the top of the leading edge, and is approximately 5mm long, 1mm high and situated 10-11mm inboard of the dogtooth.

According to the equipment quoted in *Air International* and *Jane's All the World's Aircraft* the Kfir model's cockpit layout is the most accurate available, between the two kits. However, only in systems carried

by the aircraft and not in layout! Armament: Stations  $1\&7 - 2 \times V3B / V3C$ , Stations  $2\&6 - 2 \times 1300$  Liter drop tanks, Stations  $3\&5 - 2 \times Mk$  82 500lb bombs, Station  $4 - 2 \times Mk$  82 500lb bombs.

Painting: The Cheetah color fades very quickly, due to the harsh conditions in SA. Humbrol Dark Grey (27) is the closest grey available exterior finish. Cockpit interior is light grey. Undercarriage, wheel wells and doors are all Gloss White. See also Cheetah Modeling Details.

Building the Cheetah D (kit bash in 1/48) The Cheetah D (sometimes called the D2) can be made up from the Heller Mirage IIID and Kfir kits. The whole nose needs to be scratch built. Some IPMS SA members offer a limited production run resin nose. Otherwise, a suitable drop tank with the basic shape can be converted to look like the real thing. Both ram-air inlets on top of the fuselage are of the Kfir style. All other details, as mentioned in the Cheetah E (kit bash 1/48) are also applicable to this model. Armament: The SAAF posterbook lists the armament of the D model as follow: Station - 2 x 500 Liter drop tanks and Station 1&7 2 x V3B Kukri AAM's.

Building the Cheetah D (resin conversion kit in 1/48). Recently announced by Eagle Designs is a resin conversion kit in 1/48, to build a Cheetah D. There are two different resin conversion kits for the Heller Kfir C2 and Heller Mirage IIIB/C. Highly recommended and saves a lot of time. A master for the canopy is included, but you need to form your own.

Building the Cheetah (kit bash in 1/72). Both Cheetahs can also be built in 1/72 scale. The Hasegawa Kfir C2 or Italeri, and any make Mirage IIIE will produce a Cheetah E. The Matchbox Mirage IIIB (fair amount of scratchbuilding) and the Hasegawa or Italeri Kfir C2 will cover the the Cheetah D.

Building the Cheetah D (resin conversion kit in 1/72). Recently announced by Eagle Designs is a resin conversion kit in 1/72, to build a Cheetah D. Highly recommended and saves a lot of time. A master for the

canopy is included, but you need to form your own.

Building the Cheetah C (kit in 1/72). High Planes Models of Australia is shipping a 1/72 kit from February 2000, kit no. 72017. This kit is based on the basic work that went into the High Planes Mirage III kit, with all the appropriate changes incorporated into the new sprues. Decals are provided to enable all of the low-vis grey camouflage schemes to be modeled.

the main wheels can be used. However on the Cheetah the landing lights on the nose gear are round and not square as on the 2000. The canopy is a single unit.

Cheetah C - Additional Notes: The ejection seat is the Martin Baker JM6 and for modeling purposes the same as used by the F-4 Phantom. There are two different color schemes for the Cheetah. The two schemes used are air to air and air to ground, although the aircraft retains its

rapidly, to blend into almost a single color. It will also show up lighter on color chips. Like most other aircraft subjects, it is probably best to get good photos of the subject you intend to model.

For the main undercarriage the Mirage 2000's undercarriage including the main wheels can be used. However on the Cheetah the landing lights on the nose gear are round and not square as on the 2000. The airframe is lengthened just after the canopy by 600mm, but the nose gear is in the same position as for the Mirage III E. The canopy is a single unit.



Above: Cheetah logo as carried on the aircraft.

Left: Cheetah C No. 342 "Spotty".



DACO DECALS from Belgium have planned a set of decals for Spotty, the Cheetah painted as a Cheetah with orange top covered in black spots, and cat's face on the nose sides. [Additional info taken from High Planes web page – ED]

#### **Cheetah Modeling Details**

Info in this section was mostly supplied by N. Scheltema, PRO Division, 2 Squadron. Sourced via Ettienne Kotze.

Cheetah D - Additional Notes: The ejection seat is the Martin Baker Mk10L, for modeling purposes the same as used in the F-18. Note: the harness differs. The color scheme is the same as the Cheetah C Air to ground scheme - see Cheetah C Additional Notes. The D is currently being upgraded. The following serial numbers, 849, 852, 859, 860 and 862, have completed the conversion. For the main undercarriage the Mirage 2000's undercarriage including

multi-role capability, regardless of the scheme used. Aircraft with serial numbers 341 to 359 are painted in the air to air color scheme and 360 to 378 use the air to ground color scheme. This can be achieved as follows: The radome is painted FS 36375 Light Compass Ghost Gray for both color schemes. In the Air to Air scheme the "light" color is FS 36375 and the "darker" color FS 36320 Dark Compass Ghost Gray. In the Air to Ground scheme, the "light" color is FS 36320 and the "darker" color FS 36118. A few exceptions like 349 and 354 uses a "darker" shade - the reason is unknown.

Then there is "Spotty", serial number 342, which is painted in a colorful Cheetah scheme. This aircraft is used for dissimilar combat training.

Due to the harsh environment in SA (very hot, some areas very humid and intense sunlight) the color schemes fade rather

## Classic Airframes Fairey Battle from page 9

strip to increase the width. I also added an additional block of plastic in the well for the gear strut. I didn't feel there was enough there to secure the landing gear. This weekend I hope to have the wings on and the airframe completed. I've rescribed most of the lost fuselage panel lines so only a little further rescribing is needed.

Well I hope this helps! It's a **great** looking model once you get to the point I'm at. Believe me it's worth the little glitches and modeling challenges.

Reference: the Ken Merrick drawings in the *Aircraft Archives* on *Bombers of WWII*. It's a great help.

### Frems 1/48<sup>th</sup> Scale Aermacchi MB.339A Frecce Tricolore

### by Michael Benolkin, IPMS Albuquerque Scale Modelers

The Aermacchi MB.339 project began as a 1972 Italian Air Force requirement for an advanced replacement trainer for Aermacchi's successful MB.326. The first MB.339 prototype took to the air in 1976. Based on the airframe and engine of the MB.326, the MB.339 featured a reshaped forward fuselage and improved cockpit and avionics fit. The engine is a licensebuilt Rolls Royce Viper 632-43 turbojet producing 4000 lbs thrust.



The MB.339 entered service with the Italian Air Force in the early 1980s, and has been exported to numerous countries around the world in both the training and light attack configurations. The MB.339 is probably best recognized as the long-time mount for the Italian Air Force air demonstration team, the Frecce Tricolore.

Frems is a new manufacturer on the hobby scene. This first offering provides us with the first injection-molded MB.339 produced in 1/48th scale. Molded in light grey, the kit has no flash, nor are there any ejector pin marks on any part of the kit that would be visible after construction. The only flaw I could even find in the kit was a slight sink-mark in part 44, a cockpit bulkhead.

The instructions are the first thing that will get your attention. The assembly diagrams are nicely done. The few text instructions that are on the sheet are in both Italian and English. All of the assembly portions are labeled with letters that correspond to a color-guide table in the back to aid in painting during construction.

The next things you'll notice are the ejection seats. Each seat is seven parts and makes up a complete model of its own. While harnesses are not represented in the mold nor by decal (easily fixed),

this is one of the first kits to provide the warning and data stencils found on virtually all ejection seats.

The instrument panel is beautifully detailed with

recessed instrument faces, and both cockpit tubs come complete with control sticks and rudder pedals. No throttles are provided, but again, this is very common in kits and also easily fixed.

Assembly appears to be very straightforward, and you are provided with options to position the canopy open or closed; the flaps can be

positioned up or down; and the ventral speed brake can be positioned open or closed. This kit provides plain wingtips, two underwing smoke generator pods and two optional underwing external fuel tanks.

The decals provide options for any one of the 10 Frecce Tricolore air demonstration team aircraft. The paint scheme is straightforward, you paint the airframe an overall dark blue with silver undersurfaces. The decals provide the red/white/green markings. In fact, it appears that the white markings (as well as the other colors) are quite opaque, and will not allow the colors underneath to affect their appearance. Nice touch!

The MB.339 has always been my idea of a graceful looking trainer, and like many other contemporary trainer subjects, has been ignored by the model industry. Thank you Frems for filling in part of this void! If this kit is any sign of their future, we will want to pay attention to Frems. In fact, the planned release after the standard issue version of the MB.339 will be none other than a 1/48 Lockheed F-104G Starfighter. Hopefully they will give us an accurate F-104S/NASA version as well. My sincere thanks to Precision Parts for this sample!



#### **Preznotes**

from page 1

The paint scheme doesn't bother me any more because I have learned to find out how to do something by asking someone that knows how to do it. Fortunately our chapter has a huge membership with modeling talents in a wide variety of areas. You just need to ask. I know of no one in our group that won't explain a technique on how they completed a certain model. Most of our members have an open workbench: "if you have a problem, come on over and let's try to solve it." I have done this frequently in the past few years and I have have shown some of my techniques to others as well. Observing others during a process is many times better than just trying to explain it to them at a meeting or over the phone. It's why we as a modeling group have become collectively, one of the best anywhere.

See you at the meeting,



### Golden Age Stars of IPMS #4

Although her acting career spanned 53 years, and included two Best Actress Oscars, **Olivia de Havilland** will be forever remembered for her role as Melanie Wilkes in *Gone With the Wind*. In a way this is a



pity, as de Havilland was much more than that one character. She showed considerable range, from her early action films with Errol Flynn to later performances such as the over-the-top campfest *Hush...Hush Sweet Charlotte*.

Olivia never really got along with her equally famous sister, fellow actress Joan

Fontaine; losing the Oscar to her in 1942 couldn't have helped! Born in Tokyo to British parents, Olivia moved to California as a child with her mother. Although she lived much of her life in America, she has always considered herself British. I know the feeling...

From a modeler's perspective, though, Olivia is notable as the only multiple Oscar winner (Joan won only the one) to be a first cousin to one of the pivotal figures in the history of aviation. Sir Geoffrey de Havilland was 34 years Olivia's senior, and the two didn't meet until the 1940s. Olivia was much closer in age to Geoffrey de Havilland Jr., and the two were friends until his death in the 1946 crash of the DH.108 experimental jet.

There's a great photo of Olivia and Sir Geoffrey sitting in the pilot and copilot seats of the prototype Comet jetliner. Unfortu-

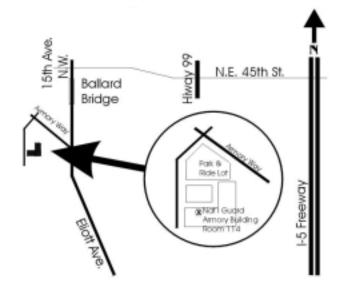


nately, I couldn't find a copy of it; the only aviation-related picture of Olivia I could come up with is a fuzzy wartime shot of her in front of what looks like a P-38.

Olivia makes an interesting comparison with the most famous de Havilland aircraft, the fast, wooden, unarmed Mosquito bomber. By Hollywood standards, Olivia was anything but fast, her acting was rarely wooden, her films never bombed (well, until the '60s), and as far as I know, she has two arms.

Olivia is living in retirement in France, and writing her memoirs. She takes her duties as a de Havilland seriously; a few years ago, she represented the family when a memorial was dedicated at the site of the former de Havilland factory at Hatfield.

## **Spring Show Reminder**



## Saturday, March 11, Registation starts at 9am

National Guard Armory, Cafeteria & 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.