

Straight-winged wonder: Hawker's *Sea Hawk*

By Bob Miller

Hawker *Sea Hawk*: evocative name, isn't it? The name was in the best British tradition, and the aircraft fit Sidney Camm's tradition of graceful birds going back to the *Fury* and the *Osprey* of the 1930s. The *Sea Hawk's* nice lines first caught my interest, but it also rates a spot in history as the Royal Navy's first effective carrier-based jet.

The design originated in 1944 as a proposal to the RAF, but it was the Fleet Air Arm that ordered it.

The powerplant installation was unique, looking at first glance like a twin-engine jet. The two wing root-mounted exhausts mirrored contemporary twin-engined jets like the FH *Phantom* or F2H *Banshee*, but the *Sea Hawk* actually mounted a single Rolls-Royce Nene, the same engine that, as the Pratt & Whitney J-42, powered the F9F *Panther*. Several references claim this unorthodox exhaust arrangement was chosen because it allowed two fuselage fuel tanks to be installed near the center of gravity, which obviated the need for drag-inducing wing tanks.

However, Robert Jackson in *Combat Aircraft Prototypes Since 1945* writes that the design was chosen to minimize tailpipe engine thrust losses. This might be credible; designers chose some odd solutions to minimize tailpipe length in such contemporaries as the F9F, *Vampire* and Saab J-29, but the *Sea Hawk* design had to be exceptionally well done, or the losses in thrust from two 90-degree bends would cost more than the shortened tailpipe would save. Whichever the real reason, the idea worked well.

It's tempting to compare the *Sea Hawk* to the F9F. The F9F

design began in 1946, some two years behind the *Sea Hawk*, but the F9F first flew on Nov. 27, 1947, barely behind the prototypes *Sea Hawk* on Sept. 2. Development was slow in post-World War II Britain, also. The first production F.1

didn't fly until November 1951, when the F9F was already in action in Korea.

The *Sea Hawk* was about a foot bigger in span and length and about 1000 pounds lighter, but performance was essentially the same as the *Panther*, varying more within models than between the types. *Sea Hawk* production reached 542, a rather modest number in comparison with the

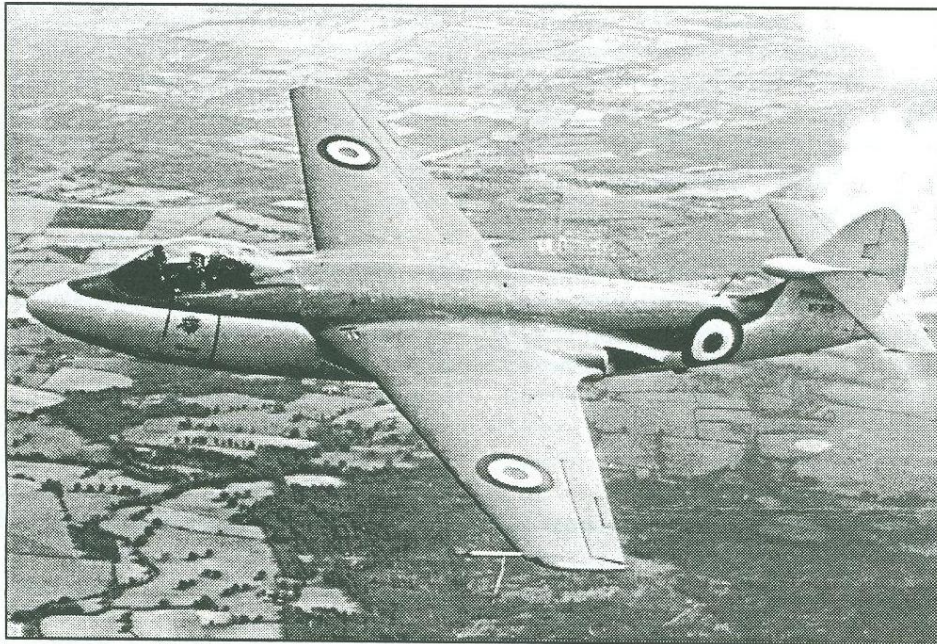
Panther (1349), but it was exported to Australia, the Netherlands and Germany's Bundesmarine, and it was used aboard India's aircraft carrier *Vikrant* until replaced by *Sea Harriers* in the 1980s, an amazing record of longevity for a first generation jet that makes up for its slow start.

Even then, the story didn't end.

In the mid-'50s, Hawker was looking for work because of the cancellation of a project they had been counting on to pay the rent for the next several years. A French inventor had proposed extracting shaft power from a jet engine to drive blowers that would give a bit of extra lift to a STOL aircraft, and two of Sidney Camm's assistants, on pondering this idea, realized that if you could successfully split the core engine exhaust and deflect it downward through rotating nozzles, you might solve the heretofore intractable problem of a practical VTOL jet.

Could that double 90-degree bend be done with low enough loss of thrust? Been there, done that! The concept had already

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A Hawker *Sea Hawk* F.1 prior to its delivery to a Fleet Air Arm squadron. The pilot gives an idea of the small size of the airplane.

EDITOR'S BRIEF

Welcome to SVSM members and IPMS National Convention attendees, one and all! This is our second big issue of 1996, and we're proud to share it with all of you.

As you can see by the sheer size of this issue, our modelers have been busy. Someone wrote in *Fine Scale Modeler* magazine last summer that this time of the year is off-season for modeling. I beg to differ! The weather's great for airbrushing, the nights are warm, and the Nationals is offering incentive for us to get our projects completed!

Speaking of the Nationals, I've gotten a little more involved in the politics of IPMS/USA recently. If you're a member of IPMS/USA, you should, too. The issue that worries me is John Noack's goal of "100 percent membership" in IPMS/USA for all members of chartered LOCAL clubs.

Should this proposal become "law" with the national organization, it could drive many members of our club away and effectively end the growth of IPMS chapters nationwide.

I whole-heartedly endorse IPMS/USA membership, but I don't see the point of forcing it on folks who are relatively new to the hobby. Think of it: a person comes to our meeting, looking to learn more about the hobby by joining a club. "Okay," we say, "that'll be \$25 for our annual dues... plus, \$19 for IPMS/USA membership." Now, to be a member of Silicon Valley Scale Modelers, you have to fork over \$44 up front. Even your editor would think twice about ponying up so much at once, and newcomers are likely to take a pass on membership on any club, national or otherwise.

This suggestion totally misses the point of IPMS/USA. The organization exists as an umbrella under which local groups gather, not a central controlling agency. It is not more important than the local and regional organizations. If IPMS/USA disbanded tomorrow, Silicon Valley Scale Modelers would still exist. But if SVSM and other local chapters vanished or seceded, IPMS/USA would be hard-pressed to survive.

Our club has 24 members out of 68 who are IPMS/USA members. These people are modelers who have progressed to the point that membership in a national organization is useful and valuable. But how many of these would have taken the plunge for national membership without first belonging to a local chapter? Not many, I imagine.

Also, should the 25 of us who are national members bar the door for the 43 of you non-members? Well, we wouldn't. That's not what this club is about. It's about including people, not excluding them. We don't even exclude non-SVSM members from our meetings.

There's also a major economic crunch inherent in this proposal. If we refused our non-IPMS brothers just because they aren't IPMS members, we'd be losing \$1700 out of our treasury each year. Our contest wouldn't happen. We'd lose our meeting space. And this newsletter would shrink in size, content and value.

This is a worst-case scenario, some might say. It's

melodramatic, and, even if it were to come to pass, SVSM could squeak by, they might say. I say: why should we squeak by when the club—and, I might add, IPMS/USA—is doing as well as it's ever done?

If President Noack and the rest of the Georgia Board wants to increase membership, it should make IPMS/USA membership more attractive than it is today. Sell it like the product it is. Use marketing and positioning instead of hanging requirements on the membership. A twice-monthly magazine, a membership card and a contest that only some of us go to just aren't enough, and liability insurance, while nice to have for the contests, isn't exactly a powerful selling point. Increasing the number of hobby shops that offer IPMS/USA members would be a good start; periodic decal sheets or other IPMS/USA-only premiums would really help.

John Noack wrote that even he believed there would be an initial backlash to this step, and that the club might lose members and chapters before emerging as a "stronger society." But driving people away is never a positive step, and the idea of causing such "uncomfortable effects" at the local level to stimulate growth at the national level is unbelievably short-sighted.

This is a hobby, something people do for enjoyment. The Georgia Board needs to ask itself: would requiring people to join IPMS/USA before becoming a member of a local chapter make the experience more enjoyable? This is a hobby, and people are choosing how they will spend their free time. IPMS/USA old-timers lament the competition we face from everything from video games to sports cards to rollerblading, so why should we do anything to sour the experience for the few people who have chosen modeling as a hobby?

The bottom line: we shouldn't make it more difficult and less attractive to become a member of SVSM or IPMS/USA. To do so would be to reverse the trend for what is now a healthy, growing organization and its local affiliates.

For more information on this issue, read President Noack's comments in Volume 8, Issue 3 of the IPMS Journal. Think about his arguments, and about the arguments against the proposal. Then, voice your opinion—by mail, or to his e-mail address, jnoack@aol.com.

That's it for now. Gotta go paint, and pack, and prepare for Virginia Beach!

—The Editor

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Detailing *Skywave's* 1:700 *Cleveland*

By Jim Gordon

The 1942 *Cleveland*-class light cruiser was a sleek, symmetrically shaped gunboat. Basic armament consisted of 12 six-inch guns in four triple turrets, 12 five-inch guns in six twin turrets, four 40mm AA guns, and 15 20mm AA guns. As the war progressed the need for heavier AA guns was addressed by the addition of dual and quad 40's at various locations.

However, the added weight of these guns made the ship precariously top heavy and unstable, necessitating removal of the catapults, depth charges, and other heavy items.

In November, 1942, the *Cleveland* lent support to the landing of Patton's troops at Casablanca, an element of Operation Torch, the allied invasion of North Africa. The *Cleveland*-class cruisers with their fire control radars were instrumental in silencing the French coastal batteries.

In November of the following year, the *Cleveland*, along with three other light cruisers and eight destroyers engaged the Japanese Fifth cruiser squadron in the Battle of Empress Augusta Bay. The Fifth squadron comprised the heavy cruisers *Myoko* and *Haguro*, the light cruisers *Sendai* and *Agano*, and six destroyers. In the 22-ship, four-hour battle royale that followed, the American light cruisers, although outnumbered and outgunned, had the advantage, their radar directed fire scoring more hits than the Japanese, sinking the cruiser *Sendai* and the destroyer *Hatsukaze*, and damaging two other cruisers and one destroyer. The U.S. forces took damage, but no ship was sunk. "It was a rarity for the time, an American-Japanese naval battle in which the United States didn't lose a single ship." The *Cleveland* went on to survive the

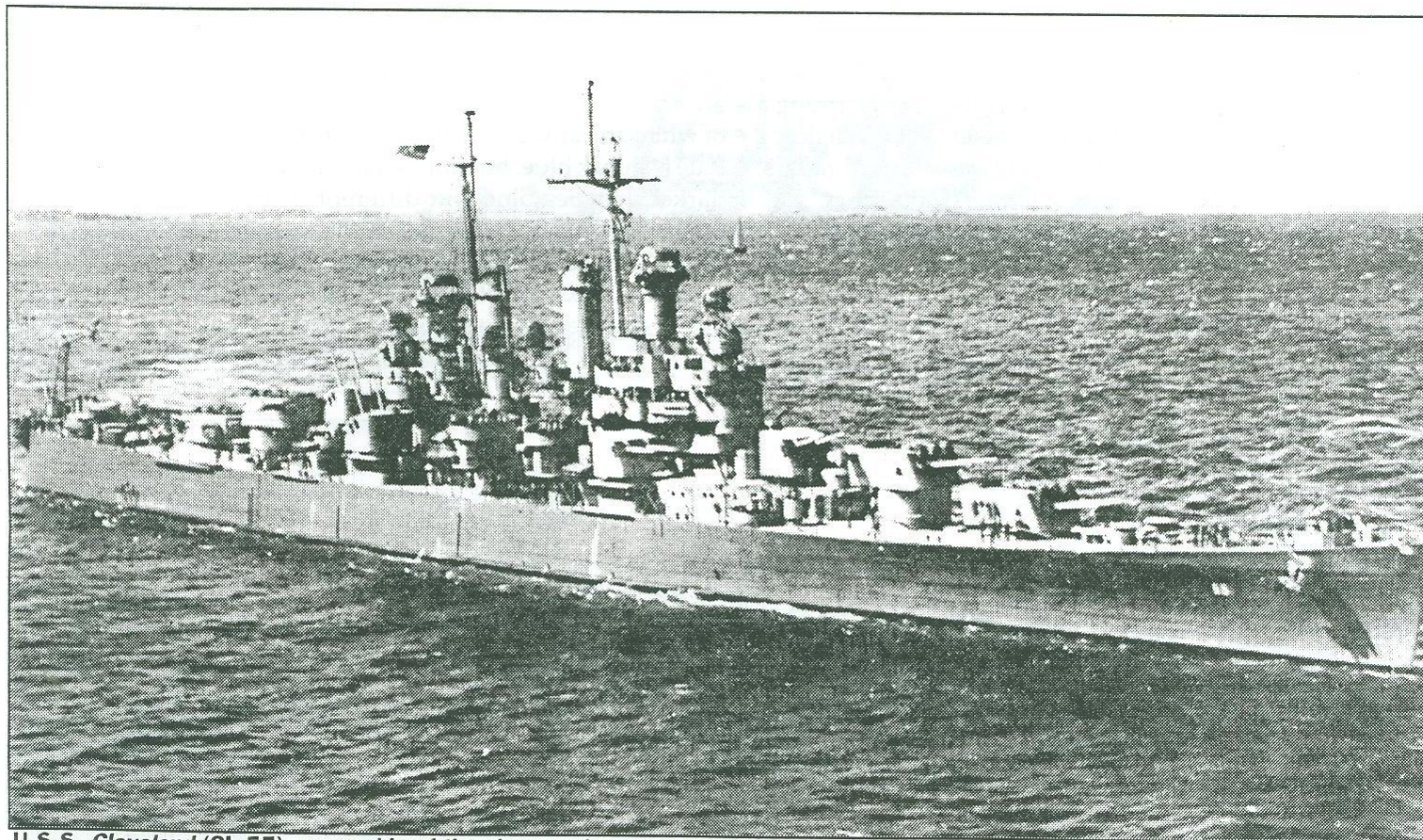
conflict and serve in post war duties.

The *Cleveland* kit by *Skywave* is a benchmark of clean molding and fine detail. The hull and deck comprise sprue A, superstructure parts sprue B, and two sprues C of generic details are included. There are enough spare guns, rafts, radars, etc. to complete a second model, so this in part mitigates the high expense (\$45) of the kit. Also included are two decal sheets; one of generic numbers and international flags, the other of U.S. plane insignia. The decals are good.

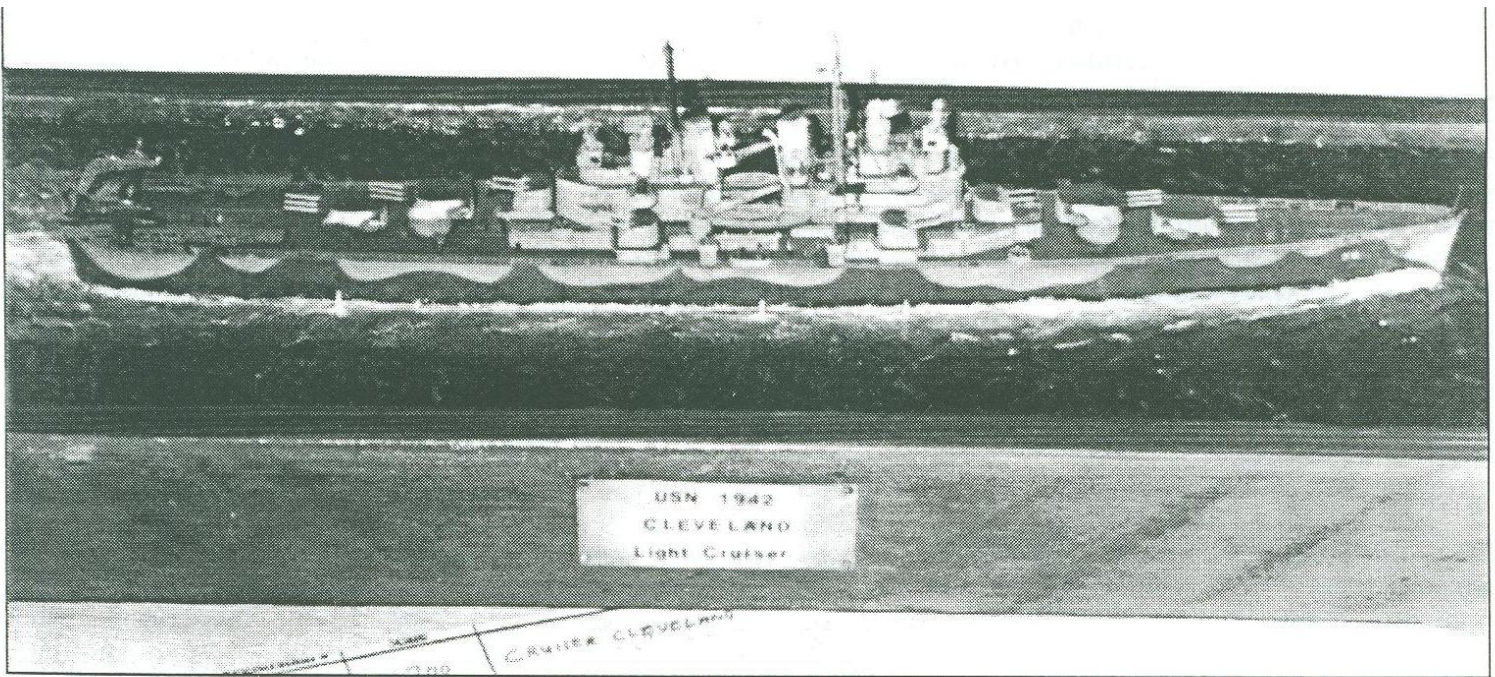
Upon construction you will notice that the parts fit is excellent in general. There is only microscopic flash on most parts, hardly noticeable. The superstructure assemblies, front and rear, are so good that they dry fit like Lego blocks. The only problem areas with this kit are the second level deck halves where they butt together. One half is fractionally higher than the other. The second problem area is the way the aft superstructure fits over a stepped area. There is a gap that results all around the step that must be filled. Small problems, easily fixed. You could build this model in an evening or two straight out of the box, paint it grey and have a nice model.

But this model deserves special treatment—in the form of *Tom's Modelworks* brass sets, and a special paint job—Measure 32/12d, four colors of blue and grey.

You will need four sets of brass for the *Cleveland*: railings, radars, catapults, and 20mm guns. *Tom's* brass is especially delicate, but forgiving. Some parts, like the funnel grills, are so fine as to be maddening in their shaping. The hardest assembly will be the catapults, of which two are required. The parts bend well, and fit as advertised, but the



U.S.S. *Cleveland* (CL-55), name-ship of the class, underway in 1946. By this time, her anti-aircraft battery had been upgraded.



Jim's model, afloat on a Gesso sea on a home-made base. Jim's use of brass parts brings the Skywave 1:700 kit to life.

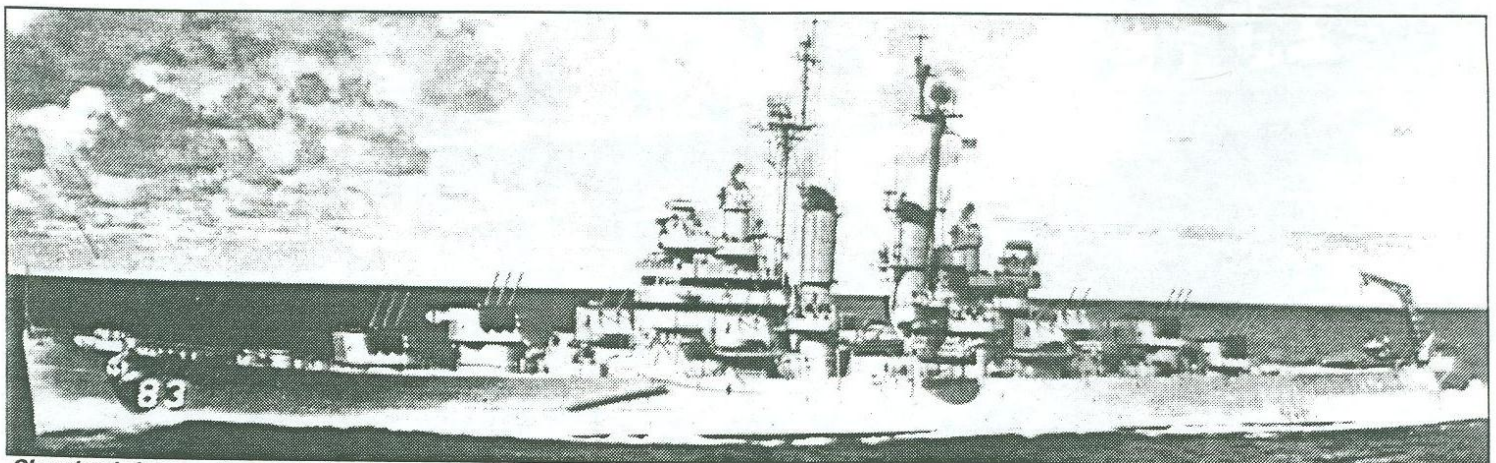
instruction sheet will leave you scratching your head. I carried the instructions around with me for a day or so and kept going over them until my brain said Aha! It's like those 3D posters that you have to stare at for a while until the image forms. Good tweezers are a must, as are a strong light and magnifying glass. A shot of Wild Turkey might help as well. I spent about three hours per catapult, which was too long. I now take a break after an hour working on the small, fine things in order to save my eyes and neck. Of course, if you are an Origami Master, it should take you much less time.

Next in difficulty is the pair of Mk 8 radars which must be bent around formers of styrene strips. Think of performing a vasectomy on a mosquito and you get the idea of the delicacy of this operation. The rest is relatively easy—more radars, prop guards, funnel grilles, cranes, ladders, and stairs.

As to the railings, I use slightly thinned Krystal Kleer white glue to adhere them to the hull. If you screw up, and you will, just dissolve the glue with water and start over. You can't do that with superglue. White glue also allows you to feather the glue edges to the parts, eliminating bumps and thick sections.

Just wet a brush with water and paint over the glue until it starts to smooth out. I use the same method for applying the stretched sprue rigging. Use a dark grey, or black sprue for rigging—you won't have to paint it, and when you matte overspray the model the rigging loses its waxy plastic sheen and blends in nicely. Of course, if your ship is one color, just spray the rigging the same color and this looks very nice indeed.

As for the paint scheme, I chose the early 1942 mottle scheme of four greys. Actually, two of the greys appear blue, but are considered types of grey. In a nutshell, they are all made from a blue-black color in which percentages of white are added, but they all start from the same color. Sea blue is a dark blue, but not as dark as Navy blue. Deck blue is darker than Sea blue, but different than Navy blue. Get it? Ocean grey is a medium grey, haze grey a light grey. All vertical surfaces are painted ocean/haze grey. All horizontal surfaces (decks, turret tops), deck blue. Hull sides are Sea blue and ocean grey. Some parts require two, three, and even four colors. I decided early on just to brush paint each part indi-



Cleveland-class cruiser U.S.S. Manchester (CL-83) at sea during World War II. Her six-inch batteries are shown to good effect here.

vidually as I went along. I did spray the hull and main deck, but the superstructures, guns, and all other parts were brushed. I used some *Polly S* Sea Blue and Ocean Grey as starting points, but both were too dark for this scale, so I adjusted them with white, medium blue, and purple, depending upon the color. My overall goal is to reproduce the look of original color photographs of the period, not achieve an exact color match, which is not likely anyway.

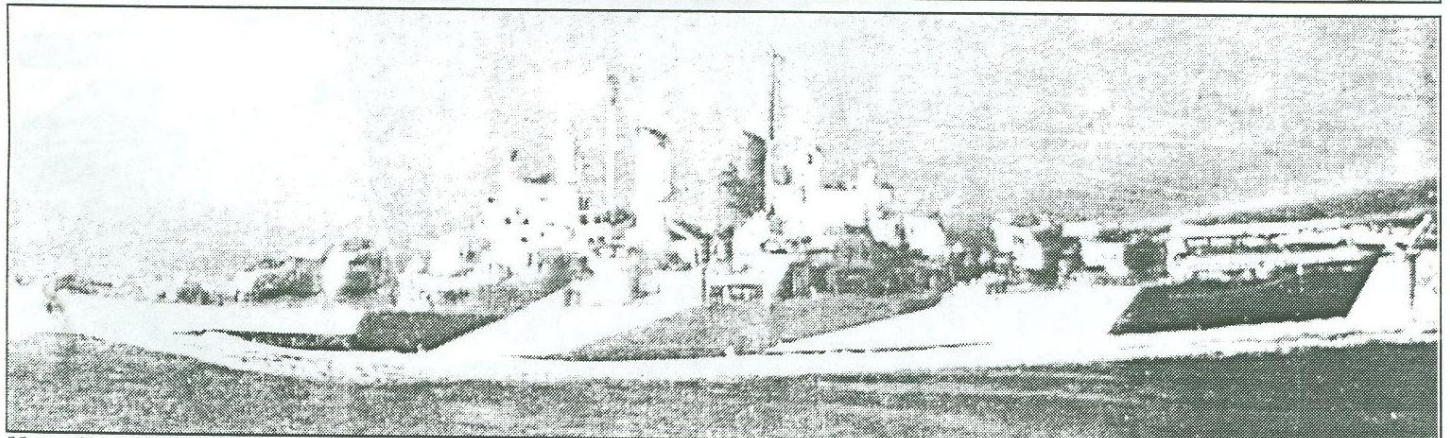
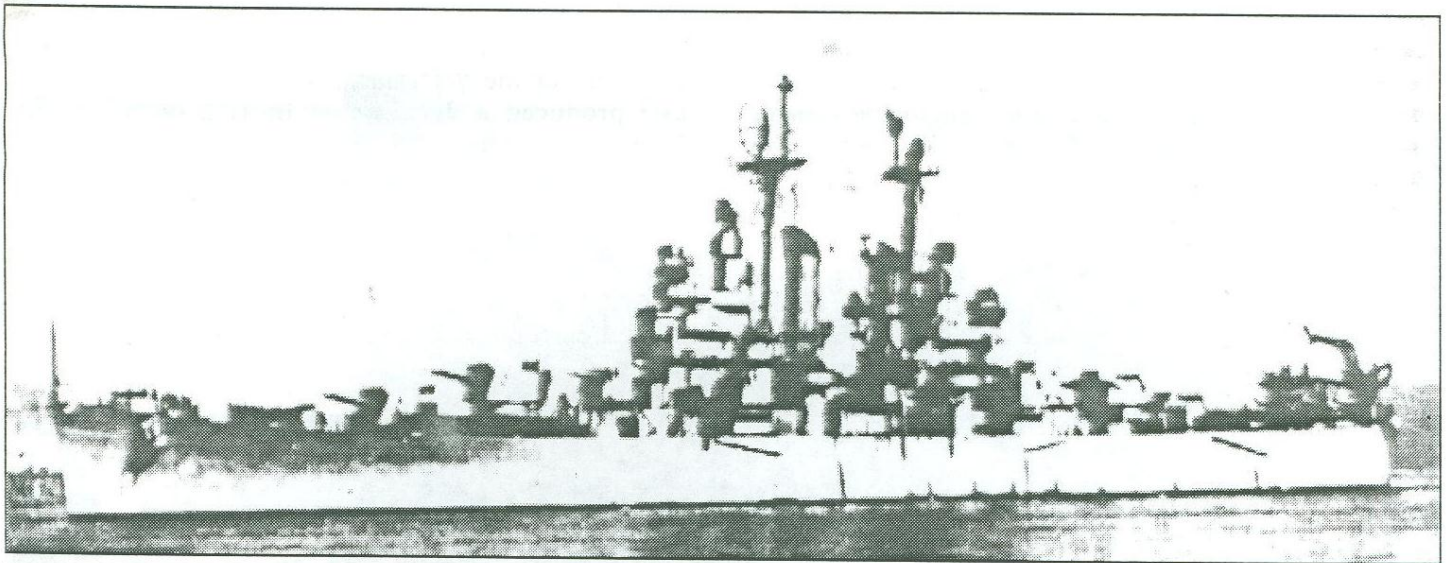
After painting was completed, the entire ship was oversprayed with *Pactra* Flat Acrylic, full strength. This will eliminate any glossy areas resulting from the white glue, and even out the reflectance of the four greys. I added some pastel dust to the hull sides: brown, dark grey, and light grey in random areas in a vertical streak pattern. Lastly, I added the Curtiss *Seahawk* scout floatplanes on their catapults, and a dozen or so crewmen for scale effect. These little men are not easy to paint, but then in this scale you could get away with painting them dark grey overall and they would still look fine.

I constructed a simple rectangular base out of oak strips, and cut a half-inch thick rectangle of styrofoam for the ocean to fit inside. The water is dark blue/purple acrylic gesso, shaped and textured with a brush around a foam board dummy of the ship's hull. The foam board was coated with hot candle wax, then tack glued to the styrofoam base. Gesso

was worked up to the side of the dummy, and when dry, the dummy was popped off the styrofoam, leaving a nice hull-shaped hole in the water. *Polly S* Sea Blue was sprayed thinly overall, then white and green were added and sprayed around the hull to simulate churning water. Pure white was sprayed at the stern. The ocean was then inserted into the base, and the model tack glued into the ocean. Lastly, a thick coat of gloss acrylic gel was brushed overall, up to the hull sides, sealing the model in the water. Minor drybrush highlights on the water finished the ocean. A descriptive plaque was made from a thin square of sheet brass, with rub on lettering.

The difficulty of the four-color scheme is paid back in the look of the finished model. I chose a dark ocean to demonstrate the camouflage scheme, and it becomes readily apparent to the viewer why the Navy painted ships this way. Thanks to *Skywave* and *Tom's Modelworks*, 1:700 scale ships can meet, or exceed, larger scales in accuracy, detail, and viewing pleasure. I give this model my highest recommendation.

Special thanks to Rob Mackie for providing the kit and reference materials: *US Navy Camouflage, Pt.1* by the Floating Drydock, *Clash of Titans*, by Walter J. Boyne, and *US Cruisers*, by Norman Friedman; and to Bert McDowell for both his midnight parking lot brass supply, and phone advice.



More *Cleveland*-class cruisers: U.S.S. *Wilkes-Barre* (CL-103) shown after the war (top); U.S.S. *Houston* (CL-51) in her wartime dazzle camouflage (bottom).

A bird's eye view of Hawker Sea Hawk kits

Continued from page 1

been developed and proven on the *Sea Hawk*. That was one of the keys to the *Harrier*, my nomination for the most brilliant feat of aeronautical engineering of this half-century.

There are a number of *Sea Hawk* kits including, I believe, a vacuform kit in 1:144 by *Welch*. I haven't seen it, but other *Welch* kits are jewels.

My choice of the kits I've seen in a 1:48 vacuform by *Falcon*. It has about 30 parts, none of which are injected plastic or metal, leaving you to find landing gear legs in that presumably "bottomless" spare parts box. Contours and surfaces are about perfect, with no vacuum hole pips that I can detect. As an unusual touch, there's a nicely formed cockpit tub that includes the seat bottom, with the seat back included as part of the pressure bulkhead. It makes an easy and effective basic seat, but if you decided to use an after market seat, life would get complicated.

There's an alternative taller vertical tail for the German Mk 101, and inlet and exhaust ducts are provided to build into the wing. To make it all work, the fuselage is split horizontally back to the exhausts (the upper wing surfaces included, and the tail is split vertically).

There are decals for two Royal Navy aircraft, the most dramatic being an 806 Squadron aircraft with a big "ace of diamonds" on the nose (pictured on the opposite page). The other plane is in rather mundane 738 Squadron markings.

The printed matter assumes you know what you are doing, but provides a nice panel sketch, seven references, and the basics for converting the kit to several prototype variants, including the swept-wing P.1052 and P.1081 (which they don't really seem to recommend).

In a smaller scale is a 1:72 kit by *Airfix*, a 34-piece kit that also includes the *Sea Hawk* Mk 101's taller vertical tail and decals for and 804 Squadron Royal Navy plane and A Bundesmarine aircraft. It's a good starting point but several things need to be done to make a first-class model of it, including vac- or stretch-forming a canopy to replace the 2-

scale-inch-thick part provided, adding a better seat and some interior, and removing the outboard pylons and consigning those bombs to the spares box. I've seen very few photographs with two pairs of pylons and none with tanks and bombs mounted simultaneously.

The wings can be posed in a folded position, but the inboard pylons should be on the inboard wing section rather than the outer folding panel, so more surgery is needed there. Though wrong, this is not too disconcerting when the wings are spread.

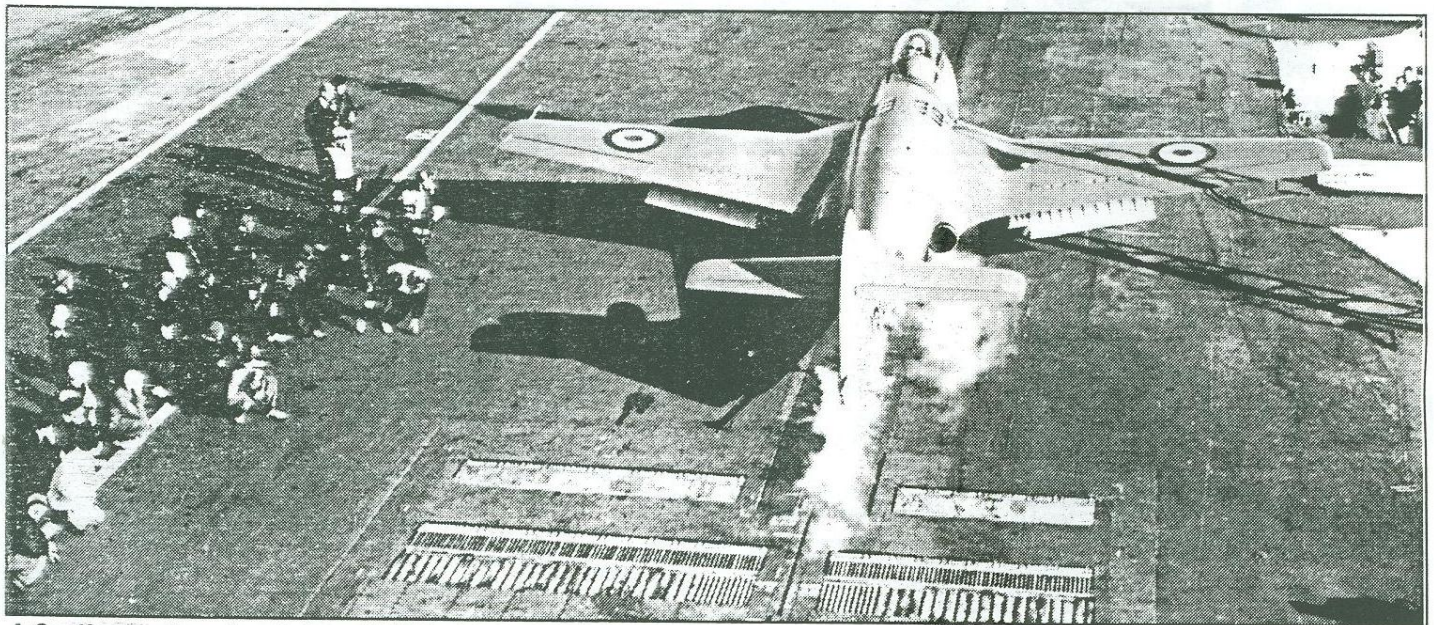
While they are not very prominent in pictures there are 12 doors atop the fuselage slightly ahead of the spar. If you ever scribe anything on airplanes, scribe these. The Nene had a two-sided centrifugal compressor, and the entire fuselage here was a big plenum; at low speeds, these doors sucked in to provide additional air, anticipating another neat solution used on the *Harrier's* inlets.

Beyond this point, work gets sticky. The inlets are noticeably too shallow at the fuselage end, as well as being too sharp-edged, and both inlets and exhaust need something added to at least suggest some smooth internal ducting. Finally, the underside of the wing-fuselage joint should have a sweeping curve from the wing fold line to the bottom centerline instead of the thin root and abrupt break that the kit has. Man, that's a lot of white putty!

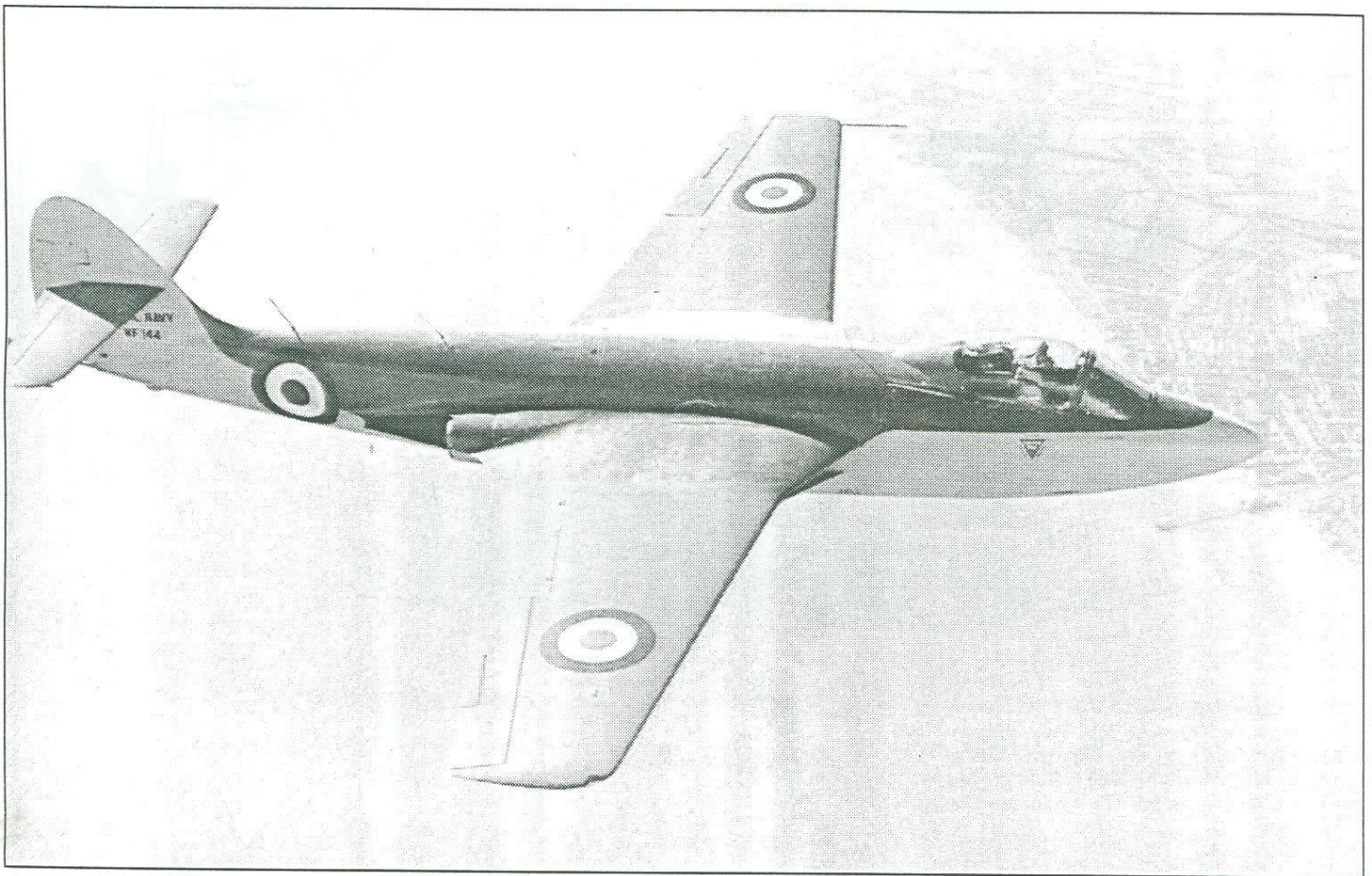
It's a very pretty kit out of the box, as proven in an *Airfix Magazine* article in August 1991, but it misses the subtle lines of the *Sea Hawk*.

Esci produced a decal sheet in 1:72 (#73) for the 1956 Suez conflict that includes attractive markings for *Sea Hawks* of 804 and 897 squadrons (pictured on page 8). With their black and yellow stripes, these are quite dramatic. A good illustrated reference for this conflict is *Scale Aircraft Modeling* from November, 1984.

Modeldecal sheet #57 also includes aircraft from 897 and 810 squadrons. Though I haven't actually seen this one, this is an excellent line.



A *Sea Hawk* on the catapult aboard H.M.S. *Ark Royal* in October 1955. Its long service aboard the Indian carrier *Vikrant* makes it one of the longest-lived naval jets.



And now we come to the 1:72 kit by *Novo*, which is what drove me to write this review. Is this really an ex-*Frog* kit?

Verily, if it is, it is the worst *Frog* kit ever produced! There is no cockpit detail. Why should there be? There is no cockpit! No need for one... The pilot is a small round head perched on the centerline of the fuselage.

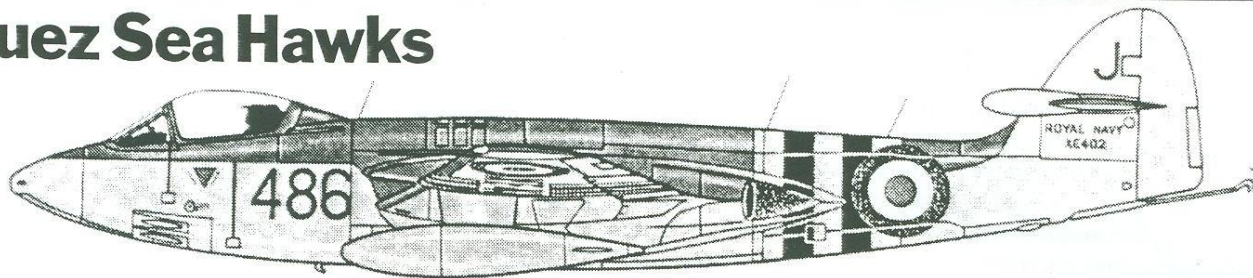
There are thoughtfully-provided indentations on the top and bottom of the wing to locate the decals, but the decals are far too thin to fill them.

There are plenty of other things to complain about in this kit of dubious heritage. But hey, there's no reason kick a man when he's down. Profit from my mistake: pass up this one and take your chances from the two far better kits of this airplane well worth modeling.



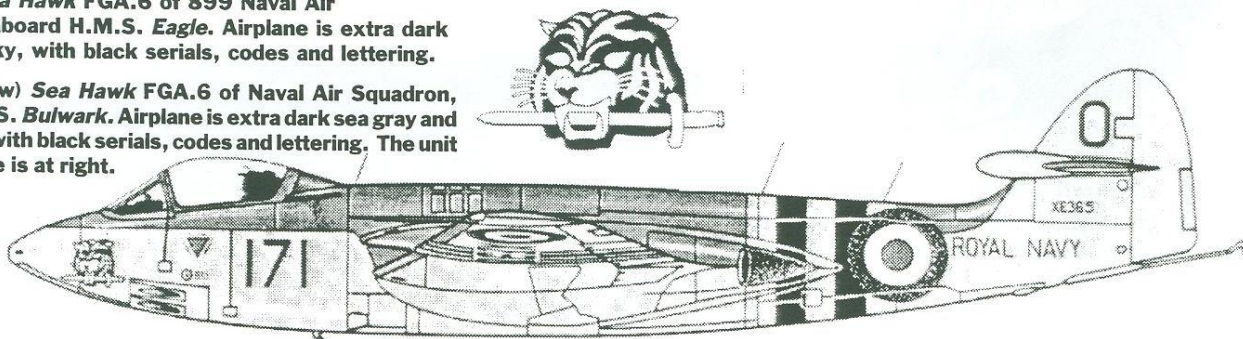
At top, the Hawker P.1040, the prototype for the *Sea Hawk*, which first flew in 1947; at bottom, a restored *Sea Hawk* FGA.6 in the markings of 806 Squadron.

Suez Sea Hawks

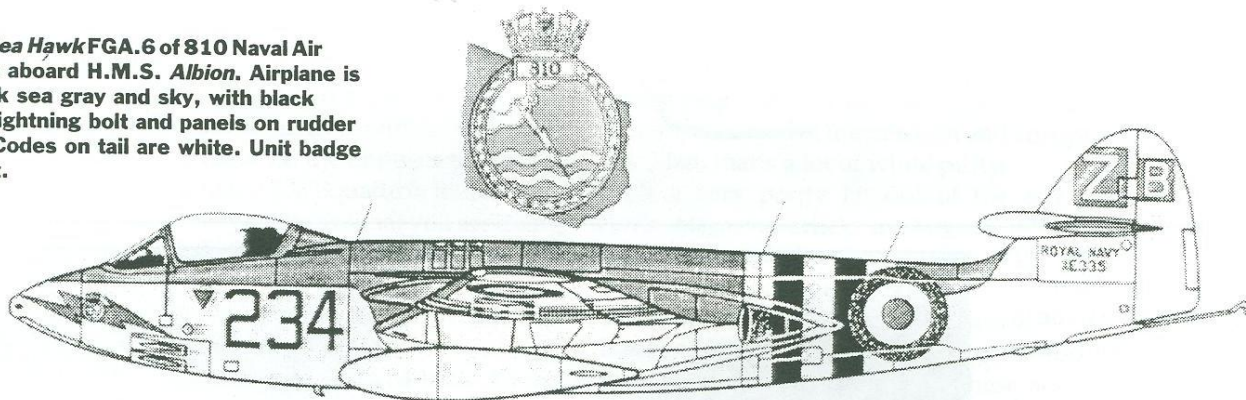


(Above) *Sea Hawk* FGA.6 of 899 Naval Air Squadron, aboard H.M.S. *Eagle*. Airplane is extra dark gray and sky, with black serials, codes and lettering.

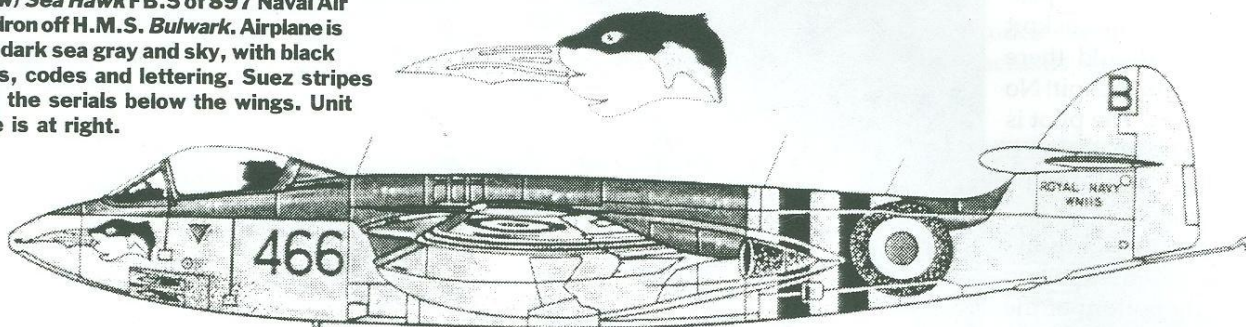
(Below) *Sea Hawk* FGA.6 of Naval Air Squadron, H.M.S. *Bulwark*. Airplane is extra dark sea gray and sky, with black serials, codes and lettering. The unit badge is at right.



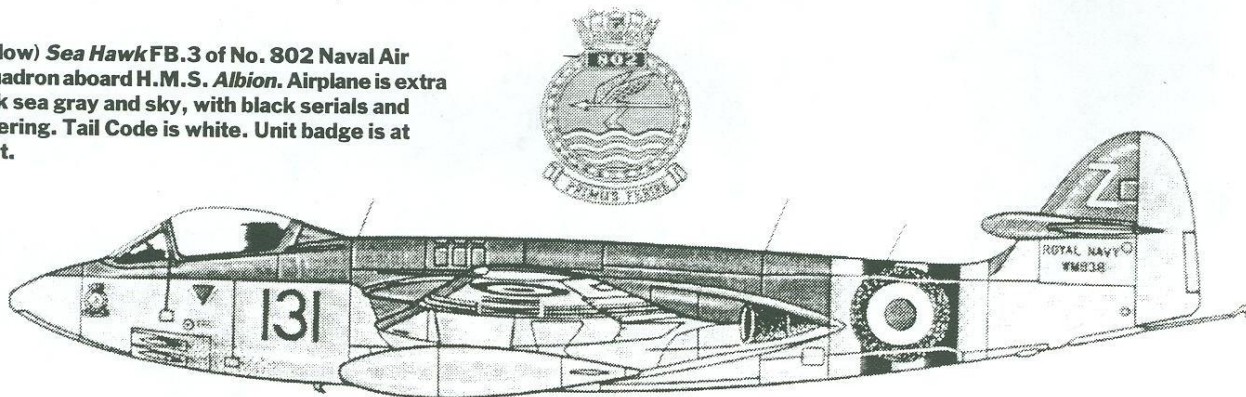
(Below) *Sea Hawk* FGA.6 of 810 Naval Air Squadron aboard H.M.S. *Albion*. Airplane is extra dark sea gray and sky, with black serials. Lightning bolt and panels on rudder are red. Codes on tail are white. Unit badge is at right.



(Below) *Sea Hawk* FB.5 of 897 Naval Air Squadron off H.M.S. *Bulwark*. Airplane is extra dark sea gray and sky, with black serials, codes and lettering. Suez stripes cover the serials below the wings. Unit badge is at right.



(Below) *Sea Hawk* FB.3 of No. 802 Naval Air Squadron aboard H.M.S. *Albion*. Airplane is extra dark sea gray and sky, with black serials and lettering. Tail Code is white. Unit badge is at right.



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OUR FAVORITE MUSEUMS

MiG-21, *Saber* part of Santa Maria museum

By Jeff Hargis

Summer is here again, and many of you modelers may be planning road trips to parts south for a contest or that dreaded trip to Aunt Bessie's. If you happen to be headed south on Highway 101 the weekend of August 17-18, you may want to plan a stop in Santa Maria, about 200 miles south of San Jose, for the annual Warbird Fly-in and *Mustang* Roundup. The event is the highlight of the season for the Santa Maria Museum of Flight and will feature more than 50 aircraft from World War II and Korea.

The *Mustang* Roundup has featured as many as 23 P-51s in past years, with an average of 8-10 of these aircraft being flown in every year and put on static display.

The aircraft for this event start arriving Friday afternoon, which might be a good day to go if you want to see large numbers of these planes flying. Unlike the larger airports in our area, access to the Santa Maria Airport is fairly open, but it would be a good idea to check with the organizers as to access on this day.

The show will be open Saturday from 8 a.m.—5 p.m. and Sunday from 9 a.m.—2 p.m. for a \$5 admission charge for adults and a \$3 charge for children. The crowd is expected to be as "large" as 8,000 on Saturday—a

dream compared to what we were used to at Moffett Field.

While most of the aircraft will be on static display, several fly-bys are scheduled for each day. Late Sunday afternoon might be a good time to be around to see these warbirds fly home.

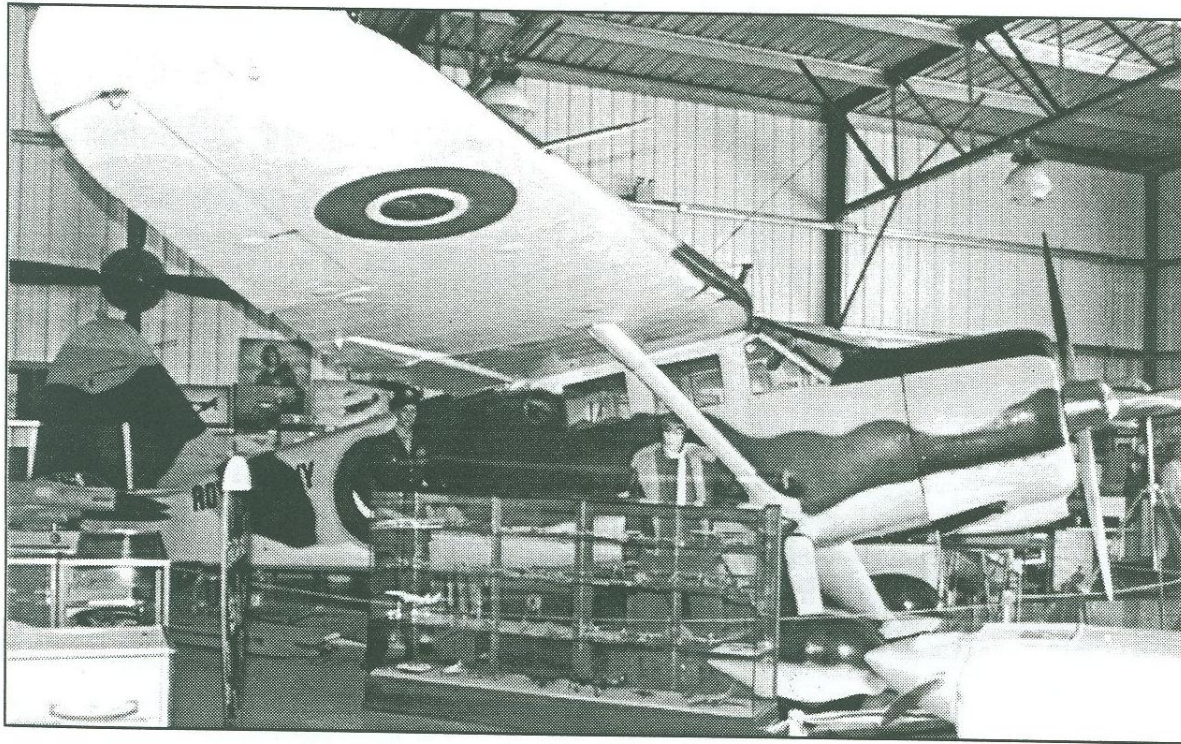
If you aren't in the Santa Maria area the weekend of the event, don't let that stop you from a visit to the museum if you are passing through town. With several aircraft making Santa Maria their home and a wide variety of items on display, the museum has much to offer. A MiG-21 and a Twin Beech sit out on the tarmac, while inside you can find everything from an F-86 *Saber* to a display of the Norden bombsight. By the way, the F-86 is for sale, in case you have \$300,000 you don't know what to do with.

The museum started out as a gift shop in the main terminal in 1984 and has grown large enough to fill three hangars. Possible expansion plans include more Soviet aircraft and a P-51 making a permanent home in Santa Maria.

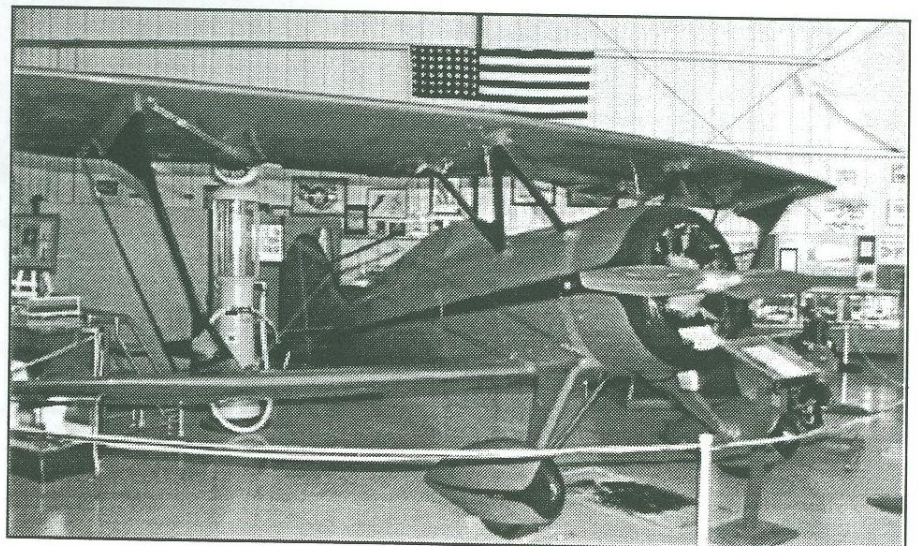
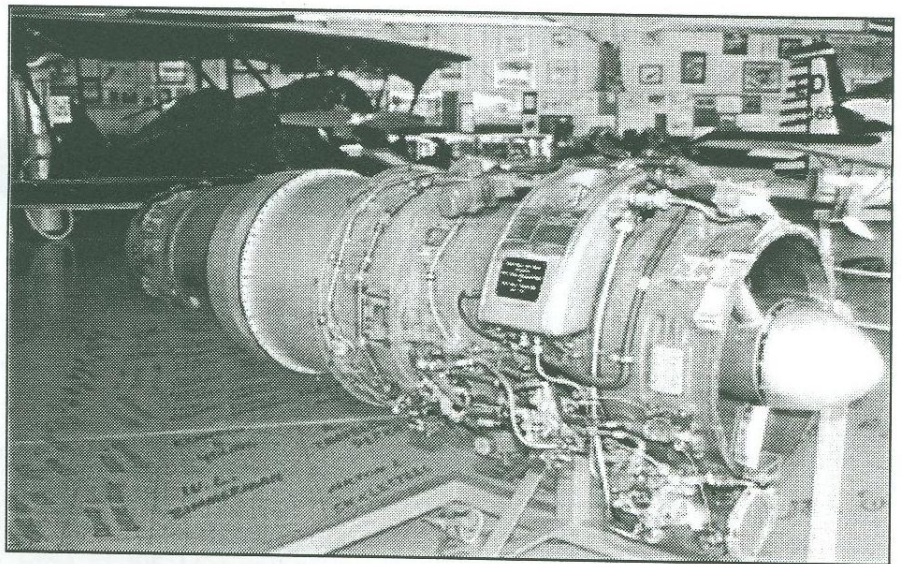
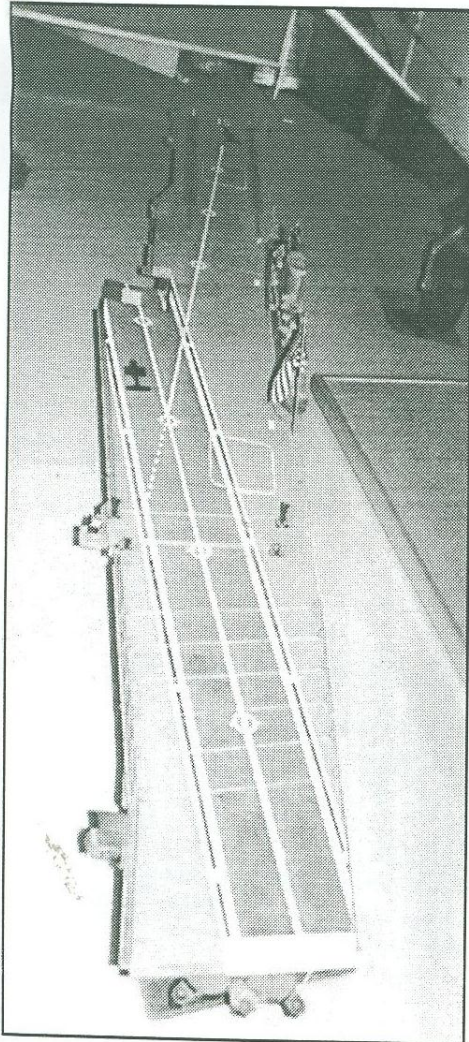
If you would like more information about the museum and its upcoming events, call (805) 922-8758 and leave a message, or call Friday through Sunday to talk to one of the museum volunteers.



At the Santa Maria Museum of Flight, the public gets to take a peek at the front office of a MiG-21MF, as you see here.



At left, a Stinson Reliant in the markings of an RAF navigation trainer; at bottom left, a model of the deck of the U.S.S. *Boxer*; below a Rolls-Royce Viper jet engine; at the bottom, an immaculate Great Lakes T21A biplane.



Re-planking your WWII 1:700 carrier decks

By Bert McDowell

•Part 1 of 2•

If you want to build a model of a World War II aircraft carrier in 1:700, your chances of finding a kit of the ship or class of ship you want to build are about 95 percent. The chances that you'll be satisfied with a reasonably accurate representation of the prototype is about 60 percent. But your chances of finding a kit with a believable flight deck fall to about five percent.

The early offerings from 1:700 ship modeling's "Big Four" (Tamiya, Hasegawa, Fujimi and Aoshima) paid little attention to detailing the decks with any feeling for a scale effect. The main concern was with the modeler being advised of the correct deck markings, such as striping, the ship's initial or number, or markings on the ramp (turndowns). These markings were represented with large raised relief, something in the scale of a roadside curb.

For the waterliners who paint with a brush, these large guides are helpful, but the finished model suffers. Try to imagine yourself as the pilot of an Aichi D3A "Val" rolling down a deck covered with foot-high speed bumps!

For years I tried to ignore the obvious until one day, when I snapped and sanded off all the deck detail, making the flight deck smooth. "Off with their heads!" I yelled as my wife ran to hide. I thought I had the problem solved for a while, but soon discontent seeped in again. Most decks were planked with timbers in WWII; a smooth deck doesn't look like timbers. So what did I do? I gave up, of course, and went back to model railroading. And that's where the answer was!

A manufacturer of plastic products named *Evergreen Scale Models* in Kirkland, Washington, makes, among other things, plastic sheets of clapboard siding, seam roofs, corrugated metal and so on, perfect for railroad modeling. Most importantly for my purposes, *Evergreen* makes finely-scribed sheet for "N" scale railroads. Catalog item #2020 is a freight car siding material, .020" thick and scribed at .020" spacing. It is the smallest they make and I think it comes close enough to be representative of a planked deck in 1:700. A sandwich of this

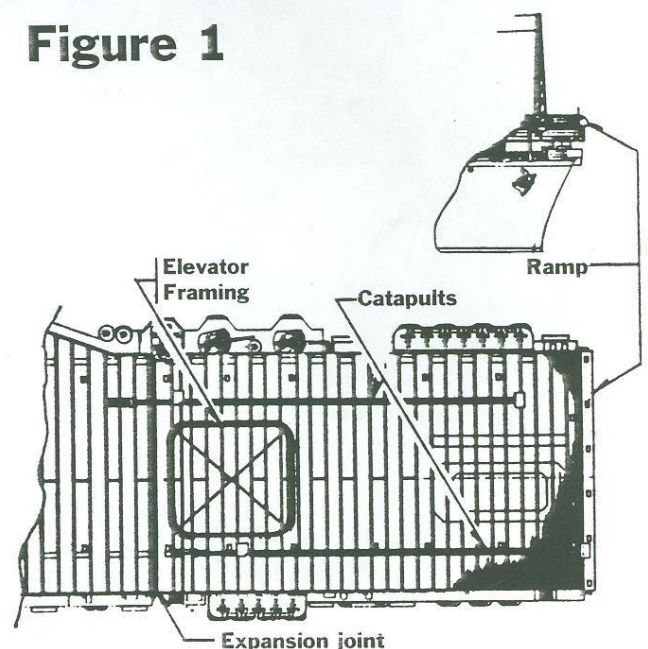
scribed sheet above the original flight deck after the original has been sanded down is the answer to the "Lumpy Deck Syndrome" of the Japanese manufacturers.

Incidentally, two new offerings from *Skywave/Pitroad*, a *Bogue*-class escort carrier and an *Independence*-class light carrier, are both fairly accurate, but they too suffer



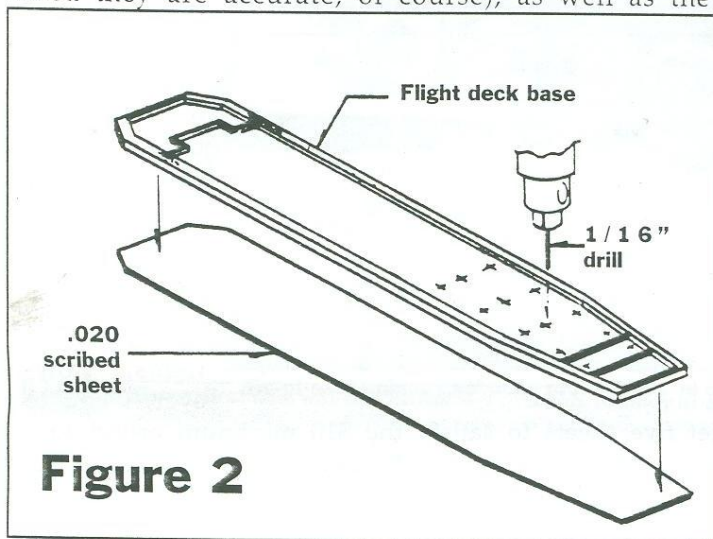
Deck of the U.S.S. *Enterprise* in 1942 shows pattern U.S. Navy used throughout World War II for decks: port-to-starboard planking with strips of tie-downs. The planes on deck are SBDs and TBDs in pre-Midway colors.

Figure 1



from a strange misrepresentation of the flight deck. They have smooth decks except for a groove located where the tie-down strips should be. I'm sure they didn't believe the U.S. Navy was using eight foot wide planks on their flight decks, so if the grooves do represent tie downs, they should be raised. What else but "off with their heads!" again. Despite being new, they're still candidates for a flight deck sandwich.

Each kit has its own set of problems when it comes to rebuilding the flight deck, and I will deal with those later on a nation-by-nation basis. But there are basic procedures that the modeler can follow with most kits. The first is to run a copy of the original kit flight deck on a photocopier. Place it top down on the glass and make sure that it is an exact copy (some machines expand the image slightly). You will want this copy to keep a record of details like the elevator and catapult locations (provided they are accurate, of course), as well as the



general outline of the deck edges. Make a second copy for a template to cut out the deck from the scribed styrene sheet.

When you get your *Evergreen* #2020 package, remember that the USN ran its planks from side to side and the Imperial Japanese Navy ran its planks lengthwise, front to back. This may determine how much #2020 you will need. On large carriers like the U.S.S. *Essex* or the IJN's *Akagi* or *Shokaku*, look for expansion joints on the deck to locate the seams where the deck is longer than the scribed sheet. Trace the outline of the deck on the scribed sheet, as well as the catapults and elevators. I've used both a carbon paper trace and a cut-out template to do the job. Choose the best technique for you.

Now sand down the kit deck, removing all detail that rises above the deck edge. Putty in all the depressions and sand smooth for a good surface to build on. This now becomes the flight deck base. The reason for retaining the kit deck is that it still has all the detail below the deck edge and the positioning tabs to mount it on the hull, which makes it much easier to keep the bottom of the deck than to scratchbuild an entirely new unit.

Next, cut out the deck outlined on the scribed

sheet, leaving a bit of extra styrene sheet on all sides to cover mistakes. Once glued on, you can sand the deck edge to match the base. Before gluing the decks together, however, it will be necessary to cut out the lifts (elevators) and catapults from the scribed overlay first. If the lifts were planked (as in most USN carriers), save them. (For most IJN elevators, use plain .020 styrene sheet, because they were made of steel plate.)

The openings for the lifts were usually framed in at the deck level and you can use *Evergreen* strip (Catalog #100, 110, etc.) for this job (see figure 1). Take the cut-out elevators and sand them down to fit the openings now made smaller by the framing. If you plan on building your elevators in the raised position, glue them back in place at this time. Catapult slot cut-outs can be filled with *Evergreen* strip (.020 x the appropriate width). Work on the elevators and catapults should be done before gluing the overlay to the sanded deck base so that you have a flat surface to work with.

The next step is the rather tricky part: the gluing of the new deck and base deck. Each modeler has a special way of working, but I'm suggesting you consider my method since it has worked (so far). Drill a pattern of holes in the base deck using a 1/16" drill. Drill from the bottom of the base to spare the underside detail, spotting the holes between the framing and inside the hull line (see figure 2). Locate the holes about one inch apart, and sand away any burrs from the drillings.

Next, get a straight piece of one-inch-by-two-inch pine a bit longer than the deck and lay the overlay and base top down on the 1-by-2, holding them in place with rubber bands (see figure 3). Check to be sure your base and deck overlay are in line. With the base bottom facing up, put a drop of very thin cyanoacrylate glue in each hole. Capillary action will spread the adhesive inside the sandwich. Set it aside for a day to cure, then remove the deck from the 1-by-2 and sand and trim the edges. Place the deck on the hull for stability and do a light sanding to level off the elevators, catapults and seams, and you're almost done.

Caution: do not use welding or styrene-type glues. These will warp the decks. I use *Pacer Technology's Zap CA*, but many other brands will work as long as they are very thin.

The last part of the project is the ramps, the round-downs at the ends of the flight deck. Use .020 plain sheet to match the scribed sheet. For USN carriers, cut a strip

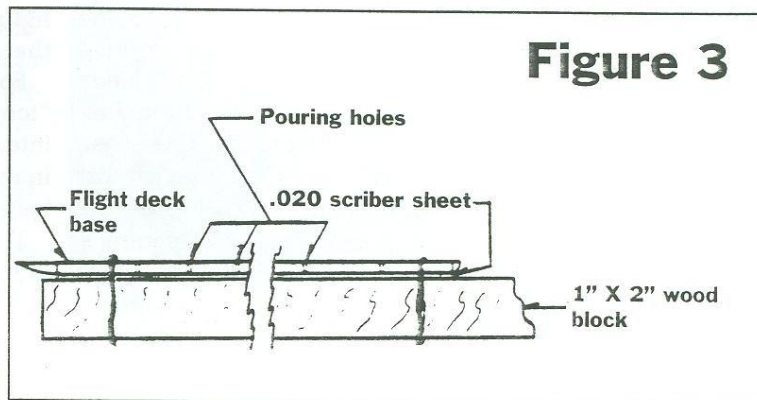
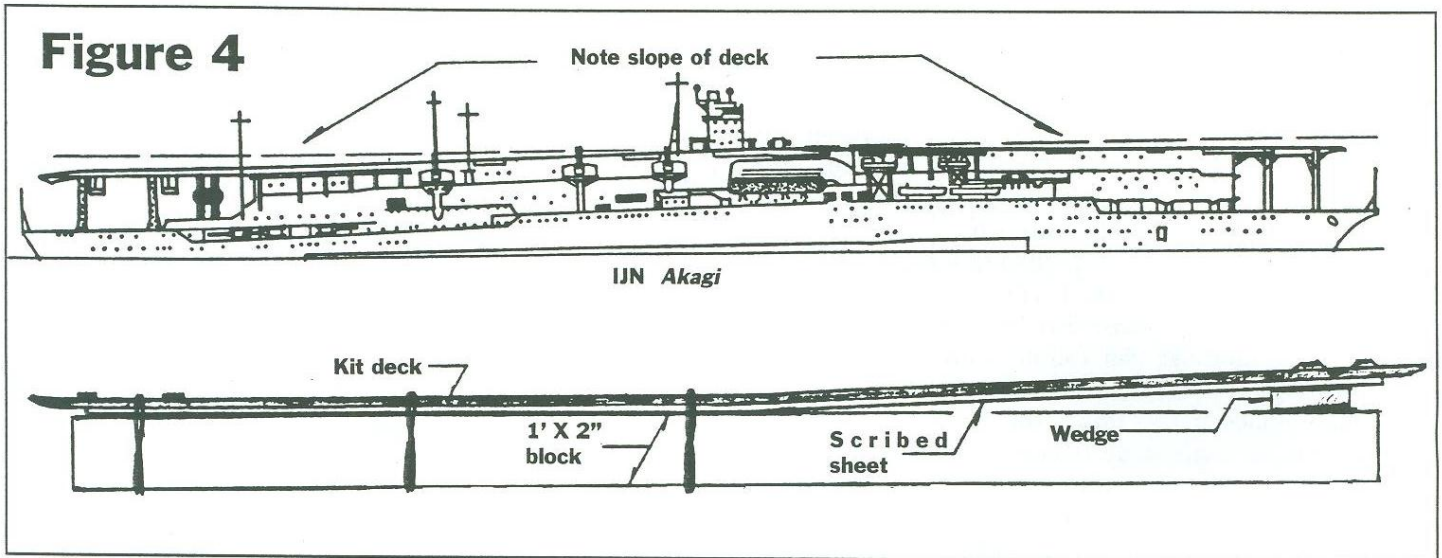


Figure 4



to match the width of the flight deck end. For USN ships, this is usually an easy square shape, but IJN ramps on some flight decks had unique shapes. Cover these deck ramps with masking tape and cut out a template to use in cutting your styrene sheet ramp.

After cutting out the ramp, place it face down and start rounding it by rolling a metal rod or an X-Acto handle back and forth until the curve fits the kit's ramp. Dry fit it first, then glue it in place and you have a steel ramp.

A reminder for all you IPMS'ers: check and fill any seams at the edge of the deck and ramps. Also, sand the seam between the ramp and the planked deck lightly to make a smooth transition from the flat to the curved surfaces.

As I mentioned earlier, the nationality of the ship to be modeled may offer special problems. The IJN decks were very thin, most noticeably at the extensions beyond the hangar decks. If the .020 scribed sheet adds too much thickness for your eye, then you have some choices to make. First, you can sand the kit deck down to paper thinness before adding the overlay. Second, you can scratchbuild all the underside framing to add to the bottom of the scribed sheet. Third, you could rescribe the entire deck after cleaning off all the oversized detail. My choice is that you do the best you can do with the first option, because I don't think it looks too thick as it is.

Another problem with IJN decks in 1:700 is that most of the large ones will be longer than 11 1/2 inches, the length of the #2020 Evergreen sheet. This will require a seam in the middle of the deck. If you can find no point on the deck that would represent an expansion joint to hide this seam, then write to Evergreen and get their catalog. I bought sheets cataloged as M-2020, which



M2T1 torpedo plane on the deck of IJN Hoshio in 1928. Note planking running fore-to-aft.

were 12 inches by 23 inches in size, with the grooves running lengthwise, affording you a one-piece overlay. When I bought these items, however, I had to

get five sheets to satisfy the \$10 minimum order, so a chat with your fellow modelers about their styrene sheet needs could benefit everyone.

Then there is the very special case of the IJN's *Akagi*, Nagumo's flagship, with its peculiar deck which slopes downward to both fore and aft from the center. An overlay on that kit will require some care, but it can be done.

Laying that deck flat and then imparting the slope by bending invites splitting the seams, warping the deck and even a complete separation of the sandwich. Try gluing just the first half of the deck together before imparting the slope in the center. Place the half-completed deck assembly top down on the 1-by-2 and hold the rear unglued half of the deck in place with rubber bands. Raise the forward half of the deck with a wedge, using the top half of the hull to best determine the proper angle (see figure 4). Glue the second/rear half of the deck and add the ramps.

For USN carrier decks, don't worry about making the deck "too thick." All the kits I have encountered have failed to take into account the gallery deck (the working spaces suspended immediately below the flight deck), and the .020 addition will help correct this.

To complete the deck, add the small details, such as the arrestor gear, crash barriers, wind baffles, etc. But first the deck must be painted, and that will be the subject of the second part of this article next month.

Building an out-of-the-box M-47 Patton



Rodney Williams' first tank was this Revell M-47 Patton. Rodney used weathering techniques traditionally reserved for planes on the model.

By Rodney Williams

After spending literally years on P-51 *Mustangs*, I recently built my very first tank. The kit was an old Revell M-47 Patton in 1:32 scale.

I built it out-of-the-box, adding only the front and rear running lights. Like all kits, there were gaps and seams to be filled. Also, there was a lot of flash that needed to be removed from the rubber-band tracks.

I had the choice of posing the engine compartment and turret access doors open or closed. To speed up production time, I closed them up, since I would have had to scratch-build some items inside the turret. The engine was nicely done, but needed some detail, so it was less work to pose the doors closed.

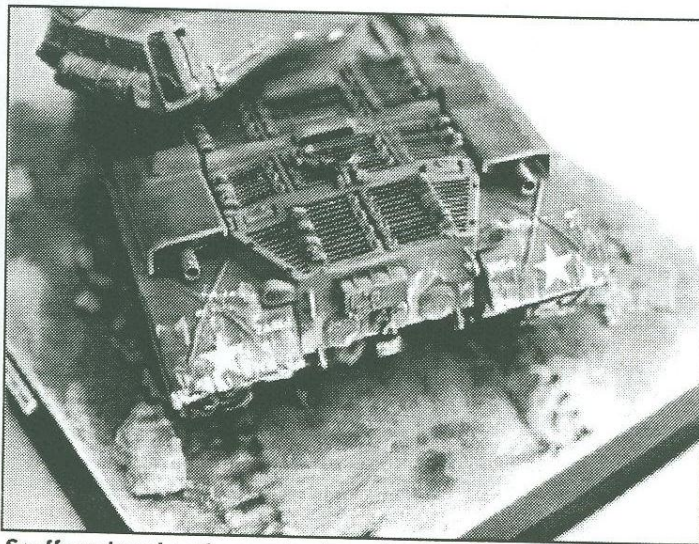
Assembly and painting was easy, and the vinyl tracks went on without any problems.

To show weathering, I sprayed the entire model with *Snj* aluminum paint, then airbrushed coats of *Tamiya* olive green and olive drab over different sections of the model. The paint was wet-sanded, and the wet paint residue was left on the model to dry. When dry, the residue was wiped off the model, but not all of it comes off, which leaves a bleached-out effect to the paint.

I made templates for the four white stars, and sprayed them with *Tamiya* flat white. I applied floor wax to the back of the tiger face decal and added it to the front of the tank. It did not conform to the curvature, so I had to cut it in a few places. Later, the decal was sanded. I used after market decals for the tank's serial number.

While attending TamiyaCon in Southern California this past March, I watched a guy weather his tank and base. I followed his method, using spackling powder and artists' water-based colors. I applied a mixture of *Tamiya's* flat base and clear to the entire model to give it a dusty look.

I had some fine sand, so I added this to my model's base. To simulate a pool of standing water, I used floor wax. The rocks were made from left-over hardened spackling mixture.



Scuffs and mud on the rear fenders of Rodney's M-47.

NACA's SB2C: a Beast becomes a bubbletop

•Part 1 of 2•

It was a book review by Mike Burton in the *Styrene Sheet* that first pointed me to one of my favorite books, *Flying the Frontiers; NACA and NASA Experimental Aircraft*, by Art Percy. And one particular sentence

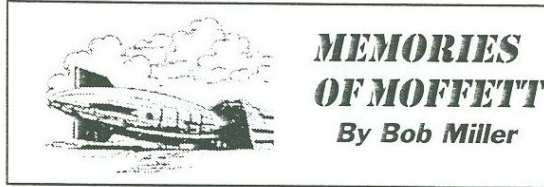
Mike wrote in that review sent me off on a search: of a photo of NACA 147, an SB2C-5 with a bubble canopy above the original gunner's seat, Mike wrote "I'll bet no one left at Ames remembers this odd conversion."

Actually, photos of the old SB2C were fairly well-known at Ames, although even to people who were around the flight line when it was here, its purpose and details were a bit hazy.

A search like this begins with old-timer Seth Anderson, who has been at Ames almost from day one and remembers everything that flew. He steered me to ex-project engineer Howard Turner, now retired, who lent some photos, filled in the story of this unique *Hell-diver*, and even corrected a few errors in Percy's book.

SB2C-5, BuNo 83135, came to Ames in December 1948 from the Navy, where it had been used as a drone aircraft in some hazardous dive tests. It was painted a bright yellow with black anti-glare panel, and marked with the NACA wings, although it kept the navy stars. In photos taken May 19, 1951, as well as others taken later, the lower gear doors were removed. (One of Percy's errors was misidentifying the photo on pg. 85 of *...Frontiers* as a second NACA 'diver'. This photo was 83135, taken in the same May '51 session.)

One of the features of the drone conversion was high-authority servos on all the flight controls. They would be used to advantage later, but for the first three years, the SB2C, fitted with its pair of wingtip air data system booms, was used for other tests, including development of realistic simulations and dive-bombing handling experiments. It's hard to imagine with today's crowded skies and overlapping controlled airspace in the Bay Area, but Turner describes riding along on vertical dive attacks on an old destroyer hulk lying grounded between the San Mateo and Dumbarton Bridges.



MEMORIES OF MOFFETT

By Bob Miller

In late 1951, Navy 83135 began its metamorphosis to NACA 147. Equipment in the former gunner's cockpit was removed or relocated. Standard SB2C-5's had a large fuel tank abaft the pilot's seat, but this had been removed during the drone conversion.

A solid deck was installed to replace the former sliding canopy, retaining a single transparency just ahead of the fin. In those low-budget days, NACA engineers were champions at scrounging and improvising, and this job was a masterpiece. A canopy from an F8F *Bearcat* was installed over a new opening in the deck, with the optical flat replaced by an aluminum panel. The gun-sighting periscope from a Douglas A-26 was installed protruding through this panel. This peri-

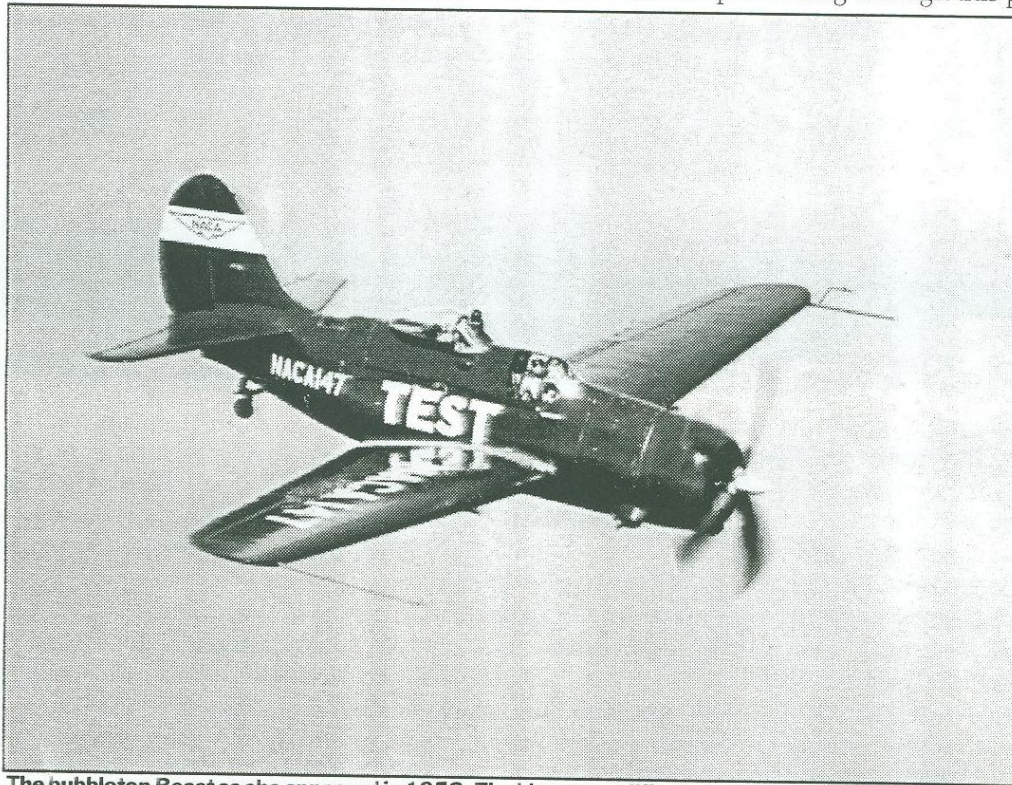
scope originally had a second optical head that extended through the bottom of the A-26: This would have ended up in the bomb bay of the SB2C, but it was removed and replaced by a viscous damper to minimize shaky images caused by vibration of the aircraft or the operator's hands.

An ejection seat left over

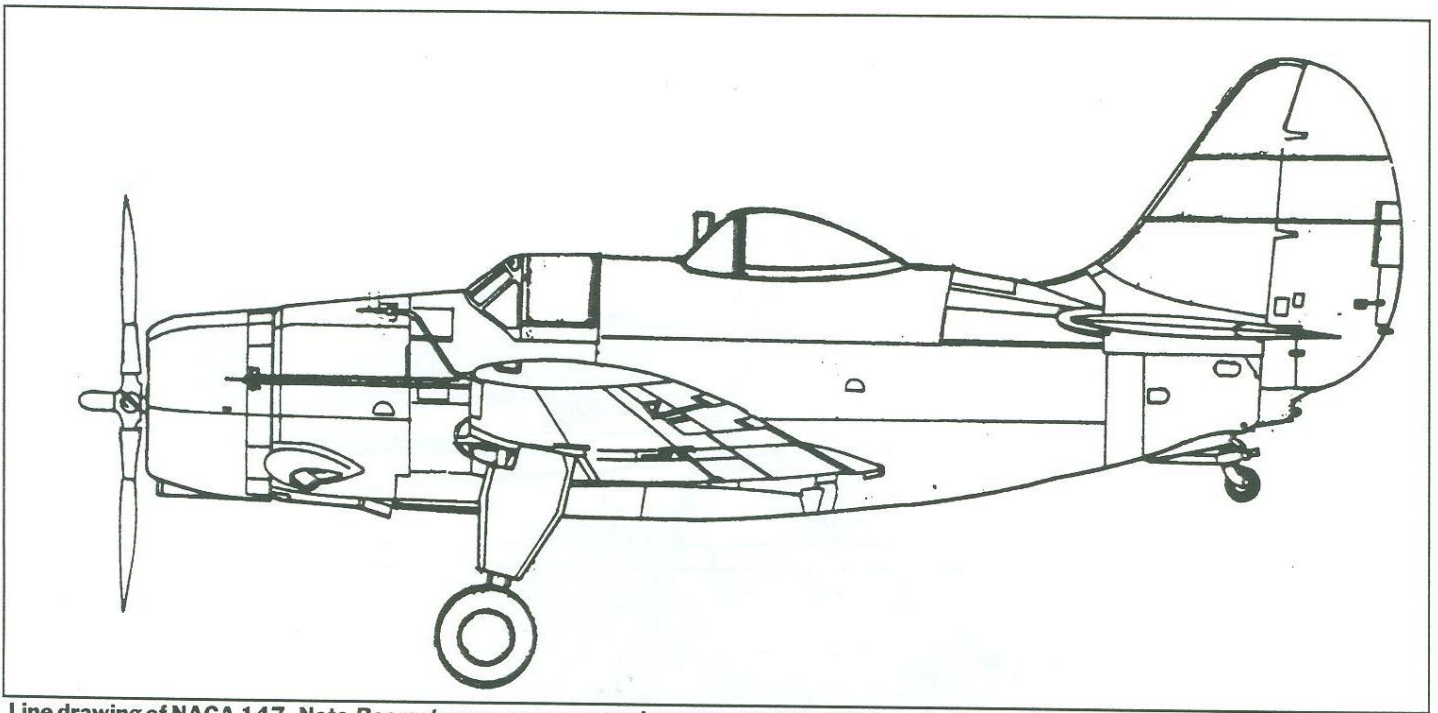
from the hapless F6U *Pirate* program was installed after removing the cartridge, face curtain, and other ejection components. All that was really required was a seat that could be readily adapted to the airframe and that had six inches of vertical and a small amount of fore-and-aft adjustment, and this fit the bill.

The sighting periscope was a tight fit, so bulges were added to the outside skin below the windscreen. The top of the bomb bay, which formed the floor of the pilot's cockpit, now became the deck for the back-seater also, although the seat appears to have retained the stirrups which might have been handy foot rests when the seat was raised.

By now, Turner had quite a number of hours in the back seat of the SB2C, but his first ride under the bubble was a new experience. "The first time I raised that seat up all the way, it was like sitting on top of a flag pole!" he says.



The bubbletop Beast as she appeared in 1952. The bizarre modification allowed NACA to investigate radar interception control techniques.

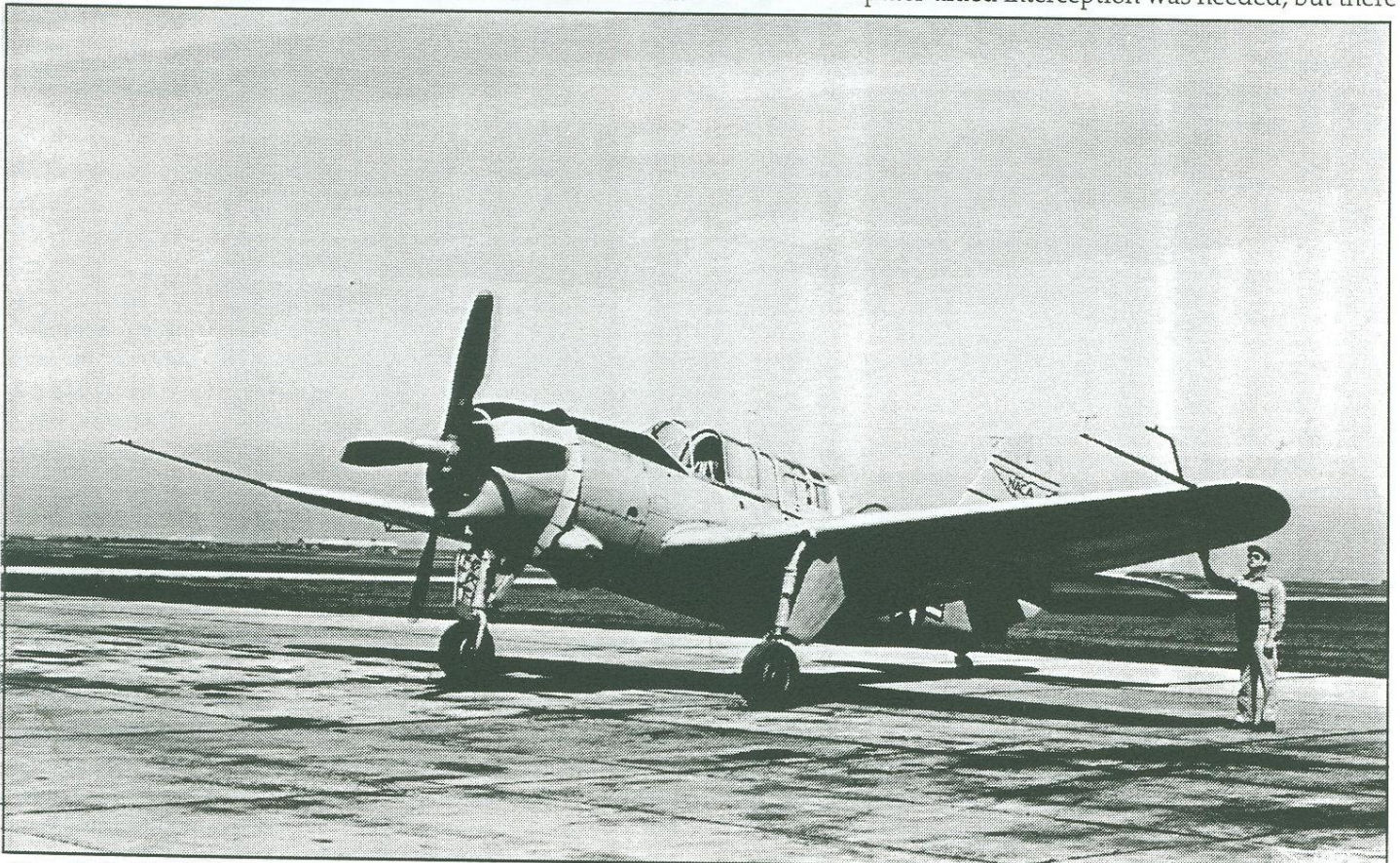


Line drawing of NACA 147. Note *Bearcat* canopy over gunner's compartment, periscope, instrument booms and removed lower gear doors. (Drawing by Bob Miller)

To complete the conversion, the bird was painted in Gloss Sea Blue overall, except for the black-edged yellow tail band. It was marked in white with its new number, NACA 147, on the aft fuselage and top-right/bottom-left wing, and "TEST" on the fuselage side above the wing.

It's obvious by now that this was not just an attempt to cobble up a dual-control TSB2C-5. So what was it for? Think

back to the technology at the end of the 1940s. The threat of the nuclear-armed jet bomber was already on the horizon, and all-weather interception (AI) would have to be fast and reliable. Yet, except for the one-man F4U-5N and F6F-5N, and a few Fw 190's with *Neptun*, use of AI radar was still a two-man job, little changed from the first *Blenheim* ops in 1940. Automatic or computer-aided interception was needed, but there



Navy BuNo 81315 before her transformation on May 19, 1951. The plane is yellow, with black anti-glare panel and NACA wings on the tail.

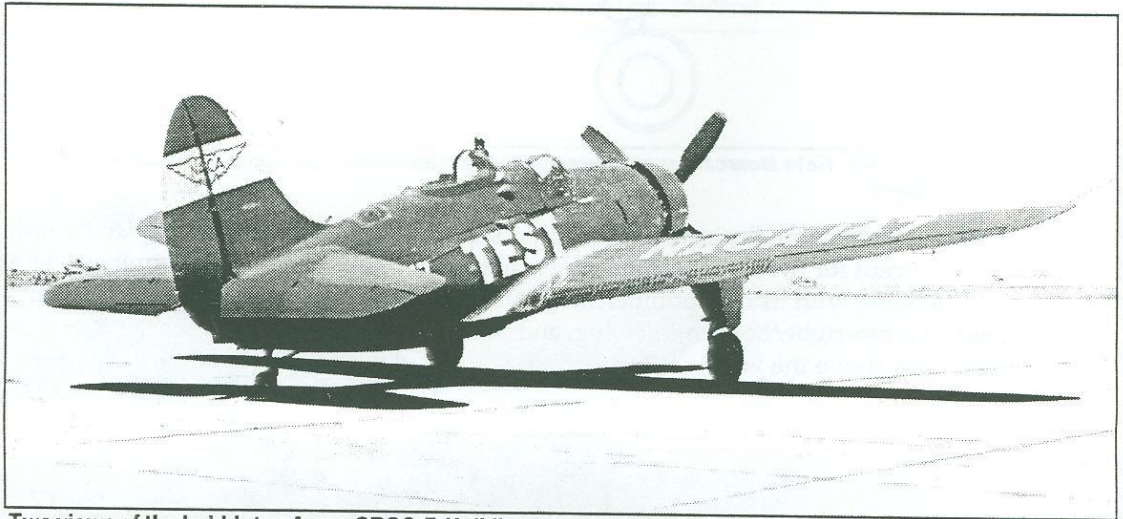
were problems. Among tasks that could be easily learned by humans but which challenged computers were such things as target recognition and discrimination and how to translate target location and movement into the optimum control inputs for attack. Ames has always been strong in controls, so this last part was a natural assignment, but to make it manageable, there had to be a way to separate it from the detection problem.

The solution was to let the back-seater with his sighting periscope simulate a radar system by simply holding his crosshairs on the target, which sent its apparent azimuth and elevation to the computer, which then flew the plane. Up front, the pilot handed control to the computer and, unless something glitched, he just went along for the ride. In back, the observer rested his head against the pad above the eyepiece, and controlled the periscope optics somewhat as if it

were a bicycle with twist-grip handlebars. In the photo of the observer's controls, the forward ends of the sloping consoles at each side are visible, with their double rows of potentiometers for setting the dynamics into the analog computer. Most test instrumentation was buried well out of sight, but it did include two movie cameras, one looking through the pilot's gun sight and the other mounted on the forward side of the A-26 periscope, recording the operator's tracking process.

The target was an F6F or F8F, and one of Turner's photos includes a *Bearcat* that was painted, as he describes it, "fire orange" from wingtips to about mid-span, and the aft quarter of the fuselage plus tail surfaces. The photo's definition was too poor to tell anything about other markings.

This was another NACA program that cast a very long shadow. There were serious problems with early semi-automated systems, to the degree that Bill Gunston in *Night Fighters* says that "In 1952 there were 380 otherwise complete [F-86D] airframes at LA airport waiting for their innards..." Howard Turner was, for a time, lent to the Air Force and described riding in a target-tow aircraft in a sky so full of *Sabre-Dog* rockets that he must have been tempted to get on the horn and remind the jocks that they were *pulling* the target, not *pushing* it. NACA147 flew regularly until the first production F-86D arrived at Ames in 1953 to take over, and then its job was done. Still, not until the advent of the super



Two views of the bubbletop Ames SB2C-5 Helldiver, showing the large "TEST" markings on the fuselage and "NACA 147" markings on the wings.

F-106 was the intercept problem really solved. By then, NACA147 was long since scrapped and forgotten, except for those perplexing photos scattered about Ames.

Ames' flight ops began in 1940 with a North American O-47 used for de-icing research, and unless saner heads can convince Administrator Dan Goldin of the logic of keeping research aircraft someplace closer than 400 miles from the researchers involved, Ames' flight ops are scheduled to end by the close of 1996. But those years have been a magnificent time! And of all the moments of all the years, can any airplane lover imagine a sight to match those props turning over slowly, then the puffs of smoke as the big round engines caught? The rumble of engines echoing between hangers as the big blue interceptor and its target aircraft taxi out? The long wait as they taxied to the end of the runway and the distant thunder as they come into view again, climbing out past Hanger One... Howard Turner and the gang of old-timers forming the "Owl-Feather Society" lived it all and still meet to reminisce and critique Goldin's management, and young engineers from other organizations around the lab, who ate their lunches leaning against the hanger doors and watching flights leave and return, remember as bright as yesterday the sights and sounds of this wonderful time.

**In part 2, building NACA 147:
cockpit photos, seat drawings and Helldiver kit reviews**

Sea King surgery: converting an HH-3F Pelican

By Randy Rothhaar

•Pat 1 in a series•

Although it has now been replaced by the HH-60 *Jayhawk*, the HH-3F *Pelican* was the U.S. Coast Guard's primary medium-range rescue helicopter for many years.

Able to land on water and remain on station for hours at a time, many people stranded at sea owe their lives to this trusty old bird. In addition to search and rescue duties, the *Pelican* has also played a major role in drug interdiction operations in the Atlantic and Caribbean.

I built a 1:48 *Jayhawk* a couple of years ago, so I thought it fitting to build a 1:48 *Pelican* to display along side it. Since there is not an HH-3F available in kit form, a major conversion of Hasegawa's 1:48 Navy SH-3H *Sea King* was my only option.

Because the HH-3F was based on the Air Force's HH-3C, which was in turn based on the original Navy SH-3 *Sea King*, I essentially had to do two conver-

sions to get the helicopter I wanted. The first conversion (SH-3 to HH-3C) would require stretching the forward fuselage ahead of the engines, scratchbuilding the side fuselage sponsons, rebuilding the rear two-thirds of the fuselage to include a new cargo ramp, and scratchbuilding a new tail section. The next step (HH-3C to HH-3F) would involve adding flotation gear to the side sponsons, scratchbuilding a weather radar radome for the nose, and adding the little details that are unique to the Coast Guard version.

After gathering all of my reference material and purchasing two of the Hasegawa *Sea King* kits, I began planning the conversion. I blew up drawings of the SH-3H and the HH-3F to 1:48 and did several "cut and fit" trials to see which portions of the kit fuselages I could use and to determine how much I

would have to scratchbuild. When doing a conversion, especially of this magnitude, I try to plan the cuts along panel lines that line up on both sides of the fuselage. This eliminates the potential problem of chopping up two \$80 helicopter models and having something not fit later because it isn't on both sides. After deciding on the most efficient cut locations, I traced the cuts with a fine black felt pen on all four fuselage halves, both lower fuselage pieces, and both cargo floors. At this time, I also noted on the fuselage halves which



The first two HH-3F *Pelicans* deployed to Alaska arrive for work in June, 1972. The helicopters operated out of Annette Air Station. The family resemblance to the SH-3 *Sea King* is readily apparent here.

holes, vents, etc. would have to be filled and which details I would have to save.

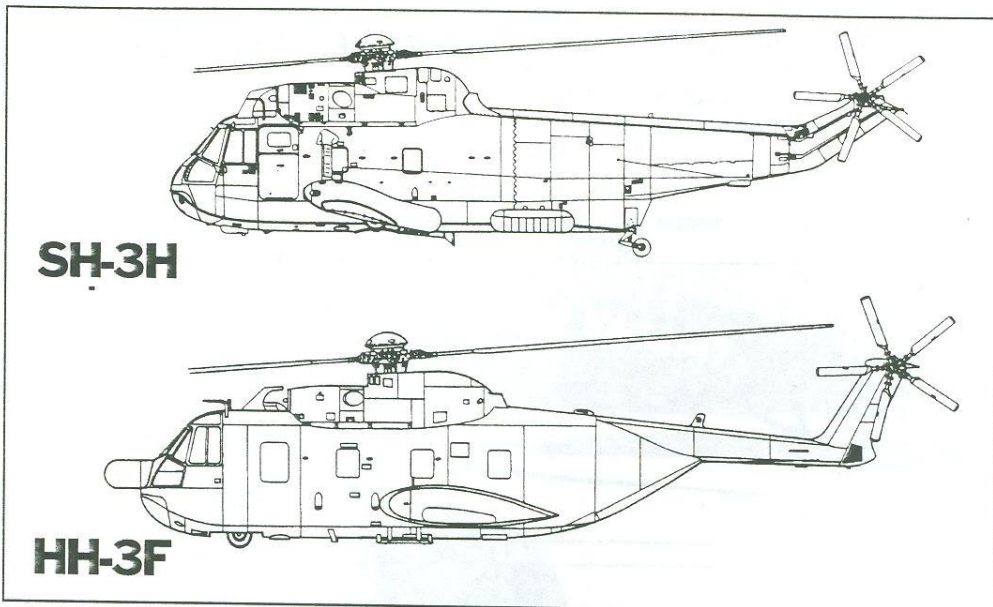
With razor saw now in hand, I began cutting. What follows is not for the squeamish—especially those who hold expensive Hasegawa models sacred!

I used one kit for the main portion of the fuselage, which included the middle of the fuselage that house the engines. The second kit was used to extend the forward fuselage and to lengthen the rear fuselage to the point where

the cargo ramp would begin. The lower fuselage from kit #1 was cut and extended with a part from kit #2, and the same was done with the interior cargo floor. The drawing of the fuselage halves on page 21 with their respective cuts will probably be easier to understand than me trying to explain them further.

Another trick I've learned from conversions and scratchbuilding is that when cutting, cut oversize and save everything. That scrap plastic thingamabob might save you hours of work later when you're trying to scratchbuild a doohickey that happens to be the same size and shape.

After making all the necessary cuts, the scrap fuselage chunks were put in a Ziploc bag and set aside in case I needed them later, and the parts I planned to use were test-fitted for the first time. I was pleased with the fit, and was impressed that the panel lines and the cuts actually lined up. I cleaned the parts with some quick sanding and began to reassemble the new fuselage halves.



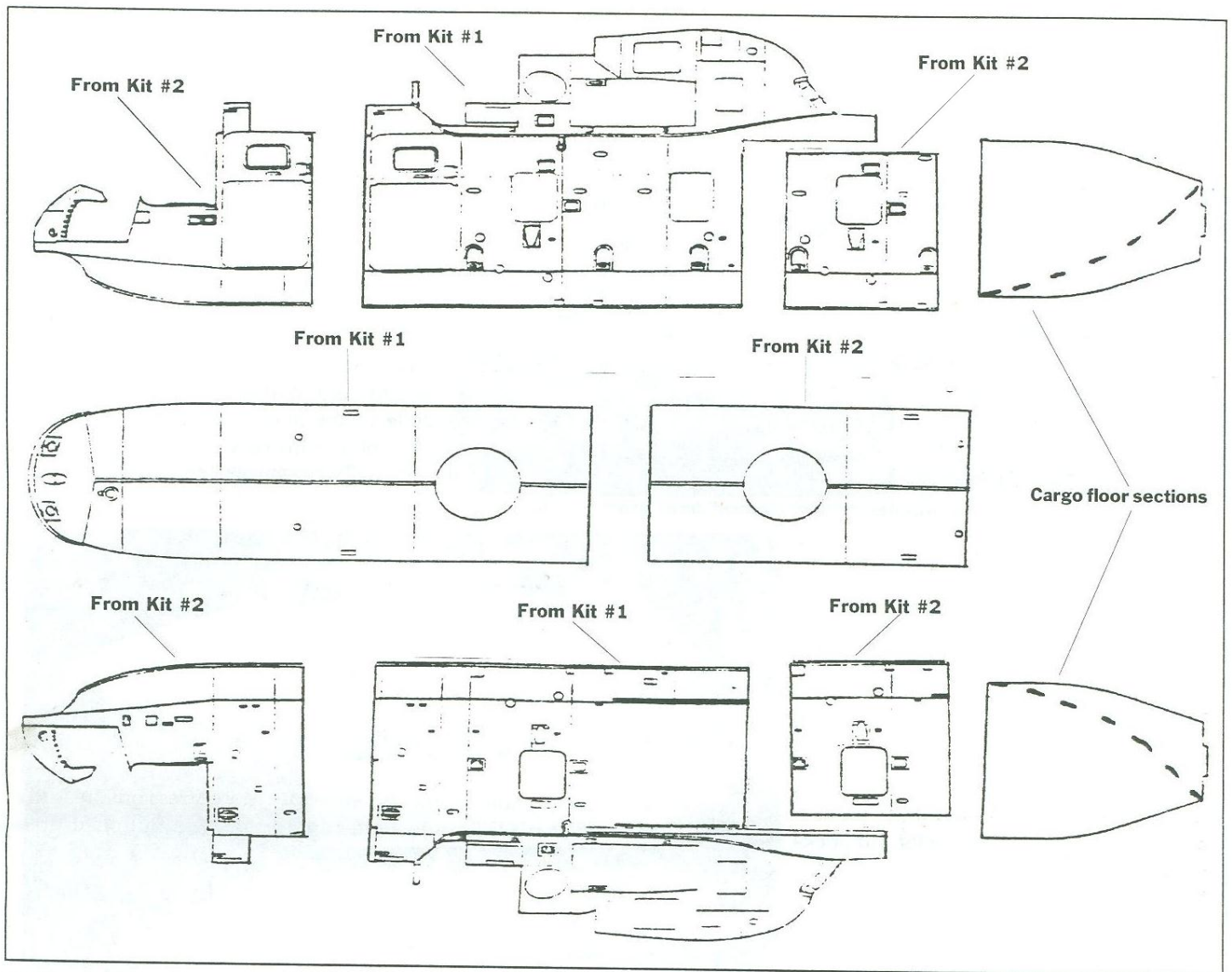
Since I planned to scratchbuild a complete interior for my *Pelican*, I ran into an interesting problem when I started to assemble the fuselage halves. All of the seams joining the new fuselage components were simple butt joints, and normally I would reinforce them from the inside with sheet or strip

styrene. If I were to do this in this case, the helicopter's skin would be unrealistically thick when viewed from the outside through the cabin windows or through the rear cargo ramp opening. Also, sanding the outside would have put more stress on already weak joints. Not wanting to have a buttoned-up helo, I decided to just glue the pieces together. I let them dry for an extra day and went easy on the sanding. To my relief, the joints held and my *Pelican* was starting to take shape.

After some more clean-up, I began laying out where the new windows and cabin sliding door would be. The layout of windows and door on the *Pelican* differ greatly from the *Sea King*. On the starboard side, there is a large sliding door on the front of the fuselage just aft of the cockpit, with three smaller windows aft of the door. On the port side, there is a large observation window located opposite the starboard sliding door, and there are three smaller windows located opposite the ones on the other side. The middle of the three smaller windows was located properly on the fuselage halves (the *Sea King* and *Pelican* just happened to share this window), so I was able to install those windows later on. The openings for the remaining windows and the sliding door were cut out using my Dremel tool. I was really asking for trouble at this point, because most of the window openings were located at points where I had to cut across those weak fuselage joints! Again, none of the joints gave way, and after cleaning up the window openings, I glued oversize chunks of 1/16" clear acrylic sheet into the gaps to form the new windows. Some heavy filling and sanding followed in order to fair the windows into the fuselage. After they were faired in, the windows



Pelican 1478 over her home air station in San Diego. During the helicopter's career, the Coast Guard used 29 HH-3Fs.



were sanded with progressively finer grits of sandpaper, polished with Blue Magic polish, and masked with frisket film on the outside and inside. I boxed in the sliding door opening with some thin plastic strip and then went to work on the rear fuselage where the cargo ramp would eventually go.

In order to make the rear fuselage the proper shape, I had to first extend the fuselage sides and roof. The fuselage sides were made out of cargo floor scraps (remember that bag full of fuselage remains?) that had the correct profile. The floor parts were bent to match the contours of the fuselage and shortened to match the length in my reference plans.

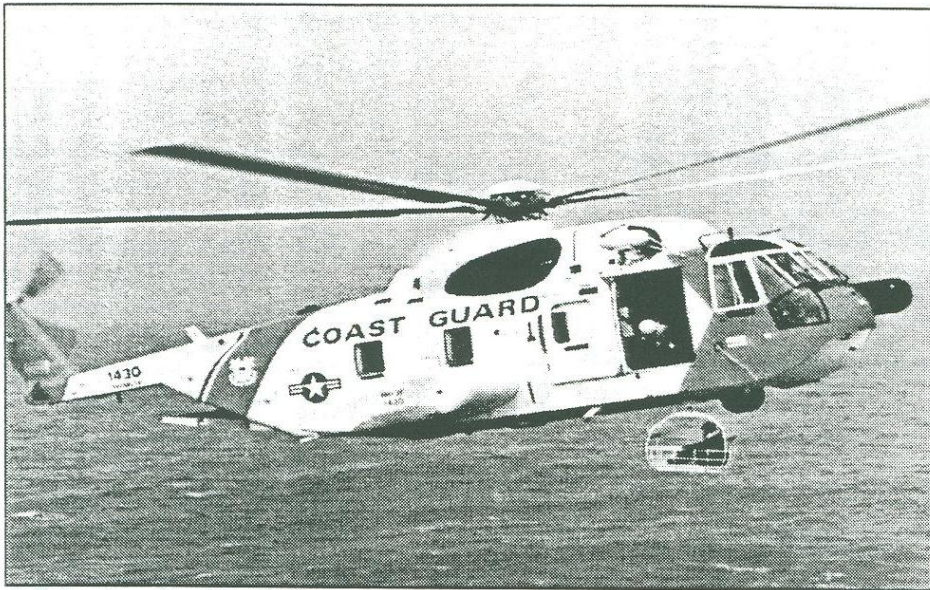
The roof was extended with portions of leftover fuselage as well, and the remainder of the fuselage extension was made with sheet plastic. By using scraps, I was able to save time and material in rebuilding the rear of the helicopter. Instead of having to scratchbuild the entire rear end, I had some pieces that needed only minor reworking to yield the results I was looking for. Some minor gaps were filled with gap-filling superglue and strip plastic, and the new rear fuselage was sanded and faired into the rest of the helicopter. The fuselage halves were then set aside and I began working on the lower fuselage.

This piece was made by combining pieces from both kits. The holes for the dipping Sonar array were filled with

sheet plastic and sanded flush, and I laid out the location of the nose gear well. The *Pelican* has tricycle landing gear, unlike the *Sea King*, which has main gear and a small tailwheel.

The opening for the nose wheel well was cut out with my Dremel tool, and the well was scratchbuilt from sheet plastic. The well was detailed with strip styrene and some small photoetched brass parts from various detail sets from *True Details* and *Eduard*. With the lower fuselage done, I started work on the interior.

First, I sanded the interior smooth, taking care not to damage the masks I had on the inner faces of the windows. Once the surface was smooth, I glued .010 sheet plastic to the fuselage interior to replicate the inner skin of the helicopter. I cut holes around the window openings to depict the inner framing, and the sheet gave me a nice, uniform surface to use when detailing the interior. The sheet also reinforced the many joints in the multi-piece fuselage halves. The cabin floor was test-fitted at this time, and when I was convinced that its fit wouldn't be affected by any interior work, I started to detail the inside of the fuselage halves. The interior ribs and stringers were made of thin strip plastic. When I finished the ribbing, the ceiling was then scratchbuilt out of sheet stock. Overhead ribbing was lined up with the fuselage halves, and plumbing and wire



A Pelican from Brooklyn Air Station winches aboard a "survivor" during exercises in July, 1969.

was replicated with plastic rod, solder, and photoetched parts from *Teknics*.

Some cabin bench seats were taken from a *Minicraft* UH-60 *Blackhawk* kit, and lifesaving gear was represented with some *Verlinden* duffle bags and pouches. An observer's jump seat next to the large port-side window was modified from a leftover pilot's seat from the second *Sea King* kit. In the cockpit, some small details were added to the area behind the pilots' seats, and wiring was added to the rear of the instrument panel. Seat belts and buckles were added to the seats, and the cockpit and interior were ready for paint.

The interior was shot with *Model Master* dark gull gray using my double-action Paasche airbrush. The interior components were painted as per my references, and I weathered the interior with a drybrushing of dark and light grays and a wash of *Tamiya* thinner tinted with black. Some paint chips were done with a silver-colored pencil, a technique I've found looks more realistic in smaller scales than silver paint.

I glued the jump seat and the bench seat to the cabin floor, and the floor was installed in the fuselage. The cockpit components were put aside for installation later. With the interior complete, I put some lead weight in the nose under the cockpit floor and glued 1/4" square plastic strip along the lower edge of each fuselage half to support the cabin floor and give the lower fuselage something to attach to.

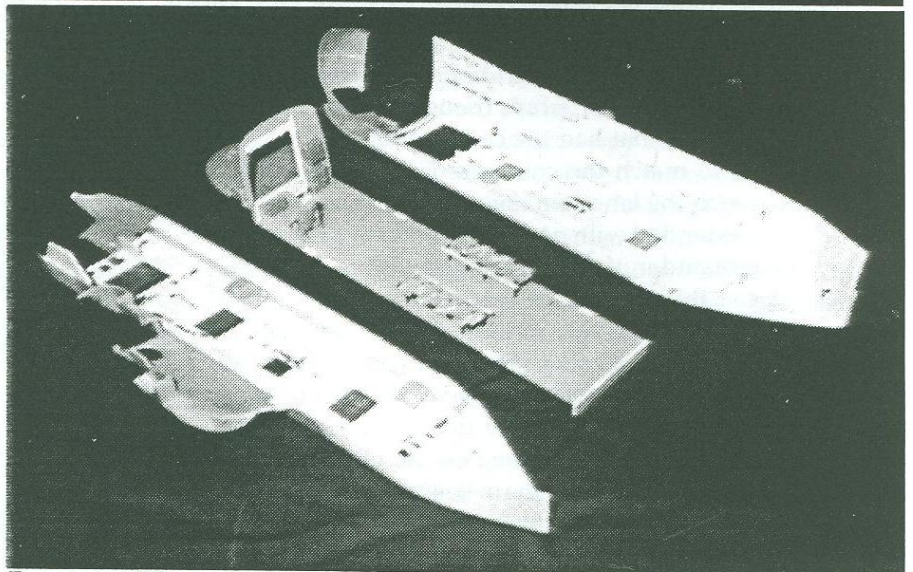
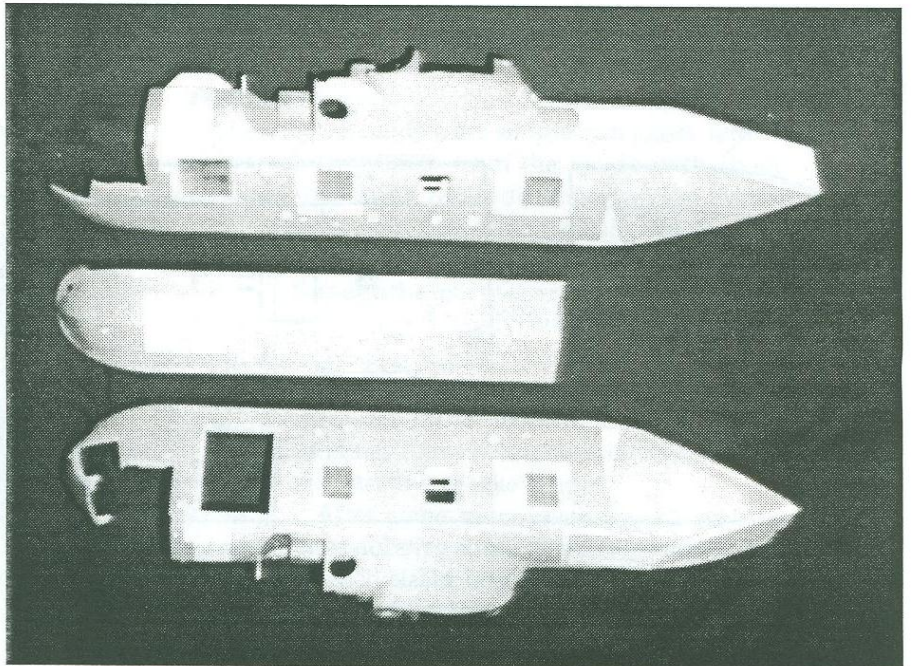
After a few more trial fits to make sure the fuselage pieces fit correctly, I was ready to assemble the fuselage.

I used Tenax 7R to glue the fuselage together, periodically using gap-filling superglue along internal seams for some

added strength.

After letting the completed fuselage dry for a couple of days, I cleaned up the seams and sanded off all the fuselage detail, planning to restore it later. Some gaps along the lower fuselage where the cargo ramp fairing began were faired over with multiple layers of superglue and strip styrene. The contour of the lower fuselage in that area was a gradual smoothing of a "V" shape to almost no curve and was really awkward to duplicate. After a couple hours of repeated sanding and filling, I finally ended up with something that looked right. With most of the major work done in the main fuselage, I started to scratchbuild the new tail section.

To be continued next issue



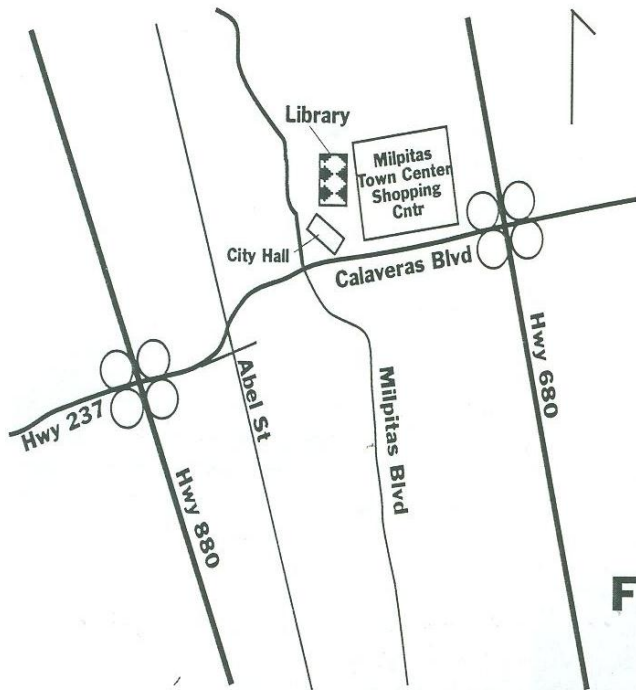
Two views of Randy's new fuselages: at top, the exterior of the helicopter, and below, the detailed interior.

JUNE MINUTES

There was NO BUSINESS discussed at the June meeting, a fine move enjoyed by all. There was a reminder of our club's upcoming special contests—the Henry Ford contest (black-colored subjects) in August, “The Missiles of October,” “Unlimited Air Racers” in November and World War II Thunderbolts in December! (The editor is working hard to complete his gloss-black, Goodwrench-sponsored P-47 with *Sidewinders* for rocket-assisted stretch-runs...)

Again, the models on the table rivalled some contests in number and quality. Hubert Chan's DML M-46 Pershing is an artfully-detailed example of heavy metal; Hubert used *Polly S* for the upper deck and *Tamiya* paints for below. Despite its impressive appearance and award-winning showing at recent events, Hubert says he's not finished with it yet! Barry Bauer is easing back into the hobby, starting with a lil' wooden biplane he built on the request of his daughter. Matt Reich is certainly busy—he's working on a *Monogram* kit of Jeff Gordon's NASCAR mount, a *Testors* metal-bodied Dodge Ram truck with a one-piece interior that Matt finds somewhat dubious, a 1:48 F-14 *Tomcat* from *Minicraft* that's been refitted with *Monogram* ejection seats, and an in-progress PBY *Catalina* from *Monogram*. When models aren't working on Rodney Williams (as was the case at his 65th birthday party), he's keeping himself busy working on models—namely, a 1:32 P-40 that he's superdetailing and a MiG-15 by *Tamiya*, which he says he's building “in the reverse order of the instructions.” Jack Van Zandt's very first foray into 1:72 was a successful one; he used the *Minicraft Spitfire* Mk XIV to build a very attractive Merlin Spit. If you can think of it, Cliff Kranz has probably already done it; his Peterbilt wrecker was built in 1976, and features a scratch-built body aft of the cabin. The booms really work, too! Brad Chun is pursuing the “World War II, 1946” theme with his P-47N, converted from a *Monogram* “D;” the plane will be a Tuskegee Airmen bird, with 500-pounders and triple tube launchers for ground attack! Brad's also added a growth to an AMT F7F *Tiger* in an effort to turn it into a Sis-Q firebomber. Jim Priete is working in a bigger scale these days (1:48); his *Tamiya* Hayate is still on his workbench, and he's adding *Paragon*'s thimble nose, four-bladed prop, arresting gear, etc. to an *Airfix* *Mosquito* to build a *Mosquito* TF.33. Chris Bucholtz' two-*Panther* project became a one F9F effort when *Panther* number 2 suffered a midair with a wall; nonetheless, the survivor is nearly ready for paint and final detailing. Laramie Wright got an F4F-3 the hard way, tailoring the *Minicraft* F4F-4 with a scratchbuilt interior, vacuformed canopy, improved engine with intercooler scoops and gun tubes. Laramie used the dark gray blue scheme of VMF-311 at Wake Island, and the effort looks very good considering its humble beginnings. Peter Wong surfaced with a lovely *Gato*-class fleet submarine, based on the venerable *Revell* kit, and an in-progress *Airfix* *Comet* IVc that will wear BOAC livery when complete. Actor Tim Curry was present, in the form of a bust of his character Darkness from the movie *Legend*; Rich used *Polly S*, *Liquitex* and *Pactra* paints to get the very-short-run bust red-dy. Also hailing from Rich's bench is a *Minicraft* P-38J, in progress and sporting a *True Details* cockpit tub. Milt Poulos had trouble

getting all the parts he needed, but after calling *Tekniks* a couple times, he ended up with everything he needed to build a lovely 1:32 F-14 cockpit from their kit. Eric McClure made the mistake of not trusting the kit instructions of his *Emhar* Mk I World War I tank, and rebuilt the rear hatch... Only to find that *Emhar* was right in the first place. Can't we count on anything in this world? The tank still looks quite striking. Roy Sutherland took “Best of Show” at the Sacramento Regional with his *Seafire* IIc, built from the *Tamiya Spitfire* V. Roy finished things with *War Eagle* decals and *Tamiya* paints. He's also still working in 1:72, showing an Fw 190A-4 converted from the *Hasegawa* Fw 190A-8 kit and topped off with *Aeromaster* and custom decals, and a Ramjager Fw 190R-8 that he's been working on much longer than he likes to think about. Roy's also designed a resin intake for *Dynavector*'s *Sea Vixen*. Jim Gordon has a tiny garden of artillery, using *Esci*'s anti-tank set in 1:72 as the basis for four rebuilt guns. He repositioned his PAK 40 so it wouldn't appear to be in the recoil position; his PAK 36 has an urban “brick wall” scheme; his quad 20 made an appearance; and his Rocketwerfer 43 wheeled bazooka scratch project grew to about 1:53 scale before reaching completion. He also has finished up work on a 1:72 Hotchkiss chassis with a 10.5cm howitzer. Bryan Finch is detailing the pooh out of his *Tamiya* P-51B (decals on the throttle quadrant? Come on!), and he's beating his brains out on a *Tamiya* M4A3 E-2 Jumbo Sherman, adding a resin turret from *R&J Enterprises* and a *Chesapeake Models* transmission cover that wasn't quite the right size. Fit is not a problem for modelers, is it? Joel Rojas displayed a collection of Chevys, including a '91 Caprice that was the Motor Trend Car of the Year. Greg Schell is both pushing and pulling for his latest project to come out well; he added a detail set from *Eduard* to *Monogram*'s Do 335 Pfiel. Kelly Avery modeled his *Monogram* TBD *Devastator* in the markings of Torpedo 8 in the Battle of Midway, is part way through *Hobbycraft* kits of the P-35 and *Sea Fury*, and pulled out all the stops on his Atlantic SBD, adding a *Squadron* canopy and *Aeromaster* decals. Ricky Yokogawa used the old AMT kit to build a 1:24 smuggler's jalopy. Ben Pada is working over 1:48 territory pretty well, finishing up a *Fujimi* Bf 109E-6 in Erich Hartmann's markings and a *Hasegawa* out-of-the-box P-51D. Ben is also working on a *Hasegawa* Ki-61. Dave Balderrama did a lot of work to bring his DML 1:200 B-2 up to snuff, but he'd have to point this work out to you because it integrated very well into the model. Mike Williams is rehabilitating a 1:32 Su-27 in Canadian aerobatic markings (huh?), and he's wired about his *Star Trek* *Defiant/Reliant*, which he's strung up with fiber optics. Frank Babbitt is exploring weathering techniques on a *Hasegawa* 1:48 *Shinden*, and he's done with two 1:72 birds, a *Heller* PZL P.23 *Karas* and a *Minicraft* TBM *Avenger*. Larry Roberts' Bf 109s this month were G-14 models by *Otaki*, one dressed as an Italian bird, the other as a Romanian craft. And the models of the month were... Ken Miller's California Department of Forestry *Hasegawa* S2F and *Airfix* O-2, which Ken researched first-hand and cobbled decals together from a myriad of sources. He says, after these two, he's sick of piecing together decals! Hot models for a hot part of the year!



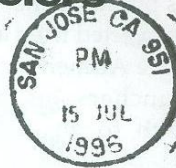
Next meeting:
**7:30 p.m.,
Friday,
July 19**

**at the Milpitas
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