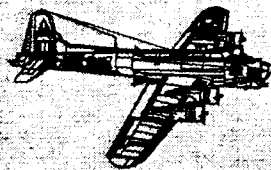


Seattle Chapter News



Seattle Chapter
IPMS-USA

May, 1998



PREZNOTES:



Tell me this never happens to you. You are at your workbench, scraping the mold seam from a radio mast or similar small part, and suddenly it pops out of your fingers and drops to the floor. Of course, the color of the part just happens to match the color of your carpet nearly perfectly, making a search from your chair impossible. So you carefully step out of your chair hoping that you won't step on the part, and begin your search. Usually, you didn't see where the part went, so you have to get down on your hands and knees with your nose a few inches above the carpet. It is truly amazing how far a part will go to remain hidden. After searching the area around your chair, you start expanding your search area. Finding the *Titanic* was easier. You bring in your heavy duty flashlight, and shine it across the floor hoping to see the part better. It's at about this time that your better half walks into the room and asks "Just what the hell are you doing?" "Nothing dear, just looking for something." Your initial search finds nothing. Check your pockets. Check the workbench again - maybe it didn't really hit the floor. Nope. One more time. Start your grid search over. Where did all these dust bunnies come from? Ah, there it is! Way over there. No, wait. That's a part from your last model. Damn. At about this time, you start thinking about how easy it would be to make the part from scratch. So much for spending some quality modeling time finishing your latest work of art. Sometimes the part shows up, and sometimes you bring on the vacuum, run it over the

area around your bench, then empty the contents of the bag on the floor. This method is known to have been successful on occasion, but afterwards you have to vacuum again to clean up the mess you just created. I'll bet coin collectors don't have this problem.

Another thing that happens on occasion is working on a subassembly or something just glued. It falls out of your hands. The natural reaction is to slam your legs together to at least keep it in your lap. However, the mind is not as quick as it used to be, and it takes the command to move your legs together a little longer than it used to. More often than not, the part is stopped from falling to the floor only to have it crushed between your knees. And what about the part you snip from the sprue and it takes off into its own lunar orbit? You think you heard it hit the wall behind you, but just aren't sure. Or did it just go in the stack of modeling supplies and half started kits on the back of your workbench?

I won't bring up what happens when your Xacto knife rolls off the end of your workbench. Maybe I should just go help Jill clean her collection of snow globes...

See you at the meeting.

Terry

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Boiler Plate: This is the "official" publication of the Seattle Chapter, IPMS-USA. As such, it serves as the voice of our Chapter and depends largely upon the generous contributions of our members for articles, comments, club news, activities, any rumors or facts involving plastic scale modeling and other contributions. Our meetings are normally held each month (see the calendar below for actual dates) at the Washington Army National Guard Armory, off 15th Ave. N.W., just to the west side of Queen Anne Hill in Seattle. Our meetings begin at 10:00am and usually last for 2-3 hours. Our meetings are usually very informal and are open to any interested plastic modeler, regardless of your interests. Subscriptions come with payment of your Chapter dues of \$12.00 (to Norm Filer, our Treasurer). We also highly recommend our members join and support IPMS-USA, our national organization (dues: adult - \$19. and junior - \$9.) Any of the folks listed above will gladly assist you with further information about any aspect of our Chapter or Society. (see the application form below)

The views and opinions expressed in this newsletter are just that, and do not constitute the official position of our Chapter or IPMS-USA.

You are encouraged (no, begged) to support and submit material to the Editor for this newsletter. He will gladly work with you to see that your material is put into print and included in the newsletter, no matter what your level of computer or writing experience. Please call Bob at 232-7784; we need your input.

If you use or reprint from the materials contained in this Newsletter, we would appreciate attribution to both the author and source document. We do not copyright our Newsletter. It is prepared with but one concept in mind: this is information for our members and fellow modelers and is prepared and printed in the Newsletter in order to expand the skills of our fellow modelers.

Meeting Dates: 1998

The IPMS/Seattle 1998 meeting schedule is as follows. To avoid conflicts with already 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. Because some of us never seem to know when we will meet, we *strongly recommend* that you cut this page out of your newsletter and paste it up next to the recycle, Mariners, Cheers reruns, Husky home game, lemming return or any other schedules you post in your house. All meetings begin at 10:00am on meeting Saturdays.

MAY 16, 1998 (3rd Saturday)

AUGUST 15, 1998 (3rd Saturday)

JUNE 13, 1998 (2nd Saturday)

SEPTEMBER 19, 1998 (3rd Saturday)

JULY 18, 1998 (3rd Saturday)

IPMS/USA NEW MEMBER APPLICATION

IPMS No.: _____ Name: _____

(leave blank)

Address: _____

City: _____ State: _____ Zip: _____

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

P.O. Box: 6138

Warner Robins, GA 31095-6138

FINAL EDITORIAL

Well, it's about time I provide an editorial. As my time here draws to an end (this is my final issue as your Editor), I haven't really taken the opportunity to share my thoughts with you. These ideas and thoughts are a bit ragged, some pointed and clearly only my own. But since I've not cluttered up the Newsletter with my personal opinions in the past (except for a brief few notes and pleas), I hope you'll bear with me. I would like to reflect on several aspects of what I have been doing and attempting to do over the last year. Here goes.

Thanks. First and foremost, I want to thank the Chapter, especially those who have provided support, feedback and contributions, for all of your support. It hardly seems like a year and a half has transpired, but it has. I also want to sincerely and specifically thank those who have contributed so greatly and saved my bacon on more than one occasion. First my wife Helen (who appears to think its normal for someone to sit at a computer for days on end), Norm and Sherry Filer, Brian Cahill, Terry Clements, Ted Holowchuk, Terry Moore, Bill Osborn, Mike Quan, Jim Schubert, Tracy White and the Editors of the corresponding Newsletters which I have drawn heavily upon: Walt Fink, Phil Brandt, Ed Esposito, Chris Bucholtz. I know I've left some contributors out and I am sorry for the oversight. Without you folks, I couldn't have gotten even what I did. Thanks a million!

Why even do a Chapter newsletter? I supposed that's still a valid question (and one I have reconsidered more than once over the last year). It's a mixed bag. Primarily because I felt, as a Chapter we had much more to do to establish a reason for our existence. I felt that as one of the oldest IPMS Chapters, I missed a sense of sharing which is the essence of the IPMS concept. I am still not sure about what the answer is or where it lies (for me that is) but I still feel something is missing. still think of a Chapter as having a need to exist and accomplish something to show for itself. To service to its members, if you understand what I am suggesting. For those reasons, I felt we "had it in us" to produce more than a 1-2 page flyer and meeting announcement. I still do. Hence, my volunteerism.

I also suspect there was touch of ego in the effort as well. I found myself with a sizable amount of resources and information and wanted to share them with others, especially

newer or less experienced members. With my semi-retirement and the available computer (and some rudimentary skills on this critter), the time and mechanical opportunity presented itself. So, I found myself standing up, saying my piece and hearing someone shout from the throng, "right on" (actually it was only Norm and I'll eventually forgive him). In retrospect, I suspect it was just one of the early signs of what I refer to as "modeler's menopause." I haven't been building, I might as well do something. And I have this crazy ingrained notion of giving to others. While I haven't finished a model since undertaking this effort, I guess I am proud to look back and see the fruits of my efforts. I can't tell you how rewarding it has been to get the feedback I have from the 5 or 6 folks who have commented to me about the Newsletter results.

It has been an incredible amount of time and work. Often I plug along on these issues for 60-80 hours each and have become almost driven to get each issue out on time. This is probably in large measure due to my lack of technical and editorial skills. I've attempted to provide what I hoped would be diversity in our topical content. In a sense, trying to provide something of interest for all our builders. I realize only too well its geared largely to aircraft builders. That's what most of us seem to build and relate to. Besides I have literally (in print and verbally at our meetings) *begged* for input from everyone.. The Seattle Chapter has a great reservoir of skills, knowledge and accomplishment. I wish we were more willing to really share it with others. From my perspective (therefore I am sure it's right....) our Seattle Chapter Newsletter has to be one of best returns for your modeling investment that I am aware of, if not the best.

One of the disappointments frankly has been the lack of feedback. Please don't read anything extra into my observations. I am *not* mad nor upset with anyone. It's just that sometimes we don't seem to see the trees for the forest and I think, as a group and individual members we are better than we demonstrate and have far more to offer.

Again, thanks for the opportunity to work on the Seattle Chapter Newsletter. It's been an experience. Please support Robert in his new role as your Editor. Now it's time for some modeling for me! Like Terry always says, "see you at the meeting."

Bob

Modeler's Notes:

Added Observations by Paul Ludwig

Further to my Brief Appreciation of Models: all of us in some measure appreciates color. I know that I love color. Each of us attempts to present fidelity of color on a model based upon the actual item. Even though camouflage appears to be a hodgepodge of colors that do not look good together, in fact the individual colors are exciting. However my appreciation of models goes back to my earliest recollections of the colors of real aircraft.

During World War Two my parents knew of my interest in airplanes and after seeing me play endlessly with a metal toy model of a Waco they took me to Detroit City Airport. The war effort required a stop to the use of private aircraft and when I was taken to a catwalk high above the hangar floor, there I saw beautifully painted 1930s "ships" that had their propellers removed and were nosed-up, stacked closely together like so many useless objects. I was amazed! I cared only that there were some all-red airplanes, yellow ones and others whose colors I can't visualize today.

Our home was just a few miles west of the Naval Air Training base at Grosse Ile, Michigan and we had a two-acre plot which the Navy biplane instructors used as a low-altitude emergency landing field. Students were taught to respond to engine failure and to pick our vacant acre as a possible airfield. I won't go into why they chose that place because there were high trees and wires on telephone poles south of the acre. However, I saw an amazing variety of colors on the biplanes and to this day do not know the reason why one fuselage was blue and another yellow.

I was in the Navy for a few years and there I saw a wide variety of color on aircraft used for training, utility, the fleet and for other purposes. Now that I'm resurrecting an interest in models I am still amazed at the colors used on aircraft. The Golden Age of racers are no more colorful than were late-World War Two USAAF fighters. Who has not noticed the Art Deco designs employed on Japanese, Italian and Spanish Civil War aircraft?

It is a joy to me to see the models make by members locally. I try to keep up, but my appreciation of models is endless. Each model I see usually has colors so attractive that color often transcends the shape of the model. I owe it all to my parents who responded to my interest in those "ships" of the 1930s.

How To Paint Navy Aircraft ?

by Bob LaBouy

With the recent release of a crop of newly molded U.S. Navy aircraft, if you are like me I started to look for colorful schemes and markings. At our most recent "outing" Kevin was able to further lighten my wallet with several "have to have" items. One was the beautiful pre-war Dauntless kit, which offers some of the more colorful pre-WW II Navy and Marine markings for those of us interested such treasures (see the two photos to the right as an illustration of what I mean when I say "colorful"). Once I was bitten by the pre-war bug, I quickly remembered that I had better do some further research before beginning this kit (and I *am serious* about wanting to actually *build* kits again, rather than just writing about them). I was just reviewing and reading the Accurate Models SBD-1 instruction sheets (Kit no. 3420) and believe me, if you've not started one of the Accurate kits, their constant reminder to read and follow their instructions closely is the best information I've seen in kit instructions since we stopped using them in the early 50's. One area where this kit excels is in their coverage of how pre-war Naval aircraft (including the USMC, which is after all *part* of the Navy) are marked. It carefully illustrates, with several nice drawings how the typical squadrons were painted to indicate the sections and positions of the individual aircraft within the sections and squadron. I quickly thought, some of us have never (or maybe just for some time....) been exposed to this information. Maybe a brief review is in order? Not that this information is brand new or has been added to lately, but just maybe a review would be helpful to others as it is for me.

One of the earlier articles I ran across (and included below for you) is from the old Eastern Pennsylvania Chapter News might assist you in gaining a better understanding of the many very colorful schemes you see or read about in various magazines and books. This article is really just the "tip of the iceberg" and can bring a new understanding to the many very colorful arrangements you can apply to Buffalo's, Wildcats and early Dauntless aircraft. There are several other excellent guides available, which provide even more color reference and fill in more details, including books and articles by Bill Larkins and the late Dick Hill, both of whom have given us who enjoy Navy aircraft a lifetime of information about aircraft and markings we will never see in our lives. I've also listed some of the better known reference sources for

those of you who may not have seen these and wish to read and study further. I believe you will be astounded as to the depth of this subject and the beautiful modeling subjects which await your efforts. Need help, give me a call and maybe we can dedicate a portion of one of our meetings to this subject or have a small get together on our own. I'm at 232-7784. Enjoy!

U.S. NAVY COLOR SCHEMES

1920 THRU 1940

by DICK WEGRYN

"Standard coloring was silver overall with orange yellow on upper surface of the upper wing and horizontal stabilizer in the early 1920's. Metal parts were painted light grey, while the fabric remained silver by late 1920's. Metal parts were again painted silver in 1934. There appears to be a certain lack of standardization on the grey as it went to an off-white shade on F4B-3's and -4's. Also, it appears that many aircraft maintained their grey-silver scheme beyond 1934.

In 1925-26, practically all U.S. Navy aircraft were identified with three vertical red, white and blue rudder stripes similar to those used by Britain and France. In 1920, the custom of painting the entire tail assembly in a solid color to identify a particular squadron was adopted. By 1928, the vertical stripes were no longer used on first-line Navy combat aircraft, although they were retained by the U.S. Marines until the adoption of camouflage in 1941. The solid coloring continued to identify specific squadrons until July 1937, when the system was changed to have color identify the aircraft carrier to which the squadron belonged. These were as follows:

Red	USS Langley
Black	USS Yorktown
White	USS Saratoga
Green	USS Ranger
Blue	USS Enterprise
Yellow	USS Lexington

The lettering U.S. NAVY appeared on the lower wing until dropped in 1932.

Each squadron was comprised of six sections of three aircraft each. Section colors are as follows:

1st	Red	4th	Black
2nd	Blue	5th	Green
3rd	White	6th	Yellow

Certain aircraft were flown by specified squadron officers. Assigned officers were as follows:

1st	A/C No. 1 Sqd. C.O.	
2nd	Unassigned	
3rd	Unassigned	
4th	A/C No. 10	Exec. Officer
5th	A/C No. 13	Engr. Officer
6th	A/C No. 16	Gunnery Officer

Section leaders' aircraft had the entire cowl painted plus a fuselage band. Fuselage bands did not appear on the other aircraft of the section. Cowls were painted according to position of the other aircraft in the section: wingman had either the upper half or lower half painted, depending on their position — one number removed from the section leader (top half) two numbers removed (bottom half). All aircraft in the squadron displayed a chevron on the upper wing carrying their section's color.

Squadron insignia appeared on fuselage sides ahead of the cockpit. Some of the earlier squadrons are listed below:

VF-1	High Hats	(Red)
VF-2	Fighting Chiefs	(Yellow)
VF-3	Felix the Cat	(White)
VF-4	Red Rippers	(Blue)
VF-5	Screaming Eagles	
VF-6	Fighting Six	
VF-7	Burglar Wasps	

Aircraft numbers and letters on fuselage sides indicated squadron, primary mission and section position. Thus, 2-B-7 is an aircraft of VB-2B (Bombing Squadron 2) and is the first aircraft of the third section. Aircraft 1-F-1 the first aircraft of the first section and is in VF-1 (Fighting Squadron 1).

On December 30, 1940, the colorful markings gave way to an overall grey. This was replaced by a blue above/grey below scheme between September, 1941 and October, 1941. Squadron number and mission letter were removed on December 7, 1941, leaving only the aircraft number."

References:

As I previously mentioned, in this and other notes for modelers, the basic marking information (as is the case in this article) important to us as modelers. Of even greater importance to many us, based on our limited modeling experience, finances and reference libraries, is probably the sources of further research and information. I will always think back to my earlier modeling experiences when I felt that the Profile series was a "God sent." As my hobby interests progressed and my pay

check allowed me to acquire more materials, I was astounded at just how basic the Profiles were themselves. Books and information such as that provided by Bill Larkins, John Elliott and Bill Riley was almost unheard of and hard to come by. We are now blessed and I hope you'll find the following sources of use to you as well.

Doll, Thomas E., Berkley R. Jackson and William A Riley, Navy Air Colors Vol 1, 1911-1945, Squadron/Signal Publications, 1983.

Elliott, John M., The Official Monogram U.S. Navy & Marine Corps Aircraft Color Guide, Vol 1, 1911-1939, Monogram Aviation Publications, Boylston, MA, 1987.

Elliott, John M., The Official Monogram U.S. Navy & Marine Corps Aircraft Color Guide, Vol 2, 1940-1949, Monogram Aviation Publications, Boylston, MA, 1989.

Kilgrain, Bill C. USN Color Schemes and Markings, U.S. Navy Aircraft 1911-1950, Meridian Printing, Ltd. (Canada), 1975.

Larkins, William T., Battleship and Cruiser Aircraft of the United States Navy, 1910-1949, Schiffer Publishing Ltd; Atglen, PA, 1996.

Larkins, William T., U.S. Navy Aircraft, 1921-1941, Orion Books, New York, 1988 Edition. [It should be pointed out that this book and Bill's fine companion book on U.S. Marine Corps Aircraft, 1914-1959 have been republished by several publishers, since the first editions in 1959, including U.S. Naval Institute and most recently by Schiffer Publishing. I point this out not only to indicate it's lasting value to modelers, but to let you know when you see the various printings, you'll know you are buying the same basic information and data, rather than information as each succeeding edition has been reprinted. These books also contain more photographic images of Navy and Marine a/c in these various markings and color schemes than any other sources I am aware of. In my humble opinion, as a interested Navy modeler and photographer, Bill Larkins' books are "must have" resources.]

Riley, William A. & William Larkins. "Thirty Years of Navy Markings." American Aviation Historical Society Journal, Vol 2, No. 3, July-September, 1957, pp. 143-175.

Wegryn, Dick, "U.S. Navy Color Schemes, 1920 Thru 1940," EP-IPMS, Eastern Pennsylvania Chapter News, Vol 4, No. 12, page 15. (reprinted above).



Bill Larkins' classic photo above depicts an early SOC-3 (ashore) from the USS Colorado. This photo clearly illustrates (even with the limitations placed on our reprinting of this beautiful shot) the multicolored markings used by the U.S. Navy prior to WW II.

The U.S.N. photo below again clearly gives a brief indication of the very colorful markings carried by the Navy's pre-war Scouting Squadrons. Included are the fuselage bands, painted tails, nose cowl, yellow upper wings and chevrons, along with the aluminum fuselage and floats.



Observation Squadrons and Tail Colors

Since I've put my "foot into the water" just a bit by illustrating some of the colorful pre-WW II markings, in the preceding notes and photos, I thought I'd attempt to share what data I have collected concerning one of my favorite aircraft, the SOC Seagull.

During the 1930's the U.S. Navy arrived at a specific marking system intended to quickly and easily identify all of its squadrons and aircraft. This system was intended to serve both the squadrons (and their air crews) and the ship's personnel as well. A similar system was eventually spread throughout the shore-based Navy & Marine squadrons as time passed. These colors were generally used until October, 1940, when the Navy issued its infamous "final" instructions (known as "SR-2B"). They

lasted early 1941, when they were changed again, only to be changed again in early '42 again, as we entered into World War II. Generally, all of the colored markings outlined below became obsolete and were discontinued on February 26, 1941. A very colorful era in Navy aviation had passed from the scene.

The following lists illustrate, by type of squadron, assignments of ships (where easily identified) the colors and types of markings carried by the Navy's pre-war observation squadrons. I have attempted to bring together information from several sources (as listed in the following references) and illustrate the amazing diversity in colored markings carried by this single type of aircraft. These same markings would have also been used by the Navy's other ship board observation aircraft while they were deployed from the fleet's ships. This system can sometimes become a bit complicated due largely to the various time periods involved and I apologize ahead of time for any further confusion I am creating—as I am often confused myself.

As mentioned in the prior article, good references for this type of modeling and research are a must. When I originally pulled this information together, I used all of the references shown in my bibliography shown on page 5, except for Bill Larkins' Battleship and Cruiser Aircraft of the United States Navy, 1910-1942, which had not then been published. If you are interested in these markings and any of the Navy's observation or scouting aircraft and their assignment and use aboard battleships and cruisers, I can't recommend this fine book too much. It is without a "bible" in the sense that almost everything known about such aircraft, their markings and operations is chronicled in this book. I've been casually following and researching the SOC and catapult operations for approximately 25 years and am overwhelmed by Bill Larkins' efforts and finished product in this book. It is clearly a product illustrating his life-long interest and love affair with these beautiful aircraft. It is another of those "must have" books which may only come along once during your modeling life times.

BATTLESHIP OBSERVATION and UTILITY SQUADRONS

Battleship Division One	VO- 1	Insignia Red	1933-41
USS Arizona BB-39			
USS Nevada BB-36			
USS Pennsylvania BB-38			
Battleship Division Two	VO-2	White	1933-41
USS California BB-44			
USS Oklahoma BB-37			
USS Tennessee BB-43			
Battleship Division Three	VO-3	True Blue	1933-41
USS Idaho BB-42			
USS Mississippi BB-41			
USS New Mexico BB-40			
Battleship Division Four	VO-4	Black	1933-41
USS Colorado BB-45			
USS Maryland BB-46			
USS West Virginia BB-48			
Battleship Division Five	VO-5	Lemon Yellow	1940-41
USS Arkansas BB-33			
USS New York BB-34			
USS Texas BB-35			
	VJ-1	Willow Green	1933-41
	VJ-2	Lemon Yellow	1933-41
	VJ-3	Aluminum	1940-41

CRUISER OBSERVATION and UTILITY SQUADRONS

Cruiser Division Two (VCS-2)	VS-5	True Blue	1933-40
Operated two plane sections and a/c displayed double horizontal strips on tail			
Cruiser Division Three (VCS-3)	VS-6	Insignia Red	1933-40
Operated two plane sections and a/c displayed double horizontal strips on tail			
USS Concord CL-10			
USS Cincinnati CL-6			

USS Milwaukee CL-5
 USS Omaha CL-4
 USS Trenton CL-11

Cruiser Division Four (VCS-4)	VS-9	White	1933-40
		True Blue	1940-41

Operated four plane sections and a/c displayed single horizontal strip on tail

USS Northhampton CA-26
 USS Houston CA-30
 USS Pensacola CA-24
 USS Salt Lake City CA-25

Cruiser Division Five (VCS-5)	VS-10	Lemon Yellow	1933-41
A/c displayed single horizontal strip on tail			

USS Chicago CA-29
 USS Chester CA-27
 USS Louisville CA-28
 USS Portland CA-33

Cruiser Division Six (VCS-6)	VS-11	Willow Green	1934-37
		Black	1937-41

Operated four plane sections and a/c displayed single horizontal strip on tail

USS Minneapolis CA-36
 USS Astoria CA-34
 USS New Orleans CA-32
 USS San Francisco CA-38

Cruiser Division Seven (VCS-7)	VS-12	Black	1935-37
		Willow Green	1937-41

Operated four plane sections and a/c displayed single horizontal strip on tail

USS Quincy CA-39
 USS Tuscaloosa CA-37
 USS Wichita CA-45
 USS Vincennes CA-44

Cruiser Division Eight VCS-8		Black	Double Horizontal Stripe
USS Philadelphia CL-41			
USS Brooklyn CL-40			
USS Nashville CL-43			
USS Savannah CL-42			

Cruiser Division Nine VCS-9		Willow Green	Double Horizontal Stripe
USS Honolulu CL-48			
USS Boise CL-47			
USS St. Louis CL-49			
USS Phoenix CL-46			
USS Raleigh CL-7	Insignia Blue	Double Horizontal Stripe	
USS Detroit CL-8	Insignia Blue	Double Horizontal Stripe	
USS Richmond CL-9	Insignia Red	Double Horizontal Stripe	

NOTE: It should also be noted (as can be seen in the previous photographs, that since the mid-20's the ship's name was normally painted on the aircraft in both Battleship Observation and Cruiser Scouting Squadrons. This was often seen below the aircraft cockpit and was finally "standardized" (again as can be seen in many photos) below the last digit in the fuselage number. As illustrated in Bill Larkins' SOC photo, this was normally painted a bit to the rear and lower than the last digit on those aircraft assigned to Battleship Observation Squadrons, from at least 1935 through 1941.

Basic Kit Scribing - Scribing the P-38

By Chip Stewart, Jr.

It is my contention that a scale aircraft model should display recessed or scribed panel lines as opposed to the raised panel lines supplied by many kit manufacturers. Although there appears to be some effort on the part of a few manufacturers to provide recessed panel lines, the majority don't. If a modeler desires to model a particular subject, in my case a 1/48th scale P-38J, and the best available kit has raised panel lines, then a scribing procedure must be performed.

Scribing, admittedly, is not the most pleasant of all modeling chores. But it is one that if executed with patience and persistence yields a most pleasing effect. The first and

piece of magic mending tape, will enable the modeler to scribe around the curves (fuselage tops and under surfaces).

When armed with the proper tools the scribing can begin. It is not necessary to scribe all panel lines to achieve realistic results, but all major panel lines should be done. The modeler should locate the major lines and have a good idea what he wants scribed before starting. I recommend testing your technique before beginning on the actual model. To do this, take an old kit or a large scrap part and test on it. The idea is to remove plastic, not to spread it. This is where the patience comes in. First, lay your straight edge down just adjacent to an existing raised panel line and secure the position with your fingers. Now, with the scribing tool, carefully locate the beginning point (or corner of the panel line) and draw the tool lightly along the straight edge. Just

curved panel line (the top or center seam of the fuselage, etc.) and proceed to align the brass strip with the existing panel line on either side. Once the brass strip is in place, carefully employ the scribing tool in the same manner as previously described for flat surfaces.

The process is repeated after the final joining of the subassemblies for any additional applicable panel lines. Once the scribing and basic construction is complete all the rivet and existing raised panel line detail should be sanded off. Start with 400 grit sandpaper, but be careful to only remove the panel lines and rivets, not to reshape the surface. When the entire surface is clean (all raised detail is removed) the model should be polished with 600 grit paper (save these used pieces of 600 sandpaper for a future section on finishing the model). After the sanding process, which should be performed with great care, patience and thoroughness, the modeler will find his scribed panel line detail filled with sanding debris. This should be removed with a toothbrush under a running tap with a mild detergent. When the modeler is satisfied with the cleaned panel line detail (you may need to rescribe some lines which were removed during sanding and cleaning) the finishing may begin.

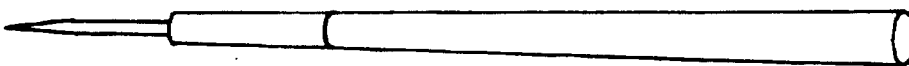


Figure 1



Figure 2

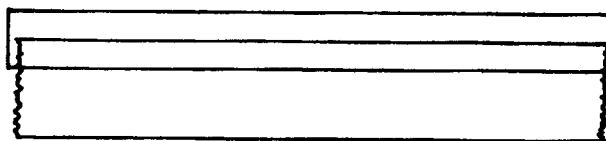


Figure 3

probably most vital step in successful scribing is to procure the proper tools. I recommend and use a needle from a good set of drafting dividers for the actual point. The modeler will find that such a needle provides the hardness and inflexibility needed for plastic scribing. The needle is held by a three to four inch handle (FIGURE 1). I use the handle from the probe of a standard college biological dissecting kit. Any similar handle will do as long as the scribing needle is held firmly and securely in place.

The next necessary tool is a semi-flexible straight edge which will provide the initial scribing guide. I recommend a strip of .030 sheet styrene about 1/2" inch wide and four inches long. One end of the strip should be diagonal (FIGURE 2) to enable butting up to curved or slanted surfaces. This strip will enable the modeler to scribe most flat surfaces and some mildly curved surfaces.

The last tool necessary is a small strip of thin brass about 1/8" of an inch wide and three inches long. This strip, when coupled with a

scratching the plastic of the model. Repeat this scratching process until the desired recessed panel line is achieved. Depending on the hardness of the plastic, the modeler may have to scratch the line from seven to ten times or more to achieve the desired result.

Scribe all applicable lines on the surface of the individual parts which will not extend to an adjoining part. When all such parts are scribed and all other necessary construction (interior, wheel wells, etc.) has been completed, then join the parts in successive subassemblies (in my case the two booms and the wing-central nacelle assemblies). At this point any necessary filling on the sub-assemblies should be done. Now the cross scribing can begin. This is where the brass strip comes into play and the persistence of the modeler is tested. Overlap the piece of magic masking tape over the brass strip, parallel to the strip but not completely covering the strip (FIGURE 3). With the brass strip and tape combination the modeler will be able to wrap a straight edge around a contoured surface. It is generally better to start the tape-strip at the center of the

It goes without saying that any process is subject to improvement, and I'm sure that an imaginative modeler can improve on this one described above. This has been written in an effort to advance our craft and the author hopes that it will help.

[reprinted from the IPMS Memphis newsletter, The Leading Edge]

WHEEL WELL DETAILING

by Dr. Frank Mitchell

Once again, fans, it's detail time. Specifically, we will discuss wheel wells and what extends from them. Granted, they are underneath and there is a tendency, even with me, to say the heck with it. However, it is somehow kind of depressing to pick up (or look under) a model that has been well detailed otherwise and find just a big empty hole. Therefore, let's see about doing something about that empty hole.

First off, I am all too aware that it can be difficult to find photos of wheel wells. However, if you can't find an appropriate photo, a little fakery won't hurt and you will certainly be more correct than if you left it alone.

The wells really begin before you join the wing halves. If the well has formers and stringers shown on the top surface, cut the former out first, and then glue down the stringer so they butt into the formers. This is much easier than trying to cut the formers to match the stringers.

for stringer in 1/72nd scale, you can use sprue. For the larger scales, Plastistruct stripes work very well; I prefer the T shaped variety.

The landing gear leg can usually be mounted as per the kit instructions, although they may have to be modified around the detail.

After the wing is together, the walls of the well can be added. The easiest way to do this is by using very thin plastic sheet. Merely drop it in vertically, hold it up against the edge of the opening and glue. After it has dried, just trim it off and sand. This technique works fine for any shape, just score or bend the plastic a bit during the dry-run process.

If the model has one of those fuselages that have a gaping hole in the bottom with a one-piece wing fitting into it, make sure that this hole is covered with a thin piece of plastic so that it can form the top of the well. (In this case you obviously can't do the walls until the wing halves are attached).

From here on, it is a matter of using sprue, wire, tubing, and anything else that comes to mind to form the various hydraulic lines, control rods, etc., that clutter up the wells.

For finishing touches, spray the well the appropriate color and then put a tiny bit of Rub-N-Buff mixed with a little lead from a pencil on almost dried black paint and lightly rub over everything. This really pops out the details and makes the whole thing worthwhile. you can also use a Q-tip to get into corner or for the smaller 1/72 wells. As in all things, however, don't overdo this; a little goes a long way.

Some detailing is also in order for all other things that keep the fuselage off the runway, gear legs, wheels, covers, and the like.

The landing gear legs can almost always benefit from some work. Remove the molding lines and shape up the ridges and other lines. One of those tiny square files serves well for this. Almost invariably, the torque link is too thick and generally out of scale. They can also benefit from thinning and shaping.

As for wells, most just need a general cleaning, but if there are holes, drill 'em out. I usually spray the hub the appropriate color and then spray on a light coat of clear (flat or gloss). At this point, a little Rub-N-Buff and pencil can work wonders on the detail. Finish off with flat black (or dark gray) for the tires.

I use a little trick on the gear doors when painting; spray the outer surface first because usually the inner surface has detailing which can be very difficult to mask. As a bonus, this also allows all the edges to be in the interior color.

Again, brake lines, door actuators, etc., can be added with sprue, wire, or whatever.

One final trick - for the sliding portion of the oleo, I use Scale Metal. It really makes the oleo stand out, and there just isn't any other way to duplicate that very bright and shiny surface.

Maybe some month we should have a contest where all the models are displayed bottom-up. That would be interesting.

MILITARY MINIATURES

by James J. Schubert

GENERAL:

The generic term Military Miniatures covers all scale model figures — military or otherwise — in a large range of scales. 54mm (2-1/4") — that's the height of a six foot man (the scale is actually 1/32) — is the standard. Tamiya with their 1/35 scale figures have muddied the water a bit. A 1/32 and 1/35 figure side-by-side are too obviously two different scales. You can, however, get away with using 1/32 figures with 1/35 tanks, etc., and vice-versa, if you don't mix in any figures of the other scale.

MATERIALS:

Most figures are of metal, but don't get caught up in the ridiculous metal vs plastic arguments. Neither is intrinsically superior to the other, and outstanding figures are available in both. My 35 finished and unfinished figures are 25 metal and 10 plastic, but you can't tell what a finished piece is unless you heft it. Prices can range from as low as 15¢ for plastic toys convertible to models all the way to several hundred dollars for custom finished, and crafted pieces. The average metal foot figure will go about \$3.00; the average plastic foot figure will go about \$1.75. Mounted

figure averages will run about \$8.00 and \$3.75 respectively.

Most metal figures are of lead, or a lead based alloy. Lead is soft and very easy to work. It can be cut, filed, sanded, bent, etc. more easily than plastic. Epoxy is best used for joining — a quick setting formula like Klenk's or Devcon.

The best cheap metal figures are Strombecker's four \$1.00 sets cast in Zamac — a Zink alloy that's almost hard as steel. The low cost is nearly offset by the labor required just to remove the mold line flash and sprues. I heartily recommend these sets for beginners because of their low price. One problem though, they are very hard to find now as they didn't sell very well when introduced.

Plastic figures run the gamut from great to awful and the varieties of plastic will drive you mad. Historex are clearly best, but with only two exceptions are all of French Napoleonic era figures. They, like Tamiya and Almark, are of the genre of styrene to which you are accustomed from airplane, car, armour, etc. kits. Airfix 54mm and 20mm figures and Timpo and Swopet 54mm toys are in a greasy plastic like Tupper Ware bowls, and are very hard to work with. Again, however, their low price is on your side. Britains Models and their "Herald" series, both 54mm, are an in-between kind of plastic

BASIC TECHNIQUES:

Pick a simple first figure, and one on which you have good clear references that leave no ambiguities as to detail of colors, insignia, gear, etc.

Metal:

Remove all mold line flash with a knife or file. Make sure the figure is square and true, and generally looks "right". Trial fit all the pieces and make adjustments as necessary. At this stage decide what should be painted as separate details and added later. As a general rule, complete the model as far as possible, or make as few and as large subassemblies as possible before painting—remember, if you can see it you can reach it to paint it.

Epoxy the pieces together. I use non-hardening clay for jiggling whilst gluing. After the epoxy sets, file/sand the joints to blend in. Use "Green-Stuff" as necessary. Spray

Plastic: (Historex, Almark, and Tamiya)

These are worked just like a model airplane — no special techniques. As the Historex figures are already white, I don't

prime these, but do prime the others.

Plastic: (Airfix, Timpo, and Swoppet)

You must use a new sharp blade and make clean precise cuts for all trimming on these. You cannot scrape, nibble, break, sand, or file them — the plastic fuzzes up into a mess. No glue, paint, or filler really sticks to them either.

For a simple one-piece Airfix figure trim the mold lines etc. and wash the piece in warm soapy water. I then paint these figures overall with Elmer's glue thinned with water. The Elmer's sticks to itself and encases the piece in a glovelike sheath. Give it a couple of coats like this. After the thin glue has dried, straight Elmer's can be used for light filling. Following this a couple of coats of Floquil Barrier will assure that everything hangs together. Green-Stuff etc. can be used on top of the Barrier, and this can be sanded. Now prime white as before.

If you are converting one of these pieces making joints is difficult, and you must either pin and glue the joint or entrap the joint with glue, or both. I use Duco, Elmer's, or epoxy, or a combination. This is strictly an art — no science — so you have to practice and experiment. I practiced and experimented and swore at those damned Timpo pieces for two months before I got the hang of working with this "greasy" plastic.

Now epoxy the figure to its prefinished base, making sure that the epoxy completely covers the small base molded to the figure's feet to entrap it.

Plastic: (Britains Models and Britains Models Herald Series)

These two are midway between the previously noted plastics. They are easier to cut, can be filed and sanded, and take paint and Green-Stuff directly, but they too don't glue too well.

DETAILING:

Don't be a purist; use lead sheet, plastic sheet, paper, balsa, aluminum, brass, Green-Stuff, all kinds of wire, tubing, tape, tissue paper, etc., whatever will do what you want it to regardless of whether your figure is metal or plastic. Historex plastic kits, for example, give you some useless cloth ribbon for straps and belts. Throw it away; use lead sheet instead. I use lead from wine bottle necks. Different brands use different gauges of sheet; I've never actually bought a bottle of wine just for its lead sheet, but given a choice of several bottles of what I want I will take the one with the least marred lead. Other sources are toothpaste

tubes, ointment tubes, etc.; some pharmacies stock unfilled tubes and would probably sell you a few.

Sheet lead is also good for helmet and hat straps to replace cast on straps, and for officer's bars, non-coin's chevrons, and other minor insignia. It works well to make rifle slings, and horse harnesses. Because it can be easily coldformed into compound curves, folds, creases, and so on, I prefer sheet lead to heated sheet plastic.

Heavily textured canvas belts and webbing can be simulated with cleanly cut masking tape. Similarly Scotch tape can be used for smooth belts. Bare-Metal, Metal-Skin, etc. adhesive foils for airplanes are good for personal armour circa 900- 1700.

PAINTING:

You primed your figure white as a sanding guide and to provide a good base for all further colors. Do the face and other skin first. My personal preference is for Floquil's Polly "S" water colors for the skin. Place blobs of flesh, medium brown, white, pink, and black on a suitable palette (I use old business cards), and proceed as follows.

1. Apply dots of light blue, medium green, medium grey or medium brown on white of face in eye sockets for irises.
2. Apply tiny dots of black indict ink with a fine pen for pupils.
3. Outline whites of eyes with medium brown. The inside is what counts here; don't leave too much white showing, or your figure will look extremely startled. The brown should make deep tangents with the color of the irises — look at your own eyes in a mirror.
4. Paint almost up to the whites with flesh, leaving almost no brown showing to outline the eyes. Failure to do this will leave your figure looking like he's made up for the Vampire part in a horror show. Cover the face with flesh.
5. Shade the underside of the nose with the medium brown.
6. Place very thin lines of medium brown in the lip line, and under the bottom lip.
7. Place very thin lines of medium brown along either side of the nose almost to the corners of the mouth, under the bottom of the ear lobe, and inside the fold at the top of the ear.

8. Draw the blobs of flesh and medium brown on your palette into one another, and painter-style mix a puddle between them ranging from the pure colors at either end to

) a full mixture in the middle. From this mess select a not-too-light brown and shade from the upper eyelid to the eyebrow line. Paint the eyebrows, with a nearly dry brush, the same color you are going to make the hair. Shade the cheeks, the jaw line, and the hairline. Using lighter and darker shades from your palette, and thinner, blend these shades

9. Mix flesh and white, as above, and draw off a light shade of flesh to highlight down the center of the nose, the tops of the cheeks, the tops of the ears, knuckles, fingernails, etc.

10. Mix flesh and pink, and draw off a shade of flesh just tinged with pink; apply this carefully to the bottom lip only. Don't overdo the color, or the area covered, or your fighting he-man will look a bit tweet

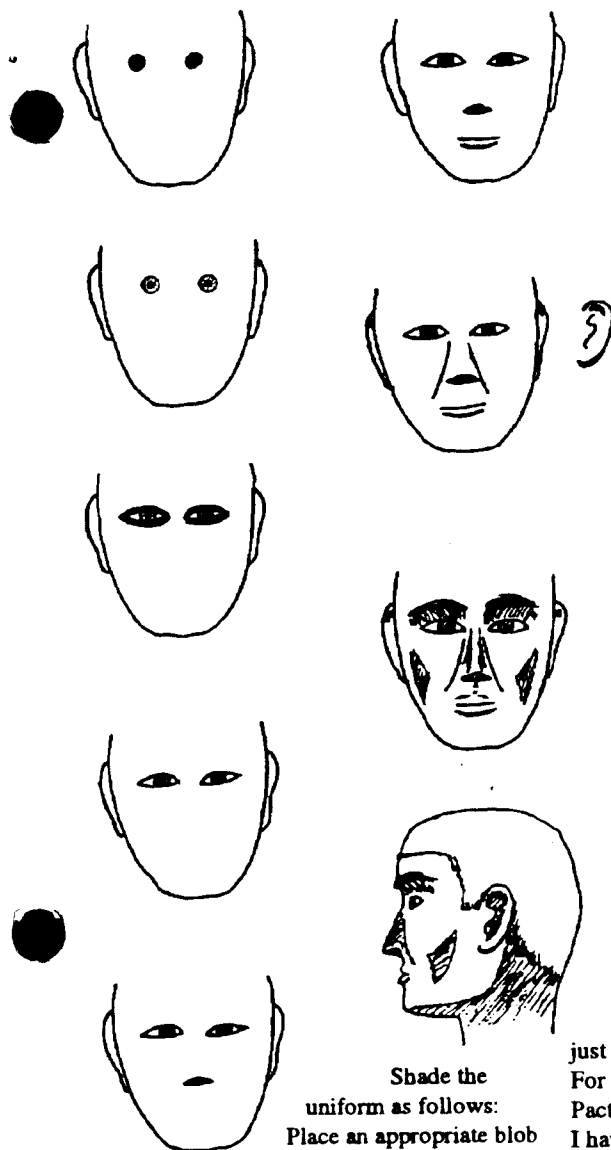
11. After painting the hands an overall flesh, shade between the fingers with a darkish brown. Highlight knuckles and fingernails as noted above. Shade most of the palm a medium to dark brown except for the ball of the thumb.

12. Paint the hair area overall but not quite out to the hairline with a shade darker than the hair is to be. When this has dried, paint in the hair with a nearly dry brush the desired shade. With the same nearly dry brush, carefully work out the hairline — this is a softer line in the back than in the front, and is also soft at the temples.

13. If you are doing an American Indian, an Indian, a Japanese, a Chinese, or an African, blend up a suitable flesh color as a base and otherwise generally proceed as above. Color photos from sources like National Geographic are good for reference in selecting skin hues and values.

For the clothing and gear, proceed as follows:

Paint belts, webbing, straps first if they are to be flat. If they are to be white, just leave them in primer. Now brush on the basic uniform color(s) starting right next to the belts, so as to create a very sharp line. Continue around the figure outlining the belting this way then fill in the rest of the uniform color area. Finish all uniform and gear details that are to be flat, do not do the metallics or leathers yet — anything gloss or semi-gloss.



Shade the uniform as follows: Place an appropriate blob of darkening color next to a blob of each basic uniform color on your palette, and draw them together as before. Paint in the creases and folds darker than the basic color, and darker toward the bottom of the crease or fold. Remember you're accentuating the fall of a general overhead light (sunlight — direct or diffused) onto your figure.

Having done with the darker coloring in creases and folds apply "edge shadows" under buttons, belts, cuffs, etc. to establish the hard dark line under an object standing slightly proud of its background. On white or other light surfaces I use a sharp #3 lead pencil for this. Don't overdo this by letting your edge shadows get too wide or your figure will look like something from a little kid's coloring book.

White is the hardest color to shade; I use a wee spot of black or grey, immediately spread with a brush dipped in clean thinner. This takes a bit of practice to establish control.

The other side of shading is highlighting. Place blobs of lightening colors on your palette next to their respective basic colors and draw them together as before. The top side of a sharp crease or fold should be highlighted with a lighter shade drawn from your palette. Elbows, shoulders, knees, edges of cuffs, collars, lapels, etc. can also receive some very discreet highlighting.

Flattening:

Having done the skin and the cloth, mask off the skin and the base and spray the whole figure with Pactra Clear Flat. This is much coarser than any other flat, and gives a cloth like texture to the uniform. This is especially important if you've brushed Floquil for some of your uniform colors, for although Floquil sprays flat, it brushes semi-gloss to gloss.

Glosses and Metallics:

As Floquil brushes semi-gloss, it is generally good for leathers. Black indict ink brushed over net black probably gives the best black leather. Gloss paint just won't do — it's too glossy.

For bright shiny silver use fresh Testor chrome silver; highlight it with just a wee spot of gloss white for glare spots. For not so shiny silver mix some Testor or Pactra flat white with the testor chrome. (Note: I have never had trouble mixing Pactra and Testor paints, they seem to be the same formula, except that Pactra glosses dry very slowly — but hard — while Testor glosses dry fast but never seems to ever get hard enough to handle freely.) Slightly different textures of bright silver can be obtained for differencing purposes (as on a knight's armour) by using Pactra chrome silver, and Floquil aluminum as well as the Testor's to get three minor variations on the same theme. Pactra flat aluminum is very good for dull silver. Shiny brass and gold are best done with Testor gold. Floquil brass is good for differencing. For other metallics mix your own to suit — a bit of blue, silver, black, gold, white, etc.

Give figures a try, they're great fun, and if approached carefully need not be prohibitively expensive.

[Ed's note: you'll probably notice that some time has passed since Jim wrote this article in early 1970. However, little has really changed, save for the prices he mentions.....]

Modeling Questions Wanted

One of the most useful aspects of a model club is as a resource for its members. All of us have questions that we'd like to know the answer to.

They could be questions of technique; Why do my decals always silver? How far away should I hold my airbrush?

They could be questions of model or aftermarket product availability; Has anyone ever made a 1/72 scale Grumman FF-1? Can I get decals for Canadian WW2 armor in 1/35 scale?

They could be questions of research; What were the color scheme differences between Nigel Mansell's and Mario Andretti's Newman/Haas Lolas during the 1993 IndyCar season? What's an accurate color scheme for a late-war VVS Yak-9D?

Often it's just a question of knowing who to ask. If you have any modeling questions, the editor would like to hear them, and I'll find someone in our club who can answer them. Send them to me at rallen@lwtc.ctc.edu, or call me (Robert Allen) at 425-823-4658.

Tamiya's 251/9 Kannonwagen

continued from page 16

detent system that lets them pivot after putting them together. They are tedious, as you have to glue all the rubber pads to the link, but when that is done the links just snap together. I build individual track links in sections. I glue the sections together with Testors glue and before the glue dries, I drape the tracks were they go. I shape them to the contour I'm after, then carefully remove them and place them on their side to dry. The areas around the drive and idler sprockets are glued with fast drying super glue. The Testors glue gives you about 10 minutes of flexible "playing" time before the glue sets. These Model Kasten tracks did not need much glue at all, however. Since they held onto each other, I only glued the areas around the sprockets, and on each side of the road wheel, areas that are stressed during travel.

I wanted a European three color paint scheme. Tamiya acrylic paints were used in dark yellow, red brown, and olive green. The entire vehicle was washed with Burnt Umber. The highlighting was done with the base color plus more and more white. The edges of the armor were dry-brushed with small amounts of aluminum to show wear. I had a blast building this model. I hope you enjoy building yours as much as I did mine.

Inches Into Decimals of a Foot

[Ed's Note: As you saw in our March notes about conversions, this is a topic which causes some concern for many members and I thought this added table, printed in an earlier issue of Random Thoughts (IPMS-Canada) would be of further assistance and is a handy table to keep near your modeling desk, eh?]

You're probably wondering what this half page of numbers is all about, right? Well, it's a inches-into-decimals-of-a-foot conversion table. Here's what it does:

Let's work in 1/72 scale. In 1/72, 1 inch equals 6 feet. Now, say you're checking out a new kit, or scaling a set of drawings. The aircraft is listed as having a span of 30 feet. Easy.....30 feet divided by 6 yields a 1/72 scale span of 5 feet.

Now, suppose the span is listed as being 30'7 5/16"? Go to the table. To find out what 7 5/16" equals in feet, read across the top line INCHES until you come to 7. Then go down that column until you come to the line represented by the 5/16. It reads .6094". Divide by 6 and you have the span in 1/72nd...or by 4 to get 1/48th, etc.

The listings for 1/3", 2/3", 1/6" and 5/6" are included below.

1/3" = 0278"
2/3" = 0556"
1/6" = 0139"
5/6" = 0691"

This handy little table should save you considerable time and calculations. As you won't want to cut it out of your RT, perhaps you might try getting a Xerox copy made and hanging it up on your work area.

[reprinted from the IPMS/Canada Random Thoughts]

Inches	0	1	2	3	4	5	6	7	8	9	10	11
.....	0.0833	0.1667	0.2500	0.3333	0.4167	0.5000	0.5833	0.6667	0.7500	0.8333	0.9167
1/32	0.0026	0.0859	0.1693	0.2526	0.3359	0.4193	0.5026	0.5859	0.6693	0.7526	0.8359	0.9193
1/16	0.0052	0.0885	0.1719	0.2552	0.3385	0.4219	0.5062	0.5885	0.6719	0.7552	0.8385	0.9219
3/32	0.0078	0.0911	0.1745	0.2578	0.3411	0.4245	0.5078	0.5911	0.6745	0.7578	0.8411	0.9245
1/8	0.0104	0.0938	0.1771	0.2578	0.3411	0.4245	0.5078	0.5911	0.6745	0.7578	0.8411	0.9245
5/32	0.0120	0.0964	0.1797	0.2630	0.3464	0.4297	0.5130	0.5964	0.6797	0.7630	0.8464	0.9297
3/16	0.0156	0.0990	0.1823	0.2656	0.3490	0.4323	0.5156	0.5990	0.6823	0.7656	0.8490	0.9323
7/32	0.0182	0.1016	0.1849	0.2682	0.3516	0.4349	0.5182	0.6016	0.6849	0.7682	0.8516	0.9349
1/4	0.0208	0.1042	0.1875	0.2708	0.3542	0.4375	0.5208	0.6042	0.6875	0.7708	0.8542	0.9375
9/32	0.0234	0.1068	0.1901	0.2734	0.3568	0.4404	0.5234	0.6068	0.6901	0.7734	0.8568	0.9401
5/16	0.0260	0.1094	0.1927	0.2760	0.3594	0.4427	0.5260	0.6094	0.6927	0.7760	0.8594	0.9427
11/32	0.0339	0.1172	0.1953	0.2786	0.3620	0.4453	0.5286	0.6120	0.6953	0.7786	0.8620	0.9453
3/8	0.0313	0.1146	0.1979	0.2813	0.3646	0.4479	0.5313	0.6146	0.6979	0.7813	0.8646	0.9479
13/32	0.0339	0.1172	0.2005	0.2839	0.3672	0.4505	0.5339	0.6172	0.7005	0.7839	0.8672	0.9505
7/16	0.0365	0.1198	0.2031	0.2865	0.3698	0.4531	0.5365	0.6198	0.7031	0.7865	0.8698	0.9531
15/32	0.0391	0.1224	0.2057	0.2891	0.3724	0.4557	0.5391	0.6224	0.7057	0.7891	0.8724	0.9557
1/2	0.0417	0.1250	0.2083	0.2917	0.3750	0.4583	0.5417	0.6250	0.7083	0.7917	0.8750	0.9583
17/32	0.0443	0.1276	0.2109	0.2943	0.3776	0.4609	0.5443	0.6276	0.7109	0.7943	0.8776	0.9609
9/16	0.0469	0.1302	0.2135	0.2969	0.3802	0.4635	0.5469	0.6302	0.7135	0.7969	0.8802	0.9635
19/32	0.0495	0.1328	0.2161	0.2995	0.3828	0.4661	0.5495	0.6328	0.7161	0.7995	0.8828	0.9661
5/8	0.0521	0.1354	0.2188	0.3021	0.3854	0.4688	0.5521	0.6354	0.7188	0.8021	0.8854	0.9688
21/32	0.0547	0.1380	0.2214	0.3047	0.3880	0.4714	0.5547	0.6380	0.7214	0.8047	0.8880	0.9714
11/16	0.0573	0.1406	0.2240	0.3073	0.3906	0.4740	0.5573	0.6406	0.7240	0.8073	0.8906	0.9740
23/32	0.0599	0.1432	0.2266	0.3099	0.3932	0.4766	0.5599	0.6432	0.7266	0.8099	0.8932	0.9766
3/4	0.0625	0.1458	0.2292	0.3125	0.3958	0.4792	0.5625	0.6458	0.7292	0.8125	0.8958	0.9792
25/32	0.0651	0.1484	0.2318	0.3151	0.3984	0.4818	0.5651	0.6484	0.7318	0.8151	0.8984	0.9818
13/16	0.0677	0.1510	0.2344	0.3177	0.4010	0.4844	0.5677	0.6510	0.7344	0.8177	0.9010	0.9844
27/32	0.0703	0.1536	0.2370	0.3203	0.4036	0.4870	0.5703	0.6536	0.7370	0.8203	0.9036	0.9870
7/8	0.0729	0.1563	0.2396	0.3229	0.4063	0.4896	0.5729	0.6563	0.7396	0.8229	0.9063	0.9896
29/32	0.0755	0.1589	0.2422	0.3255	0.4089	0.4922	0.5755	0.6589	0.7422	0.8255	0.9089	0.9922
15/16	0.0781	0.1615	0.2448	0.3281	0.4115	0.4948	0.5781	0.6615	0.7448	0.8281	0.9115	0.9948
31/32	0.0807	0.1641	0.2474	0.3307	0.4141	0.4974	0.5807	0.6641	0.7474	0.8307	0.9141	0.9974

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A-1H Syraider
A-3B Skywarrior
AC-130U
B-25J

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Italeri
Hasegawa
Hasegawa
AMT
Monogram

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Boeing KC-135 Stratotanker
CC-144
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F-104
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F2A-2 Buffalo

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Hopkins
Leading Edge
Beauchamp
Monogram
Revell
Italeri
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July '97 2
April '98 25
Feb. '97 14

F4U "Birdcage"	Tamiya	Feb. '97	12
GMC CCKW	WWP	April '98	24
Junkers Floatplanes F.13 & G.24	Revell	Feb. '97	3
Ki 44 "Shoki"/"Tojo"	Arii & Hasegawa	Mar '98	8
Kyushu J7W1	Shinden	Mar '98	3
Lockheed SR-71/YF-12	Warbird Tech	Nov '97	10
P-51B	Tamiya	Aug '97	6
PBY-5	Monogram	Feb. '97	4
ProModeler Paint	Monogram	Dec '97	16
Roll Call: THUD	Schiffer	Nov '97	11
SB2C Helldiver	Detail & Scale	Nov '97	11
Soviet Aces of WW II	Morgan	Mar '98	11
Space Shuttle Decals	RealSpace	April '98	25
Spitfire Mk. Vb	Revell	Mar. '97	9
Surcouf	SeaWolf	Nov '97	8
TBF-1C Avenger	Accurate Min.	Feb. '97	12
USAF Aircraft Markings & Camouflage, 1941-47	Archer	Mar '98	13
USS Missouri	Tamiya	Aug '97	6

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Avenger Wingfold Set & Torpedo	KMC	July '97	3
Avenger Wingfold Set (update)	KMC	Aug '97	7
Beaufighter Cockpit Set	Cutting Edge	Nov '97	8
Boeing RC-135U "Combat Sent"	Maintrack	April '98	21
EE/BAC Lightning	Airfix	April '98	23
F4D-1 Skyray	Tamiya	April '98	22
F7F Tigercat Detail Set	Aries	Mar '98	7
Harrier GR.3	Flightpath	Oct '97	4
OH-13S	Italeri	April '98	22
PBY	Belcher	Feb. '97	4
SH-2F Seasprite Resin Upgrades	Cobra	Aug '97	7

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428th TFS (F-111s)	Remington	Mar '98	14
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A Primer On Primers - Interiors Colors of WW II Aircraft - Part II	Vitkus	Mar '98	22
A-1H/J Interior	Labouy	May '97	15
After-Market Detail Parts	LaBouy	July '97	2
Armor Basics	Schubert	Sept '97	3
B-17E "Birmingham Blitzkrieg"		Feb. '97	10
Basic Kit Scribing	Stewart	May '98	8
Bf 109E4 "Mike" - in Japanese markings		Feb. '97	10
Brewster Buffalo - captured Japanese a/c		Feb. '97	10
British Ordnance	Remington	April '98	14
Building KMC Wingfold	LaBouy	Aug '97	7
Camouflage of AVG - Part II	Clements	Apr. '97	1
Check Those References	Russell	Oct '97	5
CO2 Bottles As Air Source	Johnson	Apr. '97	12
Competition and AMS	Shaw	Feb '98	17
Corrective Dental Work - AVG A/C	Clements	Dec '97	8
Decal Silvering	Borger	Dec '97	17
Detailing Instrument Panels	Koons	Nov '97	17
Details, Damed Details	Schubert	Dec. '97	14
Details, Damed Details - Pt 2	Schubert	Jan '98	17

Details, Damed Details - Pt 3	Schubert	Mar '98	18
Details, Damed Details - Pt 4	Schubert	April '98	15
Ejection Seats	LaBouy	May '97	1
Evolution of Modeler	LaBouy	May '97	14
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Modern U.S. Aviation Ordnance	LaBouy	April '98	1
My First Plastic Model	Schubert	Feb. '97	8
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	LaBouy	May '98	6
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Colors and Camouflage of the East Indies and British Pacific Fleets

By Scott Spencer

East Indies and Pacific Area of Operations

At the start of the war with Japan, in December 1941, the very few Fleet Air Arm aircraft stationed in this region of the world were painted in the Temperate Sea Scheme S.3. This particular scheme used the colors Extra Dark Sea Gray, Dark Slate Gray, and Sky. Biplanes were finished in the same top colors, but were finished in Dark Sea Gray and Light Slate Gray on the lower surfaces. The national markings were those as found everywhere else. The upper wings carried Type B roundels, the lower wings carried Type A roundels, and the fuselage sides carried Type A1 roundels. The fin flashes were of various sizes.

On September 29, 1943, a new directive for national insignia was issued for RAF aircraft in the Indian Command, deleting the red center of the insignia. Following previous procedures, the Admiralty complied with the new orders and directed that all Royal Navy shore-based aircraft and spotting aircraft aboard ships were to follow the directive. This directive called for the following changes in national insignia:

Wing/Fuselage Roundels

<u>Aircraft Size</u>	<u>White Circle</u>	<u>Blue Circle</u>
Small	6 inch	16 inch
Medium	12 inch	32 inch
Large	18 inch	48 inch

Fin Flash (White toward leading edge - white and blue portions of equal width)

<u>Aircraft Size</u>	<u>Width</u>	<u>Height</u>
Small	16 in.	24 in.
Medium	22 in.	24 in.
Large	34 in.	24 in.

It was found that the use of a pure white was much too obvious, so it was decided that a color obtained from mixing 4 parts white with 1 part blue was to be used instead. It was further ordered that the

Small insignia be used on all fighters and trainers, the Medium insignia on intermediate types, and the Large insignia to be used on heavy bombers.

During the period of January through October 1943, the Royal Navy did not have any seaborne aircraft in the Far East. This was to change with the arrival of the Escort Carrier *HMS Battler*. The *Battler* was carrying a mixed patrol squadron, for antisubmarine warfare, of Fairey Swordfish and Supermarine Seafires. These particular aircraft arrived wearing the Temperate Sea Scheme of Extra Dark Sea Gray and Dark Slate Grey uppersurfaces, and Sky undersurfaces. They carried the name ROYAL NAVY, with the aircraft serial number, 4 inches tall (in black), on the rear portion of the fuselage.

To conform with the Admiralty's directive of September 1943, the upper wing roundel's red center was simply painted over in blue and a white disk was applied in its place. The fuselage side roundels (originally Type C1) were completely over painted and were repainted in the Blue and White scheme.

In January 1944, after the creation of the SEAC (South East Asia Command), *HMS Illustrious* arrived on station carrying Fairey Barracudas and a fighter complement of Grumman Hellcats. The Hellcats, along with other US-built aircraft, were painted in the Temperate Sea Scheme, but were painted using the US versions of the British paint. The US versions were known as ANA (Army-Navy) colors. These color equivalents were ANA 613 - Olive Drab and ANA 603 - Sea Gray uppersurfaces, and ANA 610 - Sky lower surfaces.

As more and more escort carriers began to arrive in the Indian Ocean, so did the number of ship-based aircraft. These aircraft, which were designated as antisubmarine squadrons, were Wildcats, Swordfish, or Avengers. These particular aircraft, from the escort carriers, had their sides and lower surfaces painted in white. The upper surfaces were carrying the same September 1943 India Command patterns and markings described earlier. Unlike the Atlantic and Mediterranean based aircraft, the aircraft of the Eastern Fleet did not carry the individual carrier "deck letter" on their fuselage sides. Instead, they used single letter squadron codes and individual aircraft letters which

were 24 inches tall (sometimes 18 inches). By the time of the attacks on the Dutch East Indies and Sumatra, during April through October 1944, the Eastern Fleet had aircraft available from the carriers *HMS Illustrious*, *HMS Indomitable* (later replacing *Illustrious*), *HMS Victorious*, and *HMS Indefatigable* to fight with. The aircraft which they carried were all US-built Grumman Hellcats, Eastern-built Grumman Avengers, and Vought Corsairs. The US-built aircraft were painted in the US designated ANA colors Extra Dark Sea Gray, Dark Slate Grey, and Sky. In August, the carrier *HMS Indomitable* also carried the same type aircraft and they too were painted using the same US colors.

Establishment of the British Pacific Fleet

In November of 1944, the much anticipated split-up of the Eastern Fleet was realized. It was split into two forces: The Eastern Fleet and the all new British Pacific Fleet (BPF) consisting of Capital Ships. At first, the US Navy was hesitant to allow the participation of a British Pacific Fleet in the Pacific waters, due to the Royal Navy's lack of being able to replenish itself. It was finally approved by the Joint Chiefs, providing that the Royal Navy could maintain itself independently with its own oilers and supply ships.

The 1st Carrier Squadron, of the BPF, was composed of four Fleet Carriers, cruisers, and other vessels. The Eastern Fleet (aka East Indies Fleet) provided an Escort Carrier Squadron, which would provide CAP (Combat Air Patrols) and long range spotting for the battleships. This command would fall under the watchful eyes of Admiral Lord Louis Mountbatten's SEAC. The escort carriers carried a small number of Barracudas and Avengers for bombing, and several squadrons of Hellcats and Seafires to work in the Photo and Tactical recon role. Previously, in late 1943, the carrier squadrons had organized into Tactical Units such as Fighter Wings and Torpedo/Bomber/Recon (TBR) Wings.

In February 1945, there was a new directive for aircraft of the Eastern Air Command. This directive ordered that aircraft be painted with the following ID markings. The cowling was to be painted with a 17" white ring, while the tail and wings would have white ID bands of 18" width on the tail and 28" width on

the wings. Aircraft of the East Indies Fleet (with the exception of Photo-Recon aircraft) carried these markings. On the Hellcats, the wing bands were carried so that they covered the inboard edge of the upper wing roundels.

In March 1945, the BPF joined the US ships of Admiral Spruance's Fifth Fleet. This fleet was renamed Task Force 57, and began a series of airstrikes against airfields around Okinawa. The air portion of this carrier strike force was called the 1st ACS (designated as CU 57.1.1) and was made up of Avengers, Corsairs, Hellcats, Seafires, and Fireflies. TF112, which was in the supporting fleet of supply ships and tankers, had escort carriers carrying two Hellcat squadrons (20th ACS) for CAP and aircraft replacement for the Fleet Carriers.

Also in March 1945, there was a revision to the national insignia used by the BPF. The insignia was to have panels similar to the US national insignia and was to be made up of a blue ring, with a narrow white border, and a white circular center. This insignia is sometimes wrongly referred to as the SW Pacific marking. This is not the case, as the RNZAF and RAAF did not use these markings. Only the BPF used them.

The marking was derived from the "medium" and "large" roundels discussed earlier, and imposed over a marking of similar size to the US insignia. This new marking was applied on the upper left wing, lower right wing, and aircraft sides. The dimensions used were a 32" outer ring/12" inner ring on the "small" roundel, a 42" outer ring/14" inner ring on the "medium" roundel, and a 48" outer ring/18" inner ring on the "large" roundels. The white border markings were from 2 to 3 inches in width, while the rectangular panels were to be extended on either side of the roundel by 1/2 the roundel diameter (i.e., 16", 21" or 24"). In actual use, the Corsair II & IV and Hellcat II carried the 48" roundels, the Seafire, Avenger, and Firefly carried the 42" roundel, while the Hellcat I carried the 36" roundel.

During early 1945, the East Indies Fleet started receiving some of their Hellcat II's (F6F-5's) and a few Wildcat VI's (FM-2's) in US Sea Blue (ANA 623). The ROYAL NAVY logo and the aircraft serial numbers were in white. As soon as they were received, the national insignia were replaced with the August 1943 pattern India Command insignia with white 2 inch borders. The US painted Sea Blue Hellcats and Corsairs, of the new squadrons, began

entering the BPF soon after. No Avengers were ever delivered to the BPF or East Indies Fleet in this color.

Aircraft Identification in the British Pacific Fleet

In March 1945, a new aircraft identification practice came into use. It was based on the pre-war system of using the carrier "deck letters", which were placed on the upper forward portion, on each side of the tail. The aircraft also carried a 3 digit number, either 18 or 24 inches in height, on the fuselage sides. These numbers ranged from 111 for the fighters (Hellcats/Corsairs/Seafires), from 270 on 2 seat aircraft (Firefly), and 370 on aircraft with a three man crew (Avengers/Barracudas). These markings were used by the airplanes of the fleet carriers until the BPF was disbanded in 1946.

Carrier Deck/Carrier Air Group Codes for the BPF in WWII

1st AC Squadron Fleet Carriers Commanded by Admiral Sir Phillip Vian Carrier

<u>Carrier</u>	<u>Air Group</u>	<u>Tail Code</u>
<i>HMS Formidable</i>	N/A	X
<i>HMS Illustrious</i>	N/A	Q
<i>HMS Implacable</i>	8th	N
<i>HMS Indefatigable</i>	7th	S
<i>HMS Indomitable</i>	11th	W
<i>HMS Victorious</i>	1st	P

11th AC Squadron Light Fleet Carriers Commanded by Rear Admiral Harcourt

<u>Carrier</u>	<u>Air Group</u>	<u>Tail Code</u>
<i>HMS Colossus</i>	14th	D
<i>HMS Glory</i>	16th	L
<i>HMS Venerable</i>	15th	B
<i>HMS Vengeance</i>	12th	A

References: *Aircraft of the Fleet Air Arm, 1939-45*, Ray Sturtivant, Air-Britain Publishing, 1996;

British Aircraft Camouflage and Markings in the Far East 1941-1945, Geoffrey Thomas, *Scale Aircraft Modeling*, February 1994, ppg 156-181.

Scott Spenser's IMPS-USA Fleet Air Arm Special Interest Group website is a must-see for all FAA devotees. The site features kit reviews, color and camouflage information, photo galleries of models and actual airplanes, information on joining the IPMS-USA FAA SIG, and even a link that allows you to buy books relating to FAA topics. The Internet address is www.airnet.net/scotts

With the conspicuous exception of the Seafire Mk. III, which can be converted from a Spitfire Mk. V, almost all important FAA Far East Aircraft are easily available in 1/72 scale, especially since eastern European firms are making the Frog Firefly and Barracuda much more easy to obtain.

Available decals for making 1/72 scale models of the FAA in the Far East, however, are few and far between. A few kits are (were) available with suitable decals; the Airfix and Matchbox Hellcats have both been released in the past with FAA Far East markings, the Airfix Kingfisher was recently released with markings for a Ceylon-based FAA example, and ModelCraft has reboxed the old Frog Firefly Mk. I with BPF decals. Hasegawa has released its Avenger kit as a Tarpon with FAA markings; the same goes for their Wildcat, which has been reboxed as a Martlet. I haven't seen inside either kit, so I don't know if any Pacific options are included.

Aeromaster sheet 72-009, *US Aircraft in FAA Service*, contains markings for six aircraft, half of them (two Corsairs and one Hellcat) in Far East markings. Tally Ho! has released six small but excellent sheets covering East Indies Fleet, British Pacific Fleet, and other FAA Far East aircraft. 7020 includes a BFP Seafire and Firefly; 7120 has four East Indies Fleet Hellcats; 7121 has East Indies Fleet markings for a Hellcat, Seafire, Wildcat, and Avenger; 7122 has a BPF Avenger and Corsair; 7123 has two BPF Hellcats; and 7127 includes two Corsairs and one Kingfisher (the same example as in the Airfix kit!). These sheets are well worth searching out. The Firefly markings on Tally Ho! sheet 7020 are also duplicated on an unnumbered Latvian K-Decal sheet - the variations in the two are considerable, and are typical of the confusion that still exists when trying to pin down accurate markings. Useful generic sheets include Almark sheet A19, which includes white and black 8" and 4" serials, and ROYAL NAVY titles, and the indispensable Modeldecalsheet 118, which contains enough BPF roundels, code letters and numerals to model a task force.

Robert Allen

Kit Review: Toko 1/72 Pfalz D.XII

by Bill Osborn

Ah yes, Castrol in your nose and mouth, wind in the wires. Death in the skies. World War One started what for most of us is a passion, military models.

For those of us who build the early birds, there hasn't been much of a choice in the past few years. Now Toko, of the Ukraine, has released two kits from the "Great War." One is the Siemens-Schuckert D.III/IV; the other is the Pfalz D.XII.

The Pfalz comes with 28 well molded parts in a light gray plastic, decals for two different planes, and a large multi-language instruction sheet of the exploding view type with two two-view color scheme drawings. Paint codes are for Humbrol numbers.

There is a fairly good cockpit interior with a stick, seat, rudder pedals, and an instrument panel. Ribs and stringers are molded to the body sides. All flying surfaces are one-piece. The trailing edges of the wings could be a little thinner, but it's not really a problem.

Some of the best parts of the kit are the smallest. The struts are fine, with very little flash, and no mismatch. If you like to superdetail engines, you won't have to do much with the Mercedes D.IIIA. This could be a display by itself. There are four finely molded parts that only show the top part and exhaust when it's in the model.

Assembly is straightforward and simple. Only minor work is required to get the horizontal and lower wing square to each other. The only problem I found is that there is no way to hold the engine in the body. The plans show the radiator and engine as a unit when installed in the model. It might work, but I was looking to be sure the top of the engine was showing well, and was aligned correctly.

The color scheme you use affects the assembly of the top wing. One option is for all-over light gray, with yellow trim. The one I chose has four-tone camouflage with the lozenge pattern on the upper and lower wings. The kit gives decals for the wings. I don't know if the colors are correct, but they look good and I think I'll keep 'em. Now that I've said all that, the decals need to be put on before the wing struts are glued in.

Speaking of decals, they are very thin, and will

tend to wrinkle if you are not very careful. One sheet has the lozenge for the wings; two for the top wing, and four for the lower. The other sheet has the straight leg crosses for the upper and lower wings, two different tail crosses, and a few info markings. There are no special individual personal markings.

Now that the decals are on the upper and lower wings, there are a few details to be painted or weathered and the machine guns and such to be added. Start with the wing body struts, and then the "N" struts.

The prop is a club but the shape is good. It just needs to be thinned down. The kit instructions don't show any rigging, but the box art and *Profile #199* give good references. All in all, these two kits are great, and could be a great addition to any collection.

Detailing Tamiya's 251/9 Kannonenwagen

By Jon Baker, IPMS-Houston
Scale Model Forum

The German Wehrmacht used a large number of half-tracked armored personnel carriers. The Tamiya model of the Ausf. D is a beautiful kit, but can use a little tweaking to make it outstanding. The kit models a Sd. Kfz. 251/9 Ausf. D "Kannonenwagen" which was developed because of the need for close-support firepower.

I developed an overall plan to open everything that was possible to open. I wanted an engine and I wanted to open those intriguing compartments on the side.

My reference materials included the three *Panzer Colors* from Squadron. On page 13 of *Colors II* is a great picture of a "D". I also used the Osprey Vanguard 32 book on the Sd. Kfz. 251. It contained the photos I used to trick out the inside. The photo on page 10 was very useful in hanging equipment off the outside. And as usual, the *Encyclopedia of German Tanks*. This book is the most valuable armor book in my library.

I started to work in the engine compartment with the Verlinden #564 update set for the 251/9. It contained many time saving features like an engine, the air coolers for the engine, a very nice etched radio mount, shells for the 75mm, interior frame work and other little goodies.

Good engine compartment photos were hard to come by so, a lot of "gizzmology" from the

spare parts box was used to round out the fire wall. After the kit engine and tranny were removed from the kit, new brackets to mount the Verlinden engine were scratched from plastic card. The new engine was put in place and the scratched side walls for the compartment were installed.

A new tread plate floor, in the interior, was made with Scale Scenics aluminum micro-mesh laminated down with super glue. A new ammunition storage box was scratched and added to the rear interior deck. The kit radio was reworked using photoetched parts and tiny electrical motor winding wire.

The rear doors on this kit are really bad so I replaced them with plastic card, Evergreen strips and stretch sprue. The hinges came with the Verlinden set and were added after removing the kit hinges.

I started opening the side compartment doors and decided to only open four of the six. Drilling small holes, just inside the kit door outlines, allowed removing the doors by the "connect-the-dot" method. I use this method quit a bit to "open" doors and hatches. The down side is that the removed piece is no longer usable, and therefore must be scratched.

Continuing on with the interior of the 251, I was very satisfied with the short 75mm gun supplied with the Tamiya kit. I did decide to change out the canvas ejected shell bag at the back of the gun. I replaced it with expanded metal from Scale Scenics. This stuff is great. I use it everywhere. The kit MG34 was replaced with a brass MG42 and a photoetched ammo belt was glued in place. A Verlinden Panzerfaust was painted up and placed behind the crew seat at the back of the interior.

On the outside of the upper body, I attached some bent Z-shaped brass strips. These represented the brackets that were welded to the 251 for support of equipment hung on the outside. I used them to hang a Panzerschrek, jerry cans, helmets, and the ropes to hold on the camouflage foliage. This foliage was made by first denuding baby's breath dried plants, then gluing on the herb marjoram. The herb turned brown with time so they eventually looked like dead dried tree branches.

The running gear was stock from the kit except for the exquisite Model Kasten track links. There are two species of Model Kastens, the workable and non-workable. The variety available for the 251 happened to be workable kind. These pieces work on a double pin and

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Converting Hasegawa's 1/32 BF2C to a Hawk III (Lost-Foam Fiberglass Casting and Simple Scratch Building)

by Scott M. Head, IPMS/Houston
Scale Model Forum

Hawk III Background

The Curtiss Hawk III was one of the many Curtiss Hawk biplane fighters to find that fame is hard to come by. Developed from the Curtiss BF2C naval fighter, the Hawk III was an export version of a not so successful effort. It nevertheless performed admirably in the hands of China, Thailand, and Argentina. Despite the efforts of Curtiss, the BF2C Navy Fighter was not to become a success in US hands due to a design flaw that caused excessive vibration in its all metal upper wing. It was rejected from service after only a year in fleet service aboard the carrier *USS Ranger*. To meet the quickly expanding export market, Curtiss redesigned the wing to an all wood structure, and re-engined and rearmed the BF2C (a number of minor variations between export orders existed, but the airframe was basically the same). The resulting aircraft was the Hawk III.

In service, 60 Hawk IIIs were to form a large part of the Chinese fight against the Japanese onslaught in the late '30s and into the '40s. Quickly outclassed by Japanese monoplanes, it was to find a niche as a ground attack plane and an advanced trainer. Curtiss Hawk IIIs were excellent aircraft, loved by pilots, and deserve more credit than is given to them.

Kit Options

In looking for a model of the Hawk III, I had three options: In 1/72 scale, MPM makes a decent limited run kit, though the engine is a bit difficult to deal with (It's closer to a US version BF2C engine and cowl arrangement anyway, so it isn't entirely accurate for the paint scheme on the box). In 1/48 scale, Sierra had just released a beautiful vacuformed kit of the Hawk III, but I had not ordered one at the time. My third option was to convert the 1/32 scale Hasegawa BF2C-1 into a Hawk III. I chose this route, since I wanted to try a simple fiberglass casting skill I had just learned.

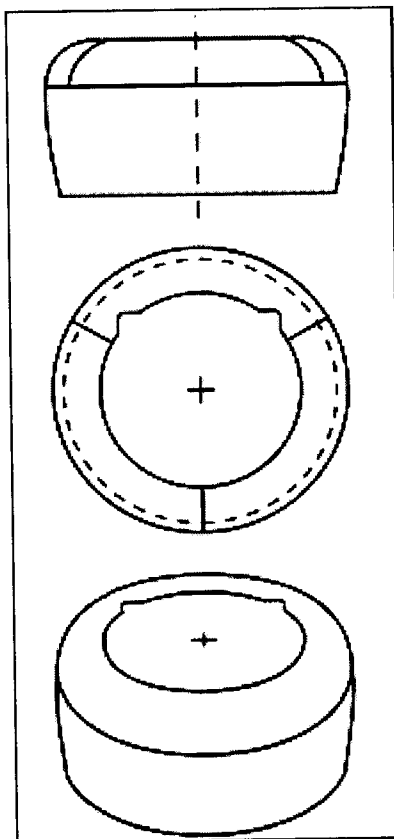
The Hasegawa BF2C kit is a relatively old kit, and may usually be found at swap meets or via old kit dealers. Many hobby shops still have some of these kits, since they are not

uncommon or rare. It's a nice kit in itself, and it builds up with very little trouble. The conversion to a Chinese Hawk III is simple too, if you are willing to do a bit of simple scratch building. The major changes are in the engine cowl, and if you build a Thai or Argentine version, some weapons fairings on the forward fuselage sides need attention too. Other changes include minor cockpit details, canopy changes, and minor changes to the rear landing gear.

I began by acquiring scale drawings, very important since there are many variations among Hawk IIIs. I selected the Chinese version powered by a Wright Cyclone engine, which required a deeper, more enclosed cowl than the BF2C's narrow cowl. Making a new cowl was the most challenging part of this conversion, but not difficult if planned properly. I used a method called lost foam casting, and here's how:

Casting a New Engine Cowl

Taking a three view of the cowl, I constructed a master form out of Dow Corning blue insulation foam (a dense sheet of styrofoam used by home builders). This is not as difficult as it sounds; simply cut a rough cylinder from two sheets that have been sandwiched together with white glue and then sand to shape. Use templates as you go, or simply judge using the



trusty Mk.I Eyeball. Don't worry about the front opening or hollowing it out, we'll do that later. Just a solid form is all that is needed. Important to keep in mind is to sand the entire form 1/16" or so smaller than needed, as the fiberglass resin we'll be using will make this up with its thickness. Create your master with about 1/2" of additional length in the rear of the cowl, as it will be easier to cut it off to the proper length later. Once the foam master has been completed, mount it on a wood dowel or brass rod (8" long or so) by creating a hole in the rear center. White glue it in place to keep it secure while handling.

As fiberglass resin is to be used as a casting material, the foam must be protected so that it does not melt away when exposed to the fiberglass. I used white glue diluted with water (1:1 ratio) and painted the foam master with two coats, allowing the first coat to dry thoroughly before painting on the second. The glue is impervious to the resin and forms a barrier that protects the foam while the casting cures.

When dry, obtain some very fine fiberglass cloth (the RC section of the hobby shop should have some) and a suitable amount of two part fiberglass resin. Mix the fiberglass resin to manufacturer's instructions; too much is better than not enough. (NOTE: If you've never worked with fiberglass, be sure to practice a few simple techniques. Check the RC department of the hobby shop for books that describe in detail the process. It is important to work with proper ventilation and a mask, as fiberglass resin fumes and glass fibers can pose a serious health risk) With a disposable dope brush (also available at the hobby shop), cover the foam master with resin. The back of the cowl can be left uncovered as it would need to be opened on the final piece, so save yourself some work. Cover the front of the cowl fully to provide strength during the final sanding and shaping process. With the resin still "wet", lay up some strips of the cloth to provide strength, overlapping them and working them into the resin until the entire casting is covered in a thin layer of resin and cloth. Work quickly as the resin is curing, and get those air bubbles out if possible! The ideal casting will be a thin layer of resin and cloth, about 1/16" to 3/32" average thickness. Don't worry about lumps as these can be sanded off later.

Finishing the Rough

When the cowl casting has cured, remove the cowl and get some very coarse sandpaper mounted on a comfortable wood block. Use the scale drawings and cardstock templates as a guide and sand, refining the basic shape to an

accurate outline. Fiberglass is very hard, so vigorous sanding will be necessary if your casting has lots of bumps or needs a lot of refining. I used an orbital electric sander with great success. Wear a mask, the dust is dangerous! Gradually, your cowl should become an accurate replica, and finer grades of sandpaper should be used to create a smooth finish. Fill airholes and mistakes with superglue if needed. If you followed your plans and sanded attentively, your finished piece should be geometrically correct: perfectly round and tapered, flat along the top, and properly curved along the forward edge.

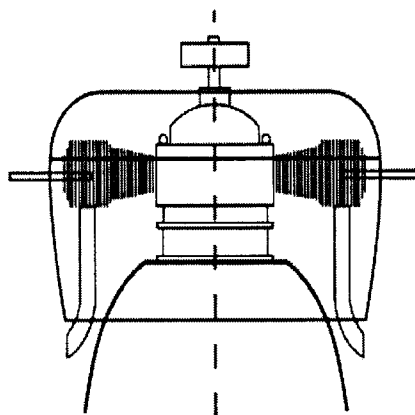
Now for the neat part! Take your casting outside, cut into the foam master from behind to open the glue barrier, and pour a small amount of lacquer thinner on the foam master from the rear. The foam will dissolve away. Keep adding lacquer thinner, rinsing the goo from inside. When all of the foam is gone, peel away the glue barrier. Voila! A hollow, one piece casting!

Finishing the casting is tedious, but these steps ought to speed the process along: The center opening of the cowl front is easy to open. Just mark the absolute center of the cowl opening (where the prop shaft will eventually reside) and using a mathematician's compass trace the opening on the fiberglass. When satisfied with the accuracy of the circle, replace the lead in the compass with a cutting point. I made mine from an old airbrush needle. Using the compass centered in the same spot that was used to trace the opening, scribe along the traced line. Keep scribing a line until the depth is sufficient enough that you can use it as a guide for grinding the center hole opening with a Dremel tool. If your casting is consistently smooth enough, you might be able to scribe right through, but keep in mind that the fiberglass will chip easily if you try to tap the center section out after scribing. Once opened, clean up the cowl opening with files and sanding sticks as needed.

Since the cowl master form was created with about 1/2" additional length in the rear, it is easy to cut the opening in the back accurately. Measure and mark the location of the cut you will need to make at the rear of the cowl. Lay the cowl flat on its front. Use small balsa or wooden blocks and strips to build up a platform that is the same height as your mark. I used balsa, 1/2" thick, 1" wide, and 6" long. I glued these blocks together and then sanded them down so that the final "stick" could hold an Xacto blade on my mark. I then scribed the cowl line by keeping the cowl and the wood block flat on my work table, rotating the cowl as I went around the entire circumference

several times. Use the back of the blade as the cutting edge may creep. The resulting scribed line is perfectly the same distance from the front of the cowl. I then used a razor saw to finish the cut using the scribed line as a guide. Clean up by sanding the rear opening on a piece of sandpaper taped to a flat surface (vacuform style).

After all this work, you now have a finished Hawk III engine cowl! Whew! And that was just step one! Never fear, that's the worst of it.



Engine

Now prepare to install the engine into the cowl. Though your new cowl is deeper than the original kit's cowl, if it was created to proper dimensions, you will have ample room to install the engine on the kit's mounting pin on the front of the fuselage. Tape the fuselage halves together and test fit the engine. Place the cowl over the engine so that your propeller hub, when installed, will be forward enough to spin the prop freely. Then, mark a spot on the outside of the cowl that corresponds with the location of the cylinders inside. Do this for at least three cylinders, preferably the three that are at 90, 30 and 210 degrees from horizontal (that is, the top cylinder and two bottom ones). Drill a hole through the cowl at these three locations, and the top of each of the three cylinder heads so that you can pass a plastic rod through the cowl and into the cylinder (See the diagram). This is how the engine will hold the cowl in place. When everything is centered and aligned, glue the cowl and engine assembly together. Cut off any excess rod from the cowl and sand it flush. I added individual exhaust stacks to the cylinders so that they would extend out from behind the cowl as was characteristic of most export Hawk IIIs. I made the exhausts from aluminum tube, bent and cut appropriately. Hold off on mounting the engine and cowl subassembly to the fuselage until after painting, as you'll need to paint the forward fuselage where the engine will be mounted.

The cowl interior and engine should be painted before they are installed. I used Yellow Chromate primer for the interior of the cowl, but aluminum is appropriate too. The engine is a standard Wright Cyclone model - medium grey crankcase, black cylinders and silver pushrod covers. I painted the mounting rods primer color since they are visible to anyone astute enough to look carefully.

Since the kit comes with a two bladed prop, we'll need to find or make a three bladed one. I used brass tube and plastic rod to make a new propeller hub, and robbed the blades from a Hasegawa 1/32 Spitfire Mk. VI, reshaped appropriately. Mount the whole assembly on a shaft made of brass rod that will fit into a brass tube installed in the engine.

Other Kit Modifications

The rest of the kit is relatively simple. I built a new cockpit for my Hawk, but you could easily use the kit's interior. To make it really stand out though, use the kit's molded-in fuselage formers as a guide to make new ones, then sand the interior smooth. I used Evergreen plastic rod and attached the new formers to holes drilled at the appropriate edges of the kit's floor and rear cockpit bulkhead. I left the forward ends of the formers free, and installed them slightly skewed outwards so that when the fuselage halves were closed the former rods would compress, insuring that they were snug against the fuselage interior walls. I added a scratchbuilt seat from plastic card since I didn't care for the padding on the kit's seat, and photoetched seat belts from an old Fotocut prewar seat belt set. A new throttle, a hand pump, compass, map case, and junction boxes were all fashioned from plastic scrap, wire and miscellaneous bits and added as necessary. New running boards were made with Evergreen channel, and I added fuselage stringers from strip. I opted to use the kit's instrument panel as I could find no drawings of Hawk III instrument panels. I assumed there are differences, but I was having such a good time I didn't want to break the process up! The kit instruments would benefit from being drilled out and having instrument decals placed from behind on a white plastic card. A drop of epoxy to simulate glass will finish them off nicely. I regret not rebuilding my instrument panel now, but the overall effect of the new cockpit is convincing.

Interior colors for the Hawk III are fairly typical of the era. The cockpit sidewalls and the fuselage tube structure, as well as the floor and foot boards are painted aluminum (dope). Note- the Hawk III had no true floor, just foot boards, so the kit is inaccurate anyway. To

replicate the floorless cockpit would have been too much of a hassle for this modeler, so I left it in. It could be painted flat black if necessary, to give the illusion that it is not really there. The seat is also aluminum. I painted my seat belts a leathery brown for the lap belts, canvas (off white) for the shoulder belts. The throttle is black, and the instrument panel is a very dark grey. The control column is aluminum with a black grip. I used a mix of unpainted soldering wire and stretched black sprue to simulate the conduit and cable that connect the throttle to the engine and the priming pump to the fuel system. The priming pump was painted silver. A map case made of plastic sheet and painted aluminum was placed on the left side of the seat, while a leather map case was painted appropriately and attached to the fuselage structure on the right.

Assembly continues by closing the fuselage and sanding the seams smooth. The next modification is the in the rear. There is a large opening that houses the tailhook on the BF2C just forward of the tailwheel- this will need to be sheeted over with plastic. Chinese and Thai Hawk IIIs often had the metal fairing removed from around the tailwheel strut assembly. On the kit, this fairing is molded as part of the fuselage halves. A simple cut along the angled indented line at the rear of the fuselage (where the simulated fabric surface meets the simulated smooth metal surface) is all that is necessary, but do this before you install the fin and rudder unit. If you choose to depict your aircraft in such manner, a new tailwheel strut will be needed. I used telescoping brass tube and parts from the kit tailwheel assembly to make mine. Check the last few pages of Squadron's *U.S. Navy Hawks* for pictures.

The final modification is the canopy. The Hawk III did not feature the BF2C's sliding rear half-canopy, so delete it from the kit. Fill in the slots and cut off the rail for the sliding glass on the kit's fuselage. Also, the windscreen could use replacement. It's not hard, as the panes are flat. I used clear styrene and cut a new one, folding each side panel along a scored line. I also cut open a hole for the gunsight. Simple enough, but still it took me several times to get one that fit well!

With these steps finished, assembly of the rest of the aircraft is straightforward, just as the kit instructions depict. Only one more item of note: Despite what some illustrations of Chinese Hawk IIIs would have us believe, the circular "thing" attached on the lower fuselage between the wheel wells is usually not present on Chinese aircraft. This device was an effort to improve stability and was unnecessary with the late version wooden wing, lighter structure, and new engine.

Final Details

With all this work already invested in the aircraft, why not add some detail that the kit lacks? Drop the elevator and add some control horns to them with some music wire. See the Squadron book for details on what they look like. Also, replace the gunsight or drill out the ends for more realism. Painting the Hawk III is best done without the upper wing installed. I used Floquil Brown for the primary color, which is actually a dark olive green that dries with a brownish green finish. I read that many Chinese Hawk IIIs were painted overall red-brown, but since all the color illustrations of Hawk IIIs I found featured the more common Chinese dark green, I chose the latter simply based on aesthetics (Photos seem to back this up, but it's too hard to determine for sure). The undersurface was painted in light grey, but not all Chinese Hawks featured this. Some were a solid color overall. Decals for the national insignia came from a 1/32 scale Polikarpov I-16 sheet, and the white fuselage numbers from the scrap box. I also installed a data plate in the left wheel well from a Waldron set, but if you got a magnifying glass out you'd see it's actually for a B-17! I don't think anyone can read it without high magnification, so I didn't fret.

I used monofilament for the rigging, and drilled out the holes to glue the rigging into with a super fine drill bit in a pin vice. The holes are located for you by small circles on the kit surface. Paint the rigging dark steel, and make the stabilizing rod in the wing rigging with a piece of plastic rod rounded at both ends. See drawings and photos in Squadron's book for reference.

Final steps include weathering, navigation lights, and a semigloss varnish. Whew! After all this work, you now have a Hawk III from a BF2C. It would really look nice next to a 1/32 scale Nate!

To each his or her own; I will never chide another modeler about whether they choose to display a model or not. I happen to believe that modeling is a process in and of itself. If, in fact, you didn't like it, there wouldn't be much point in doing it. I also think nothing of tossing a model in the trash and starting on a new one if the first didn't please me; see Webster's definition of "hobby".

Now, there seems to be some growing controversy around competition. This time, it's not the usual judging; it seems that it has become distasteful to strive for awards and recognition. Why? Most of us are not professional modelers and will never be published, so this is the only chance of some recognition for the skill that we possess. In addition, it is also a chance to show our friends that what we are doing is recognized as an art form. For many people outside the modeling community, building scale models is tantamount to playing with toys. How many of you have heard someone say, "I used to do that when I was a kid".... then suddenly fall quiet when they see your work and the ribbon that it won?

Whether you choose to bring your models and place them in competition or not is your choice. I would never criticize anyone one way or the other. If you don't want to compete, however, I hope you bring your models for the display area. There the models can be seen by many people who are new, as well as veterans of the hobby.

If you should decide to compete, it's completely okay to want to win a ribbon and be recognized. It's absolutely natural that you should want to win. There has been talk about some modelers building for historically sparse categories in hopes that the competition would be lighter there. I don't criticize the move; it helps the show by bringing up the level of competition in that category. How else can you improve the quality of a show than by putting more models in the sparse categories? You might even consider it your IPMS "patriotic" duty.

Lastly, when the show is over and people are milling around seeing who won what, keep your eyes peeled for judges. They are supposed to be there to answer questions; use them. Ask lots of questions and learn to see models through their eyes. Don't argue with them; judges can't rescind their decisions anyway. And don't be surprised when the judges in a strong category bring up very trivial flaws.

One more thing: have fun, huh? Don't take this stuff so seriously; it's a hobby, for crying out loud!

Compete? Why Not!

By Stephen Tontoni

There are several types of modelers at any club. Aside from the usual "what do you build" types there are also novice, senior and master. Another way of thinking of modeling types, however, would be show participation: competition, display only, non-participation. Not all the very best modelers have their stuff out there on the competition table!

Web Pages of the Month

The Internet has truly become the modeler's best friend. There are literally hundreds of web sites out there of interest to the modeler, from the official IPMS sites of many different countries, to sites covering one air force or types of aircraft. Even the Brewster Buffalo has a web page - but that's for next month! There is practically no area that hasn't been covered, somewhere, by someone - often with varying degrees of success. The Internet is a wonderful tool, but it requires discretion; anyone can set up a web page, and disseminate any information he or she pleases. There are no editors looking over the writer's shoulder. The material provided may not be factual or accurate. More than in traditional publishing, there is a burden on the consumer to figure out the value of the information. In the coming months, I'll introduce some of the better web sites out there, or at least my favorites, and separate the wheat from the chaff.

IMPS Seattle

www.blarg.net/~whitet/ipms.html

I'd be remiss if I didn't remind everyone of our own web site. The site, maintained by Tracy White, contains meeting information, kit reviews, and a modeler's tips section. Of special mention in the tips section are all of Ted Holowchuk's articles on airbrushing and painting. There are also several links to Seattle-area hobby shops - if you've never been to the Hobbytown USA outlet in Redmond, for example, you can take a virtual tour of that store.

IPMS-USA Fleet Air Arm Special Interest Group

www.airnet.net/scotts

This web site was mentioned in the article on British Pacific Fleet colors, but it seems appropriate to mention it again. Scott Spenser's IPMS-USA Fleet Air Arm Special Interest Group web site covers aircraft of the Fleet Air Arm and other Commonwealth navies. The site features kit reviews, color and camouflage information, photo galleries of models and actual airplanes, information on joining the IPMS-USA FAA SIG, and even a link that allows you to buy books relating to FAA topics. Of special mention are the model photos galleries - the models are not only very well done, but the pictures are excellent, also.

B-24 Best Web

www.b24bestweb.com

Those of us in Seattle sometimes forget that the B-17 and B-29 weren't the only American heavy bombers involved in World War Two. This excellent web site is dedicated to the B-24. It doesn't have fawning hyperbole about how great the B-24 was, and it doesn't have pages of historical information (though it does have all of the relevant specifications). What it has is photos - over 500 of them, catalogued by the name of the airplane. From *The Dragon and His Tail* (my personal favorite) to *Yanks From Hell*, if it was a B-24 and had nose art, it's probably here. And don't forget to download the '40s tunes from the jukebox!

Swedish Military Aviation

www.canitse/~griffon/aviation

If you want to see a subject handled perfectly, try this one. Urban Fredriksson's site gives you everything you could possibly wish to know about Swedish Military Aviation, or tells you where to find it. Every aircraft to see service with the Swedish Air Force gets its due, often with a color picture or two. The Swedes have been very conscious about preserving their aviation history. Not only are planes such as the FFVS J22 still around, but a Junkers Ju 86, also. There's also a link to SAAB's home page - unlike some aviation companies, SAAB takes care of its heritage. SAAB has huge, high resolution shots of SAAB aircraft, past and present, to download. If you're thinking of modeling a J21, for example, check this out.

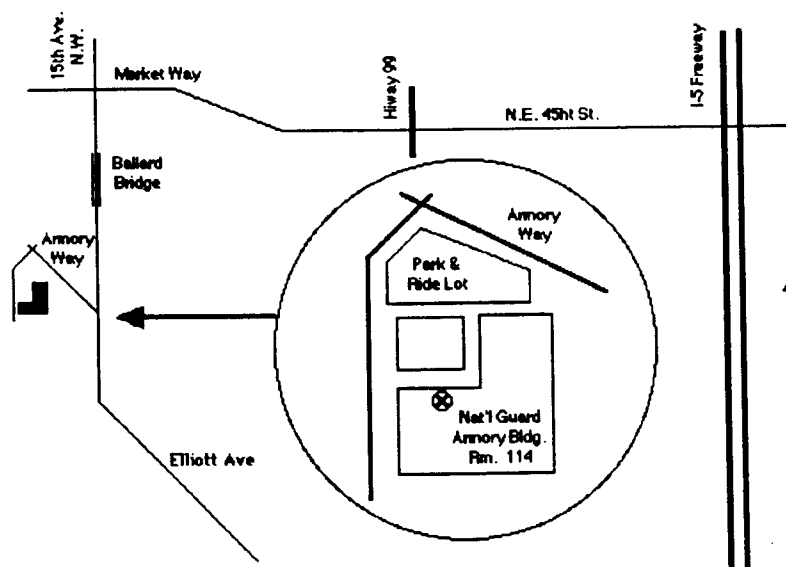
That's it for this month.

Classified Section

Several club members have expressed interest in having a classified section of the newsletter where IPMS Seattle members can either look for special kits and accessories, or offer them for sale. If you're looking for an instruction sheet for a particular model, we can do that too. If you have anything you'd like to include in a classified section (NON-COMMERCIAL ADS ONLY), send the info to me at rallen@lwtc.ctc.edu, or call me at 425-823-4658. It's free, of course!

**Saturday, May 16, 1998
at 10:00am**

Meeting Reminder:



National Guard Armory
Room 114
1601 West Armory Way
Seattle

Directions: From North or Southbound 1-5, take the N.E. 45th St. exit. Drive West on 45th, crossing under Highway 99 (or Aurora Ave North) toward N.W. Market St. in the Ballard district. 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. You should park in the Metro Park & Ride Lot.

If coming from South Seattle, take Highway 99 onto the Alaska Way viaduct to Western Ave. Follow Western Ave. north to Elliott Ave. until it turns into 15th Ave N.W., then to the Armory Way turnoff.