

REV UP SPEED RACER'S MACH 5

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November/December 2023

Modeler®

p.40

3-2-1-MODEL!

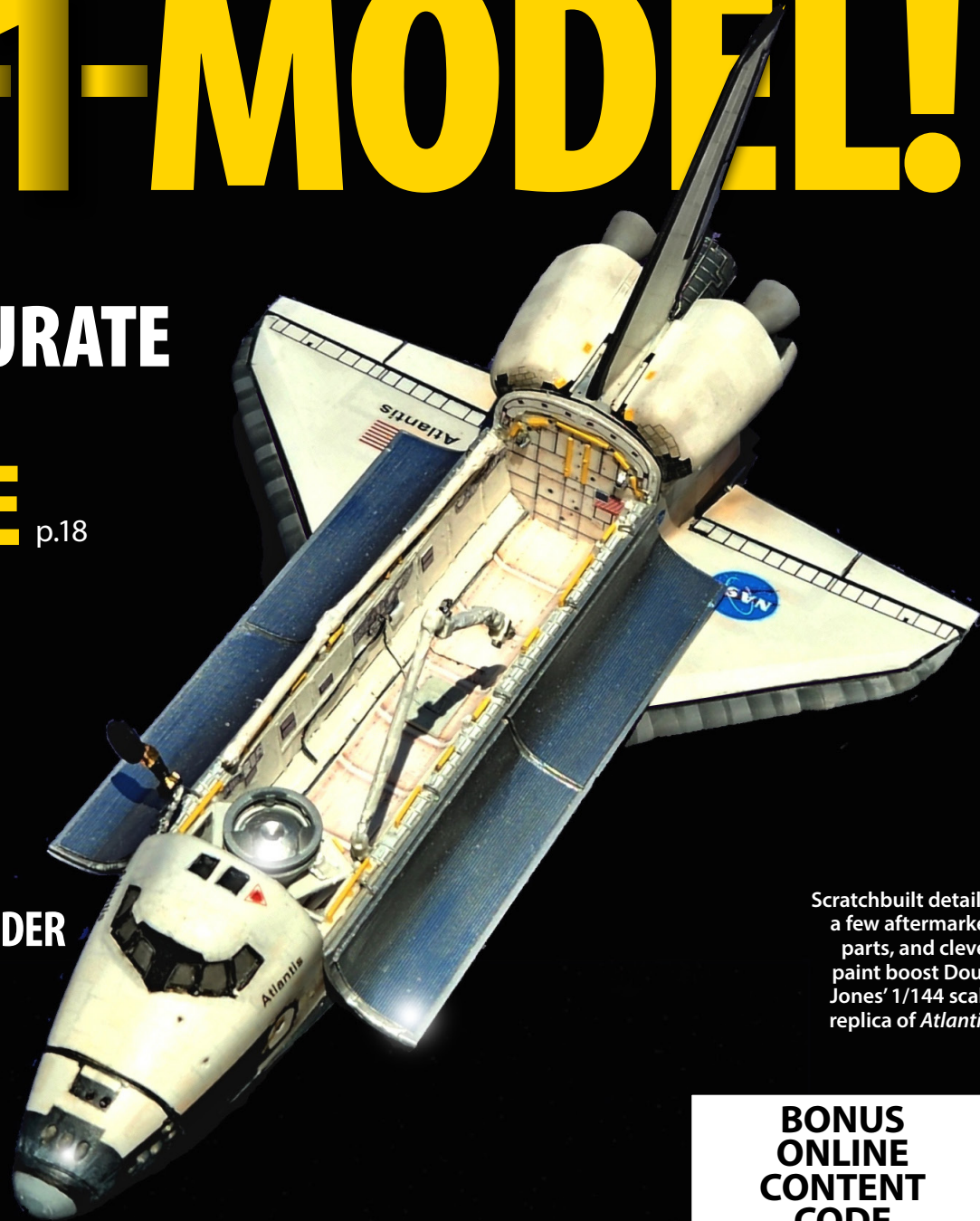
**LAUNCH A
MORE ACCURATE
SPACE
SHUTTLE** p.18

PLUS

**CONVERT AN LCM
FOR LOGGING** p.46

**SCRATCHBUILD MARDER
IMPROVEMENTS** p.32

**PAINT A HIND IN
CZECH SERVICE** p.10



Scratchbuilt details,
a few aftermarket
parts, and clever
paint boost Doug
Jones' 1/144 scale
replica of Atlantis.

**BONUS
ONLINE
CONTENT
CODE
PAGE 3**

Vol. 41 • Issue 6

Macchi MC.202 Folgore Italian "Thunderbolt"

**COMING
SOON!**



100% NEW MOLDS

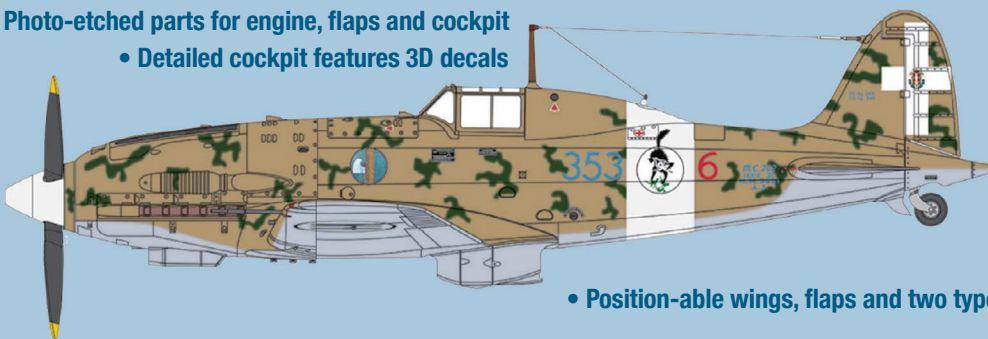
Kit # 2518

The Macchi MC.202 Folgore was often referred to as the best fighter produced in significant numbers by Italy. This single seat, single engine aircraft entered active service in 1941, and was flown by the Royal Italian Air Force. It quickly proved effective in engaging allied

fighters. It saw action over Malta, North Africa and along the Eastern Front. Subsequent versions were improved with added machine guns in the wings. For complete details on the Folgore and other Italeri kits, visit us at: www.modelrectifier.com

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1/32 Macchi MC.202 Folgore – WWII Italian dogfighter - Actual kit nearly 11"



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AMT 1/43 scale Peterbilt Twin-Boom Wrecker and Conventional Tractor

FROM THE EDITOR

By Aaron Skinner

BAMM is back, baby!

If it's November, it must be Build a Model Month. *FineScale Modeler* kicked off this annual celebration of all the fun that is modeling in November 2022. The inaugural BAMM included an online model contest and saw contributors sharing their experiences introducing newcomers to the joy of the hobby.

When the *FSM* staff looked for ways to follow up on the success of 2022, we wanted to host another contest judged by the editors and a group of luminaries from the across the modeling world. Visit [FineScale.com](https://www.FineScale.com) to enter from November 1-30 and see details. And as with the first BAMM, we are encouraging everyone to get out and have fun

introducing modeling to someone, anyone, young or old, who hasn't built before and then share those experiences with *FSM*.

But we wanted do more than that. So the entire staff will be joining in the fun with all of us working on models during BAMM. Hopefully, you all can see us gluing parts together, spraying paint, and applying decals as we broadcast some of those build sessions live from the *FSM* workshop. I can't wait!

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Sometimes we have to adjust

In November 2021, we launched *FineScale Modeler* DLC, four entirely digital issues meant to supplement the six annual print issues. While the DLCs have earned an ardent following, they haven't won a wider audience from subscribers. While we love the DLCs, we've had to make the difficult decision to discontinue them and work on other ways to offer scale-modeling advice and how-to stories readers expect from *FineScale Modeler* that are easier to access and more readily available. You'll see more of these offerings in 2024.

— Tim Kidwell, Editor, *Scale Model Brands*, Kalmbach Media

Changing subjects lights spark

Having recently retired and relocated, I have more time to devote to model building. I concur with Robert Bevelacau's comments (*Scale Talk*, September/October 2023). I have been an aircraft modeler since I was a kid in grade school. My focus was mostly commercial aircraft of every era, with some military as well and even some autos. But mostly airliners.

Recently my older brother, an avid train aficionado, had a request of me. Stating that he always was amazed at the detail and excellent work I did on my models, would I be able to build him some buildings for his train layout? He said he could never do the kind of work I do. I was glad to oblige, although I was concerned because this was something I'd never delved into before.

Well, three building later, a vintage 1950s gas station, a truck warehouse, and a factory, he — and I — were amazed how nice they turned out. A lot of detail went into each one, but the results were really cool, and I got to test some new modeling skills along the way.

As Robert related, it's never too late to try something different and keeps your modeling enthusiasm alive! I'm ready for another adventure in modeling now.

Keep up the great work.

— Louis Macedo
Kissimmee, Fla.

Ed.: Thanks, Louis. After reading your letter, I'm ready for another modeling adventure, too!
— Aaron Skinner

Proper disposal of resin?

It's official: The use of resin 3D-printing and its acceptance in model building is on the rise, and the plethora of available files to download and print is amazing. I took

the plunge this spring when the resin printer I had been considering went on sale. But the printer spent the next three months unopened in the box, the main reason being the toxicity of the resin and how to properly dispose of it. I spent that time not only researching the ins and outs of calibration but also how to manage the waste generated by the process. There are a lot of pundits that offer strict advice on dealing with wastewater or alcohol and using gloves and paper towels during handling and cleanup. I was shocked at the number of people who admitted they washed the resin down the drain, figuring the sewage treatment plant or septic system would take care of the chemicals. Obviously, a lot of the modeling products we use have a lot of chemicals — paint and glue, for example — and I'm sure some of that goes down the drain as well. If *FSM* is going to do articles on resin printing, a good place to start is with the proper handling and disposal of the associated resin printing waste byproducts.

— Jerry Ragusa
Norristown, Pa.

Ed.: That's a good idea, Jerry. And there are many opinions. So let's start here: Resin can be irritating to skin, and you don't want to get it in your eyes or consume it. So, take precautions when using resin. Gloves and good ventilation are a must.

Resin is bad for fish and aquatic life, so don't just wash it down the drain. Resin that you're planning to throw away should be cured first. That means it should be completely hardened before being thrown out. From a common sense perspective, we recommend using all the resin that you're going to use and then reclaiming any you don't — put it back in the bottle and reuse it until it's all gone (cure any that you don't intend to use). Technically, anything that comes into contact with liquid resin should be put out in sun to cure before going in the trash, including paper towels, gloves, etc. Expose isopropyl alcohol or solvents with resin in them to sunlight before disposal. — T.K.

Modeling is a big tent

When I began modeling in the early 1950s, there was a segment of modelers who worked in balsa wood. Many of these individuals cried foul as plastic increasingly became the go-to material of choice for modelers and kits. Ever since then there have been individuals who have taken issue with any change or alteration in the hobby. For me, I am amazed at the changes in this hobby that are too many to enumerate.

In my opinion, the modeling "tent" is large enough to accommodate everyone, and far be it for me to judge how anyone finds joy in the hobby.

I am in my 70s now and there are physical limitations on what I can do, but I enjoy seeing what today's modelers can — and do — produce.

Ya'll keep up the good work, and I continue to look forward to every issue, print or digital. Even that has caused a degree of controversy.

— John C. Hopkins
Lexington, S.C.

Ed.: I like the idea of the modeling tent being like the circus Big Top filled with a variety of attractions (genres) and all of them fun. But no clowns. I draw the line at clowns. — A.S.

Some incisive knowledge

In a *FineScale Modeler Weekly Tooling* Around segment, Tim Kidwell asked which knife blades hobbyist use. I use something different, specifically Swann Morton scalpels on the No. 3 and No. 4 handles. The No. 3 is about 4-inches long and the No. 4 is a little longer at the front to accept bigger blades, much like the difference between the X-Acto No. 3 and No. 5 handles. One of the advantages is scalpel handles are rectangular rather than round, so they don't roll on or, worse, off the workbench. They fit neatly into your palm.

Swann Morton offers sterile and non-sterile blades in stainless steel, and carbon steel and they are extremely sharp. The stainless-steel blades won't rust, but they are a little more flexible so cutting straight lines can be just a little more difficult. I prefer the carbon steel blades.

Blade numbering seems to be a standard. I use Swann Morton No. 10 curved blades and No. 11 straight blades almost exclusively with the No. 3 handle. The company makes other blades, and the No. 12 reverse curve blade is ideal for scribing lines. With the No. 4 handle, I use No. 19 curved and No. 25 straight blades.

The only downside is the cost of the blades in the United States, where a pack of 100 blades costs \$50. Ordering from overseas, I can buy the most popular blades from Hannants for about \$15 per 100, which is what I do.

— Joe Altnether
Mesa, Arizona

Ed.: If you use scalpels to build models, does that make you a plastic surgeon? — A.S.



IPMS/USA National Convention 2023

As always, the scale modeling skills at the IPMS/USA National Convention astounded with more than 3,000 models displaying artistic excellence in all modeling genres from aircraft to figures to sci-fi. As we do every year, *FineScale Modeler* photographed models and updated the show gallery, live, from the convention floor. Visit [FineScale.com/show-galleries](https://www.finescale.com/show-galleries) to see a selection of the outstanding replicas from some of the world's top modelers.



Don't wait to build your first model car kit

If you've never built a scale car or truck model, there's no time like the present to get started! And, wouldn't you know it, *FSM* has just what you need to get your motor started. Visit [FineScale.com/how-to](https://www.finescale.com/how-to) and let award-winning modeler and *FSM* contributor Jeff Bloomhuff walk you through building your first scale auto, from tools of the hobby, to engine and interior assembly, painting, and decals. Don't wait and check it out now!



Modeling how-to advice in bite-sized chunks

Wondering how to paint a realistic model car exhaust? What about modeling bushes for a diorama? Model snow and slush? Visit [FineScale.com/how-to](https://www.finescale.com/how-to) where you can find more than 55 *FineScale Modeler* Snapshots covering these how-to questions plus much more, like making and applying mud to dirty up your scale models, scratchbuilding coil-over shocks, and painting invasions stripes. New Snapshots appear regularly, so visit often!



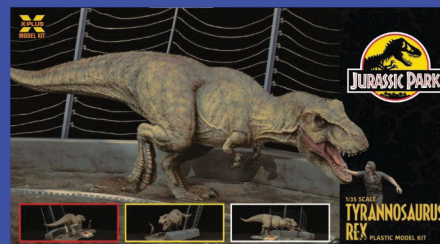
Metropolis Robot



Star Wars Millennium Falcon



Star Trek Klingon Kronos One



Jurassic Park T-Rex



Star Wars TIE Fighter



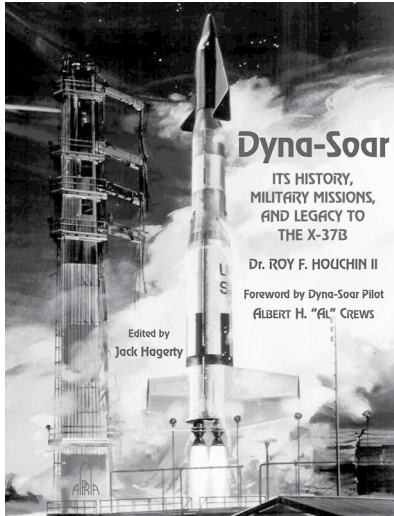
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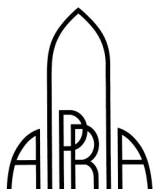
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1/32 SCALE

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TBD-1 Devastator from Trumpeter, No. 02226, \$132.95.

MC.202 Folgore from Italeri, No. 2518, \$178.99.

1/35 SCALE

AH Mk.I Apache attack helicopter from Takom, No. 2604, \$129.99.

AH-64D Apache Longbow attack helicopter JGSDF from Takom, No. 2607, \$109.95.

AH-1G Cobra (late production) US attack helicopter from ICM, No. 35031, \$121.99.

1/48 SCALE

Wildcat (FM-2 Wildcat) from Eduard, No. 11175, \$49.95.

The Zipper (F-104C) from Eduard, No. 11169, \$69.95.

A6M3 Zero Type 32 from Eduard, No. 84191, \$34.95.

Seafire Mk.15 FAA & RCN Service from Special Hobby, No. SH48233, \$32.

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MiG-17F Fresco C USSR Air Force from Ammo by Mig Jimenez, No. A.MIG-8511, \$38.

1/72 SCALE

AMX Ghibli from Italeri, No. 1460, \$48.99.

MiG-21MF fighter bomber from Eduard, No. 70142, \$29.95.

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Kittyhawk Mk.IV Over the Mediterranean and the Pacific from Special Hobby, No. SH72484, \$18.50.

Tachikawa Ki-54 Hei "Hickory" from Special Hobby, No. SH72270, \$25.

Bf 109F-4 from Eduard, No. 70155, \$24.95.

P-39N Airacobra from Arma Hobby, No. 70056, \$29.

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ARMOR

1/35 SCALE

U.S. Army G7105 4x4 1.5t panel delivery truck from MiniArt, No. 35405, \$TBA.

Liefer Pritschenwagen Typ170V with canvas from MiniArt, No. 38072, \$TBA.

R.O.K. Army K311A1 from Academy, No. 13551, \$49.

Kamaz Typhoon-K w/RP-377 VM1 & Arbalet-DM RCWS module from Takom, No. 2173, \$66.95.

M29 Weasel from Takom, No. 2167, \$42.95.

WWII US Military Patrol (G7107 with troops) from ICM, No. 35599, \$71.99.

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1/48 SCALE

German Pzkwf IV Ausf F2 medium tank from HobbyBoss, No. 84840, \$40.50.

1/72 SCALE

HMS Hood Mk 1 15"/42 gun turret B from Takom, No. 5020, \$66.95.

SHIPS

1/72 SCALE

Titan - Research and tourist submarine from Special Hobby, No. N72045, \$49.

SPACECRAFT

1/32 SCALE

Star Wars TIE Fighter Studio Series from AMT, No. AMT1341, \$84.99.

FIGURES

1/35 SCALE

To be ahead, to save the life — Sappers of the Armed Forces of Ukraine from ICM, No. 35753, \$28.99.

US helicopter pilots (1960s-1970s) from ICM, No. 53101, \$23.99.

Milkmen from MiniArt, No. 38068, \$TBA

1/72 SCALE

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AUTOS

1/8 SCALE

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1/12 SCALE

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1/25 SCALE

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1/32 SCALE

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Fruehauf 40-foot Tanker from Revell, No. 14536, \$34.99.

BOOKS

Finnish Trainer Colours 1930-1945 from MMP Books, by Kari Stenman, hard cover, 260 pages. Color and B/W photos, ISBN: 9788367227094, \$65.

F-8 Crusader Vietnam 1963-73 from Osprey Publishing, by Peter E Davies, soft cover, 80 pages. B/W and color photographs, maps and illustrations, ISBN: 9781472857545, \$23.

Early Pacific Raids 1942 from Osprey Publishing, by Brian Lane Herder, soft cover, 96 pages. Color illustrations throughout, including battlescene artworks, maps, 3D diagrams and photograph, ISBN: 9781472854872, \$25.



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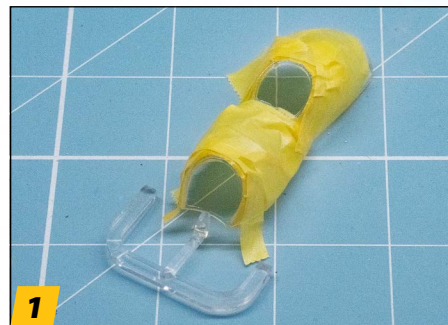
A hidden canopy issue
almost crashes Mi-24 build

BY ANDY COOPER

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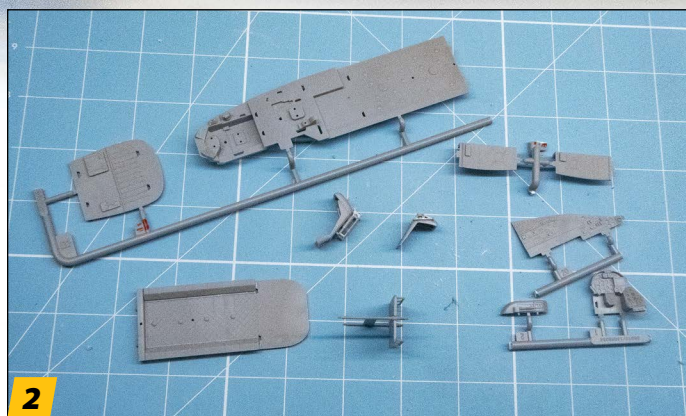


Helicopters fascinate me — the fact they even fly astounds me — and modeling them gives me a buzz. That feeling led me to tackle Trumpeter's 1/48 scale Mi-24 "Hind," but the only marking options in the box are for a Russian or a Polish machine. Neither caught my eye and casting around for an alternative, I discovered a set of markings from Caracal Models, Last Hinds of NATO (No. CD48104). It had options for six Mi-24s: two Polish, two Czech, one Bulgarian, and one Hungarian. I opted for one of the Czech birds in a nice three-color camouflage and low-vis markings.

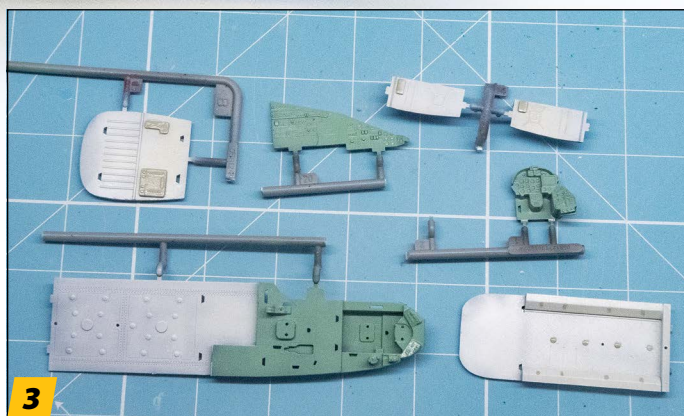


The first thing on my agenda was the unique, prominent canopy, which I dipped in acrylic gloss floor finish. When this was dry, I masked around the flat windshields and airbrushed thin Tamiya Green Clear (No. X-25).

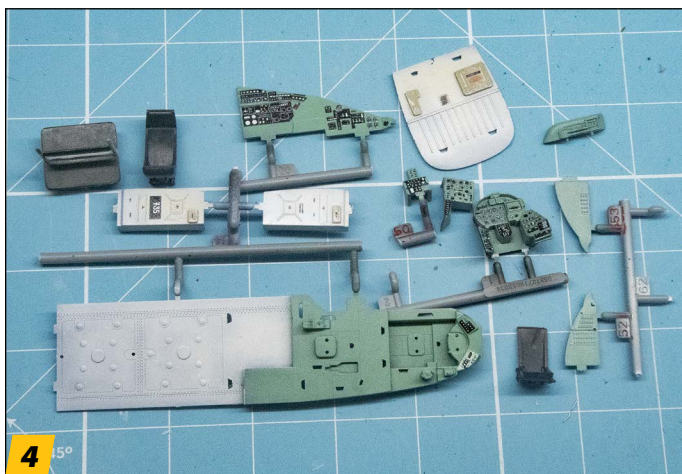
ND



In preparation for painting the interior, I clipped major components from the parts trees but left parts of the sprue as handles. Items such as the seats were put together at this stage.



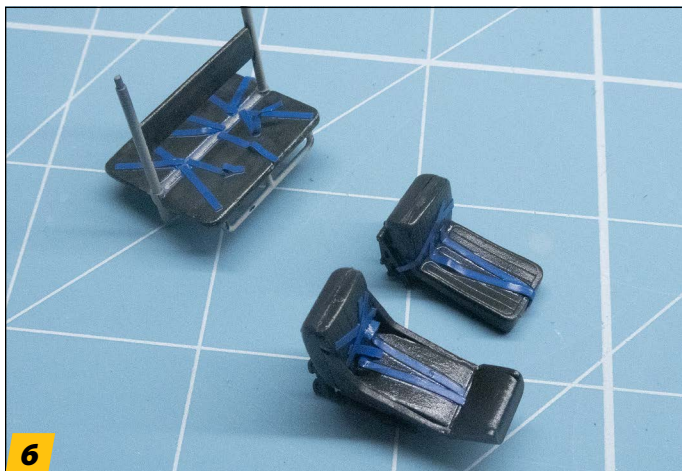
The instructions indicate the troop cabin is Mr. Hobby Light Gray FS36495 (No. H338) and the cockpit Russian interior blue-green. References showed that Czech Hinds were either blue-green, black, or a combination. I chose the blue-green because most of the instruments would be black and sprayed the parts SMS Russian Interior (No. PL88).



4 Using various shades of gray, I highlighted detail in the troop cabin and sealed it with clear acrylic. Next, I applied decals for the instruments and control panels.



5 There are no less than 32 decals to go into the cockpit and cabin. The decals for panel Part C50 are not indicated in the instructions, but when you have applied the rest, these become obvious. Once the cockpit is assembled, the instrumentation and other details look convincing.



6 What was missing was the crew harnesses. I made these using thin masking tape strips detailed with punched styrene release buttons and painted them khaki.



7 I painted the turbine exhausts burnt iron before gluing them to the roof of the troop cabin. Noticing that it might be possible to catch a glimpse inside past the openings for the exhausts, I sprayed the area black.



8 Before putting the fuselage together, the main wheel wells must be painted and assembled. The instructions were vague about the placement of the legs, so I did several dry runs to check everything fit, even taping the completed wells in place to ensure the legs cleared the opening.



9 I airbrushed the completed wheel wells with light gray, sealed them, and flowed on a wash of thin, dark-brown oil paint, and picked out details by hand. Guess what? None of this work can be seen on the finished model.



10 I used spring clamps to hold the wells in place while the glue set. There is little room for a mistake here because the cockpit and cabin assembly butt right up to the front of the assembled wheel wells. Test-fitting ensured everything fit as it was supposed to.



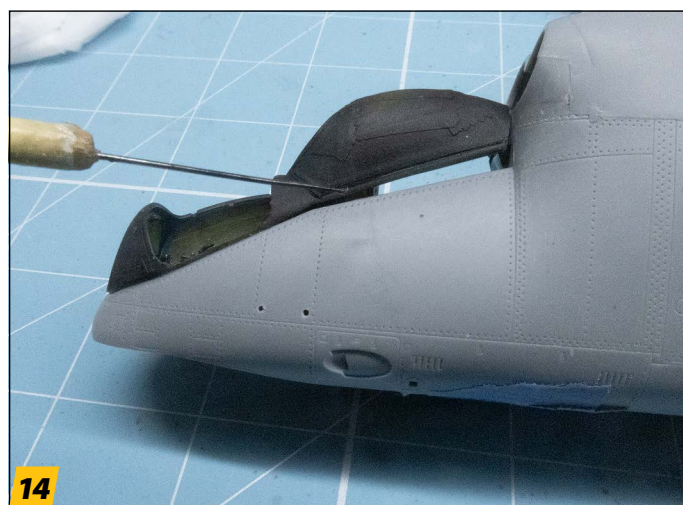
11 Before adding the interior to the fuselage, I added the weapon systems operator and pilot seats and control columns to the cockpit. Part C29 was not mentioned in the instructions, but it looked like rudder pedals, so I glued it into the rear cockpit forward of the joystick.



12 I set the completed interior and exhaust assembly into the port fuselage half using slow-setting cement for extra working time for alignment before adding the starboard fuselage and closing everything up. Painters tape held the halves together while the glue set.



13 While waiting for the fuselage to set, I assembled the rocket pods, stub wings, tail rotor, wheels, and other bits and pieces.



14 I had previously masked the canopy and sprayed the frame black. When I went to attach it to the fuselage, the fit was not good. The rear part sat proud of the surface, producing a sizable gap. To overcome this, I secured the front of the canopy to the opening with superglue.



15

When this set, I gently pushed the rear section down to meet the fuselage, applied more superglue, and gently clamped it until the glue dried.



16

Upon removing the clamp all seemed well and I set about masking the interior with pieces of packing foam in preparation for paint. However, all was not well.



17

Masking done, I primed the model and subassemblies with SMS Surfacers Black (No. PLP02) ...



18

... followed by some white in the center of major panels to pre-shade the Hind.



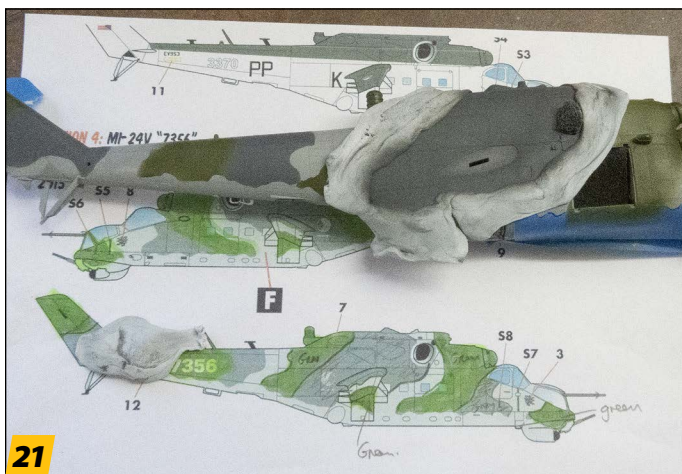
19

For the base camouflage color, I airbrushed SMS Haze Grey FS36270 (No. PL119) over the undersides and partially over the upper surfaces leaving gaps where the other two colors would be applied.



20

At various places, the demarcation between the upper and lower colors is a random, wavy line. I cut painters tape with a sharp blade to mask this pattern.



21

With the tape masks in place, I used poster putty rolled out into long sausages to mask the overall camouflage pattern. Colored plans kept me on track.



22

Changing the masks as the camouflage progressed, I airbrushed SMS RAAF Dark Slate FS34096 (No. PL158) and Gunship Grey FS36118 (No. PL121) per the instructions in the Caracal sheet. These colors matched photos of Czech Hinds.



23

After sealing the paint with a gloss clear acrylic, I applied the Czech markings from the Caracal sheet. Adding some of the stencils from the kit's Polish marking option made the chopper look a little busier because the Caracal sheet was limited to national insignia, aircraft numbers, and a few major warning labels.



24

After another layer of gloss clear acrylic sealed the decals, I applied an overall wash of thin, black, artist-oil paint to the model to pop surface details.



25

Czech machines appear to be kept quite clean, so I kept the application restrained before wiping away excess with a little turpentine on a rag.



26

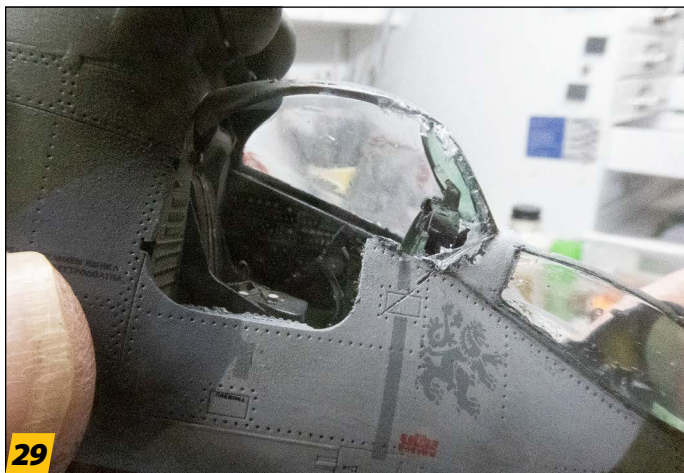
After loading the weapons on the stub wings, I sprayed the model with clear flat. I left off small, delicate parts to avoid breaking them while I removed the masks from the canopy.



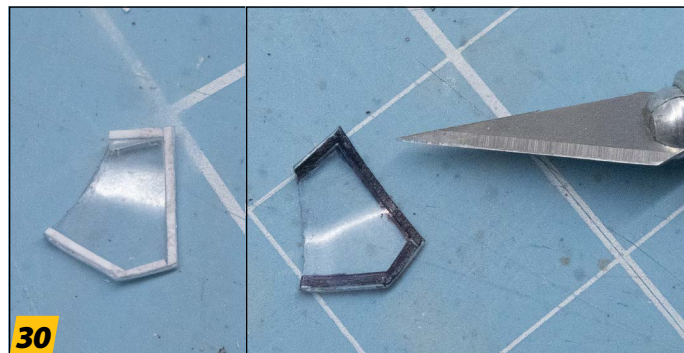
27 That revealed a major problem. Apparently, forcing the canopy into position caused a series of stress cracks that could not be polished out. I concluded that the only fix was replacing the damaged pane. I scored around the panel with a sharp, new, No. 11 blade and then drilled tiny holes along the scored line.



28 I held the panel with a small pair of pointed pliers and broke it out along the scored outline. The drilled holes stop cracks from spreading beyond the pane.



29 I cleaned up the edges with a sharp knife and a trimmed sanding stick.



30 My quest for a replacement panel eventually settled on a clear, plastic, liquid-soap bottle. The curve of the bottle was more or less the same as the damaged panel, so I cut a piece shaped to the space. I added a frame to the internal side of the panel with styrene strip and colored it black with a permanent marker.



31 After adjustments with a fine sanding stick, I set the replacement panel in place and flowed thin superglue around the edges. The internal frame gave something for the glue to bind to and held the panel where required.



32 I filled the remaining gaps, depending on where and how big they were, with a combination of judiciously applied filler, black superglue, or Microscale Micro Kristal Klear, and left it to cure for two days.



FINAL THOUGHTS

UNDERTAKING A HIGH-RISK REPAIR on a nearly completed model can be nerve wracking, but sometimes you have little choice; the alternative is often the scrap box. Personally I think it is always worth having a go — what do you have to lose — and when completed successfully, it provides a boost, something we all need now and then. **FSM**

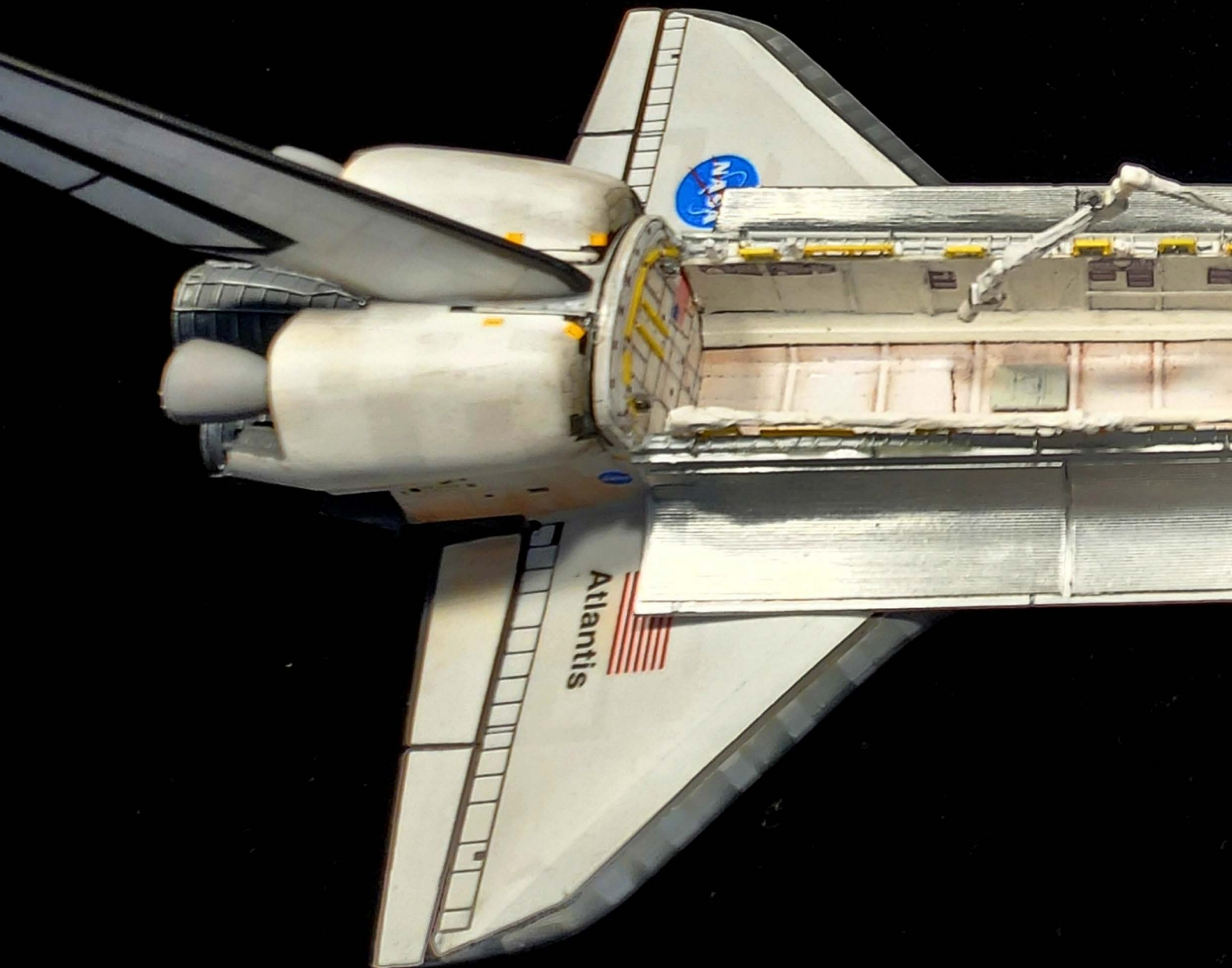
I refined the gaps with a short section of a fine sanding stick, then painted the frames by hand using the internal framing as a guide. The result is not 100% perfect, but it passes all but the closest scrutiny and is infinitely better than a cracked canopy.



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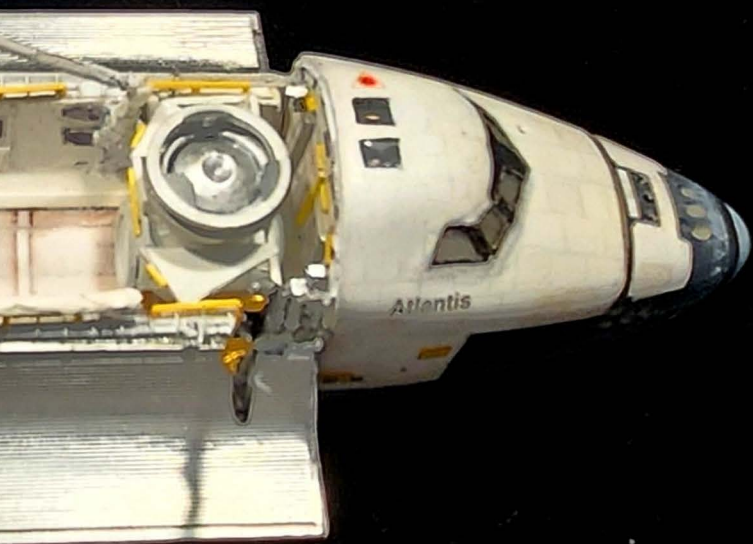
Build a better, more accurate space shuttle orbiter

BY DOUG JONES



Over the past 40 years, I have built dozens of Revell 1/144 scale space shuttle kits. A mainstay for Revell since 1978, the basic kit has appeared in many of boxings, including just the orbiter, with the full launch stack, on the 747, with power satellite, and the launch complex. The same plastic has even been dressed up as the James Bond *Moonraker* shuttle, the *Armageddon* shuttle, and even as an Alien Invader with lighted parts.

After seeing *Atlantis*, the fourth operational orbiter, on display at the Kennedy Space Center, I was inspired to pull out all the stops and turn this 45-year-old kit into a detailed replica. The beauty of the *Atlantis* display is it's the only one of the museum shuttles with the payload bay doors open. I used a few aftermarket parts, mostly for the engines, but the bulk of the work was done with styrene and patience.



Revell's 1/144 scale space shuttle has been around since the orbiter was in testing and was released three years before the first STS mission in 1981. It has operational features and simplified details, but that didn't stop Doug turning it into a detailed replica.



1

Before assembling the fuselage, I glued wide strips of .020-inch styrene along the seam. This reinforced the join on the long, open-top body and helped align the halves.



2

Once the cement on the fuselage had set, I added the wings. With this being an older kit, the fit was not ideal, so plenty of putty and vigorous sanding was required to fill gaps and eliminate seams.



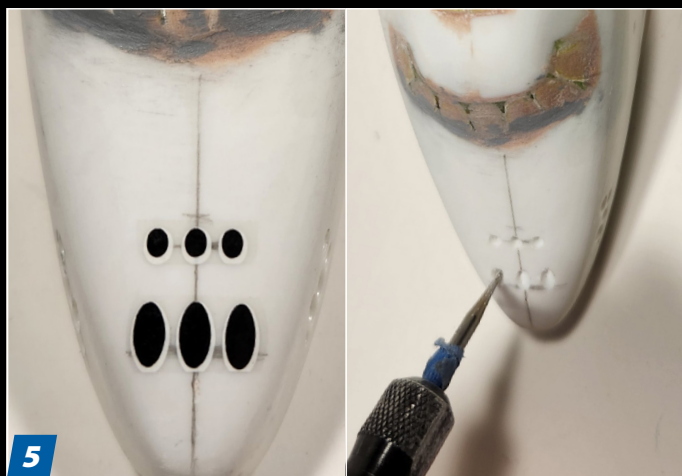
3

To ensure a secure fit, I attached the clear parts with two-part epoxy and applied tape to mask the windows in preparation for putty.



4

I glued .020-inch x .020-inch styrene strip around the windshield panes to serve as frames and applied a thin layer of two-part Bondo putty over the windows. When the putty dried, I lightly sanded the windows smooth.



5

Rather than holes, the kit provides decals for the nose-mounted reaction control system (RCS) thrusters. Using the decals for placement, I drilled out the thrusters with a cutting burr in a rotary tool.



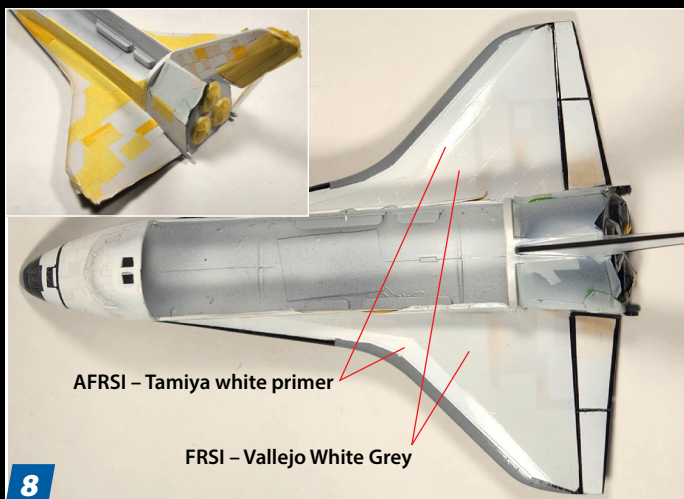
6

Later updates included a drag-chute compartment at the base of the shuttle's vertical stabilizer. After marking the outline, I cut out this area with a razor saw.



7

In preparation for painting, I sprayed the model with Mr. Surfacer 1000. This served as the color for the Reinforced Carbon-Carbon (RCC) material on leading edge of the wings, so I masked them before spraying the model with white Tamiya Fine Surface Primer.

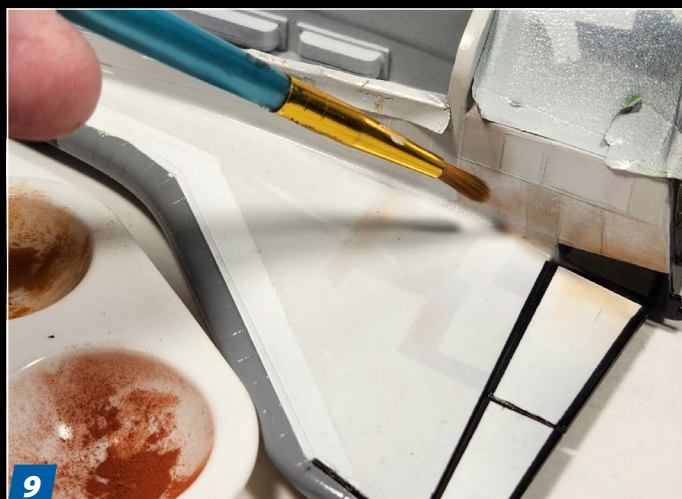


8

AFRSI - Tamiya white primer

FRSI - Vallejo White Grey

White matched the Advanced Flexible Reusable Surface Insulation (AFRSI) aft of the leading edges. Much of the spacecraft is covered with Nomex Felt Reusable Insulation (FRSI) matching Vallejo White Grey (No. 70.993). After masking, I sprayed panels with a mix of white grey and Vallejo Sky Grey (No. 70.989) for contrast.



9

I applied raw umber, burnt umber, raw sienna, and burnt sienna powdered pastels to re-create layers of discoloration left from numerous atmospheric re-entries. I focused on the nose, tail, and the Orbital Maneuvering System (OMS) pods on either side of the tail.



10

The kit Space Shuttle Main Engine (SSME) bells (right) were undersized and lacked detail, so I replaced them with a 3D-printed SSME set from RealSpace Models.



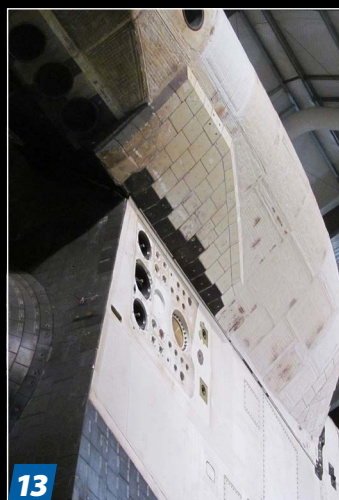
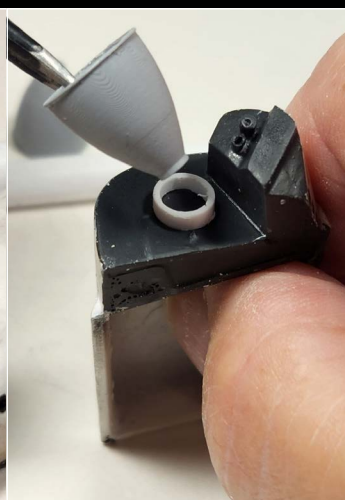
11

Prior to installing the SSMEs, I applied Warbird Decals (No. 14405, warbirddecals-com.myshopify.com/) to the rear to show the insulation tiles in this area. I used a hobby knife to open the mounting holes for the engines. The same set provided the orbiter's name, flag, and NASA meatball.



12

The RealSpace (realspacemodels.com) set included a pair of bells for the OMS engines, but they required a ringed base. I cut 1/4-inch styrene tube and glued a ring to the aft end of each OMS pod.



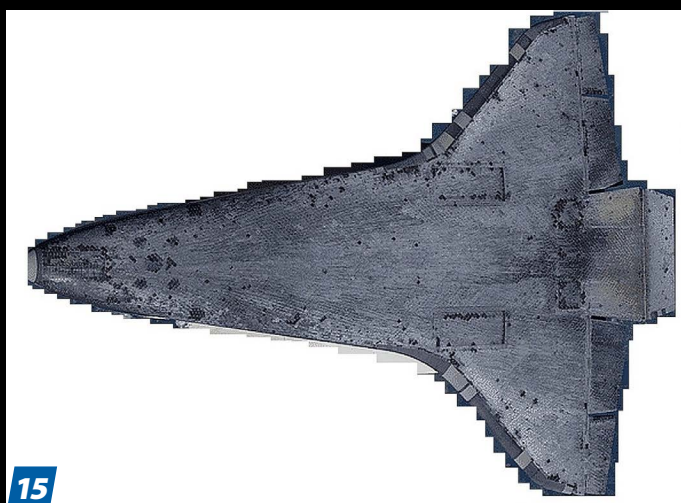
13

The final three orbiters built featured a section of raised insulation on the lower side of each OMS POD. I cut .040-inch styrene sheet to match the shapes, marked them with a tile pattern, and glued them in place.



14

While there are decals and other products available for the underside heat shielding, I made my own using Photoshop to turn a photo of the shuttle taken from the International Space Station into a decal.



15

After isolating the tiled area, I printed it on white inkjet decal paper and applied two coats of acrylic clear gloss to seal the image.



16

I cut the decal into manageable segments and applied it over clear gloss. After the decals were completely dry, I brushed on gray pastel powder to blend the seams between the sections and airbrushed the underside with Vallejo Model Air Matt Varnish (No. 70.520).



17

To blend the heat-shield decal into the rest of the model, I lightly and carefully brushed Vallejo Model Air Black Grey (No. 71.055) to obscure the edge of the decal.



18

Final blending was achieved with a dry-brushed application of dark gray over the black for the scarring and scorching of repeated atmospheric flights.



19

The kit's simplified payload bay provided a challenge for accurate detailing. First, I removed the pin locator for the robotic manipulator arm.



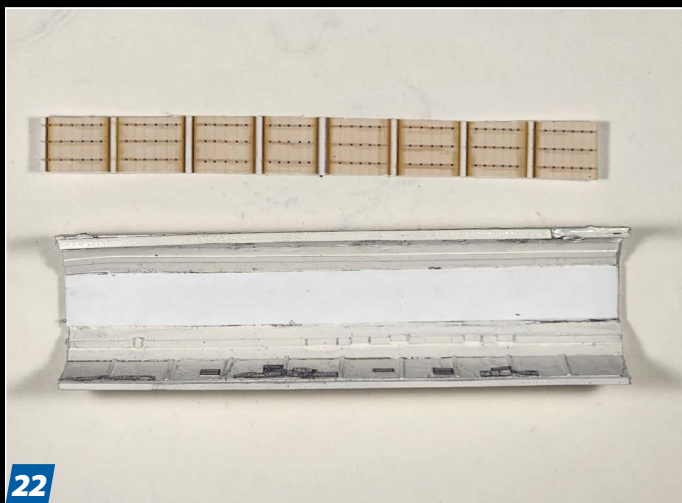
20

I cut .010-inch Evergreen styrene sheet into ½-inch x 5-inch strips and glued it over the ribbed interior of the payload bay.



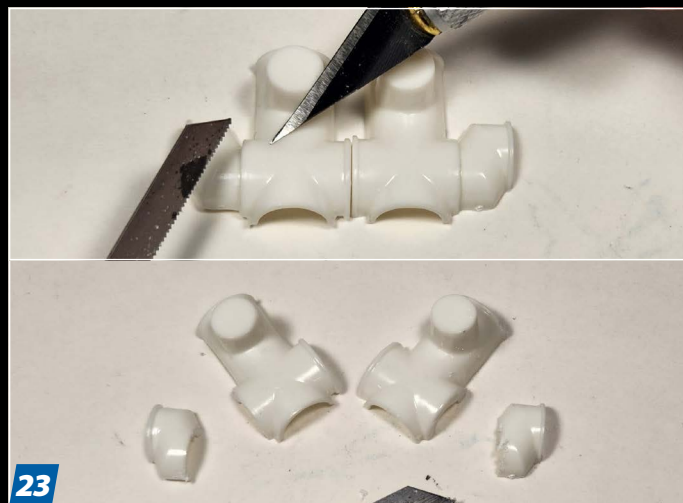
21

The interior of the bay is covered with white thermal blanket material. I cut strips of thin candy-wrapper foil and used Microscale Micro Metal Foil Adhesive (No. MI-8) to attach it to the walls and floor of the bay.



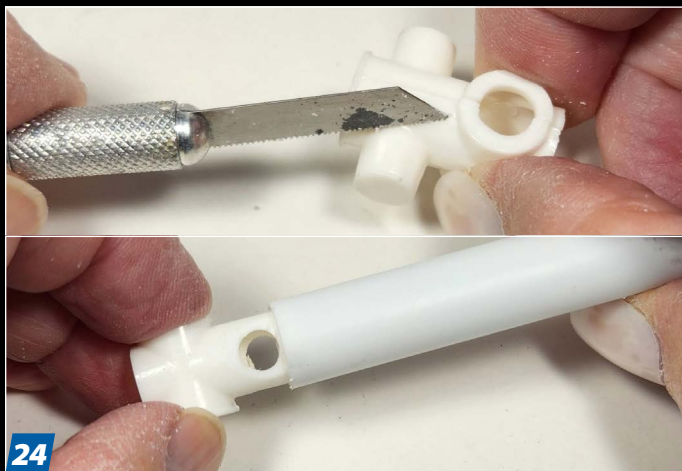
22

To detail the floor, I made a decal using parts from the AMX Space Shuttle Payload Bay paper model as a template.



23

The kit's orbiter airlock was designed to interface with a Spacelab module. Since I wanted the bay empty, I needed to alter and accurize the part. Using a razor saw, I cut off the angled adapter.



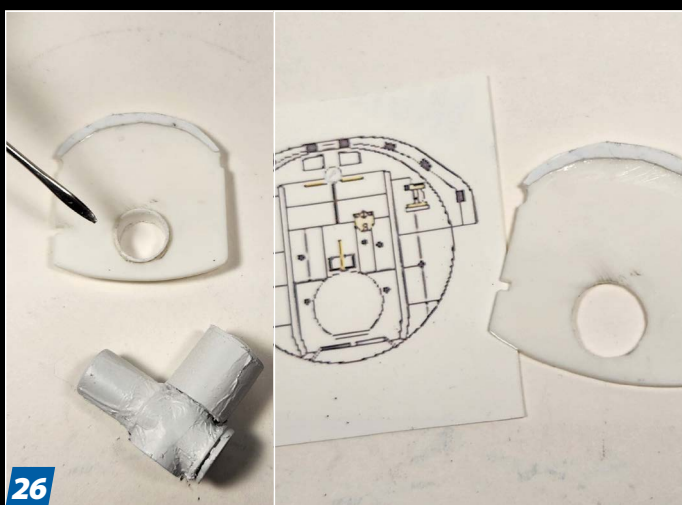
24

Next, I removed the two horizontal sections that were not part of the actual *Atlantis* airlock. To cover the resulting openings, I cut a piece of 1/2-inch-diameter styrene tube and slid it over the airlock.



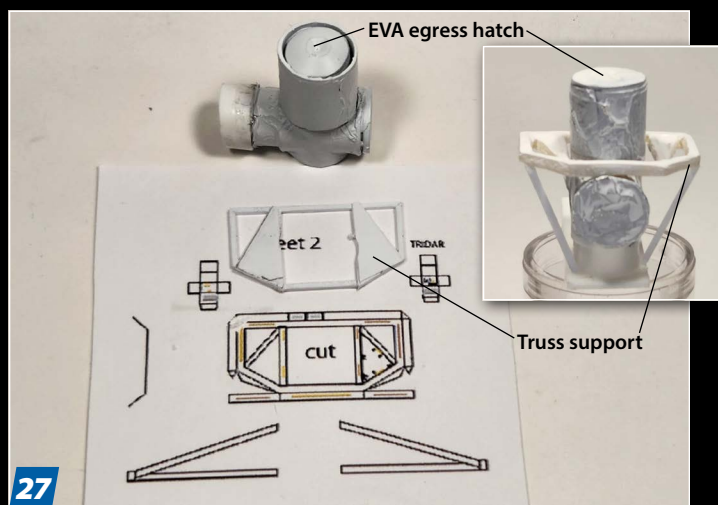
25

I applied silver candy foil around the upper section of the modified airlock with foil adhesive to reflect the thermal blanketing used on the actual airlock.



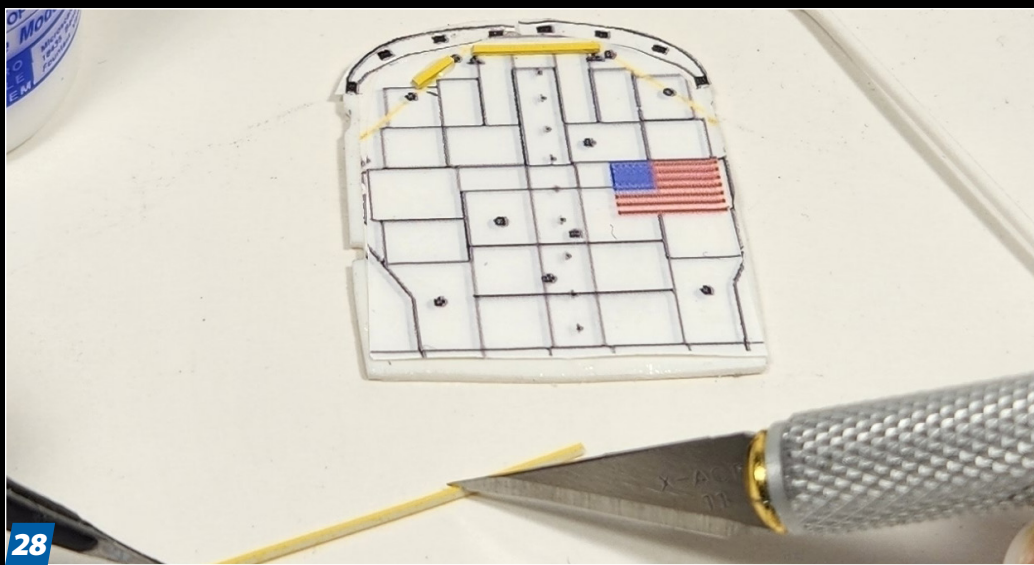
26

I opened the forward bulkhead hatch to connect the airlock. Printing the forward bulkhead part from the AMX paper model on decal paper and applying it detailed the area.



27

Using a drawing from the same paper kit as a template, I scratchbuilt the airlock truss supports using 1/16-inch styrene sheet and strip.



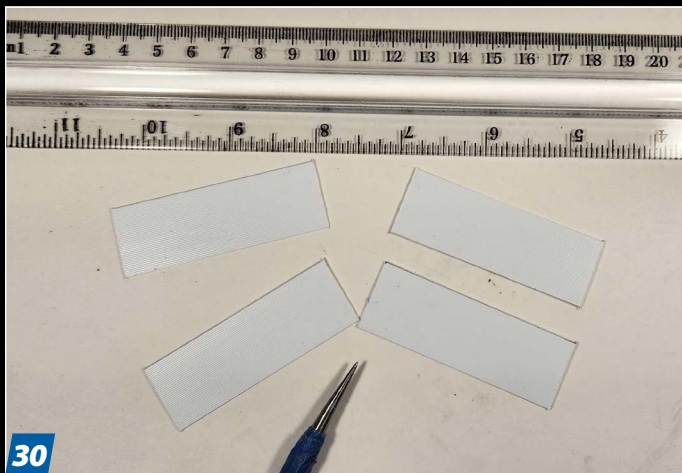
28

I painted .020-inch x .030-inch styrene strips yellow and then cut pieces of it for the handholds on the payload bay's front and rear bulkheads. I attached them with Microscale Micro Kristal Klear (No. MI-9).



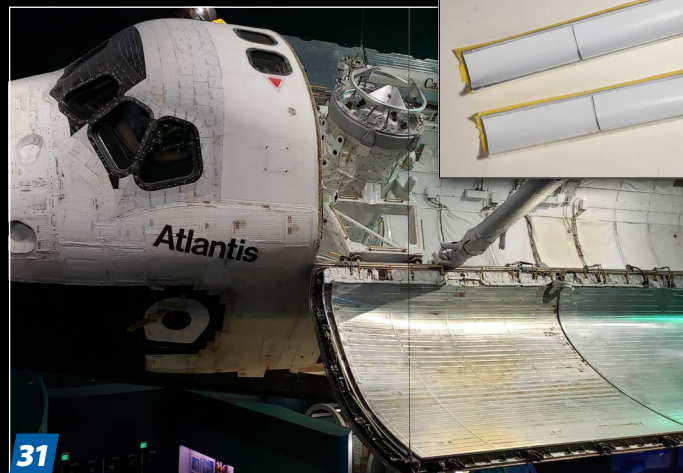
29

The payload doors are designed to be operable, but I planned on posing them permanently open. So I sliced off the pins from either end.



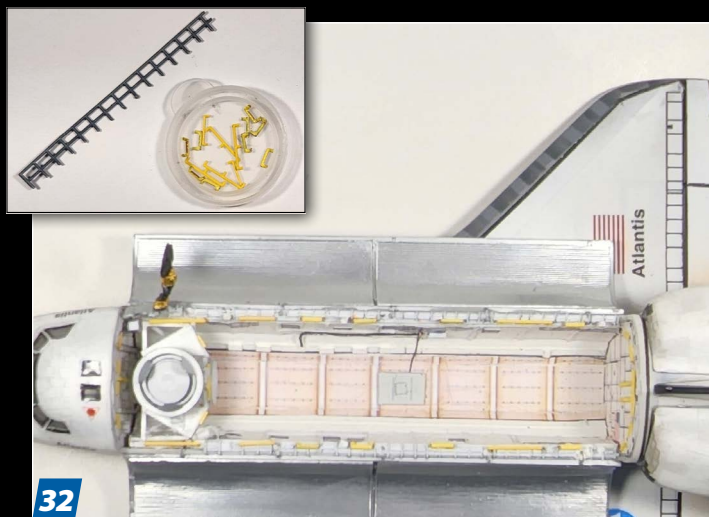
30

Although the kit includes the payload bay door radiators, I replaced them with Evergreen .020-inch styrene sheet (N-scale car siding) using the kit parts as templates.



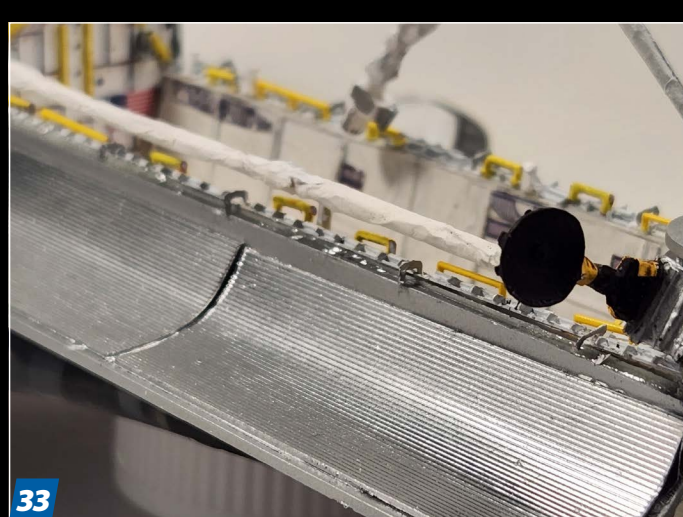
31

In space, the radiators are deployed slightly elevated from the doors. I am matching *Atlantis* as it appears today, so I posed them against the doors and glued them in position.



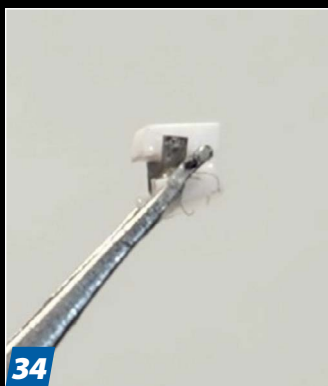
32

For the EVA grab handles along the sides of the bay, I cut up handrails left over from a Revell Shuttle Launch Tower kit. I added them and the airlock. Other panels and placards came from the AMX paper kit.



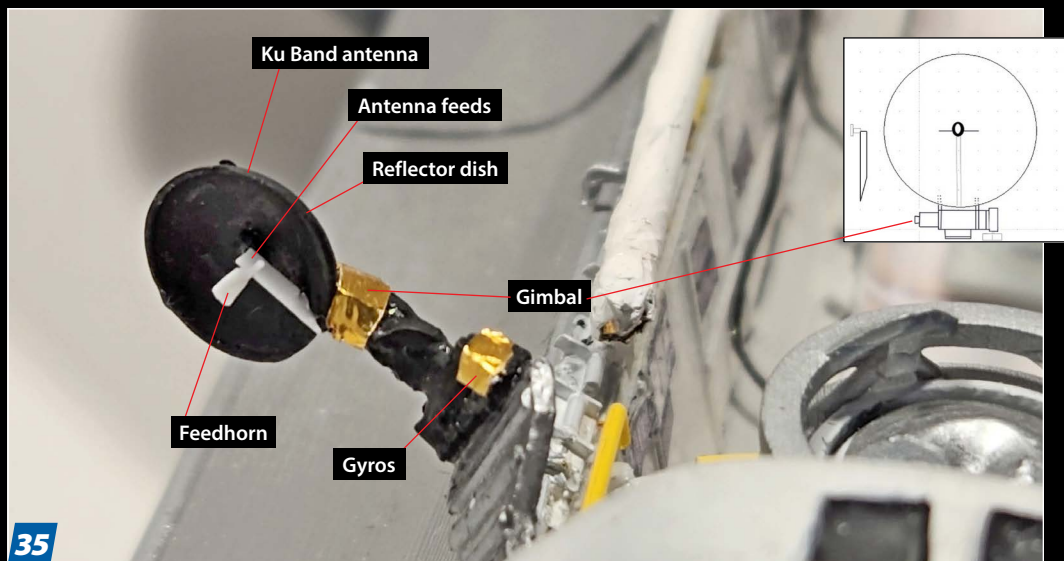
33

I posed the Remote Manipulator System (RMS) in a slightly articulated angle on the portside of the bay and the RMS extension stowed on starboard side. I made the latter with styrene rod.



34

I scratchbuilt six video cameras for the cargo bay using $\frac{1}{16}$ -inch styrene square rod. Each fits on a base of $\frac{1}{100}$ -inch styrene U-channel with mounts made from $\frac{1}{16}$ -inch photo-etched brass. At 1/144 scale, it is an understatement that they are tiny!



35

Using a spare antenna dish from a Revell 1/144 scale ISS, I scratchbuilt the orbiter's Ku-Band antenna. I added details with styrene strip for the feed horn and the back of the dish.

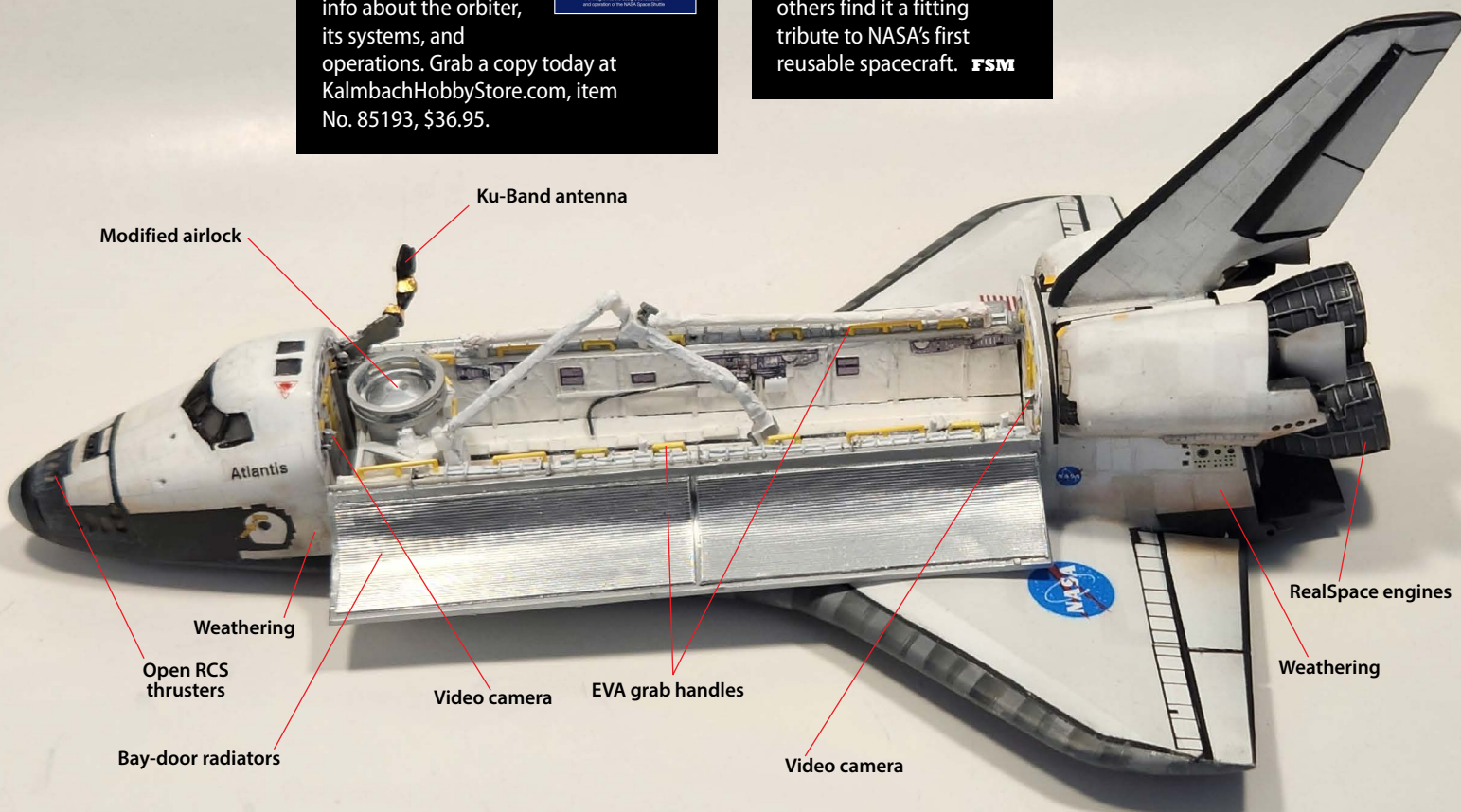
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Haynes NASA Space Shuttle 1981 onward (all models) Owners Workshop Manual is filled with photos and info about the orbiter, its systems, and operations. Grab a copy today at KalmbachHobbyStore.com, item No. 85193, \$36.95.



FINAL THOUGHTS

I AM PLEASED WITH MY replica of *Atlantis* as it appears today and hope others find it a fitting tribute to NASA's first reusable spacecraft. **FSM**





**BRAD GROWDEN
MANDEVILLE, LOUISIANA**

Brad transformed this Flame Toys *Transformers* Optimus Prime (G1 version). He wired a custom light rig for the Autobot's eyes, painted with AK Interactive Xtreme Metal Chrome, and topped with Tamiya clear acrylic paint. Brad weathered Optimus with AK Interactive washes and Tamiya weathering pastels before placing him on a custom-made base. Let's roll out!



▲ **CHRIS PIONKOWSKI**
EAU CLAIRE, WISCONSIN

"Richard Petty was my racing hero while I was growing up in the '60s and '70s," Chris says. So he made this replica of the 1964 Plymouth Belvedere NASCAR stock car Richard Petty drove to his first Daytona 500 win. Chris finished the AMT 1/25 scale kit with Splash Paints, brought in Plastic Performance Products wheels and tires, and found the appropriate markings from PowerSlide. He detailed the trim with Bare-Metal Foil and AK Xtreme Metal Chrome, and the final touch was a pair of Detail Master hood pins.



▲ **DAN CICERO**
AURORA, ILLINOIS

Dan scratchbuilt this *America* racing yacht ship-in-a-bottle from plans from the Smithsonian Institute and other sources. He used four different kinds of wood, brass for furniture and mounting hardware, fly-tying thread for rigging, and paper for sails. Dan placed the ship in an empty Woodford Reserve Straight Kentucky Bourbon bottle. This model won gold at the 2023 Midwestern Model Ships & Boats Contest.

► **ERIC KINTZER**
MENLO PARK, CALIFORNIA

Unique, to say the least, Eric built Roden's 1/72 World War I B-Type Bus Pigeon Loft essentially out of the box. He did enhance it with random photo-etched metal parts from NH Detail and Uschi van der Rosten plywood decals. Eric made it into a small scene with Scale 3D pigeons, figures, a table, and benches. Why this model? Because pigeons, of course! Plus, he finds WWI vehicles interesting.



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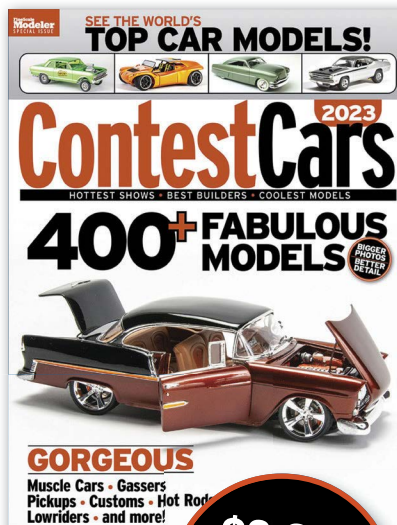


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▲ The 2022 BAMM Online Contest winner by Stathis Mamais

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MAKING

Building a repurposed vehicle with what was in the box

BY JOHN MAHER AND BRIAN WILDFONG

After the fall of France in 1940, Germany captured large quantities of French vehicles including 300 of an artillery tractor/armored personnel carrier known as the Lorraine. Maj. Alfred Becker, an artillery officer who had been an industrial engineer between the wars, saw an opportunity to use these chassis in the German war effort. Using armored plates manufactured in Germany, Becker's organization in France reconfigured the Lorraine with an open-top fighting compartment and a mount for the highly effective 75mm antitank gun. First used on the Eastern Front in 1942, the vehicle, known as the Marder I, formally the 7.5cm PaK40/1 auf Geschutzwagen Lorraine Schlepper (f), also saw service in Normandy as part of a make-do series of German tank destroyers.

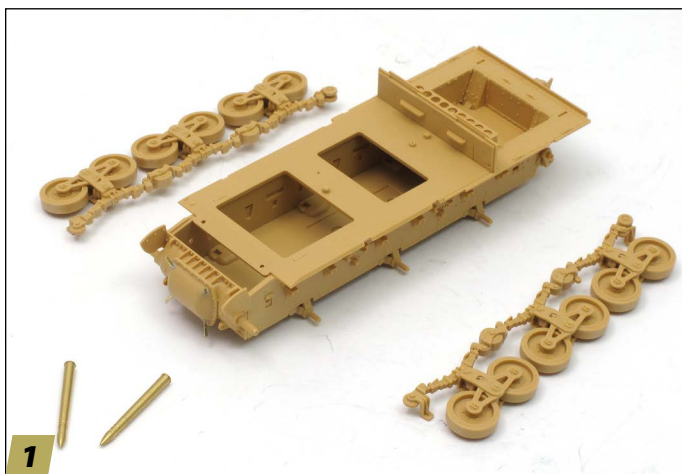
I've always wanted to build an open-top vehicle because, with so much on display, it's tempting to add a lot of detail. But Tamiya's 2020 release of a 1/35 scale Marder I coincided with one of the many COVID-19 lock downs that limited the local availability of detail sets. While I could have ordered anything I needed online, I decided to mostly make do with what was in the kit.

For this project, I once again teamed up with my friend Brian Wildfong who painted one of the figures supplied in the kit. We decided to model a vehicle crewed by older veterans.

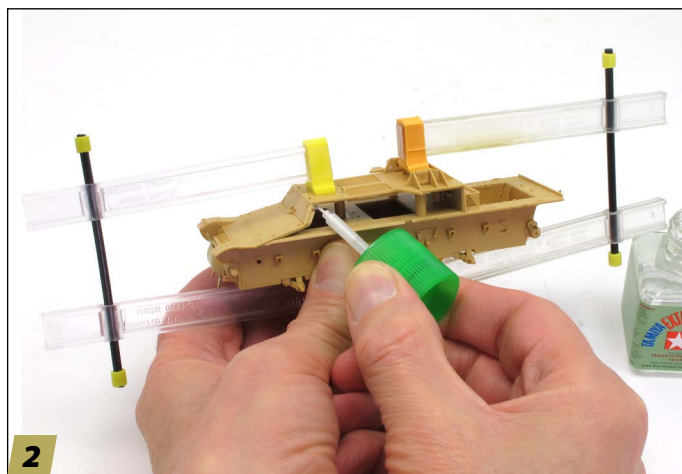


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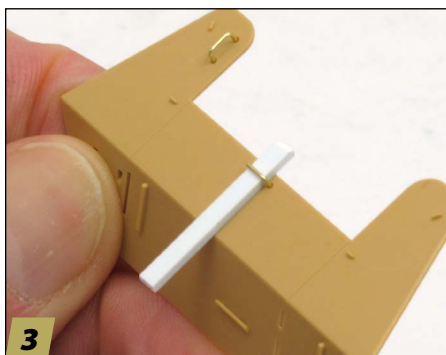




1 In typical Tamiya fashion, the lower hull and suspension are engineered for ease of assembly. The bogies are cleverly designed with just halves that sandwich the road wheels. The brass shells are Tamiya parts but not supplied in the kit. I had purchased a set earlier for another project.



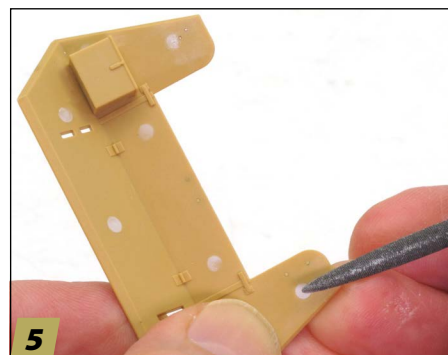
2 The upper hull builds from several plates that I held in place with Berna clamps. Then I flowed Tamiya Extra Thin Liquid Cement into the joints without the risk of the plates shifting while the glue set. This guarantees alignment and nice, sharp, prototypical joints between the plates.



3 Tamiya molded the grab handles and footman loops around the fighting compartment as solid rectangles. I replaced the grab handles with brass rod inserted in holes drilled through the thin plates. Placing .040- x .060-inch styrene strip under the rods ensured each handle was equally spaced from the plates.



4 Don't worry about cutting the rods perfectly so they fit flush to the inside of the plates. Instead, I applied thin superglue on the inside to the plate to attach the handles. Note the punched styrene discs used to fill ejector-pin marks.



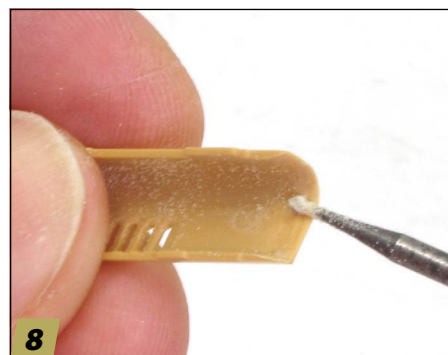
5 Superglue acts as a filler, so when I filed the protruding rods flush with the inside of the plates, any minor gaps between the rod and the holes were automatically filled.



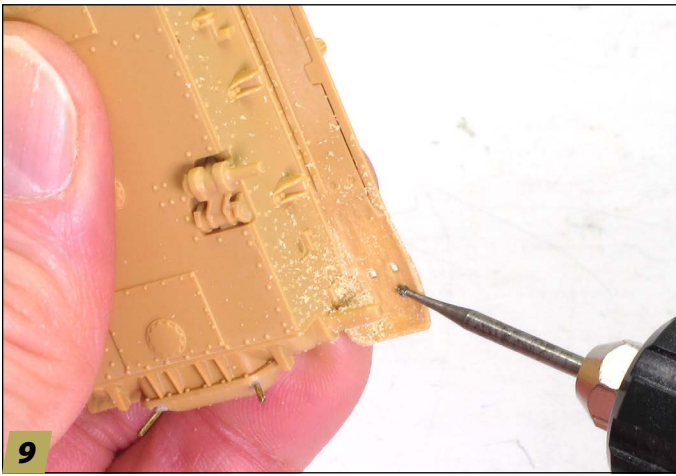
6 The footman loops were replaced with fine armature wire annealed over heat to reduce its springiness. To form even loops, I bent them over .020-inch x .10-inch styrene strip.



7 For kit parts I would normally replace with photo-etched metal (PE), I made do by refining them. I thinned the horn's brush guard by sanding it with an Alpha Abrasives Plastic Sanding Needle.

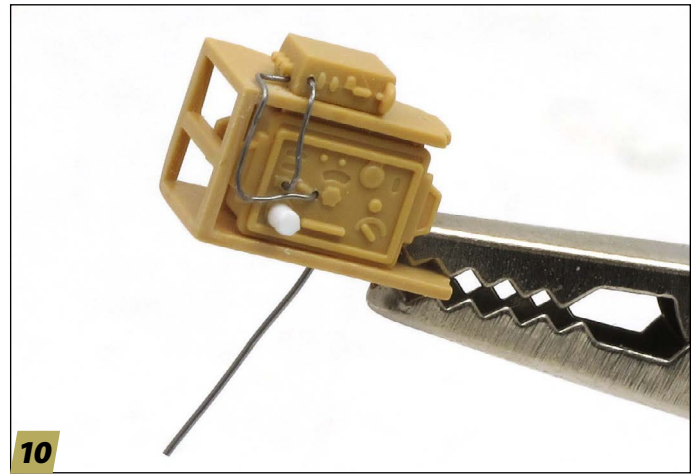


8 I used a carving bit in a rotary tool to thin the edges of the muffer guard.



9

The same tool made quick work of bringing the fenders to scale thickness.



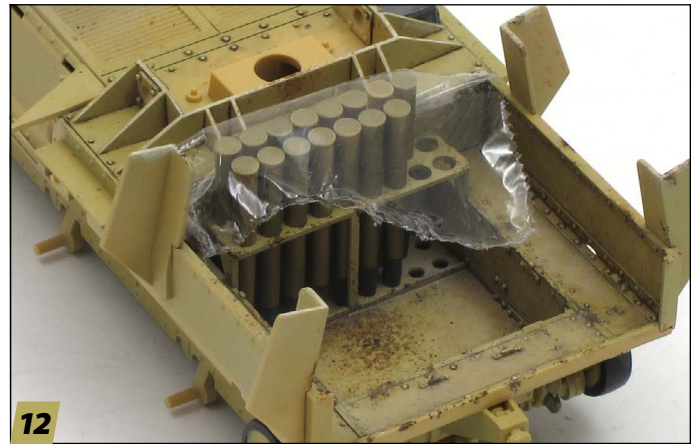
10

With its open top, the Marder I is a perfect subject for extra detail. To improve the radio, I inserted fine solder into holes drilled into the units for wiring and added styrene-rod details.



11

For the ready rounds in the rack under the gun's breech, I painted the shells with Alclad II Polished Brass (No. ALC109). The kit parts lack detail on the base of each round, particularly the primer. But I had Tamiya aftermarket rounds with better detail, just not enough to fill the rack.



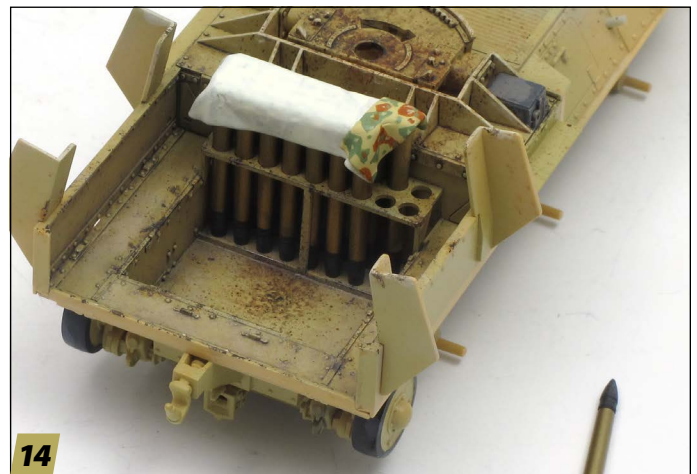
12

My solution for this lack of detail was to cover the rounds with a Zeltbahn, a simple partial tent or "shelter-half" that could also be used as a rain cape or a camouflage cover. First, I covered the shells with plastic kitchen warp.



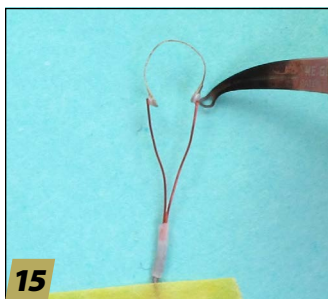
13

Next, I draped Magic Sculpt two-part epoxy putty over the shells while turning one corner over itself; the plastic wrap prevents the putty from sticking to the shells. Two of the turned-brass shells were then pressed into place in the uncovered corner of the rack.

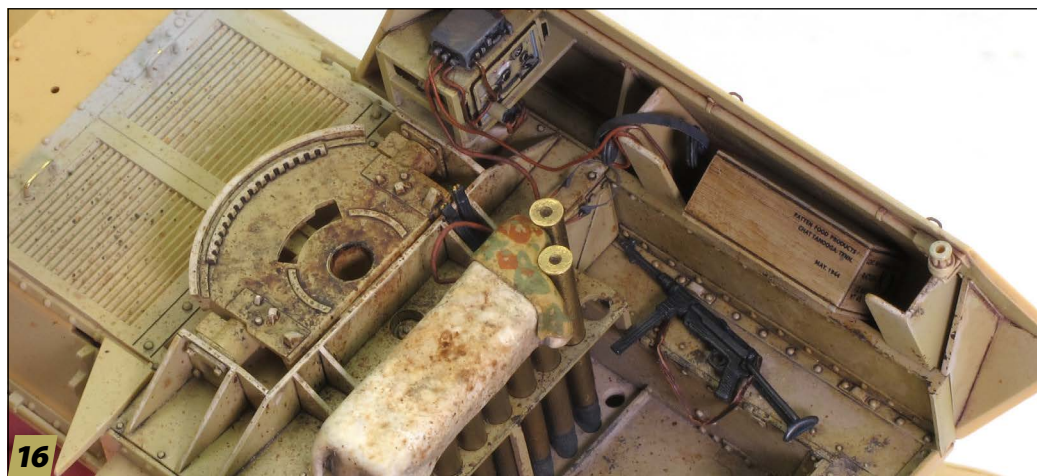


14

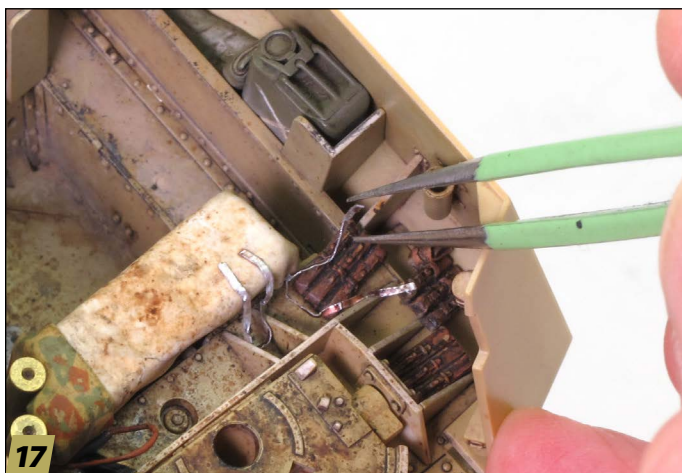
Zeltbahn was reversible with summer camouflage on one side and winter white on the other, both of which I painted with Vallejo acrylics. I left the turned-brass rounds removable so they wouldn't be affected by subsequent weathering steps.



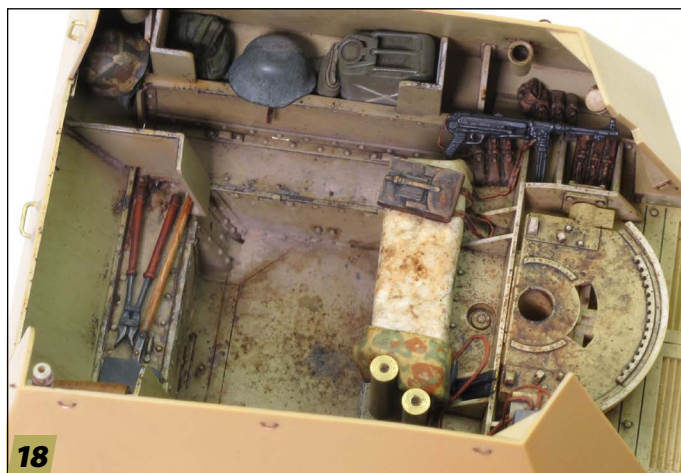
15
The kit has a radio headset but no throat mic. I scratchbuilt one using thin solder connected to fine copper wire with a narrow tube made by stretching the plastic handle of a cotton swab over heat. Two punched-styrene discs were added to a strip of spare PE and everything locked together with thin superglue.



16
Taking advantage of the kit's excellent fit, I built the fighting compartment exterior in stages so I could easily add detail. Here, the radio plus its headset are in place. Note the MP40 and carton of American K rations. The weathering is a combination of Ammo of Mig Jimenez (Ammo) washes and 502 Abteilung oil paints.



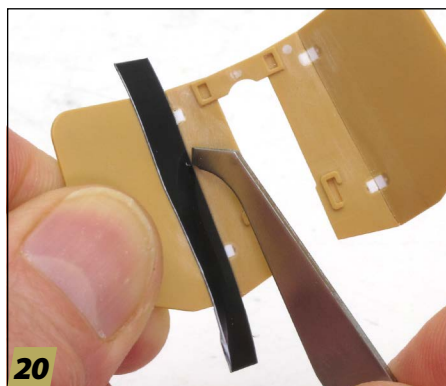
17
I used foil from a wine bottle for the straps on the MP40s, sometimes referred to as Schmeissers, and the map case. These were draped and glued in place before the items were attached.



18
After I painted the straps, the finished MP40s and map case were positioned and glued in place. Note the helmets, tools, U.S. jerry can — marked as containing water — and Schmeisser clip pouches.



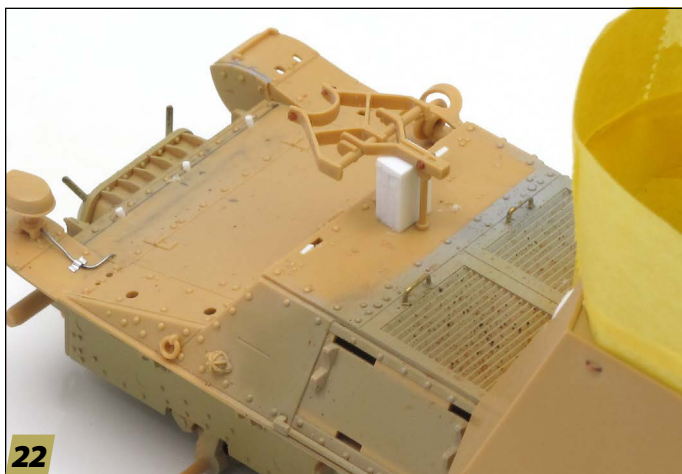
19
The cradle for the 75mm gun assembly is molded in halves and the inside seam is hard to reach. Mike Crawford's Precision Stix are perfect for dealing with this spot. You can buy these handy tools here: avworld.ca/brands/precision-stix/.



20
The inside of the gun shield is devoid of detail and ordinarily I would dress it up with PE. But in the spirit of making do, I added detail beginning by scribing lines to match the outside swivel joints between the three individual plates that make up the shield. Dymo tape guided the scribing tool.



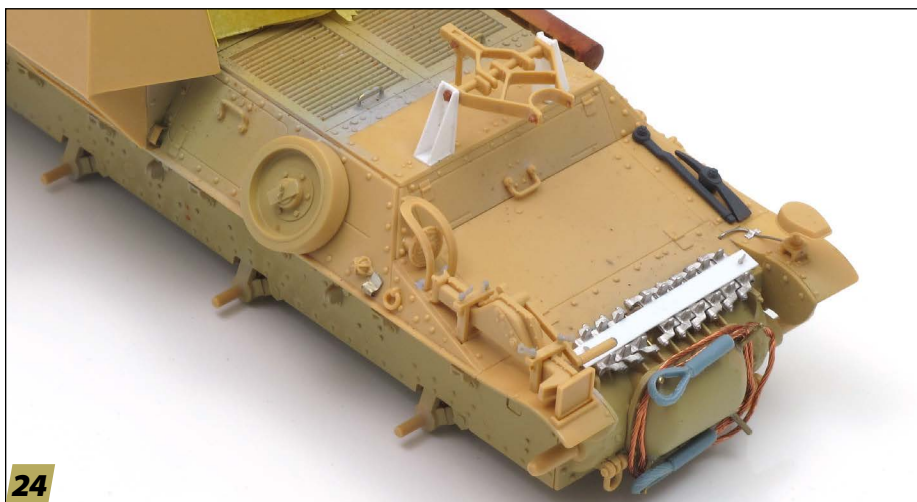
21
I punched discs from sheet styrene to represent the nuts of the bolts that hold the exterior hinges between the plates and the gunsight aperture in place. Note the pencil lines that ensure even spacing.



22 After masking the interior, I added the last of the exterior details. Tamiya's gun travel lock assembly is overly thick, so I thinned it with sanding before placing — but not gluing — it on a chunk of styrene for spacing and glued it to the hull by its rear locking post.



23 With the gun cradle suspended by its locking post, I added uprights, scratchbuilt from styrene sheet, to both sides. Because the scratchbuilt parts lack positive attachment points, this sequence ensured correct positioning of the multipart assembly.



24 The tow cable, spare wheel, and track links (all field modifications), were added using parts from my spare's box. The mounting brackets for the crowbar are the only two pieces of PE used on the model.



25 To suggest this Marder had a veteran crew, I added kill rings on the barrel by spraying the end with a mix of equal parts Tamiya Flat White (No. XF-2) and Gloss White (No. X-2). Then, thin strips of Tamiya tape masked five rings.



26 For a base coat of dunkelgelb, I sprayed a 1:1 mix of Tamiya Dark Yellow (No. XF-60) and gloss white. Next, I airbrushed a mix of equal parts Tamiya NATO Green (No. XF-67) and gloss white cut about 80% with Mr. Color Leveling Thinner at 12 psi with an Iwata Custom Micron brush.



27 I painted the gun shield last, holding it in position with poster putty. The rotbraun is Tamiya Linoleum Deck Brown (No. XF-79) again mixed with 80% leveling thinner and sprayed at 12 psi.



28

After applying a pinwash with Ammo Brown Wash for German Dark Yellow (No. A.MIG-1000), I faded the camouflage using Mike Rinaldi's Oil Paint Rendering technique. In short, it involves applying and blending small areas of paint to enhance or slightly alter the underlying shades.



29

To evoke the dusty Normandy environment, I airbrushed light coats of AK Interactive Dust Effects Wash (No. AK015) and Africa Dust Effects Wash (No. AK022), concentrating on the lower half of the vehicle. Then, with a flat brush moistened with AK Odorless Thinner (No. AK049), I stippled and streaked the dust mixture to create a patchy appearance.



30

I took advantage of Tamiya's removable running gear and applied splattered mud and dirt over the lower hull by flicking a metal spatula across an old brush loaded with a mixture of Ammo Nature Effects Earth (No. A.MIG-1403), which has a gritty consistency, and AK dust effects.



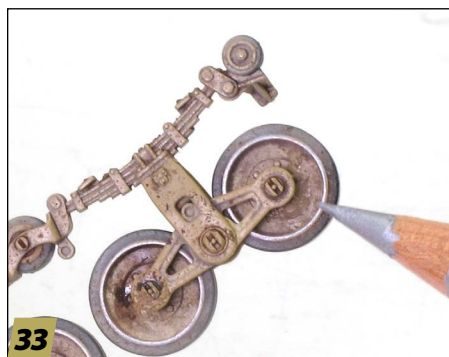
31

While the suspension units were off the hull, I built up dried mud deposits on them using Ammo pigment dabbed in place and fixed with Tamiya Acrylic Thinner (No. X-20A) applied with Flex-I-File One Drop Applicator.



32

I created fresh mud splashes by using an airbrush to blow thin 502 Abteilung oil paints in a variety of brown shades over the lower surfaces.



33

The action of the tracks removes paint from the rims of the road wheels on the real vehicle, so I rubbed the side of a silver Prismacolor pencil along this raised detail on the kit parts to replicate the effect.



34

To further the idea that this Marder was crewed by veterans, I left two of the tape strips masking the kill marks on the gun barrel throughout the weathering process. Removing them before final assembly revealed two more recent victories.



35

As a final detail, I punched a disc of clear acetate to represent the gunsight lens and glued it in place with clear-part cement.



36

Brian and I used one of the two figures included in the kit, but to suggest an older, veteran crewman, Brian replaced the head with a bald one from Hornet (Set No. HH19), carving the neck to fit the molded collar. He added the fringe of hair with Apoxie Sculpt putty shaped with a dental pick.



37

Brian undercoats faces with a mix of 6 parts white, 3 parts burnt sienna, and 1 part yellow craft acrylics (left); he prefers Deco Art paints. Next, he brushed on a thin layer of burnt sienna artist oil paint.



38

While the base is still wet, Brian added shadows with Mars brown and highlights with a mix of 7 parts titanium white and 3 parts burnt sienna. More white added to the mix lightened the brightest highlights. For the deepest shadows, he brushed on raw umber. Tiny amounts of cadmium red will add life to the cheeks and lower lip.



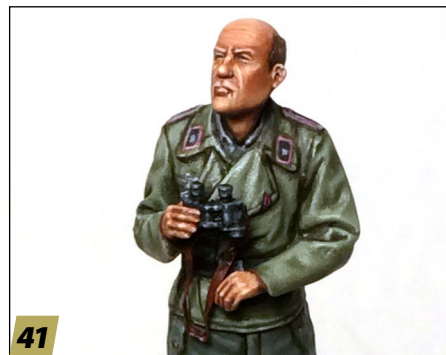
39

After applying rough blocks for the initial shadow and highlight colors on the trousers, Brian used an older, slightly frayed Size 1 brush barely damp with mineral spirits to lightly stipple the lines between the shadows and highlights and create smooth transitions and produce the mid-tone shade. He used the same process on the shirt.



40

Five-minute epoxy attached the resin head to the styrene body. Rather than try to pick out the piping on the shoulder boards and collar patches, Brian painted the whole shape acrylic pink.



41

Then, he filled the inside of shapes with lamp black artist oils. The collar patches have tiny metal skull badges in their centers, duplicated with a small dot of light gray oil paint and a smaller dot of white as a highlight. The binocular strap is a thin strip of lead sheet colored with an acrylic undercoat and oil paint shades and highlights.



42

The completed figure was tacked in place with 5-minute epoxy and then secured with thin superglue. Brian painted an Iron Cross ribbon in the tunic's buttonhole using the same method as the shoulder boards — a wider black stripe reduced to thin lines by a thinner white stripe on top of which is an even thinner red stripe. To connect the figure to the vehicle, his cap was placed on the gun recoil rails.

FINAL THOUGHTS

WHILE PLANNING THIS PROJECT, Brian and I speculated that because the Marder I was a make-do tank destroyer, they would be crewed by older veterans. The bald pate and greying hair suggest a middle-aged soldier. With its faded kill rings and grimy interior, this Marder I looks like it's been on the Normandy front since the start of the campaign. With its open top, vehicles like this are great subjects for detailing. **FSM**

GO, SPEED RACER, GO!

Learn scratchbuilding techniques
while improving a Polar Lights
1/25 scale *Speed Racer*
Mach 5

BY LONNIE ELDER

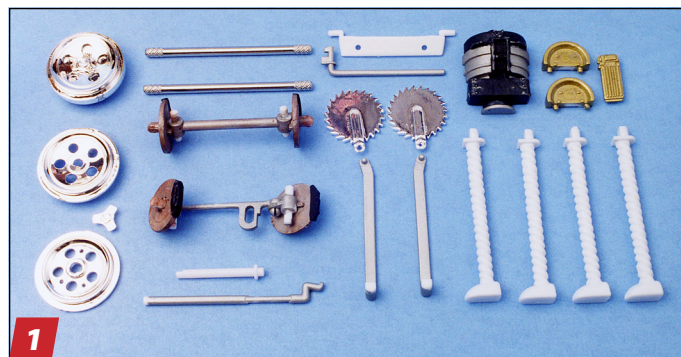
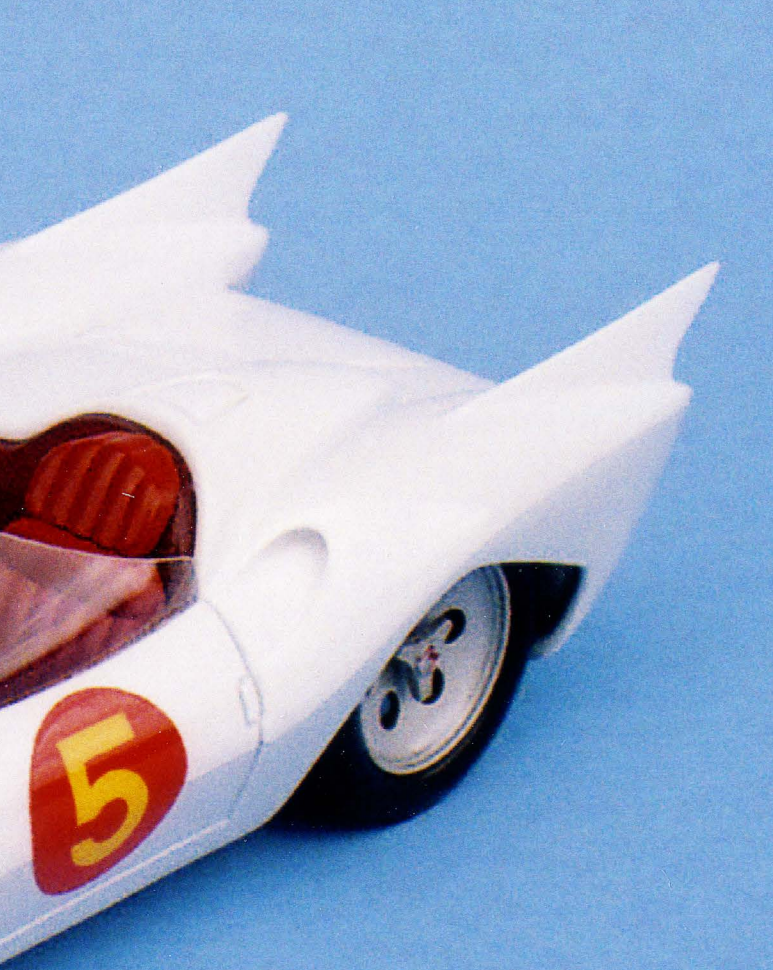


S*peed Racer* first aired in the U.S. in 1967 and has run in syndication and now on streaming ever since. Immensely popular, the show is about a boy named — you guessed it! — Speed Racer and his adventures while racing his souped up, one-of-a-kind race car, the Mach 5. Corny, fun, and endearing, *Speed Racer* has left an enduring legacy and is a favorite anime show with a diehard following.

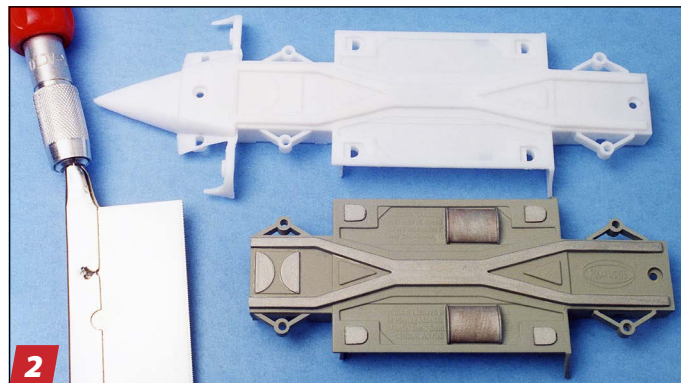
In a moment of nostalgia, I bought a Polar Lights 1/25 scale *Speed Racer* Mach 5 kit and

figured it would be something quick and easy to build in between more “serious” models. But, like many modelers, once I did a little research and realized the kit was not all that accurate, I decided to correct some details.

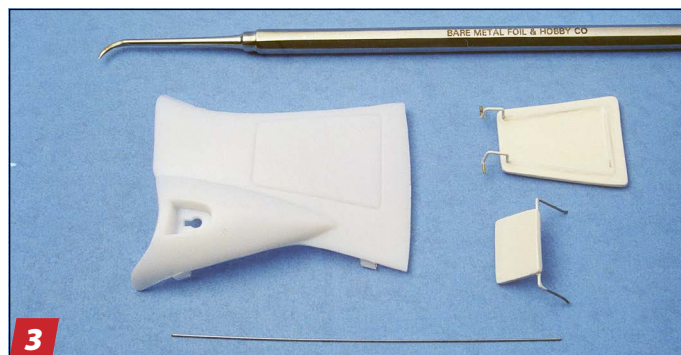
For research, I watched about a dozen episodes with a modeler’s eye for detail and visited various websites in my hunt for corroborating information. Right off, I noticed the car isn’t drawn consistently — often for convenience. For example, the dash mirror is a mirror in one



1 The Polar Lights Snap-It kit has metal axles and single-piece wheels (upper left) and is missing the rest of the parts you see Here. Not necessary, but still, quite a bit. (Parts from both kits shown.)



2 The lower part of the front nose was cut away from the chassis and attached to the body to allow me to more easily fill seams.



3 I carefully removed the trunk lid with a scribing tool. The hinges for the lid and the homing robot panel were made from guitar string.

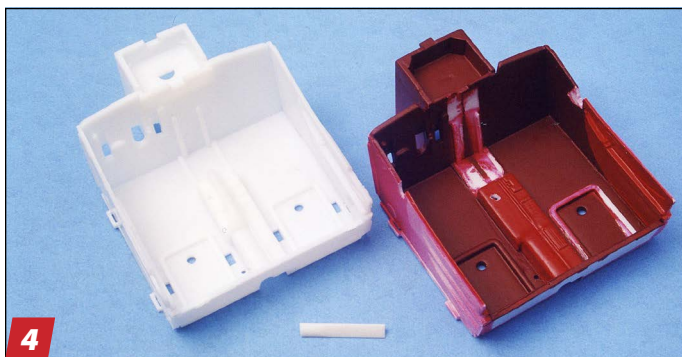
episode and a TV monitor in another. There are a couple of variations of the instrument cluster. The wheels are variously rendered with five or six holes, and two-way radios magically appear where there were none. In the pilot episode, a scene showed an open trunk lid at one point and then, in the same scene from a different angle, the whole rear panel hinged and opened!

With these inconsistencies, it is difficult to say what is accurate. Even so, there are obvious compromises in the kit. I made my decisions for detailing based on what I saw most often. Some of what I believe are inaccuracies will be discussed later, as I tell how each part was detailed, but for now let's start with the basic construction.

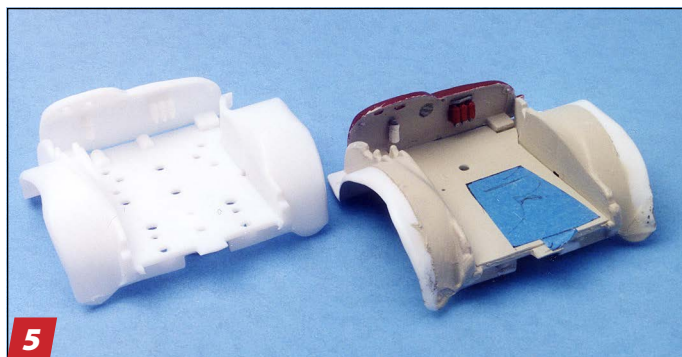
Kit options

Originally issued as a glue-kit and revamped as a snap-kit, Round 2 has reissued both for Polar Lights (nos. POL981M and POL990M, respectively). The snap-kit simplifies much of the build, with many parts missing. Some aren't necessary, while others are inaccurate — saw blades, jack stands, support arms, and engine parts, **1**. The wheels in the snap-kit combine the two-part wheels and knock-off spinners from the glue kit and would require a lot of work to make a more-accurate representation.

The snap-kit also lacks brake rotors and calipers and features metal axles. While the "turbine" engine reportedly rests in the trunk, the episodes I watched showed a more conventional powerplant that was not located in back. While you gnaw on that, also consider the snap-kit has stickers, while the glue kit offers water-slide decals. I'll paint my markings, thank you, tedious though it may be.



Notches were added to the interior to accept the dash, and I added corner supports for the homing robot panel. The ridge on the center console was removed to better represent the car as seen in the show.



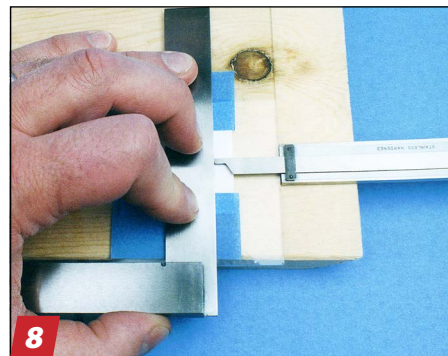
Styrene sheet, cut to fit, covered the holes in the trunk floor. The blue masking tape is a reference to mark the location of the trunk opening.



The top pleats were filled with epoxy putty and sanded smooth. I rounded the top corners to come closer to the correct shape, although I didn't end up modeling the seat frames. Still, an overall improvement.



To get the shifter boot right, I made a new one from epoxy putty opened up with a micro bit. A straight pin serves as the shifter itself.



It may be a small detail, but I like to make accurate cuts. So, I laid out and cut the shifter base plate on a sheet of glass using a machinist square and calipers.

Basic modifications

For me, it's the glue kit all the way. First, I separated the front nose from the rest of the chassis with a razor saw. It's really part of the body, and going this route made it easier to glue it on, fill seams, and sand, **2**. Sections of styrene sheet were glued inside the cut piece to help splice it back together at final assembly.

The molded-in panel lines provided a perfect guide for cutting out the trunk lid with a scribing tool. After a few passes of the tool around the lines on top, I could see them underneath and finished cutting from the bottom. Lengths of guitar string glued the underside of the lid worked well for hinges. I removed the plastic hinge pins from the homing robot cover panel and made another simple hinge with guitar string, **3**.

The console should be flat where the shifter is, but removing the molded ridge opened a small hole through the plastic. I filled it with superglue mixed with baking soda. I widened the holes near the tops of the interior door panels. This allowed me to assemble the interior without the dash and install it later. Lengths of quarter-round styrene shaved into triangles were glued inside the front corners of the homing robot's compartment to support the cover panel, **4**.

The glue kit had several parts located in the trunk not present in the snap-kit, but all the mounting holes are still there. Of all the parts, the oxygen tank is the only one that belongs there, and it's better off in another location. I made a pattern of the bottom of the trunk from paper and tape and covered the holes with a piece of thin styrene sheet cut to fit, **5**.

The pleated seats should have had rounded upper corners. I filled the pleats along the top with epoxy putty, smoothed it with a wet finger, and filed the perimeter to incorporate the new headrest,

6. Not exactly accurate because it lacks the frame seen in the show, but it's close. The seats and many other interior items were painted Insignia Red, with much of the rest of the interior painted a mix of Insignia Red darkened with Dark Olive.

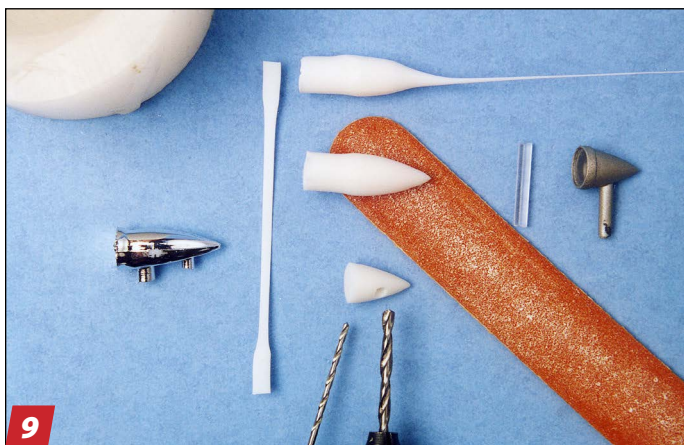
Scratchbuilt details

The Mach 5 shifter has a boot with three convolutions. To model it, I kneaded Milliput two-part epoxy putty into three balls, each slightly smaller than the previous. I stacked them together like a little snowman and squeezed just a bit off-center to flatten and skew the balls. After the putty hardened, I superglued the boot to a square of .020-inch styrene sheet and drilled a hole through the stack with a micro bit and pin vise. A round-headed straight pin finished the shifter, **7**.

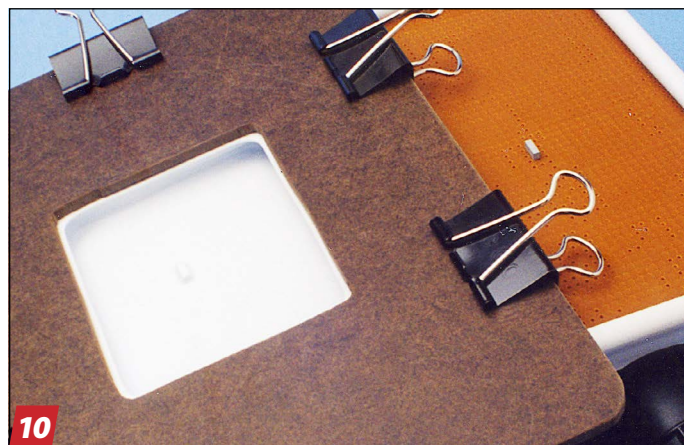
To precisely cut small squares or rectangles of sheet materials, like the base of the shifter, I tape the sheet to a piece of glass from a picture frame. Then I use the depth gauge on calipers to position a machinist square and draw a sharp knife along the square's edge, **8**. Mark the desired dimensions and make subsequent cuts using the same technique.

To replicate the bullet-shaped mirror, I found lengths of sprue approximately the same diameter and stretched them over a steady candle flame. After snipping the tail, I shaped the part with a sanding stick, cut off the unshaped part of the sprue with a razor saw, and smoothed and polished the mirror face. Similarly, I stretched a length of rectangular styrene and used it for the trim around the mirror. I drilled a hole in the mirror and mounted it on round acrylic rod, **9**.

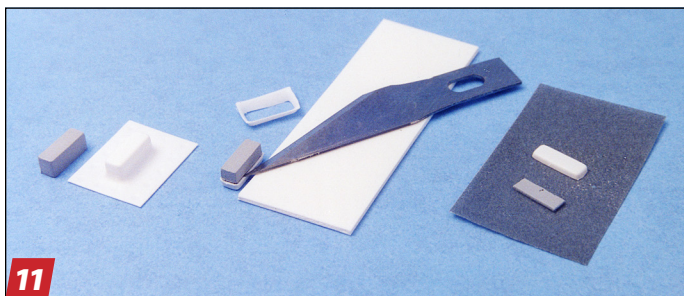
Vacuum-forming styrene can be intimidating, but it doesn't have to be. I used a small rectangular piece of styrene as a buck to



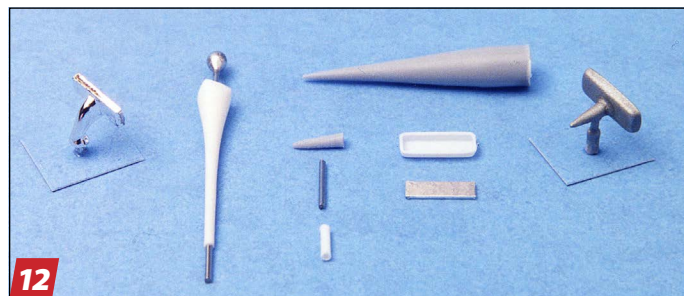
9 You can stretch sprue for thin, wiry parts, but you can also use it to get other shapes. Here, I stretched sprue to use the wide end as the body for the Mach 5's mirror housing and shaped them with sanding sticks.



10 Vacuum-forming doesn't have to be complicated. A simple, rectangular piece of styrene served well as the master or "buck" for the dash mirror's housing.



11 I trimmed the housing with a No. 11 blade glued to scrap styrene sheet. The buck I used in Step 10 made an excellent support to cut against.



12 To finish the mirror, I stretched round styrene tube over a straight pin to make the base. Stretched sprue became the spike on the back of the mirror housing, and the glass is Bare-Metal Foil on thin styrene sheet.



I went to a second kit to make the buck to vacuum-form corrected air scoops. I cut the scoops from the second kit's body, filled them with epoxy putty, smoothed them, and cut recesses in the other body to accept the new parts.



Making the buck for the new windshield took more work. It started with the kit windshield glued to styrene for support. I then glued a spacer to the top edge to make a guide for screeding epoxy putty to correct the windshield's angle.

make a tray-like housing for the dash-mounted mirror, **10**. The housing was first rough-cut from the surrounding plastic with scissors, and then I inserted the buck to have something to cut against. With a No. 11 blade glued to a piece of styrene at a fixed level off the workbench, I ran the perimeter of the housing against the blade, trimming it level. Final cleanup was done by placing a thin rectangular spacer inside the housing and rubbing this assembly facedown against a piece of sandpaper on a flat surface, **11**.

I stretched styrene tube over a straight pin to make the mirror support and stretched sprue similar to Step 9 for the spike on the back of the mirror housing. A small styrene rectangle covered with Bare-Metal Foil made the mirror glass, **12**.

To correct the air scoops so they opened to the front and not the top, I cut the scoops out of a second Mach 5 body and filled them with epoxy putty. After it had hardened, I sanded them to the correct shape and vacuum-formed new scoops from .040-inch styrene sheet. I cut out the new scoops and cleaned them up. I used

a narrow chisel blade to scrape the body recesses and glued the new scoops in place, **13**. A little superglue filled small gaps.

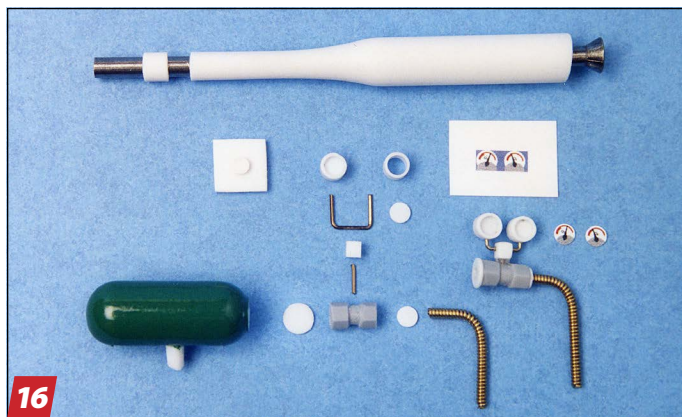
The buck for the windshield proved more complicated to make because the kit's part was too thick and its angle too shallow. I glued the kit windshield to thick styrene sheet to prevent flexing and glued an arc of .08-inch x .10-inch styrene strip around the top edge and sanded it to blend the rear edges.

Next, I made a "screed" tool from thick styrene sheet shaped with an arc correctly reflecting that of the animated windshield. I coated the front of the kit windshield with epoxy putty and shaped it with the screed, using the strip along the top of the part and the bottom edge of the part as guides. After the putty hardened, I sanded it smooth, primed and polished it, and then vacuum-formed a new windshield, **14**.

To make a hex bar for the oxygen tank, I threaded two small hex nuts to either end of a length of sprue (handy stuff, that sprue!) and superglued them in place. Using a rotary tool fitted with a milling cutter and router base, I carefully worked the piece back



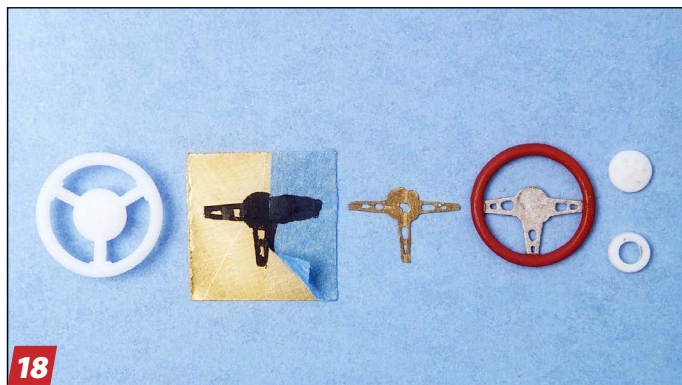
Unable to get hexagonal rod, I made some myself. Hex nuts superglued to either end of a section of sprue were used as guides to mill the plastic with a rotary tool and router base. I wore work gloves for protection.



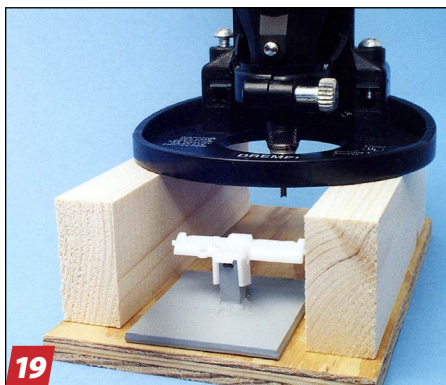
The oxygen tank gauges and manifold were made from stretched tubing, punched disks, guitar string, and hexagonal and square styrene rod.



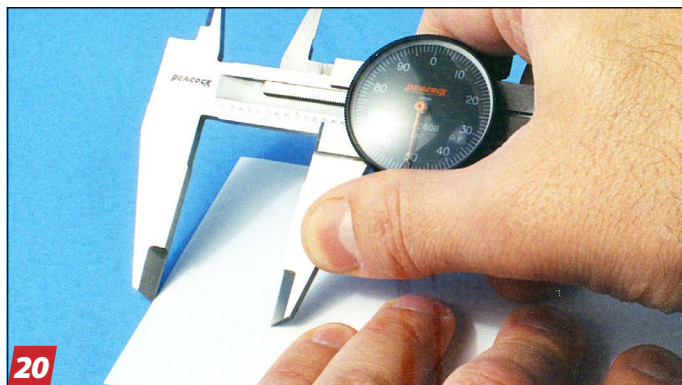
You can etch your own metal parts! I masked and painted brass sheet to etch away unwanted metal for the interior of the Mach 5 steering wheel. To speed the process, place the etching solution in a shallow bath of warm water.



The simple etching technique produced a better-looking steering wheel interior than the one that came with the kit. I cut the central hub from the kit's steering wheel to use on my new photo-etched metal part.



I fashioned a U-shaped guide from plywood and 1-inch x 2-inch x 2-inch lumber to help mill away the instrument cluster and bezel on the kit dash. Remember to go slowly when performing this type of operation so you don't melt the plastic.



Measuring dimensions and marking them with a pencil always introduces errors and inaccuracies. Instead, use calipers to accurately scribe lines when laying out flat parts that you'll cut out with a hobby knife.

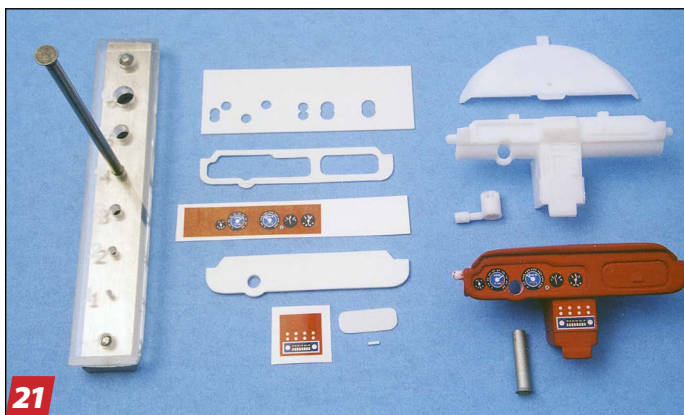
and forth over the cutter using the flats of the nuts as a guide. Work gloves protected my fingers from the bit, **15**.

I stretched round styrene tube over a punch from a punch-and-die set to make gauge bodies for the oxygen tank. This meant the bodies were the exact size to accept the disks made with the punch-and-die set for the backs and faces. The faces were designed on the computer, printed on photo paper, and punched out. Two sizes of guitar strings were used for pipes and a hose, **16**.

To replace the steering wheel spokes, I photo-etched my own. After cleaning a section of brass sheet with Scotchbrite, I applied masking tape, drew the desired shape, cut it out, and removed the tape to reveal the parts of the brass that I wanted to keep. Then I painted the exposed brass on the masked side and all of the back of the part and then removed the remaining masking tape.

The paint will protect the parts you want to keep from the etching solution. To minimize the amount of solution required to etch away the unwanted brass, only a narrow strip and small open areas were left unpainted. I placed the part in etching solution, **17**.

After etching, I thoroughly washed the new part and stripped the paint. The spokes were cut away from the kit steering wheel, and I cut three notches into the wheel to accept the new spokes. After supergluing the spokes, I cut the hub from the kit wheel in half with a razor saw and glued the parts in front and behind the new, photo-etched metal spokes, **18**.



21 An instrument cluster designed on my computer and printed on photo paper was sandwiched between a backing plate and bezel for the new dash. I also made a new glove-box door with sheet styrene.



22 The scratchbuilt replacements really spruce up the interior of the assembled cockpit, especially under paint.



23 With the reworked air scoops, reshaped tailfins, and the frame for the trunk lid in place, I filled and sanded the body in preparation for paint. The yellow circle was the first bit, followed by gloss white, and then the lower blue gray. At this point, I'm ready to apply red.

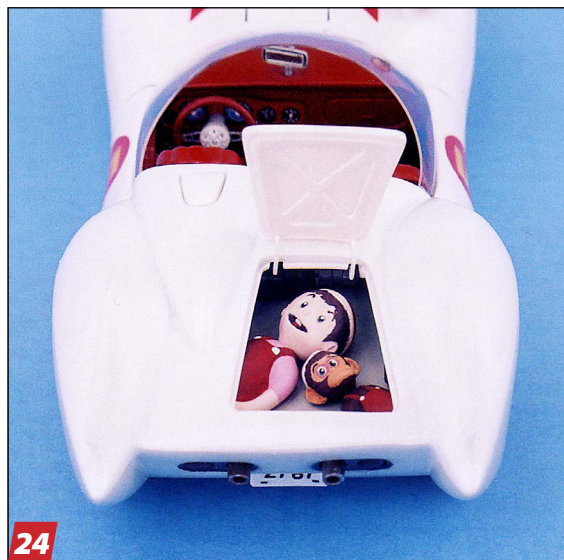
The kit instrument cluster looked like it was lifted from some other kit of a modern car. That wasn't going to fly for me. I made a U-shaped channel from dimensional lumber and ½-inch plywood as a guide for a rotary tool mounted to a router base. After temporarily gluing the kit part to a makeshift stand, I milled away layers with a fishtail bit while avoiding melting the plastic, **19**.

I designed a replacement instrument cluster comprised of a backboard and printed gauges and a new bezel to surround the instrument cluster and glove box.

Starting with a styrene sheet with a square corner and straight edges, I laid out my dimensions with calipers. First, I set the calipers to the desired measurement from the edge and lock the position. Then, holding the outer jaw against the edge, I drew back along the edge to scribe the plastic with the inner jaw, **20**.

All lines were laid out before anything was cut, but, when it was time to cut, I placed the point of the blade into the scribed line and push a straightedge up to it for a guide. I used the same method to make the bezel, but before slicing the straight lines, I rounded the inside corners with a punch-and-die set.

The instrument cluster and radio were drawn on a computer and printed on photo paper. All these parts were assembled, along with a glove box door made from styrene sheet, **21**.



24 If you're a fan of *Speed Racer*, you know who these guys are, and no model of the Mach 5 would be complete without them. But you won't find them in either Polar Lights kit. So, I made my own. Go, Speed Racer, go!

The over-sized steering column was replaced with a ferrule normally used to keep stranded wire from fraying. And it all comes together nicely in the finished cockpit, **22**.

The final straightaway

After assembling the body parts, I filled and sanded the seams and deepened panel lines around the doors with a scribing tool. The trailing edges of the tailfins were reshaped to match the car in the show. A frame cut from thin styrene sheet glued inside the trunk opening was added to create a lip to support the closed lid so it didn't drop inside when closed.

Painting began with a yellow circle masked and painted on each door, followed by gloss white above the demarcation line and a custom-mixed light blue gray below. I masked the 5 on the doors, and painted the circles and the M on the hood gloss red, **23**.

Once all the paint had dried completely, I top-coated with a gloss clear enamel. Note that gloss colors take much longer to dry than flats, so allow drying time between coats or you may regret it. And as for type of paint, use what you're comfortable with!

No Mach 5 would be complete without Spritle and Chim-Chim hiding in the trunk. These figures were sculpted, cast, and painted by me, but that's a story for another time, **24**. **FSM**

VETERAN WEARING CIVVIES



Modifying a 1/48 scale HobbyBoss LCM for a logging company

BY JOSEPH KREISS

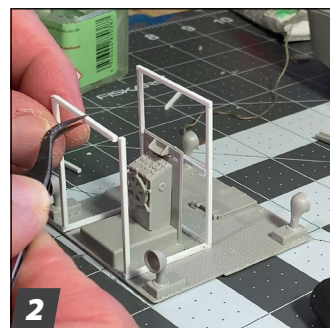
While I can't recall which hobby came first, building model airplanes and tanks or building a model railroad layout, I know that I focused on the model railroading and dabbled in static modeling as a pastime. I am currently building an operational O scale (1/48 scale) narrow gauge Louisiana swamp logging railroad. It is set post World War II when an abundance of surplus military equipment found new life in civilian roles. I have been delighted by the wonderful 1/48 scale military kits on the market and have integrated many of these kits into my layout.

Most recently, I purchased the excellent HobbyBoss 1/48 scale LCM-3 (No. 84817) with a plan to convert this shallow-draft U.S. Navy landing craft for civilian life plying the Louisiana cypress swamps. To pull off this conversion, I needed to remove the armament, rebuild the wheelhouse, and hint at the boat's military past with paint and weathering.





1 I followed the kit's instructions as written, omitting the .50-caliber machine guns on the aft deck in Step 5. Instead, I followed the Royal Navy deck arrangement shown in Step 13 and assembled the rung ladder and added the low handrails to the deck.



2 I omitted the armored wheelhouse, replacing it with a much larger open-air wheelhouse. I built the structure with eyeballed lengths of $\frac{3}{32}$ -inch square Evergreen styrene strip and sections of .003-inch corrugated aluminum held together with superglue.



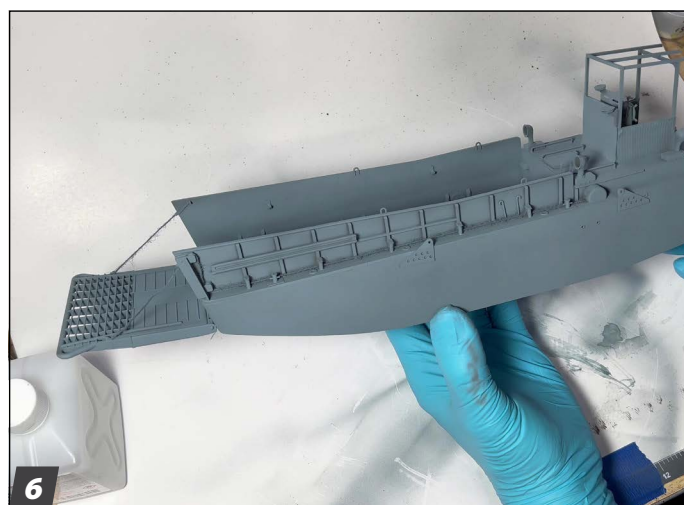
3 With the basic boat together, I took it over to the layout and test-fit it into a slot cut into the scenic water adjacent to a landing.



4 Before adding final details parts, I cleaned the hulls and superstructure with isopropyl alcohol and a lint-free cloth to remove any finger oils and sanding residue that might interfere with paint.



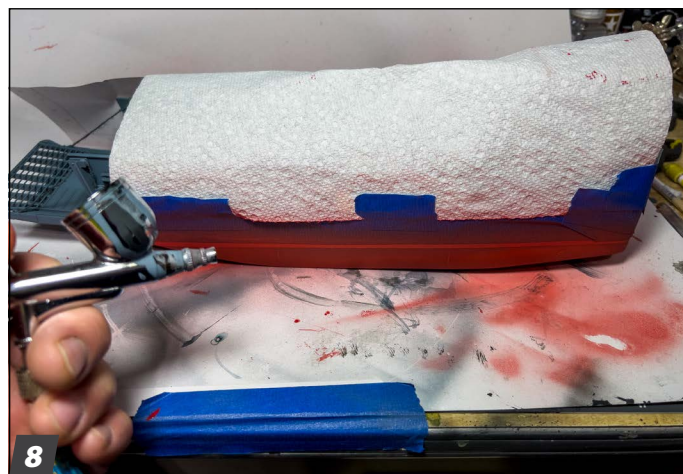
5 Next, I sprayed the model with Tamiya NATO Black (No. XF-69) mixed with Tamiya Acrylic Thinner (No. X-20A). This dark layer will serve as both a primer and a base coat for the colors to come. Over this, I sprayed several coats of unscented hairspray.



6 To produce a typical Navy camouflage blue, I mixed 4 parts Tamiya Sky Grey (No. XF-19) and 3 parts Medium Blue (No. XF-18). I airbrushed this allowing a little of the black to bleed through. Next, I used water on a stiff brush to lightly remove some of the paint inside the cargo bay.



Over Testors Clear Gloss Lacquer, I combined kit markings with custom decals for the logging company and its vessel number and applied them to the side of the LCM. Microscale decal solutions encouraged the markings to settle over details.



Wanting to add color, I masked the hull and airbrushed the bottom DecoArt Country Red craft paint thinned with Liquitex airbrush medium and mixed with a few drops of Tamiya Acrylic Paint Retarder (No. 87114) to prevent paint drying in the airbrush. More hairspray followed.



To fade the camo, I poured my custom mix into the color cup of my airbrush and added several drops of sky gray. Misting this over the model toned down the blue and the decals and produced a sun-faded appearance. Using heavier applications of this shade, I added highlights to the deck and hold that would be more exposed to the weather. Using a wet, stiff brush, I wore some of this layer making the paint look patchy and worn.



After dipping a fine, pointed brush in undiluted burnt umber craft acrylic, I drew it across the hull exterior and the walls of the bay to produce scratches from rough work.



I made light and dark rust washes by mixing Bragdon Enterprises weathering powders with distilled water. Generously brushing these on created layers of corrosion that worked especially well on the floor of the cargo bay where water would likely pool.

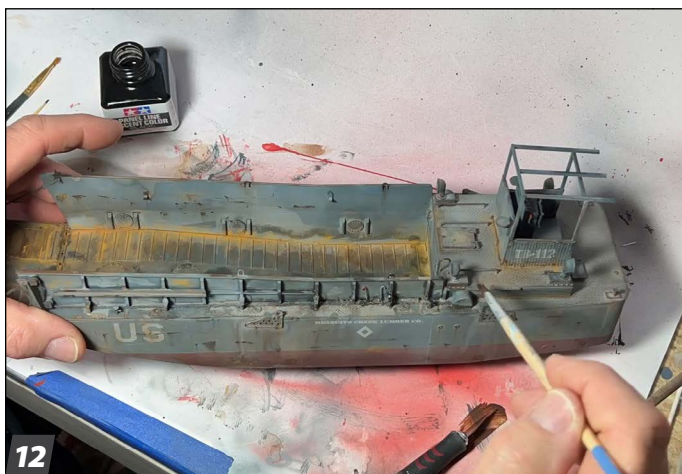
Meet Joseph Kreiss

ALTHOUGH HE HAS DABBLED IN PLASTIC MODELING since he was a kid, Joseph is best known for his HO and On30 scale model railroads, and his work has been featured *Model Railroader*, *Railroad Model Craftsman*, *The On30 Annual*, and *O Scale Railroading*.

Officially retired from careers as an on-air radio personality and a professional chef, he continues to work as a freelance photojournalist and a reporter for his local weekly newspaper.

Joseph and his wife Kim live in Truman, Minnesota, with their two dogs when they aren't touring the U.S. in their Ford Transit camper. They document those travels on their YouTube Channel and weekly blog at #jkandkiminthecamper.





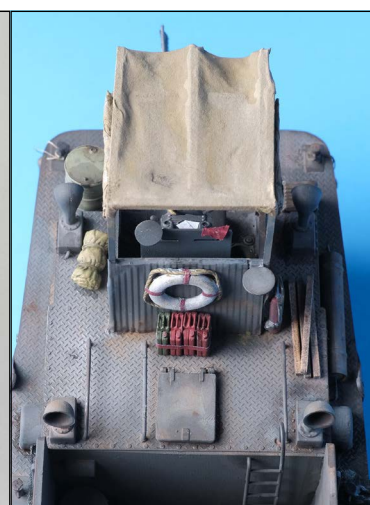
Before applying black Tamiya Panel Line Accent Color (No. 87131), I hit the surface with enamel thinner on a small paintbrush; this allows the paint to flow better. I worked the wash into details to pop weld seams, fixtures, cracks, and recesses.



I posed the ramp lowered as it would appear on the layout and added small clumps of mud to the tread using brown Tamiya Soil Effect Texture Paint (No. 87108) on a stiff brush.



Inside the hold, I added coils of cable, old planks and lumber, an oil drum, jerry can, and a tarp, but it still seemed to be missing something — it was bone dry. To convey the damp environment of the swamps and bayous, I carefully poured a thin layer of gloss pouring medium tinted with a few drops of Vallejo Model Color Khaki (No. 70.988) and Model Air IJA Light Grey Green (No.71.320) into the aft area cargo bay where it sits lowest. I pushed the gloss medium around the debris with a small brush and added puddles toward the front of the LCS to depict water tracked by recently off-loaded equipment.



The wheelhouse needed a cover, so I placed a square of facial tissue slightly larger than the top of the wheelhouse frame on glass and painted both sides with khaki acrylic paint. While it was still wet, I carefully lifted the tissue onto the wheelhouse roof framing and gently pushed it into place, adding a slight sag between the supports. As the paint dried, it locked the tarp in place.



16

To further the LCM's hard-working appearance, I gathered 1/48 scale air tanks, tires for bumpers, jerry cans, oil drums, railings, crates, tarps, toolboxes, and lumber around the wheelhouse. I printed a Jolly Roger flag and superglued it to a piano wire pole on the aft deck to give the boat crew some Cajun pirate swagger. The skipper is a modified Tamiya 1/48 scale figure sporting a logger's tin helmet.

FINAL THOUGHTS

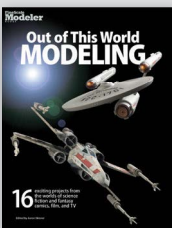
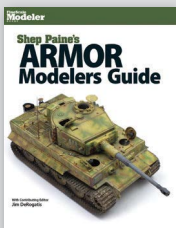
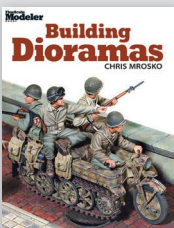
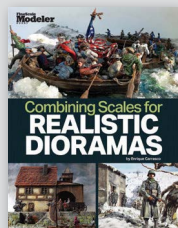
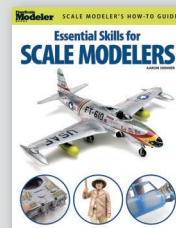
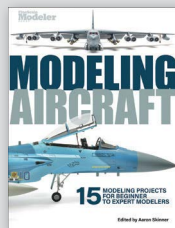
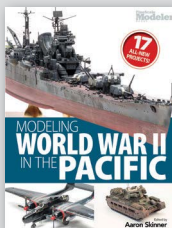
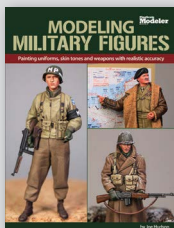
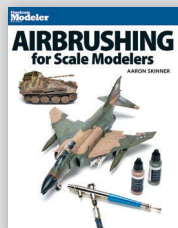
TO WRAP UP THIS fun and rewarding project, I placed the finished LCM in the slot cut into the extruded foam painted water. The WWII veteran looks right at home dock side on my On30 scale narrow gauge Mosquito Creek Lumber Co. swamp logging railroad layout.

FSM



Essential Scale Modeling GUIDEBOOKS

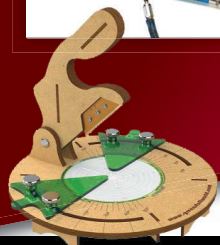
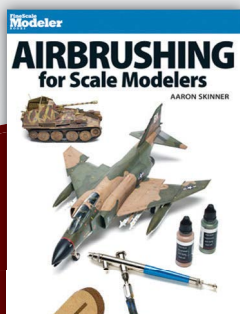
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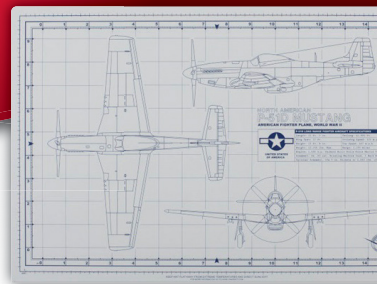
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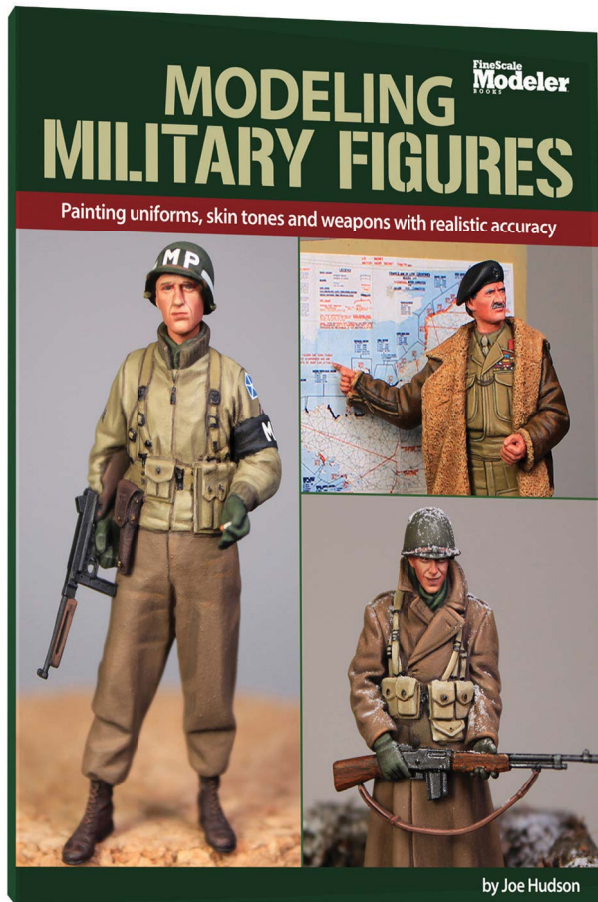
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Revell '71 Ford Mustang Boss 351

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Simple: The 1971-only Mustang Boss 351, with its all-new body and solid-lifter, canted-valve Cleveland V8, is now viewed by some as being the best all-around performance Mustang of the entire first generation (1964 ½ to 1973). Until now, scale auto enthusiasts wanting to replicate this seminal vehicle in scale were faced with finding expensive annual kits and plenty of kitbashing and scratchbuilding work.

The instructions clearly guide you through building, which starts with the engine, followed by the interior, chassis and engine compartment, wheels and tires, and, finally, the body. Follow the instructions closely for best results.

Let's be clear: Revell has produced a fully accurate 351 Cleveland V8 that builds beautifully and provides you with plenty of opportunities for detail work.

The interior replicates the optional "Décor Group" upgrade (shared with the 1971 Mach 1 Mustang) with wood-grain interior decals, gauges, and Hurst markings for the shifter. Make sure your modeling supplies include Microscale Micro Set and Micro Sol decal solutions and a fresh, fine-tipped Molotow Liquid Chrome marker — you'll use them extensively on the interior.

Revell's re-creation of Ford's optional 15-inch x 7-inch Magnum 500 wheels is the best you'll find in a scale model kit. The tires appear correctly sized, but you'll have to add the sidewall Firestone Wide Oval raised white letters from the decal sheet.

Revell based the body proportions and details on a digital scan of a full-size, restored Boss 351 and, as a result, are highly accurate. The beautifully rendered kit body shows minimal mold lines. However, all-out contest modelers may want to pay extra attention when cleaning up the passenger side, rear quarter panel where it meets the C-pillar behind the quarter window. The door panel lines also could be deeper. Four shallow ejector-pin marks are visible on the the molded headliner inside the body.

Some modelers have criticized Revell for omitting separately molded under-hood ram air ducting; instead, it is molded in shallow relief on the underside of the hood. This is a compromise to account for the necessary depth of molded styrene and the full-scale components under the hood. In this instance, Revell chose to prioritize a correctly-scaled engine over height.

Most of the kit parts fit precisely with securely aligning pins and slots. However, I found that the holes on the underbody (Part 8) needed to be widened to accept the locators on Part 38. The forward extension of the rear differential (Part 68) needed to be clipped back about ½ inch to allow the driveshaft to fully seat.

The precise fit of the windows to the body may cause issues for modelers who

use 2K paints due to paint thicknesses. Now might be a good time to point out that full-size Boss 351s were painted with single-stage colors without a clear coat.

Decals and masking presented the most challenges while completing the Mustang. The decals are thin and accurately rendered but require careful application to achieve the correct alignment on the body. The decal sheet includes renditions of both the silver and the black Boss 351 exterior graphics, including the rocker panel stripes.

Mask the hood and apply the decal around the outside edge of the blackout area. I masked to a depth of 3.8mm (about



Kit No.: 14512 **Scale:** 1/25 **Mfr.:** Revell, revell.com (Sample courtesy of mfr.)

Price: \$29.99 **Comments:** Injection-molded plastic (white, chrome plated, clear); 129 parts (4 black vinyl tires); decals **Pros:** Precision assembly; incredibly detailed; terrific value

Cons: Simplified front suspension; shallow door panel lines

$\frac{1}{32}$ inch for us non-metric types) with Tamiya tape (Revell supplies a masking pattern in the instructions) and airbrushed decanted Tamiya Semigloss Black (No. TS-29). I went with semigloss black even though the full-sized car's blackout is flat black, but that flat a paint conflicts to a degree with the glossy finish of the blackout border decal.

Speaking of the blackout border decal, Revell prints it as one piece on the sheet, which makes it difficult to align properly. Consider cutting it into three pieces before application. I would have preferred Revell provide a decal for the entire hood blackout along with separately molding the inset NACA hood scoops that could be painted. As it stands, the scoops are too deeply inset to accept a decal treatment.

I built my model with full factory paint detailing, and, to my eye, Revell's comprehensive paint instructions appear accurate. Between that and applying over 50 individual decals, I invested well over 40 hours in assembly. Moderately experienced modelers should have no difficulty assembling the Revell 1/25 scale 1971 Mustang Boss 351 plastic model kit; the ability to handle complex decal treatments will be a plus.

As today's global kit makers continue to raise prices and often choose to simplify or even omit engine and under-hood details, the Revell '71 Mustang Boss 351 makes a bold statement that freshly tooled and completely detailed scale model kits are still relevant to modelers. Combined with its modest price, this kit provides modelers with great value for their hobby dollars.

— Tim Boyd

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Takom M103A1

The M103A1 was primarily used by the U.S. Army, and its distinguishing feature was a gasoline engine, resulting in a unique engine deck and a heat shield under the turret rear. The later M103A2, used by the U.S. Marines, featured a diesel engine with an engine deck like the M48A3 and no turret heat shield because of the different exhaust location.

Takom joins Dragon in offering both versions of the M103, the last American heavy tank. The 1/35 scale M103A1 plastic model kit does an accurate job of replicating distinguishing features, like the heat shield that Dragon missed. Another feature Takom provides that the Dragon kit did not is the option for mantlet covers unique to each version.

The 19 assembly steps start with the running gear. A complicated process, it produces workable torsion bars and road-wheel arms. I glued the first and last road wheels on each side to ensure they didn't lift off the ground if I pose the model moving over bumpy terrain. I held off building the tracks, instead finishing the lower chassis and adding the deck first. There aren't many tiny parts on the model, and it went together smoothly with minimal cleanup and no flash.

The kit offers three barrel options: an all-plastic barrel, with or without the nice mantlet cover, or a metal barrel with a plastic muzzle and no mantlet cover. I chose to use the plastic barrel with the mantlet cover because almost every picture shows the full-size tanks with the cover in place. The rest of the turret assembled easily. This is a good place to note that it and the hull have beautiful casting texture molded on.

Takom provides a jig to help assemble the track, a critical tool since each link builds from six parts! The parts are provided so you can attach sections of guide teeth to the end connector and pins, but these must

be sandwiched between the pad halves for each link. Be extremely careful applying cement to the pads to avoid gluing the links together. I broke down this assembly over three nights, about 10 total hours, and the result was a beautiful pair of working tracks. I have other Takom kits that use the same track breakdown, and I think the result is worth the effort, so I am not afraid to tackle them.

The beautifully printed decals were thin but delicate and needed a healthy dose of decal solution to allow them to move into their final location. I learned this the hard way when I wrecked one of the star insignias; fortunately, I had a spare in my decal collection.

Takom's 1/35 scale M103A1 was an enjoyable build, despite the lengthy track-assembly step. Well engineered, the hull and turret build quickly. I spent a total of 24 hours on the model, and because of the tracks, I recommend it for modelers who have previously built a few armor kits.

— David Nelson



Kit No.: 2139 **Scale:** 1/35 **Mfr.:** Takom, takom-world.com (Sample courtesy of mfr.) **Price:** \$64 **Comments:** Injection-molded plastic (light gray, clear); 1,541 parts (20 vinyl poly caps, 1 metal barrel; braided copper wire); decals **Pros:** Well-engineered kit; clear instructions; flawless clear parts **Cons:** Difficult individual-link tracks; no antennas

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By Tim Boyd

Two complete trucks

AMT loads a 1/43 scale kit with a Peterbilt 359 conventional tractor and wrecker

With the introduction of its 1/25 scale Class 8 over-the-road semi-trucks in the early 1970s, AMT quickly realized it was on to a big, new, product category. As the company rushed additional kits into production, the idea occurred to AMT's management team that the large size of these assembled models and their comparatively high price (sometimes more than twice that of the average car kit) might deter some hobbyists.

AMT's answer was a series of similar kits, based on the engineering of its existing truck kits, but rendered in a smaller scale. At 1/43 scale, these downsized truck and trailer kits would yield assembled models roughly the same size as AMT's 1/25 scale car kits, and they could be sold at a more accessible price point, too.

The resulting 1/43 kit catalog started in 1973 with a Peterbilt conventional tractor, soon joined by Kenworth conventional and cabover kits. Companion kits included 1/43 scale 40-foot beaded, post, and refrigerated vans. Of particular interest here is one more kit variant introduced in 1974, a Peterbilt/Holmes twin-boom wrecker (No. T705).

A couple of years earlier, AMT had added a wrecker body variant to an original 1/25 scale Peterbilt T500 conventional, but it disappointed many truck modelers due to its somewhat out-of-date and generic design. Model truck journalist Phil Jensen addressed this shortcoming with a two-part, 16-page article in *Car Model* magazine (March and April, 1973). In it, Phil showed how to build a factory-correct replica of the Ernest Holmes Company "750" twin-boom wrecker. However, it required scratchbuilding skills that were beyond the abilities of most kit builders then.

So, AMT followed a year later with 1/43 scale Holmes 750 twin-boom wrecker as part of the new product range. It included a full Detroit Diesel 8V-71 engine and driveline, a highly detailed chassis and interior, and two full trees of plated parts. The exquisitely detailed

AMT 1/43 SCALE PETERBILT TWIN-BOOM WRECKER AND CONVENTIONAL TRACTOR

Kit No.: T785

Introduced: February 1977; reissued once in this form

Present Value: \$80

new wrecker body included twin booms, two cable reels, a stout "bolster bar," outboard legs and more; it was up to the builder to supply the cable and figure out how to rig the wrecker boom. Comprising a total of nearly 40 parts, the wrecker body was everything AMT's prior 1/25 scale wrecker kit was not.

The new 1/43 scale truck/trailer series did not enjoy the success of AMT's 1/25 scale truck kits, but AMT forged ahead with a second series of boxings that packaged the previously mentioned trucks and trailers together in single boxes. Also added was this Two Complete Trucks kit comprising both the

Peterbilt 359 conventional tractor and the Peterbilt conventional with a Holmes 750 twin-boom wrecker body. This double kit was reissued once from Matchbox/AMT; the Holmes wrecker alone was also reissued at least once more under AMT/Ertl.

If you are a small-scale builder, you owe it to yourself to assemble at least one of these relatively little-known AMT kits. And by all means, go for the Holmes twin-boom wrecker version if you can find it! **FSM**





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*build-up by
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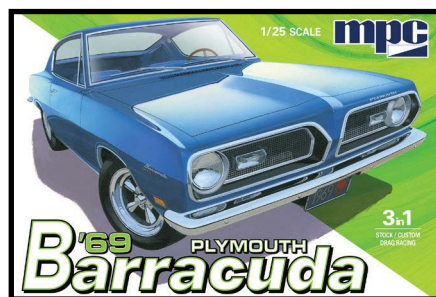
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- ❷ The nose landing gear bay has realistic depictions of details such as ribs and side boxes.
- ❸ Ordnance parts are included to recreate AIM-9X and GBU-12, and depict the “Beast mode” with ordnance attached to all six of the weapons stations.



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