

Build & paint a Gundam trooper

FineScale.com

FineScale Modeler

April 2018



p.50

SHARPER SABRES

3 CONVERSION HOW-TOS

+ HANDY
ID CHART



Chuck Davis builds three
unique 1/72 scale F-86s - p.23



**Build & detail
an SU-76M**
SPG p.18

**Distress &
weather an**
Fw 189A-2 p.42

**Cool U-boat
pen in a**
shadow box p.34

**Tips for
painting white**
on figures p.16

PLUS
**7 KITS BUILT
& REVIEWED**

Takom Merkava Mk.1 - p.59



**BONUS
ONLINE
CONTENT
CODE
PAGE 3**

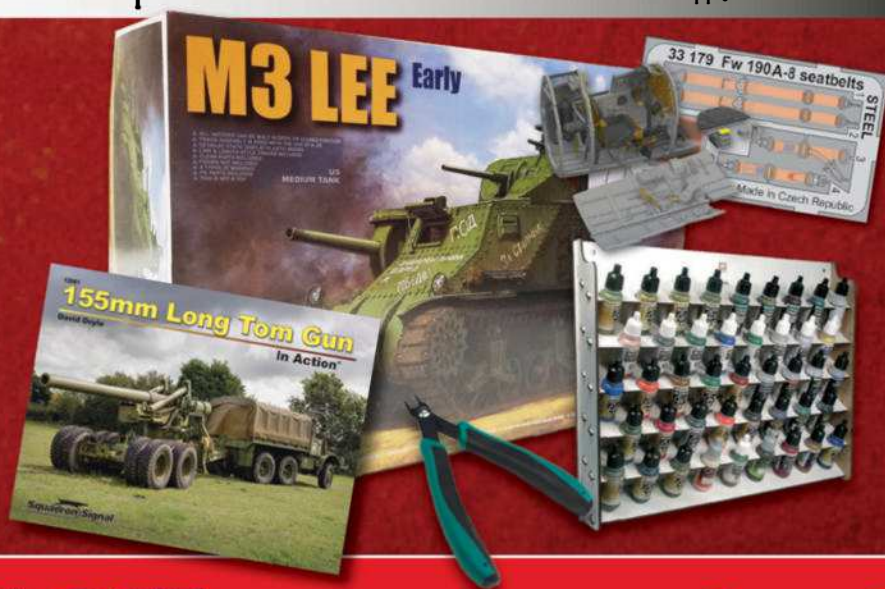
Vol. 36 • Issue 4



**LOWEST
PRICE
GUARANTEED!**

When shopping at Squadron, know that you are getting the best prices out there - guaranteed. If we're not the lowest, our customer service will price match our direct competitor's advertisements. *Some exclusions apply.

***Squadron
Brings You
the Best in
Modeling!***



Enjoy an Extra 15% OFF your next purchase!

Simply type SQFS0418 in "Coupon Code" box and click "Apply". Offer expires April 30, 2018. Cannot be combined with any other coupons.

Use coupon code:
SQFS0418

Order Today at WWW.SQUADRON.COM or call 1-877-414-0434

**FEATURES**

- 14 **Airbrushing & Finishing**
Faded fabric and chipped paint
AARON SKINNER
- 16 **Form & Figure**
Painting white
JOE HUDSON
- 18 **Thinking inside the box**
Tamiya's 1/35 scale SU-76M as is
BILL PLUNK
- 23 **Sharpening Sabres**
Three F-86s, three conversions, and
three colorful paint jobs
CHUCK DAVIS
- 30 **A modeler's guide to
F-86 Sabre day fighters**
Decoding the variants and subvariants
JOHN J. RICE
- 34 **"Wolves' Lair"**
A U-boat pen in Mike McFadden's
amazing shadow box
- 42 **Distressing an Fw 189A-2**
How to weather an Uhu
RICARDO DACOBA
- 46 **Get the jump on a Kangaroo**
1/35 scale conversion makes a
Sherman-based troop carrier
ANDY COOPER
- 50 **8 steps to a Gundam trooper**
Building your own anime robot
ROSS GAGNE
- 67 **Final Details**
"There's no one flying this airplane!"
MARK HEMBREE

**KIT REVIEWS**

- 56 **Eduard Focke-Wulf Fw 190A-4**
- 58 **Platz English Electric
Lightning F6**
- 59 **Takom Merkava Mk.1**
- 60 **Kitty Hawk T-28C Trojan**
- 61 **Zvezda Msta-S**
- 62 **Academy K2 "Black Panther"**
- 63 **Platz Mitsubishi T-2**

IN EVERY ISSUE

- 5 **Editor's Page**
- 7 **Scale Talk**
- 10 **New Products**
- 36 **Reader Gallery**
- 54 **Reader Tips**
- 64 **Modeler's Marketplace**
- 66 **Questions & Answers**

HAVE YOU EVER ADMIRERED A MODEL AND WONDERED “HOW?”



Subscribe to *FineScale Modeler* and Learn How!



When it comes to building models of aircraft, armor, ships, and even sci-fi and figures, nothing compares to *FineScale Modeler* – delivered right to your home.

From start to finish, each issue includes clear instructions and step-by-step photos that show you how to better assemble, paint, and finish kits. You'll also find:

- How-to articles by experts.
- Unbiased kit reviews and product news.
- Valuable tips for every skill level.
- Galleries from shows and readers.
- Exclusive online content and helpful tips.
- And much more!

When you learn from the best, you save time and money by avoiding unnecessary steps and purchases. Your year of inspiration starts today!

Subscribe Today!

2 WAYS TO ORDER:

ONLINE: FineScale.com ▪ **CALL:** 877-246-4847

Outside the United States and Canada, call 813-910-3616.

By Mark Savage

Time constraints, ugh! How do you do it?

One of the disadvantages of being a modeling magazine editor is that I don't have nearly enough time to model regularly.

Seems my eyeballs are always glued (ha!) to a computer screen, looking for wayward words, commas, and such.

There's issue planning, manuscripts to look through and, well, as with any company, a few meetings to fill a day or week.

I won't bore you with the rest, but you get the idea. Modeling time here in the office, where we have all the right equipment and materials, is precious. It's about this time every year that I promise myself I'll finish that Corsair sitting off to the side of my desk.

Last year I did get my Reynard IndyCar finished, and, as with every

project, I learned a thing (or three). But the Corsair is a different beast. I'm still working on my airbrushing skills, so that may determine how "great" it looks ultimately.

In the meantime, we've put together a super issue for April, with a strong story from Chuck Davis on building three variations on a theme that is one of my favorites, the F-86 Sabre. This was one of the jets I recall from my youth, and while I don't recall building one, I loved the sleek Delta Dagger and Dart that I made as a kid.

We hope there's a little something for everyone this issue, with a couple armor how-tos along with a stunning shadow-box diorama from Mike McFadden, and Ricardo Dacoba's stellar Fw 189 whitewash and weathering job.

As always, we hope these stories



My poor little Corsair calls to me from its box!

motivate you to get into your shop or basement to build more and better models this year.

But I'm curious: Just how many models do you create in a year? Let us know, and tell us how you free up your time to build regularly.

Happy modeling!

editor@finescale.com

**Tell us:
Just how
many
models do
you build
in a year?**

Off the sprue: What do you look forward to in spring?



Editor
Mark Savage
msavage@Kalmbach.com

In Wisconsin we're just happy for days above freezing, but once the ground starts to thaw I know it's nearly IndyCar season and my favorite, the Indy 500, will be roaring into sight in May!



Senior Editor
Aaron Skinner
askinner@FineScale.com

I always look forward to the return of migrating birds, especially warblers, that add color to the northern woods.



Associate Editor
Mark Hembree
mhembree@FineScale.com

Baseball: I get a warm feeling when pitchers and catchers report to spring training. There may be snow on the ground here, but the thaw begins when I hear that first exhibition game on the radio.



Assistant Editor
Elizabeth Nash
enash@FineScale.com

The sound, smell, and look of rain — not to mention the cute umbrellas that come with.



Editorial Associate
Monica Freitag
mfreitag@FineScale.com

We practically live in our the yard during the warm months, so I look forward to setting up the yard. Getting the patio furniture out, uncovering the fire pit, putting up the outdoor lights, tiki torches, and grill, and picking out the flowers.

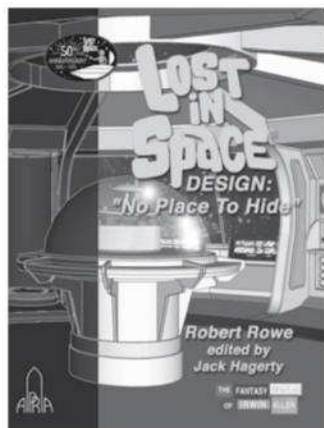
ARA Press

The Spaceship Enthusiasts'
One-Stop Data Shop!

Available Again!

Lost in Space Design: "No Place to Hide"

by Robert Rowe



- 80 pages on 80# coated stock
- 9" x 12", Softcover, Perfectbound
- 140 photos, illustrations and tables
- Newly Updated Technical Appendix

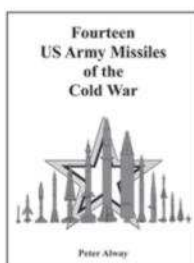
Robert Rowe was given unlimited access to the Fox Television archives when researching *Lost in Space*. To make this information available to the show's fans world-wide, Robert has produced the definitive work on the creation of the series and its original pilot episode, "No Place to Hide."

Only \$19.95! (plus shipping)

Coming Soon!

Fourteen US Army Missiles of the Cold War

by Peter Alway



Visit our website to order on-line.
All Credit Cards and PayPal accepted.
Sales Tax added to CA orders
Follow us on Facebook!



ARA Press

785 Jefferson Ave.
Livermore, CA 94550
(925) 583-5126
www.arapress.com

It's Hobby Season! Stock up NOW

Touch-N-Flow System

The Best Plastic Welding System on the market!

Item #7000

Join the Pro's, bring your modelling to the next level

Abrasive Files & Tapes

Item #550

Proven the Best, for over 45 years!

Guaranteed Results.

www.flex-i-file.com
Toll Free 1-800-506-9618

Order ONLINE Today

GO DIGITAL!

Read *FineScale Modeler* on your tablet or laptop!

- Live links.
- Zoom in & magnify.
- Bookmark pages.

Visit
FineScale.com/
DigitalEditions

FineScale Modeler

Editor Mark Savage
Art Director Tom Ford

EDITORIAL

Senior Editor Aaron Skinner
Associate Editor Mark Hembree
Assistant Editor Elizabeth Nash
Editorial Associate Monica Freitag

ART

Illustrator Kellie Jaeger
Photographer William Zuback
Production Coordinator Cindy Barder

CONTRIBUTING MODELERS

Paul Boyer, Federico Collada, Andy Cooper, Raúl Corral, Frank Cuden, Phillip Gore, James Green, Joe Hudson, Rick Lawler, Karl Logan, Harvey Low, Rato Marczak, Chris Mrosko, Bill Plunk, Darren Roberts, Chuck Sawyer, Cookie Sewell, Bob Steinbrunn, Cristóbal Vergara, Jim Wechsler, Adam Wilder

KALMBACH PUBLISHING CO.

CEO Dan Hickey
Senior VP Sales & Marketing Daniel R. Lance
Vice President, Content Stephen C. George
Vice President, Consumer Marketing Nicole McGuire
Advertising Director Ann E. Smith
Art and Production Manager Michael Soliday
Circulation Director Liz Runyon
New Business Manager Cathy Daniels
Retention Manager Kathy Steele
Single Copy Specialist Kim Redmond

EDITORIAL

262-796-8776

ADVERTISING DEPARTMENT

888-558-1544
Advertising Sales Representative
Dina Johnston, Ext. 523
Advertising Services Representative
ads@FineScale.com

RETAIL, TRADE ORDERS, AND INQUIRIES

Selling *FineScale Modeler* magazine or products in your store:

Phone 800-558-1544
Outside U.S. & Canada 262-796-8776, Ext. 818
Fax 262-798-6592
E-mail tss@Kalmbach.com
Website www.Retailers.Kalmbach.com

CUSTOMER SALES AND SERVICE

Phone 877-246-4847
Outside the U.S. and Canada 813-910-3616
Customer Service
FineScaleModeler@customersvc.com
Digital
FineScaleModelerDigital@customersvc.com
Back Issues
FineScaleModelerSingleCopy@customersvc.com

SPECIAL E-MAIL & WEB ADDRESSES

Ad Sales adsales@FineScale.com
Letters to the Editor editor@FineScale.com
New Products mfreitag@FineScale.com
Reader Gallery Contribute.Kalmbach.com
Reader Questions questions@FineScale.com
Reader Tips tips@FineScale.com

©2018, Kalmbach Publishing Co., all rights reserved. This publication may not be reproduced in any form without permission. Printed in the U.S.A. Allow 6 to 8 weeks for new subscriptions and address changes. Subscription rate: single copy \$6.99; U.S. 1 year (10 issues), \$39.95; 2 years (20 issues), \$74.95; 3 years (30 issues), \$94.95. Canadian: Add \$8.00 postage per year. Canadian price includes GST, payable in U.S. funds. All other international subscriptions: Add \$12 postage per year, payable in U.S. funds, drawn on a U.S. bank. BN 12271 3209 RT. Not responsible for unsolicited materials.





Inspired by the issue

Just wanted to let you know how much I enjoyed the February issue of *FSM* with its Vietnam War theme.

The articles have inspired me to model even more. (They might also have inspired a growth in my stash.)

I would love to see future issues with Desert Storm and Iraqi Freedom modeling themes — I'm sure others would as well.

Again, nice job!

— *Steve Steklenski*
Harleysville, Pa.

Taking care of research

I've been receiving *FSM* for a while now, but have noticed very few models from the Vietnam era in the magazine. Just when I thought there may never be any, you went and published a whole issue about them!

I just started an ambitious project that will take some time to complete: a 2- x 4-foot Vietnam War rescue scene. I still have a lot of research to do, but you've already given me a huge amount of information that has helped.

Thanks again.

— *Mike Repp*
Bastrop, La.

Ed.: When the diorama is complete, send pictures to our Reader Gallery. You can see an online gallery of Vietnam models by going to bit.ly/FSM-Modeling-the-Vietnam-War.

Fair winds and following seas

The cutaway Phantom in the February issue is magnificent. It was my pleasure and privilege to be a ship's surgeon aboard the USS

Now at www.FineScale.com



Free desktop wallpaper

If you turn to p.61, you'll see Zvezda's 1/35 scale Msta-S, built by Chris Cortez. Make the self-propelled howitzer your computer's wallpaper by downloading it for free online.

Online Extras

Building a Sabre? Go online to see an expanded chart detailing the North American F-86 Sabre variants. Be confident you're building the correct model.

New Product Rundown

If you're thinking of buying a new kit, then tune into the NPRD, a free twice-monthly video where Aaron Skinner and Elizabeth Nash review the latest/hottest models.

Constellation, Lt. Cmdr., Medical Corps, 1975-1976. The feature brought back many happy memories of that time.

When I saw *Cmdr. Gus Eggert* inscribed on the pilot's canopy, I thought your readers might enjoy some history of one of the Navy's most heroic and decorated aviators: Rear Adm. Lowell Franklin "Gus" Eggert, U.S. Navy (1929-2015).

Gus graduated from the U.S. Naval Academy in 1952 and was the most highly decorated member of that class: Navy Cross, Silver Star, two Legions of Merits, five Distinguished Flying Crosses, Bronze Star, 25 Mission Air Medals, and a Presidential Unit Citation.

While a quick Google search will tell you about all of his duty assignments, it won't tell you what a brilliant and kind leader he was. He was a gentleman who cared deeply for his men.

Fair winds and following seas, Gus.
— *Lt. Cmdr. John J. McDonough*,
Medical Corps, U.S. Navy
Oak Island, N.C.

Nail polish and modeling?

Attaboy! The Vietnam War issue was fantastic! I've been a subscriber since Volume 1, Issue 1, and this particular edition is very well done.

Quick question: On p.43, there are bright red fingernails holding up the BUFF built by Paul Boyer; any intel on what the FS number is on those nails?

— *Del Miller*
St. Louis, Mo.

Ed.: If you think that we editors wouldn't stoop to holding up a bottle of nail polish to the Federal Standard color-swatch booklet, all the while arguing about which hue it most closely resembled, you'd be wrong! We came to the conclusion that it closely matched FS11350, Coast Guard buoy red.

Suggestion

In the articles, you often mention the specific brands of modeling products used. Would it be possible to give us readers a list of websites to where we can buy these

items? I want to locate aftermarket parts.

I love the issue on the Vietnam War. It brought back many a memory — the sound of a Huey is one you never forget.

— Greg Qualtieri

Waterloo, N.Y

Ed.: On *FineScale.com*, there is a manufacturer/distributor directory with clickable links direct to the companies' websites. You'll find it in Popular Topics under Product Info at the top of the page.

Anticipation

As a longtime subscriber and reader of *FSM*, I have admired countless photos of well-executed and beautifully finished models. My own work has been inspired by numerous articles, helping improve my modeling skills over the years.

I recently downloaded the digital version of *Great Scale Modeling*. While perusing the photos from the 2017 IPMS Nationals, I proudly recalled having my 1/48 scale CT-33 photographed by Editor Mark Savage during the event.

I wondered, "could it be included here?"



Then I turned the page and ... there it was!

Thanks for including my work, among the other outstanding examples you featured from that show. Also, thanks for your continued support and recognition of IPMS/USA modelers.

I look forward to seeing you again in Phoenix next summer.

— Rob Booth

Ingram, Texas

A season of giving

I enjoyed January's Final Details about Dale Stanek building the USS *Susquehanna* (above) as a gift.

I personally know the builder, and can say that he makes an excellent model, whether it is a car, aircraft, or that beautiful ship.

Building models for others is a great idea. Currently, I am building a small diorama with an old Trans World Airlines Constellation for a friend and fellow modeler who made his first airplane trip in the aircraft at the age of 6.

P.S. You do a great job of providing articles we can all relate to.

— Davis Gandeas

Lutz, Fla.

Own worst enemy

With interest I read the Scale Talk letter in your December 2017 issue regarding the demise of local model shops.

It's very true that people will buy over the internet to save a few quid/bucks rather than use the local shop, then complain when the shop is no longer there. Unfortunately, there is another side to this.

A shop in my hometown was closed over the entire holiday period — 10 days total — just when kids (and adults, too) have gifts of money burning holes in their respective pockets.

So, instead, I made trip to another model shop in another town, only to find it shutting as I arrived. It was 3 p.m. on Dec. 30. There I was, wanting to spend money and being turned away by the proprietor.

Strangely, I have never had the internet refuse me! So, while I accept that everyone needs a holiday, aren't some inflexible small businesses their own worst enemies?

— Dave Cooper

Dundee, Angus, Scotland

discovery XD-1
two new photoetch sets

for the new kit from
Moebius Models

PARA GRAFIX
www.paragrafix.biz

How-to Book
STYRENE MODELING
88 pages of
time-saving tips
and techniques
\$16.95
Plus \$5.00 S&H

evergreen
scale models

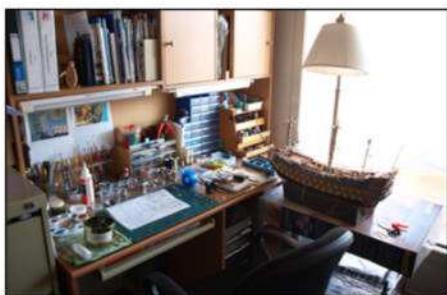
Call or write for free product information
65 E Bradrock Dr, Des Plaines, IL 60018
Toll-free: 877-376-9099 Fax: 847-813-6330
www.EvergreenScaleModels.com

Humbrol
Paints & Accessories

- Enamel & Acrylic Paints
- Weathering Powders
- Enamel Washes
- Acrylic Spray Paints
- Enamel & Acrylic Varnishes

Turn your model kit into a masterpiece!
Humbrol.com

HORNBY HOBBIES **CORGI** **SCALEXTRIC** **Pochoer** **R**



Plenty of light

My workbench is a modified computer desk that has a separate portable area for assembly and detailing. This is especially useful when working on larger models.

The drawers store subassemblies safely away, and the bookshelves keep references easily within reach. If those won't do, my computer is nearby, which is handy for Googling.

I recently completed an HMS *Victory* and I am currently working on *Le Soliel Royal*.

— Andrew Douglas
Drouin, Victoria, Australia



When space is tight

Working in a small space requires planning. My work area is used for an office, art studio, and modeling.

The modeling space is the culmination of 10 years of work. But, like all modeling projects, there is always room for more — you just have to get creative!

— James Meleney
Westlake, Ohio

Micro-Mark® 15% OFF!

THE SMALL TOOL SPECIALISTS

Berkeley Heights, New Jersey 07922

Your source for over 3,000 mini tools,
model building supplies, kits and more!

ANY Online Order
with Promo Code 4376*

*Pre-Order items, gift certificates, 3D printers and accessories,
Super Buys and other exclusions apply. Offer cannot be combined.
Offer ends 4/30/18.

Place your order online at

www.micromark.com and Enter Promo Code 4376
to get 15% OFF SITEWIDE on over 3,000 items, including...

MODEL BUILDING TOOLS

- Sprue Cutters
- Knives
- Sanders
- Tweezers & more!

Fujiya
Sprue
Cutters



MODEL BUILDING SUPPLIES

- Cement & Glue
- Weathering
- Paints
- Brushes
- Decaling
- Finishing & more!

#84131
SameStuff
& Applicator

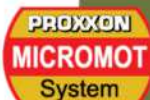


MODEL KITS

- Tanks • Planes • Ships • Cars & more!



#87903



SPECIALTY MINIATURE POWER TOOLS FOR YOUR INTRICATE PROJECTS

Real experts for delicate drilling, cutting, grinding,
polishing and cleaning jobs.

Light-weight (500g/1.2lbs) miniature power tools
for 110 – 120V power supply. Gear heads made of
die-cast aluminum. With specialty, balanced low noise
DC motor for high life expectancy.

The PROXXON MICROMOT system features more
than 50 high-quality power tools and a huge selection
of matching accessories.

Please contact us
for a free catalog.

PROXXON

— www.proxxon.com/us —

PROXXON Inc. – Hickory, NC/USA – Email: sales.us@proxxon.com

Professional
Rotary Tool
IBS/E

Longneck
Angle Grinder
LHW

Belt Sander
BS/E



Non-toxic • Non-flammable • Easy to Use • 0% Shrinkage • Waterproof • Superior Strength & Detail

AVES®

Products will Blow you Away!

Make sure Apoxie® Sculpt is in your Arsenal!

- Your aid in customization & fabrication.
- Perfect for figurine conversions, original sculpts, kit bashing, tanks, trains, boats & planes.
- Create your own tarps, coats, bedrolls, ground work, rocks, etc.
- Apoxie® Sculpt adheres to: vinyl, plastic, resin, kits, wood, metal, ceramic, glass, polymers, foam, fiberglass & more!
- Ask your hobby shop to carry Aves® products!
- Visit our web site for more information.



Elephant with Custom
Apoxie® Sculpt Zimmerit
by Joe Porter

P.O. Box 344
River Falls, WI 54022
1-800-261-2837
www.avesstudio.com

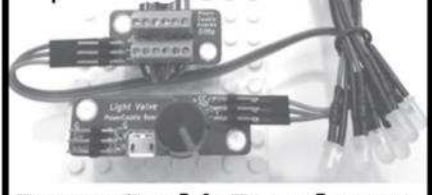
©AVES 2003

LED

Lighting & Effects

Easy to use
Precise
Expandable

Shop for More
at our Store!



PowerCookieBoards.com

NEW PRODUCTS

Compiled by Monica Freitag & Aaron Skinner

AIRCRAFT KITS

1/48 SCALE



Sukhoi Su-17/22UM-3K from Kitty Hawk, No. KH80147, \$79.99. Includes photoetch parts.



Focke-Wulf Fw 190A Early Versions from Eduard, No. R0016, \$130. Royal Class Dual Combo.



Pe-2FT Peshka from Eduard, No. 11112, \$74.95. Limited Edition.

1/72 SCALE



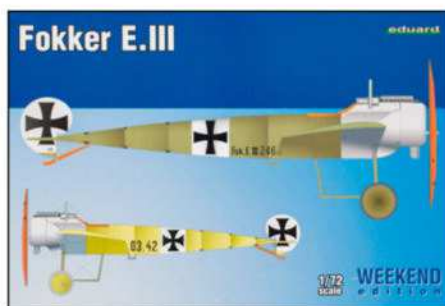
SP-2 Neptune (H version) New Patrol Scheme from Hasegawa, No. 02258, \$64.99.



Mitsubishi G3M2/G3M3 Type 96 Attack bomber "Nell" Model 22/23 with torpedo from Hasegawa, No. 51211, \$49.99.



Kugisho P1Y1 Ginga "Frances" Type II from Hasegawa, No. 51201, \$44.99.



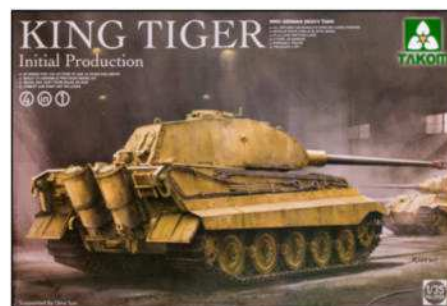
Fokker E.III from Eduard, No. 7444, \$16.95. Weekend Edition.

ARMOR KITS

1/35 SCALE



Merkava Mk.2B from Takom, No. 2080, \$55.



King Tiger Initial Production from Takom, No. 2096, \$70.



M1235A1 MaxxPro Dash DXM from Panda Models, No. PH-35032, \$74.95. Includes photoetch parts. Look for a detailed review in an upcoming issue of *FSM*.



Husky Mk.III VMMD with GPRS (vehicle mounted mine detector) from Panda Models, No. PH-35015, \$39.99. Includes photoetch parts.



M109A6 Paladin US self-propelled howitzer (Iraq War) from Tamiya, No. 37026, \$61.

Welcome new manufacturers

All Diorama www.alldiorama.com/indexen.php

SHIP KITS

1/700 SCALE



JMSDF DDG Kirishima Hyper Detail from Hasegawa, No. 30045, \$74.99.

1/192 SCALE



CSS Chattahoochee 1863-1864 — Confederate Gunboat from Flagship Models, No. FM19209, \$150.

FIGURE KITS

1/24 SCALE



Satyr from Master Box Ltd., No. MB24024, \$16.95.

1/35 SCALE



German Assault Pioneer Team & Goliath set from Tamiya, No. 35357, \$TBA.

OTHER SCALE



Ninjas of IGA from Warlord Games, No. 762210001, \$44.

AIRCRAFT DETAILS

1/18 SCALE



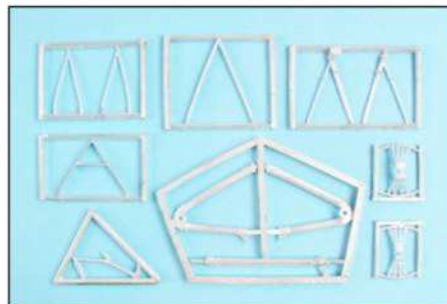
Focke-Wulf Fw 190A-5 landing gear (for HobbyBoss) from Scale Aircraft Conversions, No. 18003, \$21.95.

1/32 SCALE



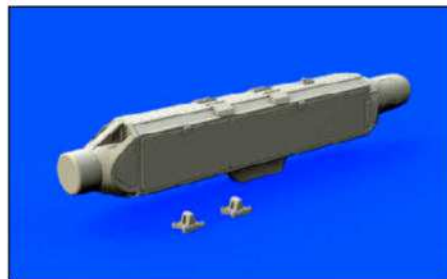
de Havilland DH.9a Ninak landing gear (for Wingnut Wings) from Scale Aircraft Conversions, No. 32126, \$16.95.

F4U-1D (for Tamiya) from Eduard, No. 33181, \$26.95. Zoom PE details.

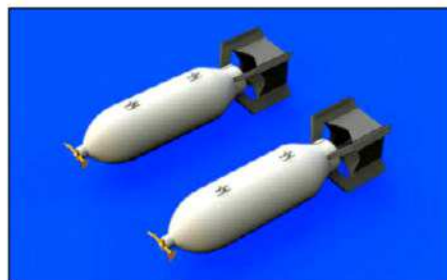


Jeannin Stahltaube landing gear & wire supports (for Wingnut Wings) from Scale Aircraft Conversions, No. 32127, \$21.95.

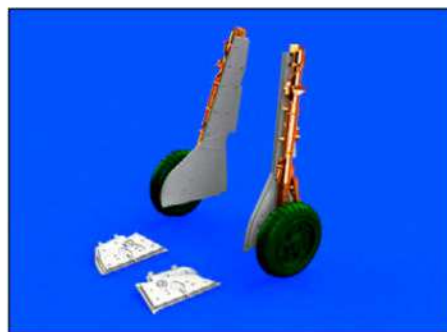
1/48 SCALE



AN/ALQ-131 (shallow) ECM pod from Eduard, No. 648363, \$12.95. Brassin.



P-51D 250-pound bombs (for Airfix) from Eduard, No. 648369, \$12.95. Brassin.



Fw 190A-2 bronze undercarriage legs (for Eduard) from Eduard, No. 648379, \$22.95. Brassin.

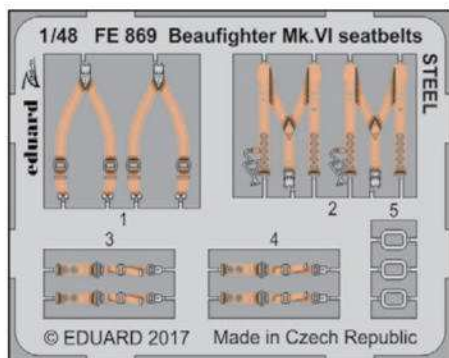
AN/ALQ-131 (short) ECM pod from Eduard, No. 648362, \$12.95. Brassin

Fw 190A control surfaces early (for Eduard) from Eduard, No. 648371, \$12.95. Brassin.

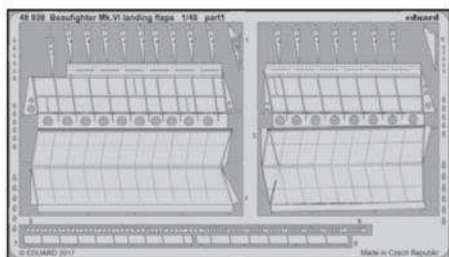
Fw 190A pitot tubes early for Eduard from Eduard, No. 648373, \$4.95. Brassin.

Want to see more?

Check out our Workbench Reviews, details of books and decals, New Product Rundown videos and more at FineScale.com



Beaufighter Mk.VI seatbelts steel (for Tamiya) from Eduard, No. FE869, \$9.95.



Beaufighter Mk.VI landing flaps (for Tamiya) from Eduard, No. 48938, \$36.95.

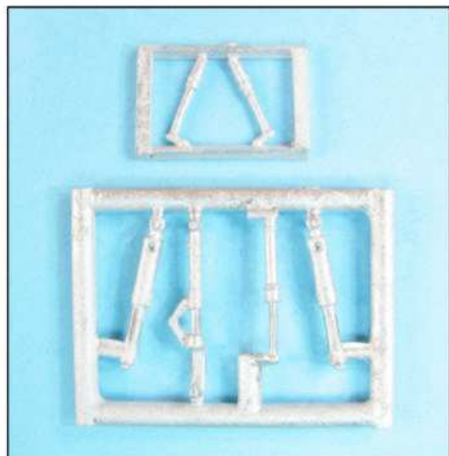
Brimstone with AGML III rack from Eduard, No. 648339, \$14.95. Brass.

British 500-pound bomb from Eduard, No. 648368, \$12.95. Brass.

P-51D Hamilton Standard uncuffed propeller (for Airfix) from Eduard, No. 648360, \$9.95. Brass.

Beaufighter Mk.VI (for Tamiya) from Eduard, No. FE868, \$19.95. Zoom PE set.

1/72 SCALE



Me 262A-1A Landing Gear (for Airfix) from Scale Aircraft Conversions, No. 72149, \$10.95.

AIRCRAFT MASK

B-17G antiglare panels (BO & DL production) for Revell/Monogram from Eduard, No. EX568, \$16.95.

ARMOR DETAILS

1/35 SCALE



Ammo belts 12,7mm from Eduard, No. 635006, \$9.95. Brass.

SHIP DETAILS

1/700 SCALE



U.S. Navy ensign WWII steel from Eduard, No. 53203, \$14.95.

OTHER DETAILS



Church corner in ruins, Central Europe from All Diorama, No. ADC002, \$83.



Arches in ruins (section) from All Diorama, No. ADC003, \$75.



Position for light artillery from All Diorama, No. ADV010, \$130.

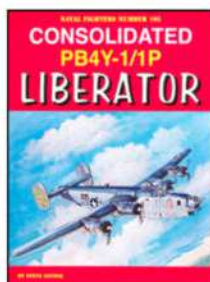


Sandbags from All Diorama, No. ADC008, \$36. (Figures not included.)



Mediterranean ruin from All Diorama, No. ADF007, \$50.

BOOKS



Consolidated PB4Y-1/1P, \$49.95, by Steve Ginter, softcover, 240 pages, 587 photos and drawings, ISBN: 978-0-9968258-7-0. From Specialty Press.



Fallen Giants — The Combat Debut of the T-35A tank, \$28.95, by Francis Pulham, softcover, 144 pages, all black-and-white photos, ISBN: 978-1-78155-626-9. From Casemate Publishers.



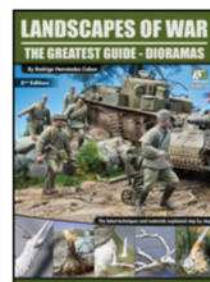
British Tank Crewman 1939-45, \$19, by Neil Grant, softcover, 64 pages, all black-and-white photos, ISBN: 978-1-4728-1696-2. From Osprey Publishing.



Jagdgeschwader 1 Oesau Aces 1939-45, \$23, by Robert Forsyth, softcover, 96 pages, all black-and-white photos, ISBN: 978-1-4728-2291-8. From Osprey Publishing.



FROG 'Penguin' Plastic Scale Model Kits 1936-1950, \$36, by Peter van Lune, softcover, 256 pages, all color photos, ISBN: 978-9-0903-0018-08. From Peter van Lune.



Landscapes of War Volume 1, \$24, by Rodrigo Hernandez Cabos, softcover, 112 pages, all color photos, ISBN: 978-84-95464-83-5. From Accion Press.



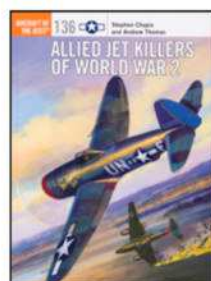
Combat Over the Mediterranean, \$22.95, by Chris Goss, softcover, 154 pages, 587 photos and drawings, ISBN: 978-1-4738-8943-9. From Casemate Publishers.



The Rafale, \$24.95, by Francis Pulham, softcover, 80 pages, all color photos, ISBN: 978-2-35250-417-7. From Casemate Publishers.



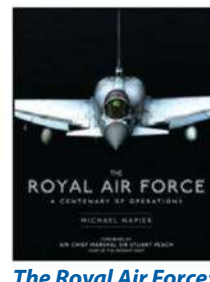
Bell X-2, \$20, by Peter E. Davies, softcover, 80 pages, all black-and-white photos, ISBN: 978-1-4728-1958-1. From Osprey Publishing.



Allied Jet Killers of World War 2, \$23, by Stephen Chapis and Andrew Thomas, softcover, 96 pages, all black-and-white photos, ISBN: 978-1-4728-2352-6. From Osprey Publishing.



Russian Tactical Aviation since 2001, \$56.95, by Yefim Gordon & Dmitriy Komissarov, hardcover, 304 pages, all color photos, ISBN: 978-1-90210-952-7. From Specialty Press.



The Royal Air Force: A Centenary of Operations, \$40, by Michael Napier, hardcover, 340 pages, color photos, ISBN: 978-14-72825-40-7. From Osprey Publishing.



Britain's Cold War Fighters, \$32.95, by Tim McLelland, softcover, 336 pages, all black-and-white photos, ISBN: 978-1-78155-630-6. From Casemate Publishers.



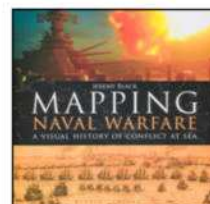
British Destroyers 1939-45 — Wartime Built Classics, \$18, by Angus Konstam, softcover, 48 pages, all black-and-white photos, ISBN: 978-1-4728-2580-3. From Osprey Publishing.



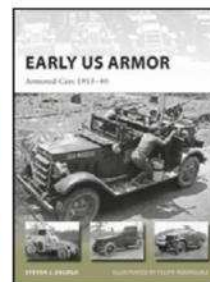
USN Battleship vs IJN Battleship — The Pacific 1942-44, \$20, by Mark Stille, softcover, 80 pages, all black-and-white photos, ISBN: 978-1-4728-1719-8. From Osprey Publishing.



F-14A Model — How to build Tamiya's F-14A Tomcat Model, \$27.99, by Glenn Hoover, softcover, 141 pages, all color photos, ISBN: 978-1-9795-3181-8. From Glenn Hoover Plastic Model Builds LLC.



Mapping Naval Warfare — A Visual History of Conflict at Sea, \$45, by Jeremy Black, hardcover, 192 pages, all color photos, ISBN: 978-1-4728-2786-9. From Osprey Publishing.



Early US Armor — Armored Cars 1915-40, \$18, by Steve Zaloga, softcover, 48 pages, black-and-white photos, ISBN: 978-1-4728-251-8. From Osprey Publishing.

More at www.FineScale.com

Check out our Workbench Reviews, details of books and decals, New Product Rundown videos and more.

By Aaron Skinner

Faded fabric and chipped paint

Weathered Corsair reveals the toll of South Pacific service

Between unrelenting sunshine, torrential rain, and crushed-coral runways, the conditions for aircraft in the Solomon Islands can best be described as harsh.

Steve Siebers, of Overland Park, Kansas, aimed to capture the effects of those conditions when he built Tamiya's 1/32 scale F4U-1 Corsair.

First, he enhanced the cockpit with fabric seat belts from HGW and decal placards and stencils from BarracudaCals.

Outside, he detailed the landing gear with resin diamond-tread wheels from BarracudaCast; the same company provided parts to backdate the kit's engine. He wired the engine and scratchbuilt engine oil-transfer pipes on top of the cylinders with telephone wire. Resin cowl flaps from Vector completed the nose. The antenna connector at the tail was made from stretched styrene tube and fine copper wire.

Steve painted the Corsair with his trusty Paasche H single-action airbrush powered by a Craftsman compressor with a 12-gallon tank, a setup he's used for 25 years. A Paasche regulator controls pressure. For complicated patterns, he switches to a Grex Tritium double-action brush.

Testors Model Master enamels supplied most of the colors, including blue gray for the top and light gull gray underneath. Steve mixes 3 parts paint with 7 parts hardware-store thinner and sprays at 12-16 psi. "I get a nice flow at that pressure," he says.

After spraying the camouflage, he masked and painted walkways and "No Step" outlines black.

For post-shading on the metal airframe sections, he added a little white

to the base colors and randomly sprayed it over the body, with a little more applied to panel centers. To differentiate fabric-covered areas on the wings and tail, he masked and sprayed the base colors mixed with more white.

Then, he misted the top of the plane with water from a spray bottle. He immediately sprinkled coarse salt from a grinder over the wet surface.

Mist coats of extremely thin Testors square-bottle flat brown followed.

"When it was dry, I removed the salt with an old toothbrush and repeated the process, this time using Testors flat tan," Steve says.

Returning to thin flat brown, he used a fine brush to flow it into panel lines.

Underneath, he airbrushed a mix of browns and blacks for exhaust stains and enhanced them with Tamiya pastels. Gun stains were done in the same way. Then, Steve applied Tamiya masking tape, painted white, to cover the muzzles. **FSM**



Engine: The engine cylinders were painted with Alclad II aluminum, and the crankcase with Testors square-bottle gloss gray. Steve applied a black enamel wash to emphasize details.

Meet Steve Siebers



Steve started modeling around the age of 7 after being introduced to the hobby by his model railroading father. Like most of us, he took a break in his late teens and early 20s. He returned to it seriously in 1992. "I build mostly military aircraft, but also dabble in armor and lately have been interested in real space." He's a member of IPMS/Great Plains in Overland Park, Kansas.

Markings: The only exterior decals on the F4U are the plane's name on each side of the cowl, which came from EagleCals. Steve painted the rest of the marking using Maketar masks. He prefers paint to decals because he can weather the markings and camouflage at the same time and there's no silvering.

Fuel stains: Steve applied Ammo by Mig Jimenez engine fuel and oil wash straight from the bottle. Then he dragged it down the sides to stain the fuselage around the filler cap in front of the cockpit.

Prop: After painting the prop with Alclad II aluminum and masking the hub, Steve sprayed the tips yellow. For a worn appearance, he sprayed the rest of the blades with black lightened by white. Then, using a fiberglass brush, he gently scrubbed the paint to reveal aluminum. "I took more paint off the rear of the blades, as photos show that the rear took a beating from the sand," he says. Rubbing Tamiya tan pastels onto the blades added a layer of dirt after the propeller logo decals had been applied.

Cockpit: Steve painted the cockpit with Model Master Euro 1 green, a good match for bronze green used on early Corsairs. After picking out switches and buttons with red, white, silver, and yellow, he mixed equal parts Pledge FloorCare Multi-Surface Finish and water with two drops of acrylic tan to brush onto the surfaces. The decal placards and stencils went on next before a coat of clear flat sealed everything. Steve used a Prismacolor silver pencil to draw wear and tear on the seat and consoles. The birdcage canopy was protected with Maketar masks.

Chipping: After dipping a chunk of foam in Testors square-bottle chromate green, he dabbed the surface to show paint worn through to primer. A subsequent application of Testors aluminum portrays exposed metal under the primer. He referred to photos to keep the chipping realistic.

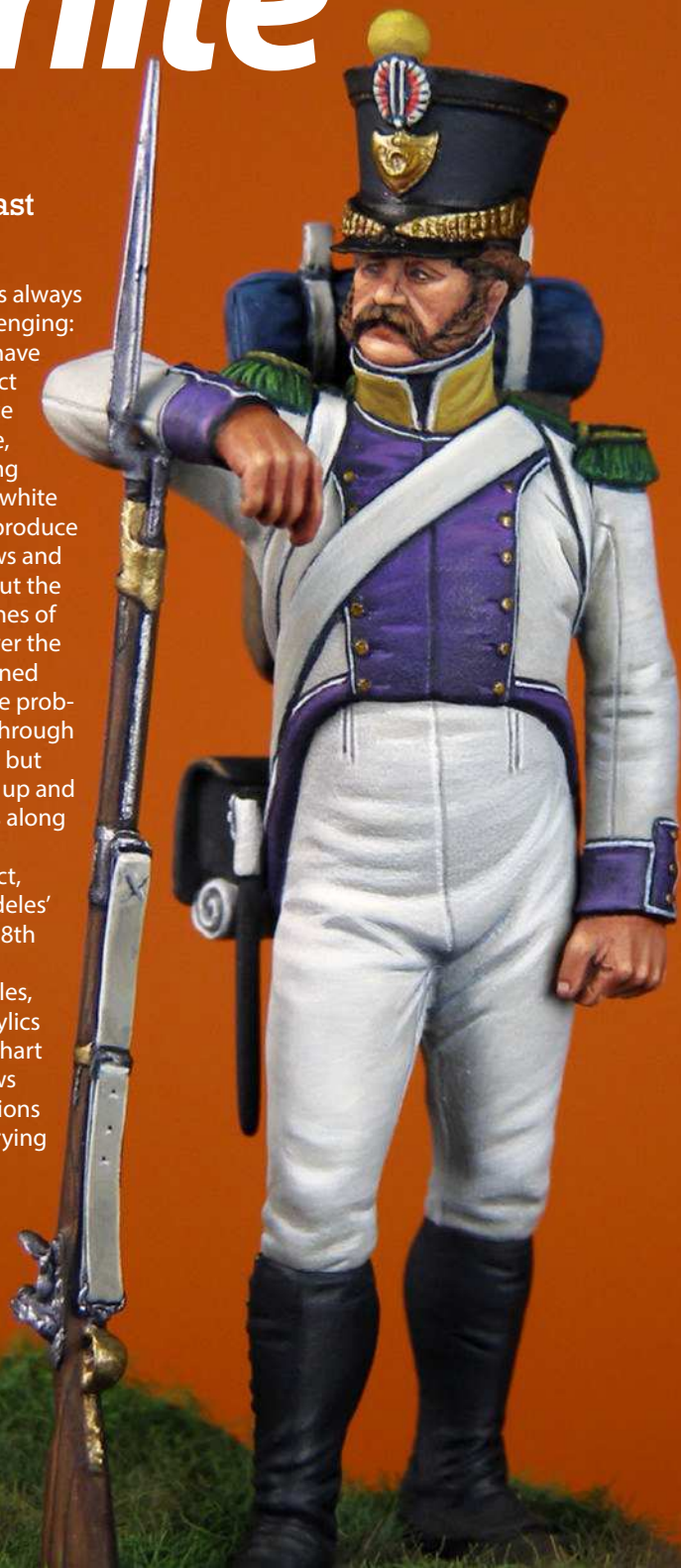
By Joe Hudson

Painting white

Changing base coats adds contrast

White is always challenging: You have to pick the correct shade to enhance the overall figure, avoid the blinding effect too much white can create, and produce nuanced shadows and highlights without the dreaded black lines of demarcation. Over the years, I have learned how to overcome problems — mostly through trial and error — but continue to pick up and adapt useful tips along the way.

For this project, I built Metal Modelers' 54mm Voltigeur 8th line regiment, Kingdom of Naples, 1813. Vallejo acrylics were used. The chart to the right shows mixture suggestions that produce varying results.



White mixtures

Mix 1: Warm white

Base: Deck tan + off-white
Highlight 1: Base + off-white
Highlight 2: H1 + more off-white
Highlight 3: Pure off-white
Highlight 4: Off-white + ivory
Hot spots: Pure ivory
Shadow 1: Base + deck tan
Shadow 2: Pure deck tan
Shadow 3: Deck tan + German gray
Shadow 4: Pure German gray

Mix 2: Pale gray/white

Base: Deck tan + stone gray + a dab of off-white
Highlight 1: Base + off-white
Highlight 2: H1 + more off-white
Highlight 3: Pure off-white
Highlight 4: Off-white + ivory
Hot spots: Pure ivory
Shadow 1: Base + stone gray
Shadow 2: Pure stone gray
Shadow 3: Stone gray + German gray
Shadow 4: Pure German gray

Mix 3: Cool white

Base: Deck tan + silver gray
Highlight 1: Base + silver gray
Highlight 2: Silver gray + off-white
Highlight 3: Pure off-white
Highlight 4: Off-white + ivory
Shadow 1: Base + deck tan + stone gray
Shadow 2: Pure stone gray
Shadow 3: Stone gray + German gray
Shadow 4: Pure German gray

Mix 4: Blue white

Base: German gray + stone gray
Highlight 1: Base + deck tan
Highlight 2: Deck tan + off-white
Highlight 3: Pure off-white
Highlight 4: Off-white + ivory
For the extreme Hot spots: 918 Ivory
Shadow: Base + German gray
Deeper shadows: Continue adding German gray to progressively build shadows.

Vallejo Model Color paints used

70.820 Off-white
70.883 Silver Gray
70.884 Stone Gray
70.918 Ivory
70.986 Deck Tan
70.995 German Gray

Next issue

Joe shows how to modify metal figures as he takes a movie-era Spock back to small-screen *Star Trek*.



Painting tips

- Keep the mixtures simple! I limit the base mixture to three colors or less and usually incorporate the base into one of the highlight or shadow colors. Avoiding complicated paint mixes makes touch-ups easy.
- If you produce harsh contrasts, take some of the cleanup water from the prior color and apply a glaze. You may have to do this several times, but it's why I use separate wells for cleanup water for my base, highlight, and shadow layers.
- If the contrast is too great between shades, or you see individual brush strokes — what I call Nike swooshes — add a blending/glaze medium to the paint. This produces more fluid paint and smoother blending.
- Always use distilled water with acrylic paints.
- Never use the same brush to paint white and red paint. That was a hard lesson learned for me!



1 After applying a base of deck tan with a little stone gray and a dab of off-white to the coat, I painted the first shadows by adding stone gray to the base color and thinning it with distilled water. I brushed this glaze under folds and arms. All of the highlights and shadows were applied as glazes.



2 I beefed up the shadows first with pure stone gray, then a mix of stone gray and German gray. Adding off-white to the base mix produced the first highlight layer to folds, upper arms, and shoulders. Progressively brighter shades followed with more off-white in the mix, then pure off-white. I added ivory to off-white for the next layer and brushed pure ivory onto edges and ridges.



3 The backpack straps started with a base mix of stone gray and a little German gray. For highlights, I added deck tan to the base, then brushed on a mix of deck tan and off-white, followed by pure off-white, a mix of off-white and ivory, and, finally, pure ivory. The cross belt started with a mix of off-white and a little dark blue gray. I deepened the shadows with more blue gray and then German gray.



4 I base-coated the pants with a mix of stone gray and a little deck tan. Slightly darker than the base coat applied to the coat, it will produce some contrast to set the items of clothing apart.



5 For the first highlights, I brushed on a glaze mixed with deck tan and off-white. Building up the density of the glazes created subtle bright spots that I enhanced with layers of pure off-white, a mix of off-white and ivory, and then pure ivory.



6 Turning to shadows, I applied a mix of stone gray and German gray in the deepest folds. (The base color provides shadows in shallower recesses.). Then, I painted the darkest folds with German gray mixed with just a touch of deck tan; this keeps it from looking too stark. Lining and seams were emphasized with a thin mix of German gray and deck tan. **FSM**

Thinking inside the box

Building Tamiya's 1/35 scale SU-76M as is /// BY BILL PLUNK



With its myriad details and add-ons, the aftermarket for model kits offers a fun shopping trip. But staying at home with the model you have has its own appeal, as with Tamiya's 1/35 scale SU-76M.

Like many modelers, I have fond memories of building models as a kid. And every now and then a straight “out of the box” build can be just the ticket to reconnect with that childhood joy while at the same time employing the advanced skills and techniques picked up through the years.

I decided that Tamiya's 1/35 scale SU-76M Russian self-propelled gun (No. 35348) would be the perfect subject for a true out-of-the-box effort. The vehicle itself is fascinating — more than 12,000 were built, making it second only to the

T-34 in numbers produced. That plus the Tamiya reputation for ease of construction got my juices flowing!

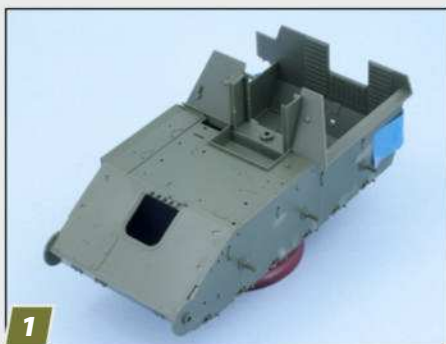
So I stuck with what was in the box. I painted with Testors Model Master enamels unless otherwise noted.

Fighting compartment

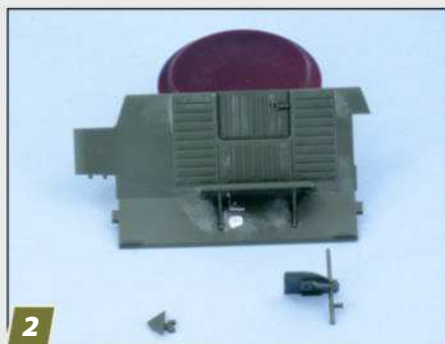
A quick study of the instructions let me know how to plan my build/paint/build sequence. I prepped the multipanel hull components first, sanding or trimming small ejector-pin marks visible on the sides or inside the fighting compartment. Gluing

the fighting-compartment bulkhead, glacis plate, and engine deck held everything squarely together. Masking tape temporarily held the rear compartment plate in place so I could remove it for easier painting and detailing later, **1**.

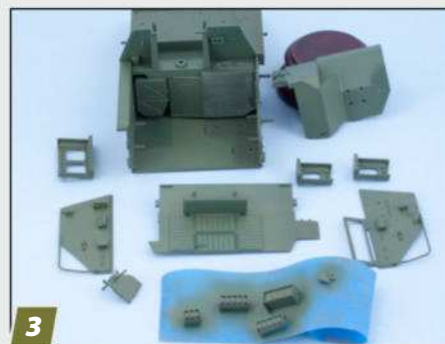
Turning to the fighting compartment's tight spaces, I assembled the right side and the bases of the ready racks as separate modules to facilitate painting and detailing. The rear plate had its ejector-pin marks removed and the rear bench seat was added, along with the external tow hook, **2**. Putty filled its opening under the seat.



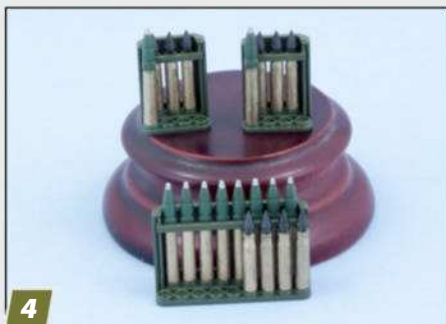
1 Tacking armor plates together with tape helps find fit problems early.



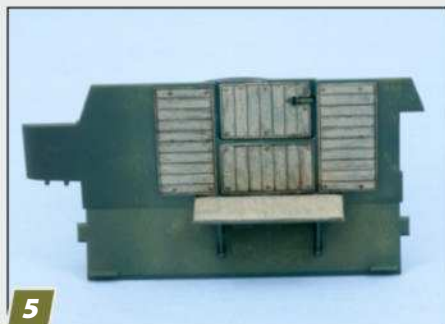
2 Sanding, putty, and more sanding smooths the way.



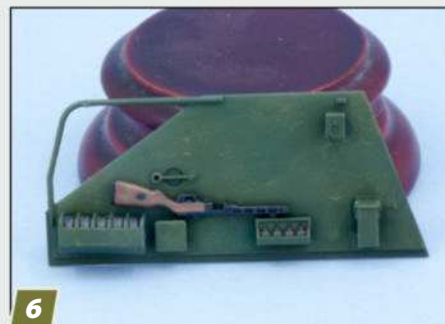
3 It's easier to airbrush components separately, off the model.



4 Shells are hand-brushed; their racks are airbrushed.



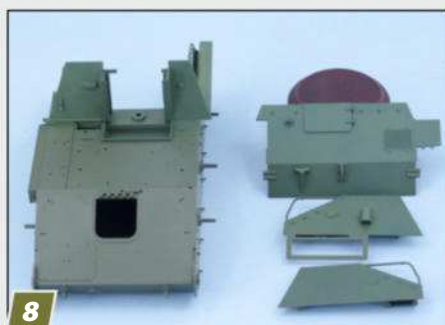
5 Upholstered padding receives a combination of two paint colors and two washes.



6 Submachine guns and their drum cartridges aren't far from the crew's grasp.



7 Weathering begins immediately — no showroom finish for armored vehicles!



8 For better gluing, I masked the mating edges of plates before airbrushing them.



9 Airbrushed separately, the plates' colors vary. This will change with further painting.

I airbrushed the compartment modules with a base coat of Russian armor green followed by a 1:1 mix of Russian armor green and olive drab (FS34087) for tonal variation, **3**.

This cleared the way for hand-painting interior details. I started with the 20 76.2mm rounds for the racks: nonbuffing Metalizer brass for the shell casings, nonbuffing Metalizer gunmetal for the AP rounds, and a combination of Italian olive green and nonbuffing Metalizer steel for the HE rounds and their fuse caps. I added the rounds to their racks according to the instructions, **4**, so I could fit the kit's crew figures later.

Cloth-covered padding on the rear plate and bench was hand-painted with a 1:1 mix of Afrika grunbraun and light gray. Applying Ammo by Mig Jimenez interior wash added a light green tint for a khaki

look, and a pinwash of Ammo Africa Korps wash lent further depth, **5**.

I also detailed two PPSH submachine guns and their magazines for the crew's personal weapons and placed them on the side panels, **6**. Dry-brushed deep yellow, followed by a dry-brushed 4:1 mix of olive drab and Russian armor green, depicted wear and tear as it gave tonal variation to the panels.

I painted the rubber nonskid mat for the gunner's position with gunmetal and weathered the floor using stippled and dry-brushed combinations of deep yellow and burnt umber, **7**. Then I mounted the ammunition racks, added the commander's jump seat, and installed the right side compartment insert. I masked the interior mating surfaces on the sides and rear panel and airbrushed outside with the same interior paint base coat and tonal variation, **8**.

Assembly of the fighting compartment started on the right side to accommodate its gear and other interior items that had to fit precisely together. Once it was in place, the left side was attached with a combination of tube glue along its base and liquid glue at the front edge where it met the angled front plate. Since I had painted the sides and front separately, the green tones didn't quite match up with each other, but that was OK — there would be time enough to blend those shades later when the rest of the hull was being finished. Slight finger pressure held the rear plate in place until the glue grabbed, **9**.

Suspension

I glued all of the suspension arms and idler mounts to the lower hull, along with final-drive housings and polycaps for the sprocket mounts. Mold seams were sanded



10 Test-fitting yet keeping wheels, rollers, and sprockets removable eases painting.



11 Brackets and the travel lock go on now; further painting will help keep them there.



12 I installed part of the exhaust but left the pipes off for painting.



13 Setting the fender supports is easier when they're in place; tape keeps fenders removable.



14 With a post-shading top coat airbrushed, armor plates become the same color.



15 Tires are painted first; then wheel hubs are airbrushed through a circle template.



16 Seams and mold lines are sanded off the main gun; gunsight and control wheels come later.



17 The mantlet is test-fitted often to make sure the gun will elevate.



18 More test-fitting ensures the gun's position is correct and it will mount properly.

off the road wheels and their rear-face inserts before the wheels were fully assembled. Return rollers and sprockets were also cleaned up and assembled to get the suspension ready. I test-fitted the suspension but left the wheels removable for ease of painting, **10**.

Tow-cable brackets and the gun's travel lock were added to the front hull, **11**. The right side got its details, including the exhaust box and covers for the twin exhaust pipes, **12**. The pipes themselves were left off for the moment; they could slide easily in and out later.

I attached the fenders and their support brackets by gluing them only to the fender base, leaving the tops dry; strips of tape held the fenders in place until the braces had set at the right angle, **13**. This kept the fenders removable for painting, allowing me to postpone mounting the tracks.

I masked the fighting compartment and airbrushed Russian armor green on the hull exterior, fenders, and suspension; a 1:1 mix of olive drab and Russian armor green, sprayed at about 10 psi, unified the colors of the hull and fighting compartment, **14**. Working close to the hull, one section at a time, I achieved tone variations while still making it all look like it belonged on the same vehicle.

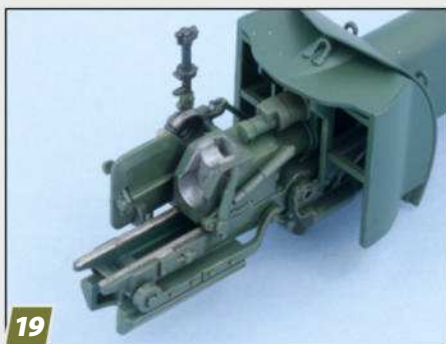
I airbrushed road wheels and idlers at the same time, **15**. I painted the rubber portions first with gunmetal, then used a draftsman's circle template to mask and airbrush the hubs with the same Russian armor green/olive drab mix as the hull.

Get your gun

Cleaning up the ZiS-3Sh 76.2mm main gun, I sanded off the slight mold seam on the one-piece barrel and built up the gun

mount and details, **16**, leaving off the gun-sight and control wheels for separate detailing. The mantlet cover was built up around the gun with care to ensure it could still elevate, **17**. The two-piece muzzle brake was joined with liquid glue and carefully sanded. I also assembled the top portion of the compartment armor that locks the gun into position, test-fitting with the gun in place.

A short trip to the paint booth and the gun and armor were airbrushed with the same green combination as the rest, **18**. One more test-fit indicated adjustments to match up with the rest of the hull. I drilled out the solid faces on the gunner's sight and hand-detailed the sight and aiming gear. The breech block was detailed with nonbuffing Metalizer steel, **19**. Bared metal was added to the recoil sled with the same steel, moderated by a light burnt umber wash.



19

A burnt umber wash will knock the shine off bare metal on the breech and recoil sled.



20

Painting the air intake screen on the starboard hull makes it look more like mesh.



21

Precise painting makes integral moldings look like separate clamps, handles, and tools.



22

Corroded muffer and pipes are painted with gunmetal, leather, and orange pastels.



23

The easiest way to weather under the fenders is to not have the fenders around at the time.



24

A kit-supplied building jig makes individual links sag in all the right places.



25

Tape holds the tracks in place for test-fitting but allows them to be removed for painting ...



26

... because painting tracks off the model is much easier.



27

Once properly painted, tracks can be glued and left to dry.

With the rear parts now fully detailed, I installed the full gun and locked it down with the final top armor piece. Three periscopes for the crew were also hand-painted and installed now that they were less at risk of breakage.

Hands on deck

One of the challenges of an out-of-the-box build is overcoming certain shortcuts manufacturers take. On this kit, that involved creativity with the engine-deck details and the tools.

To pick out details in the air-intake screen, I applied a wash of gunmetal and let that dry. Then, wielding a small square-tip blender brush and wearing an Optivisor, I picked out the screen by lightly dry-brushing the 1:1 mix of Russian armor green/olive drab until the mesh emerged from the darker gunmetal background, **20**.

All the tool clamps are molded, and a small jack block is integrated with the two spare track links. Hand-painting and Optivisor came to the rescue once again, **21**. Before painting, I thinned the shovel blade more to scale by bevel-sanding its edges. I used nonbuffing Metalizer gunmetal for the metal portions, following with dry-brushed steel. For wood, I applied a base coat of 1:1 Afrika grunbraun/light gray followed by a leather wash. Burnt umber pastels applied with a fine brush imparted wear and grain.

On the exhausts, the cylinder halves were joined and the end pipes drilled out with a micro bit, then base-coated with nonbuffing Metalizer gunmetal and given multiple leather washes for a rusty look. Burnt orange pastels lent tonal variety before the whole exhaust assembly was put together and installed, **22**.

Going low

Returning to the suspension, I weathered the lower hull and sprockets with stippled and dry-brushed deep yellow and burnt umber, adding steel to the sprocket teeth. Road wheels were weathered individually to add character. Mounting the kit-supplied single length of links on the bottom runs supported the wheels on both sides, ensuring they set up level, **23**.

I cleaned up contact points on the individual track links with a sharp No. 11 blade. Using the kit-supplied sag jig, I glued the 34-link top runs, **24**, and let them dry overnight. These runs connected the 16 links at the front and 13 at the rear. Masking tape and patience put the runs in their proper place, **25**.

Keeping the fenders, idlers, and sprockets removable made it possible to paint and detail the track sections off the vehicle, **26**.



28 Fenders in place, the model gets another, selective post-shading of a lighter green.



29 The tow cable is braided twine; even after painting, it's pliable enough to be positioned.



30 Blu-Tack poster putty makes an excellent paint stand for figure heads.



31 Tamiya's figures are made for this model and fit the fighting compartment well.



32 A wood plaque gets Woodland groundwork, a styrene signpost, and home-printed signs.



33 Pinwashes, precisely applied, pick out details for contrast.



34 A heavy layer of pigments properly mucks it up; a stiff brush removes excess.



35 Black pastel for soot lets people know you're not just blowing smoke.



36 I deliberately left the road signs in English for American viewers (vs. historical accuracy).

They were hand-painted with a base coat of nonbuffing Metalizer gunmetal, heavily dry-brushed with steel, given a raw umber wash, then permanently reattached with liquid glue and allowed to set up fully before I installed the fenders, **27**.

One more paint flourish for the hull: I added 50% medium field green to my Russian armor green/olive drab mix and airbrushed it at low pressure, up close, to add shading and chromatic variety, **28**.

Finally, I super glued the plastic ends to the braided string supplied for a tow cable. Hand-brushing it with nonbuffing Metalizer gunmetal stiffened the string, yet it was still flexible enough to fit into brackets and over tools on the front deck, **29**.

Figures, finish, and base

The kit's three figures are designed for this model and would have little use as spares,

so I put them to work. I left their heads separate for easier painting and detailing, **30**. After verifying the figures' placement, I added the cross-bar canvas frame to the fighting compartment, **31**.

I airbrushed the entire vehicle with a coat of Pledge FloorCare Multi-Surface Finish (PFM) before applying decals for a vehicle serving around Berlin in April 1945. A second coat of PFM sealed them.

Groundwork materials from Woodland provided a simple base. Using sheet styrene and Photoshop, I made my own road signs to put the SU-76 on the road to victory, **32**.

Considering what a long road that was, I applied a final round of weathering. After applying a "dot filter" using small bits of faded olive drab and the last of my custom medium field green mix and pulling them over the surfaces with a thinner-soaked brush, Ammo Africa Korps wash was pre-

cisely applied to details, shadows, and recesses with a 10/0 pointed brush, **33**; I adjusted/corrected it with clean thinner. A coat of Testors lusterless flat from a spray can dulled any stray gloss and unified the finish.

To match the base's groundwork, I applied Mig dark mud pigments to the vehicle in liquid form, using tap water with a drop of dish soap to break its surface tension. Once it had air-dried, I removed excess pigment with a stiff bristled brush, **34**. Additional adjustments and blending were done with both wet and dry cotton swabs. At last, I brushed black pastels at the exhaust tips and on the deck to simulate soot, **35**.

Once I put the clear headlight lens in its mount, Gun No. 27 was ready to storm Berlin, **36** — and I was ready to conclude my out-of-the-box adventure! **FSM**

Sharpening Sabres

Three F-86s, three conversions,
three colorful paint jobs

BY CHUCK DAVIS

Inspired by the sight of a trio of Sabres flying in formation at AirVenture 2017 — the Experimental Aircraft Association annual air show in Oshkosh, Wis. — I wanted to build an F-86. Then, I stumbled upon Euro Decals Very Colourful Sabres sheet (No. ED72101), which features options for six Sabres in unusual schemes. One of the appeals of building F-86s is that they served for many years in many air forces, so modelers have plenty of finishing choices.



From the decals, a bright yellow target tug from the Montana Air National Guard stood out. Trawling the internet for photos of these aircraft, I came across information about U.S. Army target-drone Sabres; these were Canadair Sabre Mk.Vs, essentially the same as USAF F-86F-30s. Hey, Sabres are small and another one won't take up too much room. So, I'd build two Sabres. Then, I was drawn to the appearance of camouflaged reconnaissance Sabres in South Korean service. No problem. Now all I needed was three different F-86 kits — more of a problem, as you'll see. For all three Sabres, I added simple intake covers to hide the nose weights jammed in their nostrils.

Kitbash an early Sabre

Two kits produce an F-86A's swan song as a target tug



Details make all the difference when building Sabres so you can be sure you have the right version for the markings you select. It's all about the wing — mostly. The Montana ANG tug was an early F-86A-5 according to its serial number (see p. 32). This required an early, small wing and a V-shaped windscreen, features not readily available in current kits. However, I found an old Matchbox F-86A (No. PK-32) on eBay and Pavla makes the correct canopy (No. V72-93). I wasn't crazy about the soft details of the Matchbox parts, so I paired the flight surfaces with the fuselage and details from HobbyBoss' easy-assembly F-86F-40 (No. 80259). After painting, I added metal landing gear from Scale Aircraft Conversions (No. 72046) and a HobbyDecal metal pitot (No. 72016MT).



1 Early Sabres lacked the large fairing at the base of the vertical stabilizer that housed the mechanism for the later all-moving tail. Comparing the HobbyBoss F fuselage (left) to the Matchbox A (right) shows the difference. I marked the area to be removed.



2 A few minutes' work with a motor tool and I had the rough shape ready for sanding and polishing. I love using power tools on models!



3 Overlaying the HobbyBoss F wing (molded with the lower fuselage) with the Matchbox A wing shows how much smaller the early wing was. You can clearly see where the term "6-3" wing comes from — six inches of added chord at the wing roots, tapering to 3 inches at the wingtips.



4

After cutting the wings from HobbyBoss' lower fuselage, I inserted styrene rod to support the Matchbox wings. The Matchbox horizontal stabilizers fit after I trimmed the mounting tabs to fit slots in the HobbyBoss fuselage. Both the wings and stabilizers needed sanding to smooth surface inconsistencies and thin the pudgy trailing edges.



5

The difference in the chord of the wing was apparent at the wing root. A few seconds with the motor tool fixed the extended root and provided a smooth transition.



6

The final modification involved the canopy. The early A had a V-shaped windscreen. Pavla makes a vacuum-formed canopy for the Airfix Sabre, but the sliding section did not fit the HobbyBoss fuselage.



7

To rectify the problem, I sawed the HobbyBoss canopy apart and used its sliding section with the Pavla windscreen. I sanded the fuselage to round the fuselage, which is a bit too flat and wide.



8

Pavla's windscreen fit pretty well, but it was a little tall at the front.



9

So I inserted a strip of styrene to close the gap. Filler putty and sanding blended everything.

Wiring a drone

Repurposing Airfix's F-86 as a target



The kit choice for the U.S. Army drone was easy as the new Airfix F-86F/E(M) (No. A08032), which had the proper solid “6-3” wing with fences. Other than cobbling together decals, the only additions to this special Sabre would be the antennas, lines, and sensors dedicated to its likely fatal, final mission.



The Airfix Sabre assembles quickly without problems. The aircraft I was modeling had short, nonstandard pylons. After stealing a spare from a Hasegawa Skyraider, I drilled a mounting hole to fit the new pylon and filled the now-unused rear locator.



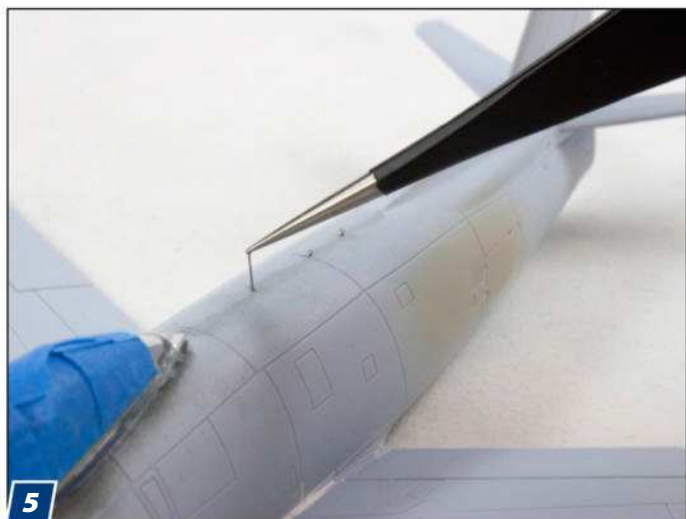
A professional target needs no defense, so I filled the gun troughs on either side of the nose.



Sabre drones carried external antennas and other details. Based on photos, an oil line snaked down the starboard side of the fuselage from the cockpit to the engine exhaust. I marked the path and drilled tiny holes with a bit in a pin vise.



4 For the wire, I used nylon suture and 1/72 scale turnbuckles designed for rigging biplanes; mine came from Bob's Buckles. Double-sided foam-tape squares secured the tiny buckles during assembly.



5 I carefully glued the turnbuckles into the holes. Good tweezers and magnifiers are a must for this kind of work.



6 The row of tiny eyelets mimic clamps attached to the full-size airframe to secure the line.



7 Then, I simply threaded the suture through the eyelets.



8 Tiny drops of super glue on the eyelets and the final hole in the fuselage at the tail locked the line in place. Be careful not to pull the stitches out while modeling!



9 A telemetry cable curved from the ventral centerline up the port side to the stabilizer fairing. I added it using copper electrical wire.

I spy a recon Sabre

Skin grafts add camera bays to Academy's F-86F



The Korean RF-86F started life as a late F-86F-30 with a “6-3” hard wing and fences. By the time it was dressed in camo, the airframe had been converted to a recon bird and fitted with a new extended F-40 wing with slats. The only 1/72 scale kit I’m aware of that has the option of drooped slats is Academy’s F-86E *El Diablo* (No. 1681). I needed to add camera bays and “chipmunk cheeks” for the reconnaissance reassignment.



1 The recon Sabre needed two symmetrical bulges on either side of the cockpit that I was leery of scratchbuilding because they should be the same shape. While pondering this challenge, I spotted the jet pods in a 1/144 Roden C-119 kit. A bit of reprofiling and thinning and they would do nicely.



2 After removing the pylon and a little sanding and reshaping, I attached the engine halves to the fuselage. They are a tad too big, but look the part. I used styrene rod to fill the gun ports, then blended the panels with putty and sanding.



3 Using a copier, I scaled drawings of the under-nose camera bays in *The Modelers' Guide to the Sabre and Fury* by Jay Sherlock (Aero Research, ISBN 978-0-9851154-0-1). I transferred the shapes to thin, clear plastic to serve as the bottom plates; gloss black on the fuselage keeps the bays dark under masks.



4

A bit of filler and lots of sanding blended the bays into the fuselage. I put tape over the gloss black and clear areas to protect the future lenses from sanding.



5

For the center camera bay, I glued a rectangle of .005-inch clear styrene to the fuselage. All three camera windows were masked for painting.



6

I taped the leading-edge slats in place for painting to ensure the camouflage matched, then sprayed the model with Alclad II gray primer and microfiller to blend the different colors of plastic and filler. The camouflage was applied using Ammo by Mig Jimenez 60s-70s USAF TAC Colors paint set, starting with camouflage gray (FS36622) underneath.



7

Dark tan (FS30219) followed topside. I enlarged the decal placement diagrams to 1/72 scale on a copier and cut paper masks for the pattern. This allows me to replicate the pattern more precisely; I don't airbrush well freehand.



8

Next, I airbrushed medium green (FS34102). Raising the edges of the paper masks with rolled tape kept the color transitions soft. Be careful to keep the airbrush perpendicular to the surface so as not to spray under the edges.



9

Dark green (FS34079) provided the final color. During masking, I applied tape even on areas not subject to overspray, just to keep from accidentally painting them the wrong color in my enthusiasm. A HobbyDecal metal pitot (No. 72016MT) finished the conversion. **FSM**

A modeler's guide to F-

Decoding the major variants and subvariants

BY JOHN J. RICE

With nearly 10,000 built, North American developed the F-86 through gradual changes and improvements.

In addition, Sabres were produced in three countries — the United States, Canada, and Australia — assembled in two more — Japan and Italy — and existing aircraft were often retrofitted with upgrades from the latest production model. All of those changes make figuring out which F-86 version you need for a particular modeling project complicated and confusing.

My research revealed mistakes in published information. The result is Australian or late-model Canadian markings applied to models of U.S. or Japanese aircraft. Kit manufacturers mismatch models and decals or throw Korean War and NATO air force decals into the same kit. Profiles sometimes show the wrong wing or miss the correct wing for a retrofit.

Wings and slats

All 33 F-86A-1-NAs and early A-5s had fully automatic leading-edge slats with slat locks. The four-piece slats extended automatically at low speed to increase lift and improve stability and low-speed control. The slat locks allowed the pilot to avoid asymmetric deployment of the leading-edge slats while maneuvering.

Because the leading-edge slats were most important in lowering stall speed and improving takeoff and landing characteristics, the slat locks were interconnected with the landing gear so the slats opened when the gear came down. Once the plane was on the ground and shut down, the pilot or ground crew could either lock the slats closed again or push them closed.

The slats were redesigned with new tracks and no locks; they could still be pushed closed, but almost all photos show them open when on the ground. This change affected late A-5s and was applied through early F-86F-30-NA and -25-NHs. While there are no major external changes, modelers may want to lower the slats or get a kit with separate parts. The modification is relatively easy: Draw a sharp blade along the outline of the slats until they separate. After making new leading edges and slat tracks with styrene, reattach the cleaned-up slats in the down position.



F-86A-5 Sabres on a Korean flight line get ready for combat in June, 1951.

Starting with the F-86A-5-NA (Serial No. 49-1288), the trailing edge was redesigned with a shorter-chord aileron. While the old one was noticeably wider than the flap, this one comes close to lining up with the front edge of the flap. This is the least-known Sabre variation, and it is hard to find side-by-side drawings of the two ailerons.

In an effort to get more performance, North American found that eliminating the leading-edge slats lessened drag. Making the leading edge thinner also lowered drag, so the two features were combined in a new leading-edge structure that also increased wing area from 288 to 302 square feet with a 6-inch extension to the chord at the wing root, tapering to 3 inches at the wingtip. This is known as the “6-3” wing, and it is the most common wing used in available Sabre kits. Taking away the leading-edge slats degraded low-speed handling and increased stall speed from 128 to 144 mph, but the lower drag increased top

speed at 35,000 feet from 604 to 608 mph, improved range slightly, and provided tighter turns at high altitude. A 5-inch-high wing fence was added to prevent tip stalling. Beyond the production lines, it could be retrofitted to existing aircraft as a kit. Eventually, enough kits were shipped to Korea to upgrade every F-86F there and even some F-86Es.

North American developed the F-86F-40 for the Mutual Defense Assistance Program (MDAP) with a new wide-chord, long-span wing. Starting with the “6-3” wing, the aircraft featured 1-foot extensions on each wingtip and restored the slats. It provided the best of both worlds, with the superior low-speed handling and lower stall speeds of the F-86A and better high-speed handling and tighter turns at high altitude of the solid “6-3” wing.

Tailplane

The F-86A had a conventional fixed horizontal stabilizer with elevators.

-86 Sabre day fighters

With the F-86E, the fighter was given an all-flying tail — the entire stabilizer moves. This gave the F-86E far better control at speeds exceeding Mach .85. To house the mechanism, the aircraft featured a bulge extending forward of the tailplanes on either side of the fuselage. This feature was unchanged through the later versions.

Windscreen

The XF-86 and the first 33 F-86A-1-NAs featured a rounded, bulletproof windscreen that was aerodynamic but caused an error in the gunsight. Production As, early Es, and Sabre Mk.2/4s used a V-shaped bulletproof windscreen, which corrected the error but obscured forward visibility. Finally, a flat, bulletproof windscreen with good visibility was used on the later Es, all Fs, and the Sabre Mk.5/6/30/31/32.

The table

I have detailed the differences in Sabre day fighter models in a table. It lists the variants and subvariants in chronological order of production where possible, cross-referenced with serial numbers. It should be possible to find the serial number on the table and know exactly what type of Sabre you are building to check feature and configuration. (An expanded online version shows later upgrades.) To keep the table from becoming unwieldy, I limited it to operators that ordered newly built Sabres directly or under MDAP. With the exception of those for the Royal Air Force, MDAP-funded aircraft conformed to U.S. variants and designations, and received USAF serial numbers. Secondhand Sabres can be traced back to the original owners to show their original configuration before the new owners added further upgrades. Be warned: The progression of North American model numbers and USAF production-block designations don't always line up. Also, the USAF used the same designation for all MDAP-funded Canadair CL-13s (F-86E-6-CAN, later F-86E(M) when transferred to other users) while the Royal Canadian Air Force split them into two different models — Sabre Mk.2 and Sabre Mk.4.



Canadair Sabre Mk.5s of the Royal Canadian Air Force Golden Hawks aerobatic team fly in formation on May 12, 1959.

All these production models and variations can be frustrating. We might wish it were neater, with improvements grouped together from one distinct variant to the next. But we must consider two things: First, the Sabre was the West's front-line fighter during the Cold War. Pilots facing Communist Bloc threats on the Korean Peninsula and across the Taiwan Strait, or protecting Japan, Australia, North America, and Europe, needed the best fighters. So, it was more important to get improvements

into service quickly than to keep the production blocks nice and tidy. Second, the F-86 and MiG-15 were two of the most closely matched opponents in fighter aircraft history. Any advantage gained, even a slight one, could make the difference in a fight, so changes to the

F-86 reflect efforts to wring any improvement in performance out of the airframe.

Sabres galore

Just the day-fighter versions of the Sabre served with the air forces of 29 nations between the late 1940s and the mid 1990s, and were involved in first- and second-line service in the Cold War defense of Western Europe, the United States, and Japan, the Korean War, the Taiwan Strait Crisis, the Malayan Emergency, the United Nations Operation in the Congo, the Indonesian-Malaysian confrontation, the Guinea-Bissau War of Independence, the Vietnam War, the Indo-Pakistani wars of 1965 and '71, the Soccer War, and the Falklands War. So, there is a nearly endless supply of interesting modeling subjects. Plus, unlike many modern jets or the prop planes they replaced, Sabres don't have a lot of easily broken parts like sensors, ECM antennas, and external stores. **FSM**

Oct. 1, 1947

*XF-86's first flight at
Muroc Dry Lake
(now Edwards AFB)*

1994

*Bolivian air force retires
the last operational
Sabres*

North American F-86 Sabre day fighter variants and subvariants including the F-86A/E/F, their Canadair equivalents, the Orenda-

Military designation	Engine	Wing	Wind-screen	Other characteristics	Serial numbers
XP-86/XF-86 No. 1	General Electric J35-C-3 (Chevrolet-built)	Original wing with leading-edge slats	Rounded	1 ventral, 2 rear-hinged side speed brakes; instrument booms on both wingtips; no armament	45-59597
XP-86/XF-86 No. 2	General Electric J35-C-3 (Chevrolet-built)	Original wing with leading-edge slats	Rounded	Production-style rear fuselage with two front-hinged speed brakes; instrument booms on both wingtips; no armament	45-59598
XP-86/XF-86 No. 3	General Electric J35-C-3 (Chevrolet-built)	Original wing with fully automatic leading-edge slats	Rounded	Production speed brakes; instrument booms on both wingtips; full armament; Sperry Mk.18 GBR gunsight; gun doors	45-59599
P-86A-1-NA/ F-86A-1-NA	General Electric J47-GE-1/-3/-7	Original wing with fully automatic leading-edge slats	Rounded	T-4E-1 ejection seat; Sperry Mk.18 GBR gunsight; gun doors	47-605 to 47-637
F-86A-5-NA	General Electric J47-GE-7/ J47-GE-13 field upgrade	Original wing with fully automatic leading-edge slats; from 116th F-86A (48-210) on, new slat tracks and no slat locks	V-shaped armored glass	Sperry Mk 18 GBR gunsight; gun doors on early A-5s; pitot tube added to right wingtip of late A-5s	48-129 to 48-316
F-86A-5-NA	General Electric J47-GE-13	Original wing with new slat tracks and no slat locks; from 282nd NA-161 (49-1288) on, new shorter-chord aileron	V-shaped armored glass	A-1B GBR gunsight with AN/APG-5C ranging radar; 120-gallon drop tank developed specifically for the F-86; pitot tube added to right wingtip of late A-5s Last 24 completed as A-7	49-1007 to 49-1339
F-86J	Avro Canada TR.5 Orenda 3	Original wing with redesigned leading-edge slats with new slat tracks and no slat locks	V-shaped armored glass	F-86A-5-NA pulled from the assembly line for modification	49-1069
Sabre Mk.1	General Electric J47-GE-13	Original wing with redesigned leading-edge slats with new slat tracks and no slat locks	V-shaped armored glass	F-86A-5-NA assembled from NAA-built components by Canadair	19101
F-86A-6-NA	General Electric J47-GE-13	Retrofits of A-5s with wing unchanged.	V-shaped armored glass	A-1CM GBR gunsight with AN/APG-5C ranging radar	retrofits
F-86A-7-NA	General Electric J47-GE-13	Retrofits of A-5s with wing unchanged; 24 production with new shorter-chord aileron.	V-shaped armored glass	Last 24 A-5s redesignated, plus retrofits; A-1CM GBR gunsight with AN/APG-30 ranging radar	49-1316 to 49-1339, plus retrofits
F-86E-1-NA	General Electric J47-GE-13	Original wing with late A-5 changes: redesigned leading-edge slats and shorter-chord aileron.	V-shaped armored glass	Like F-86A-7 (A-1CM GBR gunsight with AN/APG-30 ranging radar) with all-flying tail and associated bulge extending forward of tailplane	50-579 to 50-638
F-86E-5-NA	General Electric J47-GE-13	Original wing with late A-5 changes	V-shaped armored glass	Like E-1, with minor panel switch changes	50-639 to 50-689
Sabre Mk.2 Sabre F.2 F-86E(M)	General Electric J47-GE-13	Original wing with late A-5 changes: redesigned leading-edge slats, shorter-chord aileron.	V-shaped armored glass	Identical to F-86E-1. Total of 350 built: 288 for RCAF, 60 diverted to the USAF as F-86E-6-CAN, 3 for RAF as Sabre F.2	19102 to 19199, 19201 to 19452; 60 also have USAF numbers as F-86E-6-CAN
F-86E-10-NA	General Electric J47-GE-13/IRAN upgrade to -27	Original wing with late A-5 changes	Flat armored glass	First 132 F-86F-1s with J47-GE-13 due to J47-GE-27 delays	51-2718 to 51-2849
F-86E-6-CAN (first use)	General Electric J47-GE-13	Original wing with late A-5 changes	V-shaped armored glass	Designation for F-86E-1/Sabre Mk.2 built by Canadair and diverted to the USAF to alleviate the F-86 shortage in Korea	52-2833 to 52-2892 Also have RCAF numbers as Sabre Mk.2
F-86F-1-NA	General Electric J47-GE-27	Original wing with late A-5 changes	Flat armored glass	Last 78 of 210 planned F-1s; identical to E-10, except for J47-GE-27	51-2850 to 51-2927
F-86F-2-NA	General Electric J47-GE-27	Solid "6-3" wing with fences	Flat armored glass	Project Gun-Val conversion of 4 E-10 and 6 F-1, all with J47-GE-27, 4 T-160 20mm cannons and A-4 GBR gunsight.	E-10 51-2803, 2819, 2826 and 2836 F-1 51-2855, 2861, 2867, 2868, 2884 and 2900
F-86F-3-NA/ JF-86F	General Electric J47-GE-27	Solid "6-3" wing with fences	Flat armored glass	Project Gun-Val conversion of 2 F-1 with 4 Oerlikon 206RK 20mm cannons	51-2916 and 51-2926
F-86F-5-NA	General Electric J47-GE-27	Original wing with late A-5 changes	Flat armored glass	Identical to F-1, except for strengthened attachment point for new 200-gallon drop tanks	51-2928 to 51-2943
F-86F-10-NA	General Electric J47-GE-27	Original wing with late A-5 changes	Flat armored glass	Identical to F-5, except for A-4 GBR gunsight	51-12936 to 51-12969
F-86F-15-NA	General Electric J47-GE-27	Original wing with late A-5 changes	Flat armored glass	F-86F-10 with survivability improvements; production problems with -27 engine caused last 93 to be completed as F-86E-15 with J47-GE-13	51-12970 to 51-12976

To see an expanded list of Sabres, visit www.FineScale.com/OnlineExtras

engined CL-13A/B, the Commonwealth CA-27, as well as prototype, service-test and developmental Sabres

Military designation	Engine	Wing	Wind-screen	Other characteristics	Serial numbers
F-86E-15-NA	General Electric J47-GE-13/IRAN upgrade to -27	Original wing with late A-5 changes	Flat armored glass	The 8th-100th F-86F-15s with J47-GE-13 due to further J47-GE-27 delays	51-12977 to 51-13069
F-86F-20-NH	General Electric J47-GE-27	Original wing with late A-5 changes	Flat armored glass	Columbus-built F-86, almost identical to Inglewood F-86F-15-NA	51-13070 to 51-13169
Sabre Mk.4 Sabre F.4 F-86E-6-CAN (second use) F-86E(M)	General Electric J47-GE-13	Original wing with late A-5 changes	Flat armored glass	Like F-86E-10; some internal changes compared with Sabre Mk.2. 429 for RAF as Sabre F.4 (MDAP-funded, called F-86E-6-CAN by USAF); was to have Orenda engine, but delays caused J47 to be used.	19453-19890; only last 60 have USAF serial numbers 52-10177 to 52-10236
Sabre Mk.3	Avro Canada TR.5 Orenda 4	Original wing with late A-5 changes	V-shaped armored glass	Sabre Mk.2 given same modifications for Orenda engine as F-86J; no armament	19200
Early F-86F-30-NA	General Electric J47-GE-27	Original wing with late A-5 changes	Flat armored glass	Fighter-bomber with dual-store wing with inner hard points, each carrying 1,000 pounds of ordnance or a 120- or 200-gallon drop tank, and a 120- or 200-gallon drop tank on each of the outer pylons; F-30 numbers 1-199	52-4305 to 52-4503
Late F-86F-30-NA	General Electric J47-GE-27	Solid "6-3" wing with fences	Flat armored glass	Like the early F-86F-30-NA, but built with the "6-3" wing; F-30 numbers 200-859	52-4504 to 52-5163
Early F-86F-25-NH	General Electric J47-GE-27	Original wing with late A-5 changes	Flat armored glass	Columbus-built version of the Inglewood F-86F-30-NA; F-25 numbers 1-170	51-13170 to 51-13339
Late F-86F-25-NH	General Electric J47-GE-27	Solid "6-3" wing with fences	Flat armored glass	Columbus-built version of the Inglewood F-86F-30-NA, but built with the "6-3" wing; F-25 numbers 171-341	51-13340 to 51-13510 52-5272 to 52-5530
F-86F-35-NA	General Electric J47-GE-27	Solid "6-3" wing with fences	Flat armored glass	Like F-86F-30-NA with the Low-Altitude Bombing System and the capability of carrying a 1,200-pound Mk.12 nuclear weapon (20 kT); 265 in two batches	52-5164 to 52-5271 53-1072 to 53-1228
Sabre Mk.5	Avro Canada TR.5 Orenda 10	Solid "6-3" wing with fences	Flat armored glass	Like USAF F-86F-30, but with Orenda engine	23001 to 23370
None	Rolls-Royce Avon R.A.7/Mk.114	Original wing with late A-5 changes	Flat armored glass	Redesigned fuselage with larger intake and new break-point for the Rolls-Royce Avon engine, and two 30mm Aden guns; wings, tail and horizontal stabilizers nearly identical to F-86E	A94-101
Sabre Mk.30	Avon 20 (CAC-assembled Rolls-Royce Avon R.A.7/Mk.114)	Original wing with late A-5 changes	Flat armored glass	Production version of CA-26	A94-901 to A94-922
Sabre Mk.6	Avro Canada TR.5 Orenda 14	Earlier Mk.6s built with solid "6-3" wing with fences; later Mk.6s built with slatted "6-3" wings	Flat armored glass	Like Sabre Mk.5 except for Orenda 14 engine	Initial batch (292) 23371 to 23662; second batch (90) 23663 to 23752
Sabre Mk.31	CAC Avon 20	Solid "6-3" wing with fences	Flat armored glass	Sabre Mk.30 with "6-3" wing	A94-923 to A94-942
F-86F-40-NA	General Electric J47-GE-27	Long-span "6-3" wing with extended wingtips and restored slats	Flat armored glass	Like F-30 and F-25 with long-span "6-3" wing with extended wingtips and restored slats; 65 more added to NA-227 contract	55-3816 to 55-4030 55-4983 to 55-5047
F-86F-40-MIT	General Electric J47-GE-27	Long-span "6-3" wing with extended wingtips and restored slats	Flat armored glass	Like F-86F-40-NA, assembled by Mitsubishi; 300 ordered in three batches of 70, 110, and 120	55-5048 to 55-5117 56-2773 to 56-2882 57-6338 to 57-6457
Sabre Mk.32	CAC Avon 26	Solid "6-3" wing with fences	Flat armored glass	Like the Sabre Mk.31 with Avon 26 engine and dual-store wings like the F-86F-30-NA fighter-bomber with new inner hard points	A94-943 to A94-970 A94-971 to A94-990 A94-351 to 371

Color code notes for country of origin of airframe and engine manufacturers

- United States
- Canada
- Australia
- United Kingdom
- Built in the United States, assembled in Japan

Serial Numbers

- Blue: USAF
- Red: RCAF
- Brown: RAAF
- Green: U.S. Mutual Defense Assistance Program

"Wolves' Lair"



Realism is the goal of any modeling, whether it's a 1957 Chevy or an F-35 Lightning II. Some modelers go to even greater lengths by building dioramas to give their models context and scale.

Then there is Mike McFadden: He builds realistic models, puts them in the context of a diorama, and then utilizes carpentry and electrical engineering to construct artfully lit shadow boxes that create illusions of scale too grand for almost any open-air diorama.

FineScale Modeler readers may recall some of his past efforts: "A Night to Remember" (Jan. 2010 *FSM*), which recalled the sinking of the *Titanic*, and "Drama in a shadow box" (Oct. 2014 *FSM*), depicting two German soldiers waiting in ambush. Both employed forced-perspective techniques to portray scenes encompassing hundreds of feet in a matter of inches.

"Wolves' Lair" combines Mike's interests in modeling U-boats, figures, scale buildings, and water to portray one of the Kriegsmarine's U-boat pens, massive concrete constructions nearly impervious to Allied bombing.

Central to the scene is Revell's 1/72 scale Type VIIC U-boat. Mike opened limber holes and installed hints of inner hull workings. After sanding off molded rivets, he replaced them with Walther's HO scale rivet decals. Open hatches were thinned and detailed with HO scale photo-etch. "I opened hull and conning tower compartments to display a U-boat in maintenance," Mike says. "I used a Warhammer PE detail set for further details."

The "wintergarden" and hull railings are soldered stainless-steel wire, and the cabling is model-ship thread. Other scratchbuilt items include sky and attack periscopes, counterweights, brass grab handles/steps, conning tower exhausts, radar housings, welding cart, walkways, and a torpedo loading tube. Mike also swept the aftermarket for a 20mm FlaK gun, PE FuMO 61 mattress radar, 88mm deck gun, torpedo loading set, life raft, torpedoes, periscope housings, and a small crane.

The two-sided pen comprises sheet styrene stippled with acrylic gel medium for concrete texture. Other styrene structural shapes provided sea-wall supports and the roof. Woodland "Realistic Water" and "Water Effects," surfaced with acrylic gel medium, float the U-boat. Pipes

on the rear wall are stainless steel wire.

A few dozen figures populate the diorama. "Even in Braille scale, some figures are larger than others. I placed the larger ones closer to the viewer and smaller ones in the background for depth of field," Mike says.

And he was only beginning. Inside the shadow box are overhead fluorescent lights, model railroad lights along the walls, and model railroad welding and direction-indicator lights. He used styrene structural stock to scratchbuild a working overhead crane powered by an electrical motor and a threaded shaft that slowly moves the crane about 10 inches back and forth.

Mike kept the construction modular to allow for maintenance and future additions: The U-boat and water is one module; the two sides of the dock and walls are another; and the ceiling is removable. All electrical wiring is behind and above the scene.

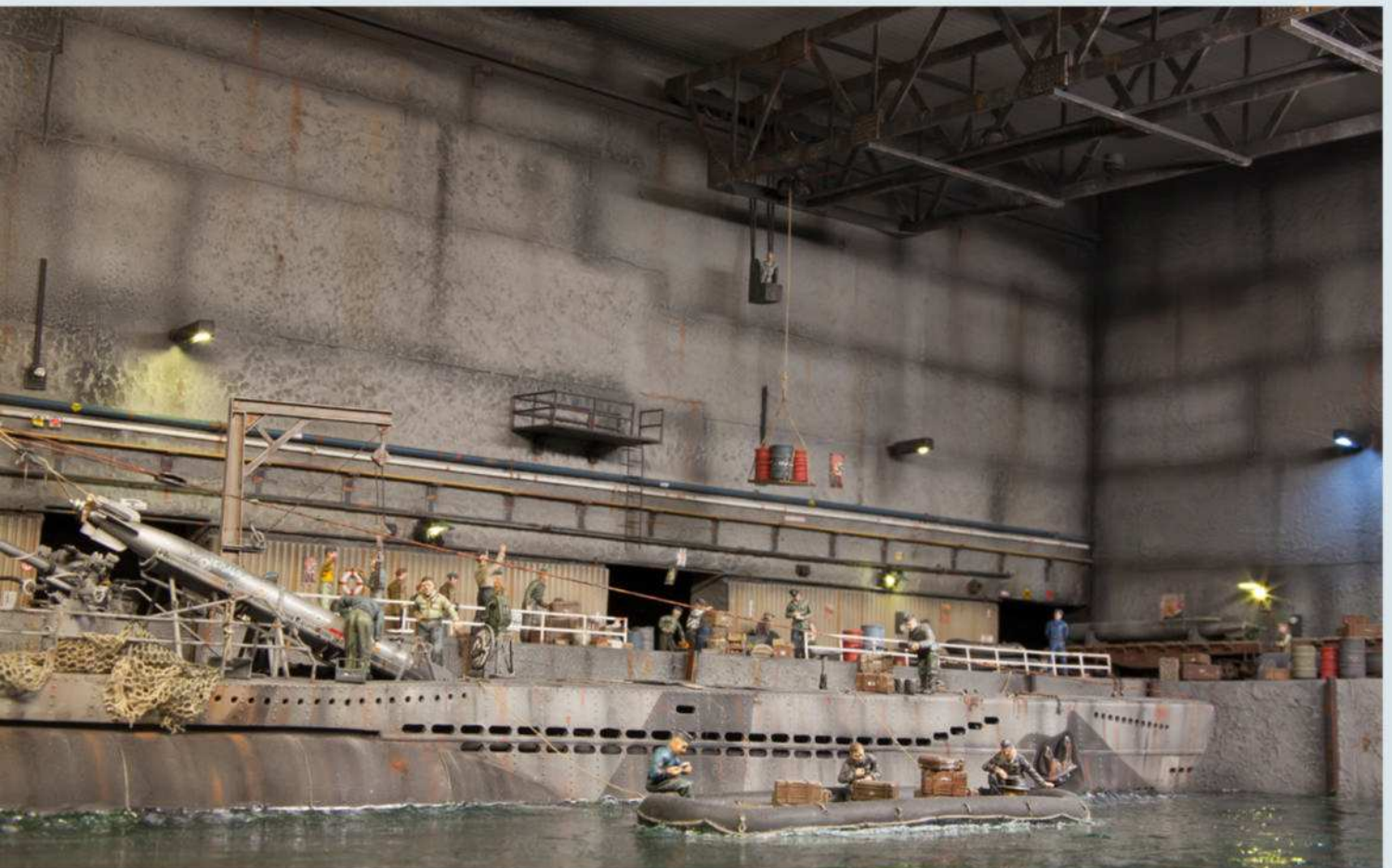
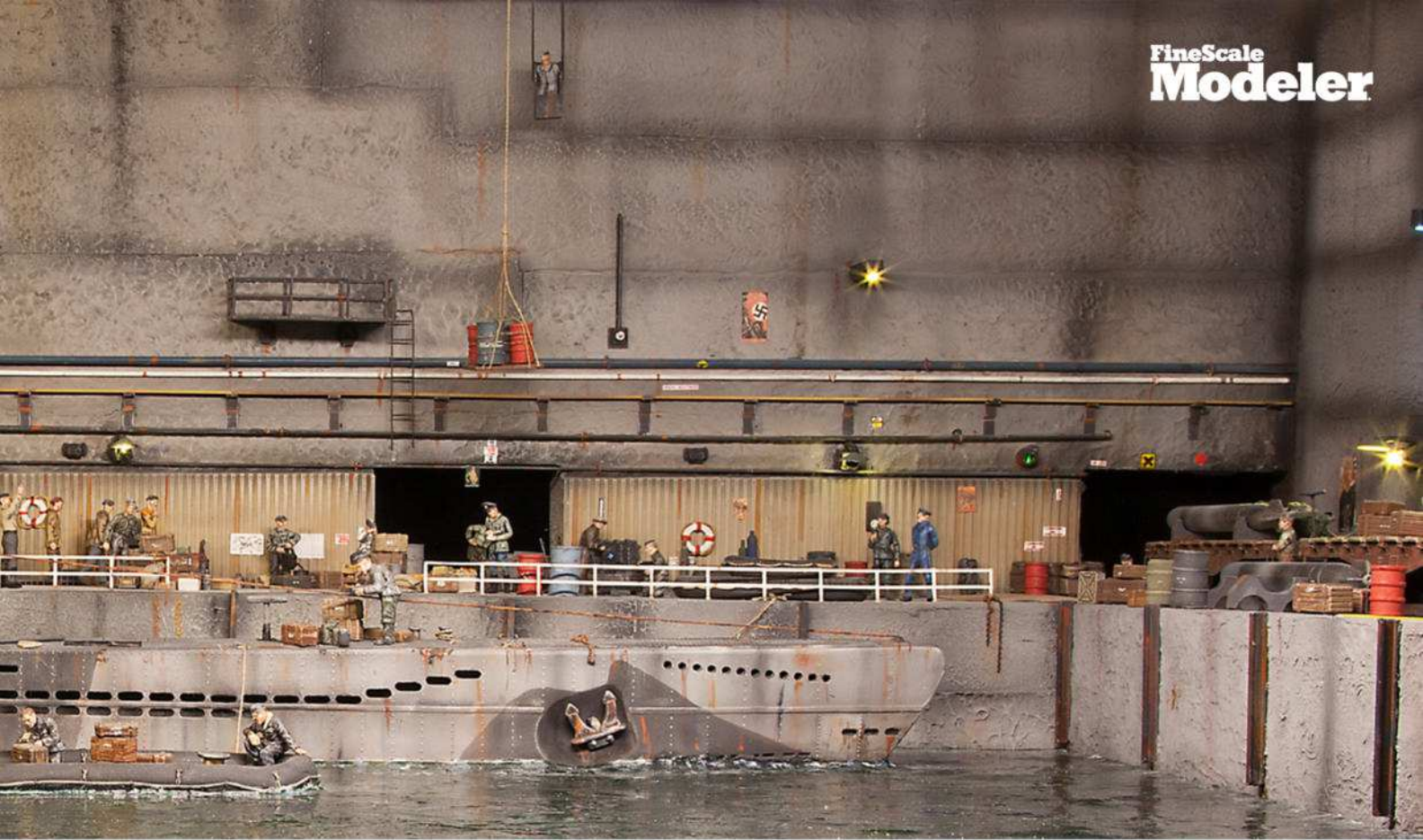
He says, "Much like a movie set, in a shadow box you can show motion, mimic fire, smoke, even weather. You can control the lighting and highlight subvignettes as focal spots in the overall scene."

At a time when Germany's U-boats threatened to stymie Allied shipping, the gigantic submarine pens embodied an air of invincibility. Somehow, Mike manages to capture that in a tabletop box. **FSM**

More Mike McFadden

See more of Mike's shadow boxes, as well as more about how he built this one, at FineScale.com/online-extras.







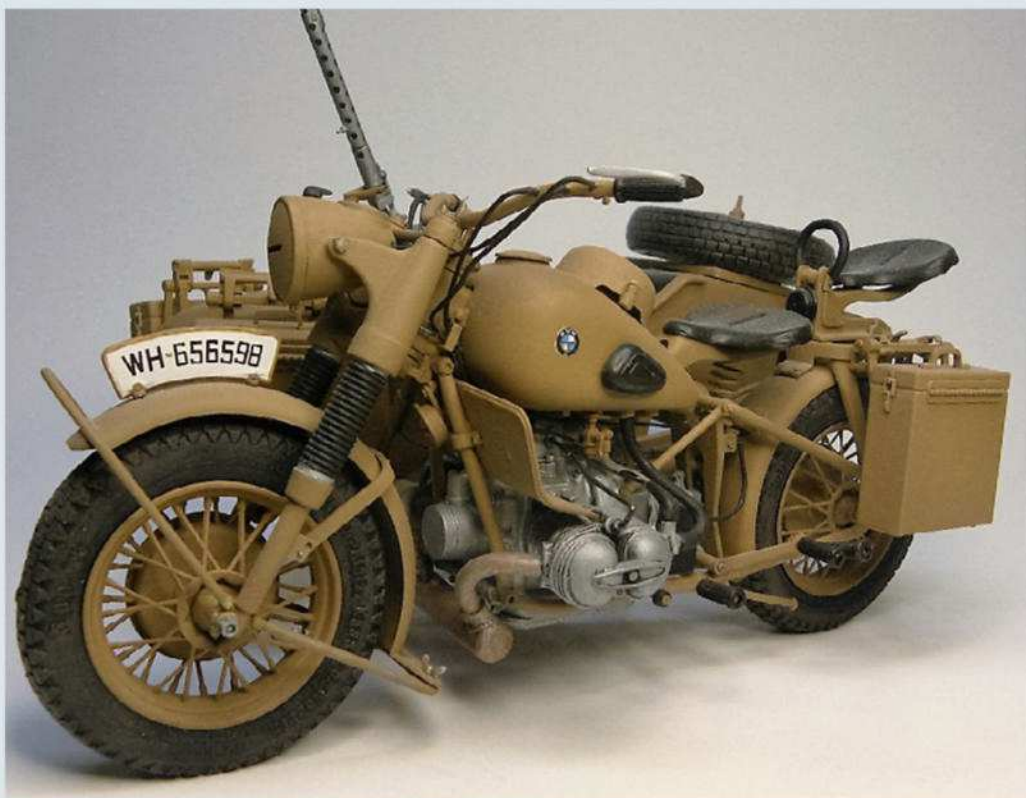
ANTHONY JONES
OAK POINT, TEXAS

Eschewing decals for all but the scary eyes and yellow numbers, Anthony used Montex masks to paint the markings on his Trumpeter 1/32 scale P-47D Razorback Thunderbolt.

► **SHINKEUM KANG**
YONGIN CITY, SOUTH KOREA

The M23 car was a winner for Yardley Team McLaren in Grand Prix racing, but it was Shinkeum who took a trophy when he won first in the automotive division of the Korean Tamiya contest in 2016, revving up Tamiya's 1/12 scale kit. "I made my own detailing in several places," he says.





◀ **BRUCE TYO**
ROCHESTER, NEW YORK

Wouldn't you really rather have a Beemer? That's what the Wehrmacht wanted when it ordered up 20,000 BMW R75 military motorcycles (about 18,000 were produced). Bruce gave Italeri's 1/9 scale kit a ride.

▼ **WILLIAM PHILLIPS**
OMAHA, NEBRASKA

William painted AMT's 1/25 scale Peterbilt 359 wrecker with Gulf orange, Gulf blue, and Porsche white. He also stripped the kit's chrome and sprayed it for a more realistic finish. He mounted after-market flotation tires on the front.





▲ **ROBERT SHVEYTSE**
FAIR LAWN, NEW JERSEY

Robert applied Tamiya paints to Bronco's 1/48 scale SU-152 and weathered the Soviet heavy hitter with oil paints, pigments, and pencils. He installed a coil spring mechanism in the gun barrel that gives it a recoil to mimic firing.

► **MARCO ALBARRÁN**
CUERNAVACA, MEXICO

Italeri's 1/48 scale A-10 got "techno snake camouflage" from Marco, who airbrushed the serpentine scheme through home-made stencils. He designed and printed his own decals.



SEND US YOUR PICTURES!

Shouldn't *your* model be in Reader Gallery?

FineScale Modeler is always accepting new material from around the world.

Upload high-resolution digital images (preferably unedited, RAW format) with complete captions at www.Contribute.Kalmbach.com, or burn it all on a disc and mail it to *FineScale*

Modeler, Reader Gallery, 21027 Crossroads Circle, P.O. Box 1612, Waukesha, WI 53187-1612.

Be sure to tell us the kit manufacturer, model, scale, modifications, paint and finishes used, and reason for choosing the model, along with your name and address. We look forward to seeing your work!



▲ **LEE SHANNON**
KANEOHE, HAWAII

Lee writes, "This is Monogram's 1991 reboxing of the 1/48 scale F-14A. It was a gift when I was in high school and I've had it ever since." Building his first model aircraft in 25 years, he airbrushed Vallejo and Tamiya acrylics, and Testors Model Master and Metalizers. Microscale products helped him get away with using the older decals. He gave the model to a former Tomcat pilot.

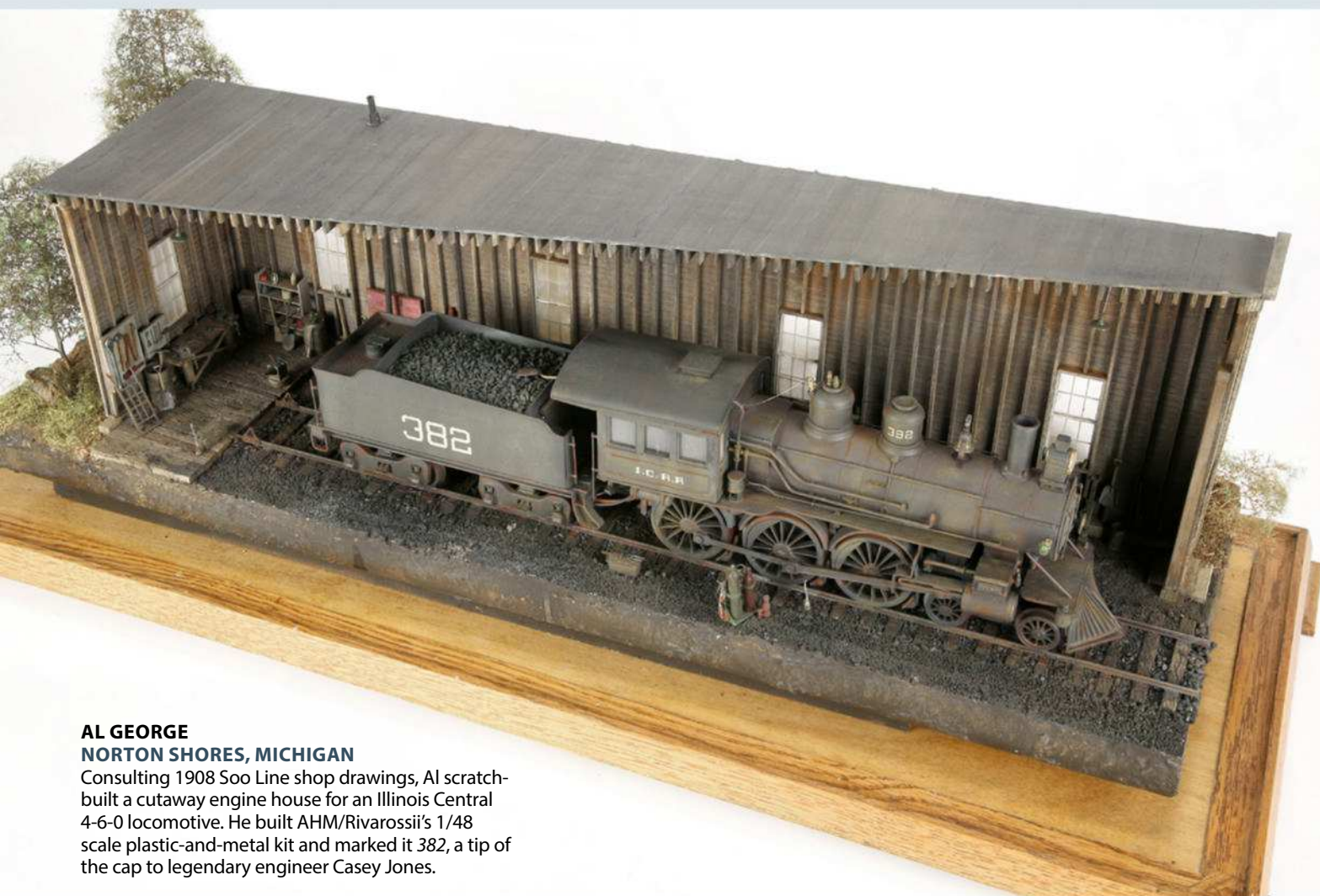
◀ **ANDY ROCHEFORD**
ZIMMERMAN, MINNESOTA

Basing his build on Revell's 1/24 scale 1941 Chevy pickup, Andy added a stake bed from a Lindberg 1934 Ford, built a mount for the spare, and spray-painted his pickup with Rust-Oleum black and blue. He was inspired by a truck he saw in the video game *Team Fortress 2*.

► **EDWIN GAMEZ**
MARINA del REY,
CALIFORNIA

"This kit comes with almost no interior details," says Edwin of the Italeri 1/72 scale HH-60J. So, he built them himself, adding seats, cables, a radio, and door handles. He finished it with Vallejo Model Air and Tamiya acrylics, and stationed it in San Diego. "I built it as a tribute to all the men and women of the U.S. Coast Guard for their professionalism and heroism in saving lives," he says.





AL GEORGE
NORTON SHORES, MICHIGAN

Consulting 1908 Soo Line shop drawings, Al scratch-built a cutaway engine house for an Illinois Central 4-6-0 locomotive. He built AHM/Rivarossii's 1/48 scale plastic-and-metal kit and marked it 382, a tip of the cap to legendary engineer Casey Jones.

► **DAVID DRAKULIC**
STERLING, VIRGINIA

The 3600th Air Demonstration Unit was activated in May 1953 at Luke Air Force Base in Arizona, taking the name *Thunderbirds*. They were flying F-84G Thunderjets then. Now, David salutes "America's Ambassadors in Blue" with Tamiya's 1/32 scale F-16. "As usual, the detail is great," he says of the Tamiya kit.





◀ RANDY MYERS

CRESTLINE, CALIFORNIA

Randy writes: "This is my original 1/9 scale sculpt of a western movie character (any resemblance to persons living or dead is purely coincidental, wink)." For the head, Randy sculpted a master from Sculpey clay and cast it in resin. The torso was built up with A+B, Aves, Magic Sculpt, and Kneadatite epoxy putties. The pistols are resin copies from a master he made from plastic sheet and tubing. He painted mostly with artist's oils and Humbrol enamels, but the metals are finished with printer's ink and Testors Model Master buffing Metalizer.

▶ STEVE TURNER

ALEXANDRIA, VIRGINIA

The artist locally known as Bricks Tattoo says he is a big fan of Shep Paine, and it shows here with Andrea Miniatures' 54mm Officier Chasseur de la Garde Impériale. Steve says, "It's painted in acrylics, but metallics were done in enamels. I fell in love with a model of this by Ray Lamb that I saw in a book when I was a kid; I have seen many renditions of the painting. When I found the kit, I wanted to take my time and make sure it was as satisfying as when I saw that model years ago."



Distressing an **Fw 189 A-2**

How to weather a 1/48 scale *Uhu* /// BY RICARDO DACOBA

This model saw many layers of paint come and go during the weathering process. The result is an eye-catching finish that tells a harrowing story.



***Fliegendes
Auge***
In German,
“flying eye,”
another nickname
for the *Uhu*.

The Focke-Wulf Fw 189 *Uhu* (German for eagle owl) was a tactical reconnaissance twin-engined light bomber. It first took flight in 1938, entered service in 1940, and was produced until 1944.

It was an all-metal low-wing monoplane powered by two Argus As 410 engines of 459 hp. The engines were housed in nacelles into which the main landing gear retracted. The single tail wheel also was retractable.

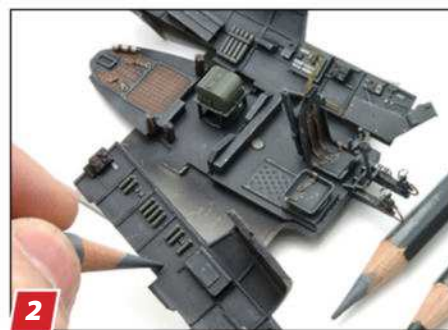
The central gondola accommodated the crew, composed of a pilot, a navigator/radio operator, and a flight engineer/gunner.

Great Wall Hobby's 1/48 scale Fw 189 A-2 (No. L4803) consists of 178 pieces of light gray and clear plastic with a small photo-etch fret and decal sheet with two painting options. The parts are well made and show a remarkable amount of detail.

After assembling and refining the interior, I began the heavy weathering process of the *Uhu*'s worn whitewash. I used Tamiya acrylic paints throughout.



A base color of black-gray RLM 66 (XF-63) was applied to the whole interior. Highlights came from lightening RLM 66 with a bit of flat flesh color (XF-15). A light dry-brushing of Humbrol medium gray enamel made details stand out.



A mixture of black acrylic paint and Pledge FloorCare Multi-Surface Finish highlighted more details and textured surfaces. Gray watercolor pencils added wear and scratches. The interior was then closed up.



Black-green RLM 70 (XF-27) became the surface layer for the splinter pattern topside.



Dark green RLM 71 (XF-61) added the classic polygon shapes of the camouflage.



Light blue RLM 65 (XF-23) was sprayed below.



A little white (X-2) added to the RLM 65 added variations to lower panels. This scheme is all about different tones and textures.



Random panels were highlighted with a white artist's pencil. The work was protected with a thin layer of satin acrylic clear. Once that was dry, the weathering continued.

Read more online

Go to FineScale.com to see how Ricardo superdetailed the interior of his *Uhu*.



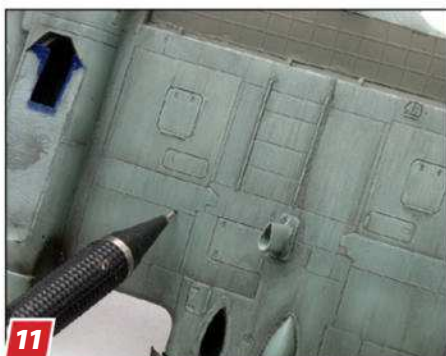
8 A diluted wash of dark gray watercolor brought out the panel lines.



9 To tone down the effect, excess watercolor was wiped off with a damp cloth. I always mopped in the direction of airflow.



10 Because a battered look was the name of the game, steel wool scratched up the paint, imparting an eroded exterior.



11 With the help of a brown pencil, fluid leaks appeared on the underside. Not wanting these small bits of weathering to distract, I was careful to not overdo it.



12 Back on the upper surface, Testors clear coat was sprayed to protect the base paint from the dot filters to come.



13 Once the clear dried, a toothpick distributed dots of white, red, sepia, and Indian red oils. Immediately, a square brush loaded with turpentine brushed much of the color away, leaving trace amounts embedded.



14 To keep the whitewash from drying too quickly and becoming difficult to remove, I brushed on an acrylic extender.



15 The white was then sprayed on in an irregular, splotchy pattern.



16 Here is the model so far, with its patchy white coating — let's get on with the extreme weathering.



17 The white was not on for long before patches of it were removed with a kitchen scouring pad.



18 Steel wool made another pass and picked up more white.



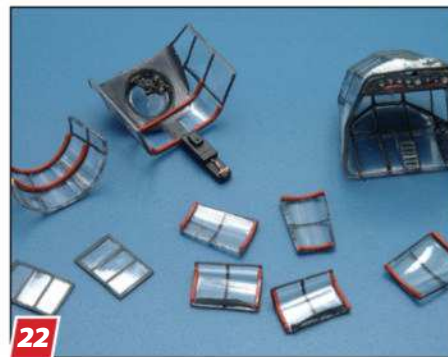
19 So far, so messy — just what I wanted.



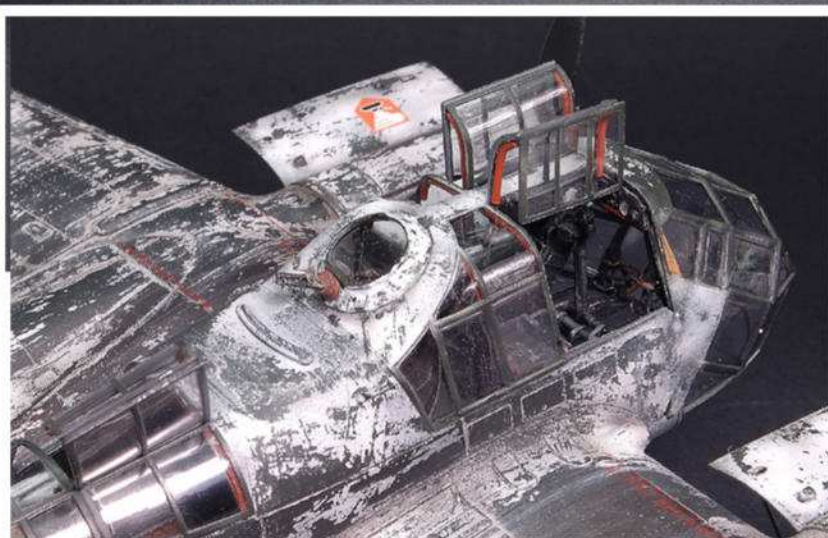
20 I let everything dry for a few days before brushing on another wash of dark gray watercolor to deepen the panels.



21 Again, a damp cloth removed the excess. Then a final layer of acrylic clear was airbrushed, leaving a satin finish.



22 The canopy rims were painted with black-gray RLM 66 and later with dark green RLM 71. Quilted padding was also added. The canopies easily fit into place on the finished model.



I like to imagine the story behind this *Uhu* and wonder at the action it saw. To see how I assembled this Fw 189, go online to FineScale.com to read the full build article. **FSM**



I used surplus parts and kits to model a Kangaroo troop carrier. Thanks to my son Ryan, who took many of the photographs.

Get the jump on a Kangaroo

1/35 scale conversion makes a Sherman-based troop carrier

BY ANDY COOPER

Developed by the 1st Canadian Army in France in summer 1944, the Kangaroo was a troop carrier initially based on the American M7 Priest (with the guns removed) and turretless Canadian Ram tanks, both running on the American M3 medium tank chassis. Arguably the forefather of modern-day armored personnel carriers, the Kangaroo afforded infantry increased protection with the mobility and speed to keep up with armored columns.

Later, in Italy, Kangaroos ran on the Sherman chassis. The Sherman's turret and main armament were deleted; radio set and batteries were moved into the sponson.

I was able to model one of these vehicles with spare parts and kits: namely, Tamiya's Sherman M4 (No. 190), a Verlinden resin internal detail set (No. 1244), and various spare Dragon Sherman parts for the engine deck and other items. I bypassed building a complete interior, knowing many of those details would not be seen.

Reference photos were hard to come by. One photo showed a turretless M4A2 with appliqué armor. However, there were numerous references on the Ram Kangaroos in

northwest Europe, and it made sense that they would have incorporated similar modifications. This assumption and some artistic license allowed me to proceed.

Construction

I started with the hull tub, assembling only as far as necessary to fit the Verlinden resin parts; I would add more detail and the running gear later.

I deduced that the radio set would have been placed in the right-hand sponson, next to the hull machine gunner's position (also the commander of a Kangaroo). To make room

Defrocked
Description of M7
Priests converted
to Kangaroos

for the radio set, some of the storage had to be removed from the right-hand sponson with a razor saw, **1**.

Before fitting the drive shaft and transmission, I had to carefully remove the batteries from the drive-shaft molding with a razor saw, **2**. Then I test-fitted the basic transmission, drive shaft, and driver's position inside the hull and checked the hull top to ensure everything fit.

The separated batteries were dry-fitted to the right-hand sponson next to where the radio set would be placed. Satisfied, I super glued the major assemblies and moved on to the detailing before final fitting and painting, **3**.

The radio set in the Verlinden set is for an American Sherman, incorrect for this model. But I had a surplus No. 19 British unit from a Resicast kit, and after a little sanding it fit snugly between the batteries and the sloping hull top, **4**. I detailed it with photo-etch and cabling.

With no internal references, I assumed what else would be inside and where. Knowing the batteries were moved to the sponson, I considered that power would need to be run down to the dynamo, starter, etc. So, I routed a conduit of styrene rod from these components to the new battery position. Conduits and intercom boxes were added to the hull top for the driver and commander using Verlinden parts, fuse wire, and stretched sprue, **5**. The floor looked a little barren, so I added some tread plating made from packing tape, **6**.

In northwest Europe, Kangaroos had handrails inside the hull for the troops. I assumed the same for the Eighth Army in Italy, so I made these from copper wire.

Paint

After Tamiya gray primer from a spray can, I airbrushed the interior with a base coat of flat white. I hand-painted various boxes, fittings, and stowed equipment with enamels. After everything dried, I sprayed the whole assembly with Pledge FloorCare Multi-Surface Finish (PFM) and left it to harden.

Once the PFM cured, I created random scratches with German gray acrylic applied with a fine brush. Then came a generous wash of raw umber artist's oils, which toned down the scratches and dulled the flat white as it flowed into recesses and provided contrast, **7**.

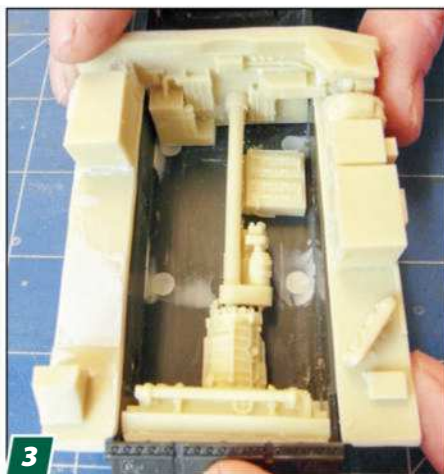
Prepainted radio, batteries, crew seats, ammunition boxes, and fire extinguishers were added. More oil washes were applied to blend these elements, **8**. Subtle dry-brushing with metallic colors, metal black, and silver, along with a rub from a soft pencil, depicted worn metal.



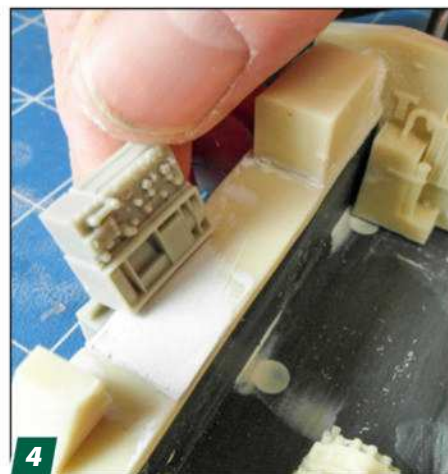
1 A razor saw makes room for the radio that should be near the commander.



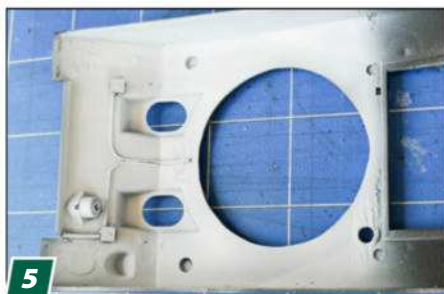
2 Batteries were part of the resin drive-shaft casting — but not anymore.



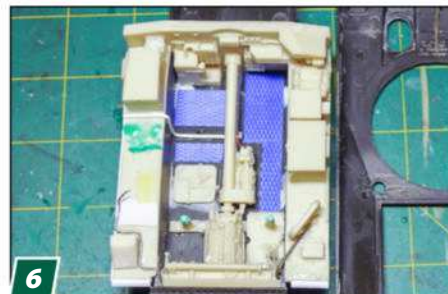
3 Sawing, sanding, and test-fitting ensured the interior details would fit within the hull.



4 An American radio came with the tank kit, but Resicast had the British wireless needed.



5 Resin for junction boxes, wire and styrene rod for cabling, stretched sprue for little bits.



6 Blue packing tape had the right pattern for tread plates in 1/35 scale.



7 Dark primer, flat white, and German gray dings and nicks were followed by a raw umber wash.



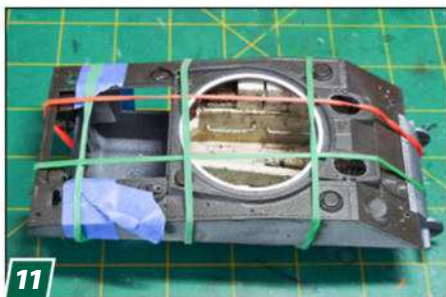
8 Individual items were brush-painted off the model. Raw umber washes blended them in.



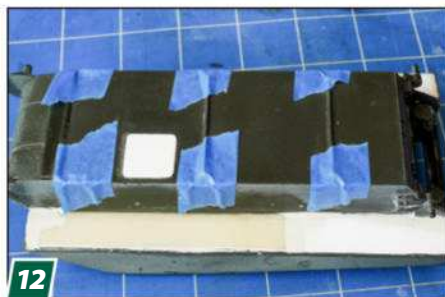
A motor tool removes molded features ...



... and a sheet styrene circle restores the ring.



Rubber bands clamp the hull shut. Handrails on the inner walls are copper wire.



The Verlinden resin filled most of the open sponsons. Filler putty and styrene did the rest.



With the interior already in place, cutting away the transmission cover was a nervous business.



The M4 engine deck had to go, too. Not a pretty sight, but it had to be done.



The Cyber-hobby engine deck fit fine. I cut the rear hull plate from sheet styrene.



Primer gives resin, styrene stock, and plastic from different kits a uniform color.



Pre-shading deepens recesses, which provides greater contrast to reveal more details.



Following the base color with a lighter shade defines edges and further highlights detail.

Adapting to a Kangaroo

Building the model without a turret required modifying the hull top. The kit's key slot for the turret needed to be removed; I marked out a circle in pencil using a template of the correct diameter (2 inches, or 50mm), then used a motor tool to slowly enlarge the kit opening out to the pencil line, **9**.

To finish the opening, I cut a ring from sheet styrene using a compass cutter and detailed it with bolt heads cut from hexagonal styrene rod and fixed in place atop the hull, **10**.

With the interior complete, I glued the hull top in place, clamped it with rubber bands, and left everything overnight to dry, **11**.

The resin parts filled most of the sponson gap, but the remainder needed to be closed with styrene sheet and filler, **12**. I do not usually bother detailing the bottom of my AFV models, but with the prominent escape hatch inside on the floor I was convinced someone would be prompted to look underneath. So, I fashioned the other side of the hatch from styrene sheet and glued it in place.

Oh, no!

I was carrying along on my merry way with assembling the remainder of the model and was ready to prime when it dawned on me that I had built the wrong version. Despite planning and sourcing the parts to build an M4A2, I had used M4 parts! After much agonizing, I decided the faults could not be passed off. So, I set about the necessary corrections.

Ever mindful of the completed and fragile interior, I cut away the transmission cover to replace it with the requisite casting from the same Tamiya M4 Sherman kit, **13**. The appropriate final-drive housings were also put in place before I repositioned the drive sprockets.

I also removed the engine deck, **14**, and replaced it with an M4A2 engine deck from a Cyber-hobby M4A4 Sherman kit (No. 9102), which fit perfectly. I made the rear hull plate from sheet styrene, **15**.

Despite my having gone so far wrong, the correction work went well. After a weekend of fiddling, filling, and sanding, I was back in business. I added stowage on the engine deck from a resin Legend stowage kit for an M4A1 (No. LF1176), smoothing it in with Milliput two-part epoxy putty, then primed the model, **16**.

Paint

Perusing the book *M4 Sherman* by Rodrigo Hernandez Cabos and John Prigent

(Osprey “Modelling Manuals” No. 14, ISBN 978-1-84176-207-4), I came across an unusual paint scheme used on British and Commonwealth Shermans in Italy. Though many older vehicles in the Italian campaign wore North African camouflage initially, as the Allies drove them north they were painted to match the Italian countryside with camo that resembled German “ambush” schemes (and perhaps were the inspiration). Kangaroos were converted from older vehicles, so this interesting twist seemed plausible.

After masking the completed interior with wet tissue paper and packing foam, I pre-shaded by airbrushing GSI Creos Mr. Hobby tire black (H77), **17**. Next, I airbrushed an approximate base color, then added another of a similar hue for variation; Tamiya buff (XF-57) and wooden deck tan (XF-78), respectively, **18**.

For the green disruptive pattern, I airbrushed Tamiya NATO green (XF-67) lightened with a little white, laying out the pattern with Blu-Tack “sausage” masks, **19**. Dark blotches were sprayed freehand with Tamiya sea blue (XF-17), **20**. A top coat of buff, lightened with a few drops of white, toned down the contrasts and blended the scheme; a finish coat of PFM was applied before proceeding.

Stowage on the rear was brush-painted with enamels and acrylics. The lighter-colored panel on the top is painted with Vallejo flat flesh (70955) to represent the faded orange of an air-recognition panel. Again, I painted scratches with dark German gray, keeping this effect subtle and random, **21**. Another coat of PFM sealed this work and prepped these surfaces for artist’s oil washes.

Weathering

I used washes of various artist’s oils thinned with mineral spirits. First, a black wash was applied to grilles and other recessed details for contrast. Once that was dry, a raw umber mix was liberally applied and allowed to settle and dry for an hour before I carefully wiped away excess with soft rags and cotton swabs. I repeated the above before I was satisfied, **22**.

Pinwashes followed: burnt sienna for rust, white for water runoff. Each color was placed in a small dot and streaked downward with a thinner-soaked brush to produce the worn look I sought, **23**. I sealed this work with Tamiya flat clear and left it to dry.

Mob, troop, or court
Collective terms for a group of kangaroos



Rolls of Blu-Tack poster putty mask color edges without threatening underlying paint.



Freehand airbrushing produced dots reminiscent of German ambush schemes.



Applying scratches with German gray, I kept it realistically random.



Artist’s oil washes flow into panels, grilles, and other recesses, calling out detail.



Selectively applied pinwashes are dragged down the hull sides to replicate runoff.



Tamiya smoke simulates fuel and oil spills and seeping fluids.

Finishing touches

I tied down the load on the rear and dusted the vehicle with earth-toned pastels that I sealed with another coat of flat clear. Fuel and oil spills were added with a small brush using thinned Tamiya smoke (X-19), **24**.

The tracks were dry-brushed with silver to show bare metal at the appropriate contact points.

Stowage on the hull front included an oil drum and some chain among other bits and pieces, **25**. An antenna was fabricated from stretched sprue and fixed to



Dry-brushing with silver replicates scraped paint and bare metal.

the kit-supplied antenna mount at the front of the hull to finish the build.

Despite my earlier missteps I enjoyed the model. It’s an eye-catcher among the green Allied armor on my shelves. **FSM**

8 steps to a **Gundam** trooper



A beginner's
guide to building
your own
anime robot

BY ROSS GAGNE

Let's talk about Gunpla. Gunpla is a combination of the words *Gundam* (a giant robotic suit worn by characters in *Mobile Suit Gundam*, the long-running Japanese anime series) and *plastic*. Gundam plus plastic equals Gunpla.

I chose Bandai's 2015 release of the 1/144 scale HG (high grade) STH-05/AC Hyakuren Amida Custom, as seen in the *Iron-Blooded Orphans* series.

The plastic comes pre-colored and the parts can be pressed together. However, to take my Gunpla to the next level, I glued many of the sections, removed the resulting

seams, and gave it a new, unique paint scheme with Testors finishing products — and all in only a few steps that you can easily mimic.

1: Cut parts off sprues

When studying a sprue tree, you'll notice that parts are connected to the main sprue by a thin channel of plastic called the *runner*. It's difficult to remove a part from the full



After removing a part from the sprue tree with much of the runner still attached, I went back and clipped away most of the nub.



I used a hobby knife to remove the remaining bulk of the nub before sanding down any excess plastic. I always cut away from myself.



After testing alignment by dry-fitting the pieces, I coated the edges of the parts with Testors liquid cement and let it sit for 10-20 seconds. Then I joined the parts.



A tiny dab of Testors contour putty comes in handy where a pesky seam line won't disappear, or if a gap has formed where the line was over-sanded.



Using fine-grit sandpaper, I resanded the seam after letting the Testors putty dry.



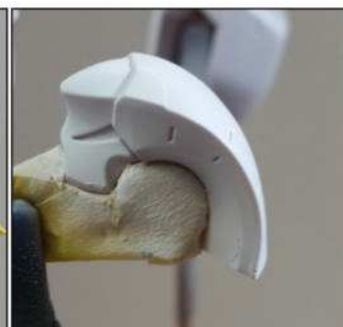
At this stage, it's a good idea to get a general sense of how the final model will look, which I did by gently pushing the separate pieces into place.



When priming the parts, I stuck to gray or black shades if the final color was to be dark or dull, while choosing a white primer for parts I intended to be brighter or lighter.



I masked parts that require multiple colors. On a small scale this proved to be tricky, but patience with aligning tape will result in cleaner paint lines.



sprue tree without taking a bit of the runner with as well. It's easier to first fully remove a part, with a bit of the runner still attached.

Once it's free and easier to handle, you can clip away as much of the runner as possible, **A**.

2: Sand parts

Now you'll have to work to make the area as flush to the part as possible. Smooth plastic edges are essential to assembling tight joins.

With a hobby knife, take off the remaining bit of nub, **B**. Go over the bare spot quickly with a microfile to remove other excess plastic.

Using either small sanding pads or sandpaper of 1500- to 1800-grit, remove trace amounts of plastic, finishing with finer pieces of 3200- to 4000-grit for a completely smooth look.

After cutting and cleaning the pieces of each section, lightly press them together to check that unwanted plastic is not interfering with the fit.

When you're ready to glue two pieces, coat the edges of parts with a light layer of Testors liquid cement for plastic and let it sit for 10 to 20 seconds. Because it is difficult to open up a section after the cement has set, make sure all polycaps and other internal parts are aligned correctly, **C**.

With a good amount of pressure, squeeze the pieces together and hold for 20 to 30 seconds. A little liquid plastic will be pushed out around the seam.

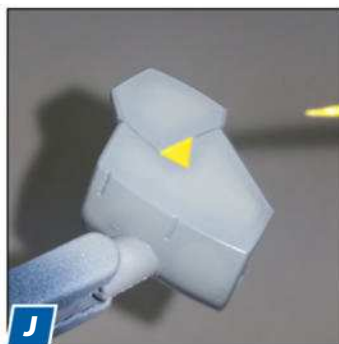
3: Remove seams

This next part of the process is a fun (not!) task called seam-line removal. You're going to spend some time buffing out those lines of dried cement.

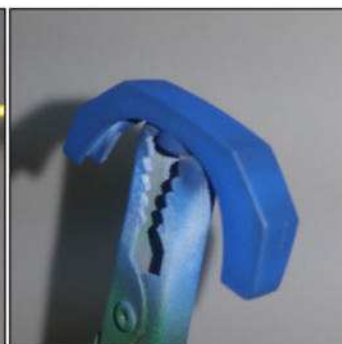
Starting with a microfile or 1000- to 1500-grit sandpaper, begin to smooth the seam line. Then, using 2000- to 3000-grit sandpaper, continue the motion. Be careful to avoid damaging surrounding plastic.



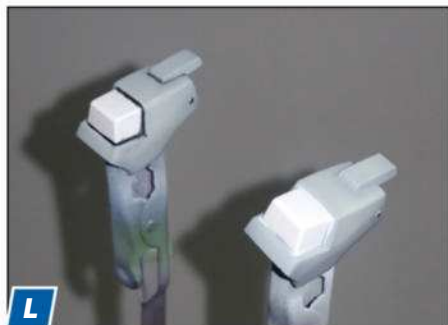
I When pre-shading, I go around all of the hard edges, panel lines, and recessed areas with black paint. This will give the fighting suit the look of movement as it creates deep shadows.



J The colors used were cadmium yellow light (4611), cobalt blue (4612), aircraft gray (4693), gunship gray (4752), titanium buffing Metalizer (1404), and gloss black. Make your Gunpla unique with its own scheme.



K I applied Testors clear lacquer after the first layer of color. Not only does this protect the paint, it also gives the upcoming panel line washes and decals a receptive surface.



L It's hard to paint a perfectly straight line, so let capillary action draw the stain along the edge for you. Simply touch the tip of a brush to the corner and color will flow in the recesses.



M I removed the water-slide decal from the water with a pair of tweezers, and used a toothpick to slide the decal from the backing paper before positioning it on the model.



N The final step in the painting process is to spray a flat, or matte, finish over all of the parts to dull the shine.



O After the parts were dry, I assembled the main sections of the body separately before joining the subassemblies.

Finish with 4000-grit sandpaper. At this point, the seam should be almost invisible.

If the line is still noticeable, or there is a gap where the piece was over-sanded, a little Testors contour putty can fix it. Using your finger, take a small bit of putty and spread it along the seam or into the gap and smooth it out, **D**. Once it dries, sand it using the same steps as above, **E**.

At this stage you will have many separate sections built that can be lightly pushed together to get a sense of how the figure will look once complete, **F**.

Before painting, dismantle the sections and sort them by intended color. My plan was to transform the pink and brown armor into blue and smoky-black.

4: Prime

When priming and painting, I used an Aztek airbrush.

Stick the pieces to be painted on part clips. I like to push the ends of the clips into plastic foam, which acts as a sturdy holding base.

If painting with brighter/lighter colors, use a white primer. If painting with duller/darker colors, use a gray or black primer, **G**.

5: Pre-shade and paint

At this point, apply masking to parts that will be multiple colors, **H**.

If you want a paint job with depth — one that shows highlights, shadows, and details — then you'll want to pre-shade.

This will give the color scheme of your Gundam trooper some life.

With black paint, go around hard edges, panel lines, and recessed areas of the figure, **I**. The effect will look exaggerated, but further layers of paint will tone it down.

Unlike seam-line removal, painting actually *is* the fun part. I used several Model Master colors from Testors, **J**.

6: Add washes

After applying the first layer of color, I put on a gloss coat of Testors clear lacquer.

Using a gloss coat will protect your painted pieces and also help the upcoming panel line washes flow and give decals or stickers a good surface to attach to, **K**.



The best part about building Gunpla models is that there is no right or wrong. Build it how you want, paint it how you want, and even display it how you want.

With a small brush dipped in Model Master black enamel stain, I went piece by piece, dropping the stain into the hard lines and indents. The capillary effect enables the stain to flow along the edge of the detail, **L**.

After giving the stain a little time to dry, cleanup is as easy as going around the kit with a cotton swab saturated with lighter fluid. This will pick up any unwanted color.

7: Apply decals

This kit comes with both water-slide decals and stickers; I used the former.

After cutting out a water-slide decal, place it into a container of warm water for 30 seconds to one minute.

Gently remove the decal from the water

with a pair of tweezers. If necessary, a toothpick or other pointed tool can be used to slide the decal from the backing paper.

Position the decal on the kit, **M**.

To help set the decal, wick away the remaining water and slightly press the decal down.

Whether you are using water-slide decals or stickers, you can apply a decal-setting solution, which will help a marking conform to the surface.

Once all of your decals or stickers are on, spray a flat (or matte) finish over all of the parts, **N**.

8: Assemble and admire

With the individual parts completely dry,

you can press the sections together, following the order in the instructions, **O**.

With that, my totally original robotic mobile suit is complete.

Armed with a large blade and assault rifle, my Gunpla can take on anything the universe throws at it. **FSM**

Learn to airbrush

Check out Testors' video *How to Set Up Your Aztek A470 or A4480 Airbrush* on YouTube for airbrush pointers.

Also go to FineScale.com or YouTube to watch *Airbrushing with Aaron*, which shows you all the basics needed.

By Elizabeth Nash



Brush cover

I like to recycle, upcycle, and reuse things as much as I can when modeling.

To protect my brush bristles, I cover them with tubes cut out of pump soap dispensers. Look for brands that use small-diameter tubes.

Once you've emptied the soap, twist off the pump assembly. Rinse it thoroughly with warm water until it's completely soap-free.

After it air-dries, cut the tube to the length needed. Make sure to cut a piece long enough so that it covers the ferrule (metal cap or band holding the bristles) to ensure the tube stays on the brush and that it extends well past the end of the bristles. Your brush is now protected.

— *Gerald Baker Jr.*
El Paso, Texas

Not such a sticky wicket

Whenever I lose a small part to the carpet monster, I break out my sticky lint roller.

Simply roll it around on the ground. It picks up small modeling parts (and hair) right away!

It's a good purchase for anybody with butterfingers working on tiny parts over a carpet or rug — not to mention it's inexpensive.

— *Martin McLaughlin*
Beaver, Pa.

Side-opening boxes

I used to wonder about all the kit reviews and kit-build articles that complained about side-opening boxes. Then, I bought a B-2 aircraft kit with that type of box and I finally got it — the box, as it was, was worthless when it came to retaining small, loose parts.

Frustrated, I took a hobby knife (a box-cutter would also have worked) and cut the top along three sides of the lid. Now I had a flip-top.

Next, I closed and reinforced the open side with clear duct tape. It's important to use clear tape so that you can read information written underneath.

This easy hack gave me a box that was sturdy, easy to close, and better at containing the tiny, precious parts inside.

— *Ned Barnett*
Las Vegas, Nev.

Supplies in the beauty aisle

Eye shadow is great for weathering and shading models and dioramas.

Use the cosmetic as you would pigment powder or pastels to simulate rust, dirt, wear, fading, as well as to add subtle color shades.

I like to use metallic colors on engines, gun barrels, and bare-metal finishes.

Eye shadow comes in just about any color you can imagine, is inexpensive, and a single compact will last a long time.

Go buy some immediately!

— *Joseph Huenke*
Philadelphia, Pa.

WD-40 clears haze

Are you having a problem with Testors Dullcote becoming hazy with time? Spray WD-40 into a container, apply it to the cloudy Dullcote with a flat brush, remove the excess, let dry, and *voila* — haze gone!

Three years ago, I tried this trick on my 30-year-old Testors 1/48 scale SR-71; now it is better than new.

The WD-40 toned down the flatness of the finish, making it look even more realistic. The decals were not adversely affected, either.

I find this works on all schemes and on the entire model. And it cleans off shelf grime to boot.

— *Stephen Newman*
Foley, Ala.

Cha-cha compressor

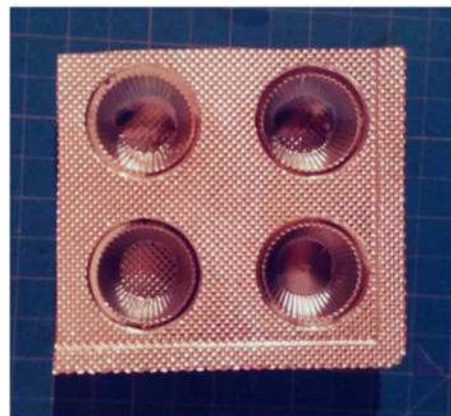
My airbrush compressor is in the linoleum-tiled laundry room, so every time I turned it on it went skating across the room.

Not wanting to chase it around, I purchased a \$7 skid-resistant see-through PVC bath mat with suction cups.

Now, at last, it stays put!

— *Mike Ballantyne*
Central Saanich, British Columbia, Canada

Heart-shaped box of tools



Higher-end boxed candy frequently comes in aluminum or plastic trays. Cut these up and make disposable cups for paint, glue, weathering powders, etc.

Another bonus is that the trim on the cups, such as those pictured, could also represent tread plate in larger scales.

So buy some high-quality candy for your significant other and get the cups — and maybe permission to add to your stash!

— *John Nordin*
Naperville, Ill.

HAVE A TIP OR TECHNIQUE TO SHARE?

Send a brief description along with a photo to tips@finescale.com or visit FineScale.com and click on "Contact Us." Tips are paid for upon publication; if you live in the U.S., we'll need your Social Security number to pay you. *FSM* obtains all publication rights (including electronic rights) to the text and images upon payment.

Liquid aircraft lights

I have good luck using Bondic to create aircraft lights.

Bondic is liquid plastic that hardens under an included UV LED. You can see the ergonomic handle, light, and carrying case in the photo to the right. While you can use it to bond canopies to fuselages and attach other fiddly parts, I found it particularly good for creating wingtip lights.

The glue can be built up in stages, or you can apply a small dab to form a tiny bubble — a very realistic light formation. If you color the glue beforehand, you'll have the making of navigation lights. Once satisfied, set the design in five seconds under the LED.

Another reason to like it is that it doesn't craze or mist clear parts like super glue can on clear parts.

— Keith Merrill
Bountiful, Utah



ICONIC COLORS FOR ICONIC PROJECTS.

Model Master® offers an extensive line of high-quality paint formulated to match many of the world's most well-known brands. So if you're building your dream car collection (on a smaller, less expensive scale) choose Model Master when it has to match, because we know close isn't close enough.

To view available Model Master colors, visit www.testors.com.



© 2016 The Testor Corporation



Eduard Focke-Wulf Fw 190A-4

The Focke-Wulf Fw 190 really needs no introduction to anyone interested in World War II. It was a formidable foe to those who flew against it, and it commanded respect from the pilots of the Allied air forces. As a result, there have been many kits brought to market by virtually every kit manufacturer in virtually every common scale.

This new-tool kit of the Fw 190A-4 is not Eduard's first kit of a 190 variant in 1/48 scale, but it does represent a change in Eduard's approach to engineering and molding. Some of the 195 injection-molded parts have been seen before in previous Eduard kits, and many of those parts are suited to other 190 variants, so will be fine fodder for those who like to keep unused parts "just in case" for future use.

Surface detail is absolutely beautiful, with fine rivets and sharp, clean, well-defined panel lines. Cockpit detail also is wonderful, with Eduard presenting three options for representing the main instru-

ment and side-panel details: preprinted photo-etch (PE) panels on a flat underlying part; a decal (again on a flat panel); or you may paint a panel with raised, molded detail. There are pluses and minuses in each option; I chose the PE parts as they give a quick, relatively easy yet good-looking result.

I found the PE belts tricky to bend and drape realistically. It may be possible to anneal them with a lighted match, but there would be a high risk of destroying the pre-painted surface. For my future builds, I will use either a resin seat with molded-on belts or another type of aftermarket belt that is more malleable and forgiving.

Construction goes quickly, with very little to challenge even a novice builder. Engineering and fit is superb throughout, and I used no filler at all on this model (although I could have used a tiny smear on the longitudinal seams on the top and bottom of the fuselage just to really finish off those areas). All of the internal structures align perfectly. The only parts that could

have been improved were the top instrument panel and panel shroud, as both of these could use more positive location and attachment aids.

The fit of the wings to the fuselage is perfect. This is probably the biggest departure from the previous 190s kitted by Eduard. Earlier kits featured separate wing-root gun-bay doors, which can be tricky to align and install. Of course that makes displaying an open gun bay much easier, but if you don't do that it creates more work. In the instance of this new 190A-4, Eduard sells a separate set of wing-root gun bays in its Brassin line. This makes sense to me, as there are many modelers who would rather have their model "buttoned up" with closed access hatches. (Eduard also offers a slew of other Brassin and PE sets should you wish to "go to town" and detail your model beyond what is in the box.)

The mounting of the main undercarriage legs is very clever and ensures a solid, strong, correctly aligned assembly. The wheels, on the other hand, are a little



ambiguous in their attachment; care must be taken to ensure they are straight and vertical once installed.

The inner gear-bay doors are molded to be mounted open. The 190A-4 had a mechanism that kept the inner doors closed when the aircraft was on the ground, cycling open during undercarriage retraction and lowering. As a result, the doors require modification to close. So, I removed the mounting lugs and alignment pins on the wing centerline to close the doors.

Keep in mind that while there are photos showing the inner doors open, it is not that common. Either way is valid: The insides of the doors are beautifully detailed, and it is a shame to hide them!

All of the control surfaces are separate items, and with minor modification could be mounted in a deflected position if desired. Finally, two canopies are provided for an open or closed pose. The canopy on the real aircraft flexes and is wider when closed than open. Eduard correctly depicts this feature, and you must make sure you

choose the appropriate part for the pose you want.

The kit-supplied masks make painting the canopy a breeze, as they fit the windscreen and hood perfectly, and adhere very well with no signs of lifting during extended painting sessions.

There are five marking options provided in the kit. I chose to build the aircraft flown by Rudolf Eisele of 8/JG 2 in France, 1943. These aircraft were the pride of the Luftwaffe at this time and were very well kept — some were even waxed to gain 1 or 2 more kilometers per hour in flight — so I used fairly restrained weathering, just a light panel-line wash and exhaust stains. The decals performed very well, settling into the recessed details to reveal the underlying surface textures. But they do look more flat in finish than the surrounding paint, even though they were sealed with clear gloss before the overall semigloss clear.

To sum, this is a brilliant little kit — arguably the finest 190 in any scale. It was a

thoroughly enjoyable project, and I will be building more of these! Both JG 52 and JG 54 used Fw 190A-4s on the Eastern Front, and the extreme weathering opportunities presented by such aircraft are quite appealing to me.

Well done, Eduard!

— Matthew Walker



Kit: No. 82142 **Scale:** 1/48

Mfg.: Eduard, www.eduard.com

Price: \$49.95 **Comments:** Injection-molded, 241 parts (48 PE), decals

Pros: Good fit; great detail; easy build

Cons: Stiff PE seat belts



Platz English Electric Lightning F6

A Cold War icon, the English Electric Lightning fighter was all about brute force in an era when speed was king.

Platz has boxed two Lightnings, along with three decal options: one in overall natural metal, one in green/gray camo over natural metal, and one in dark green over natural metal.

As you might expect, construction is fast — just don't forget to add nose weight. The interior consists of a simple seat, floorboard, and instrument panel. No cockpit decals — not that you'd see them anyway.

Be careful with the rudder and all other flying surfaces — they are razor-sharp and easily bent or damaged. The wings and stabilators are one piece with substantial tabs that aid alignment. The ventral fins are also razor-sharp, but suffer a bit from large alignment pins. I opened the holes in the fuselage halves for a better fit.

There are holes in the upper wing for mounting over-wing fuel tanks. Not all Lightnings carried them at all times, so it's unfortunate that Platz didn't make their use optional without filling. I filled the holes on one plane and put tanks on the other.

These kits were originally a pre-painted product, leading to some compromised detail and fit in spots. Platz includes parts for a gear-up option, but no stand — even though there is a slot for one molded in the lower fuselage. I filled it on both kits. A part representing the rear of the engine is included to mount inside the exhausts, but the fit is vague. I chopped most of the exhaust mount off the fuselage for better fit.

None of the joints needed filler, only light sanding. I left off the delicate refueling probe and nose-mounted pitot until later. The landing gear is petite and nicely detailed, although the main wheels only have hubs on the outboard side. The single nose gear door is mounted to the gear leg — great for simplifying the build — but the door itself has a molded ridge that's hard to trim. The auxiliary nose gear doors have the same problem.

I left the doors and landing gear off until the end and saved the Firestreak missiles for later, too. They have many sink marks and mismatched seams, the only disappointing parts in the kit.

I was surprised by the fit and clarity of the canopy — better than many larger kits I've built. I attached the canopy and masked the framework before painting.

I had decided to do the natural-metal option using Alclad II aluminum. First step for this paint is a gloss black undercoat — convenient, since the inside of the canopy frames and the tail on the overall silver version need to be black. Pictures show the spine is black as well for the silver 74 Squadron option. I thought it looked better, so I added that. After masking, the Alclad II covered the entire airframe and the over-wing tanks.

The other kit was finished in 92 Squadron's dark green over metal scheme, which also required a black undercoat. I finished with Tamiya dark green and Alclad II aluminum.

Comprehensive decals include stripes on the belly fuel tank. They are a bit thick, and

I had a hard time keeping the wing-walk stencils from silvering. Alignment is easy, as the stencils are included in the same carrier film as the major nose markings. I was impressed by the fit of the nose antiglare panels — they hugged the canopy perfectly.

After decals, the landing gear and missiles were mounted along with the fragile refueling probe and pitot probe. Extras are provided if you need more than one try, but they are flexible and, with care, won't cause a problem.

I spent slightly more than 10 hours on my little Lightnings, and I'm happy with how they turned out. The molding is first-rate, and detail sufficient to satisfy most modelers.

— Chuck Davis



Kit: No. FC-6

Scale: 1/144 **Mfg.:** Platz,
www.platz-hobby.com **Price:** \$18

Comments: Injection-molded, 64 parts (32 each), decals **Pros:** Good fits, outstanding scale thicknesses for flying surfaces **Cons:** Thick decals; holes in wing tops that must be filled

Takom Merkava Mk.1

The Merkava is the Israel Defense Force's premier main battle tank. Developed by Israel after years of using foreign tanks, its design was unique. It featured a front-mounted engine and a rear compartment with an access door for troops or munitions.

Takom's new Merkava Mk.1 (and Mk.1 hybrid kit) is most welcome, as this is the first new kit of this version in 30-plus years (Tamiya's kit being the only other Mk.1). The kit is well molded in light gray plastic and features clear plastic for periscopes and lens, optional armament for the turret exterior, separate hatches, photo-etched (PE) and lead-sheet parts, and link-and-length tracks.

The lower hull is molded in one piece. The suspension parts that are added to it are quite numerous and represent bogie mounts, bumper stops, and suspension springs. I was impressed with the overall molding.

The dual bogie wheels are built up from four parts. The front wheel comprises three parts with a separate part for the rubber tire, making painting easier.

The actual Merkava turret has numerous fittings and shapes, and I was impressed by how Takom has managed to mold most of these neatly on the upper turret part.

Parts are included for upgrades made to the Mk.1, including a .50-caliber machine gun mounted above the main gun, 60mm mortar attached to the turret side, and a second 7.62mm machine gun for the loader.

The main gun is molded in three parts and features excellent detail. But it attaches

to a fixed mount, so no elevation or depression is possible.

The link-and-length tracks have neat, crisply molded detail. Assembly jigs (one for each side) are provided and are a real help in construction.

After initial combat experiences, a ball-and-chain screen was attached to the vulnerable turret rear to protect against antitank rockets (and has been in use with all subsequent marks). This has been a thorny detail in other Merkava kits, with various versions using real chains to replicate this feature. Takom tackles this challenge in straightforward fashion with neatly molded plastic as part of the turret basket sides. If you model an initial combat Merkava, you would have to remove this plastic.

Wire is provided for the tow cables. I found assembling the cable problematic, as the wire is a bit thick and the plastic tow hooks have shallow attachment recesses. Once they're assembled, you have to snake the cables around both sides of the turret and meet at the back of the turret basket!

The upper-hull detail is as well done as the turret. Separate parts are provided for the headlights, driver's hatch, and periscopes. Periscope covers are separate parts, so these can be posed closed without the periscopes deployed (this can be said of the turret, also).

The hull's rear door is molded in separate parts and can be open or closed. Don't attach the hinge arms if you are going to have it closed, though, or your door will be ajar!

The upper hull attached to the lower



Kit: No. 2078 **Scale:** 1/35

Mfg.: Takom, www.takom-world.com

Price: \$56.99 **Comments:** Injection-molded, 403 parts (2 PE, 1 wire, lead sheet), decals **Pros:** Impressive surface presentation and attention to detail

Cons: Complex suspension assembly; unclear, small instructions

hull without any problems. There is a join seam at the "nose" that the more fastidious builder may want to eliminate.

I painted my Merkava with Tamiya acrylics, hand-mixing my primary color based on color photos.

Decals are given for two vehicles. They applied nicely over a gloss coat with the help of some decal solution.

My primary reference was Vol. 20 of Desert Eagle Publishing's IDF Armor series *Merkava Siman 1: Merkava Mk.1 in IDF Service – Part 1*, by Michael Mass and Adam O'Brien (ISBN 978-965-7700-07-5). The finished model looked good compared to the reference photos.

I completed my Merkava in 43 hours and was pleased with the outcome. The finished piece is a convincing model. It's a straightforward build that can be managed by any modeler who's built a few armor kits. I highly recommend Takom's new Merkava to anyone interested in modern armor.

—Jim Zeske





Kitty Hawk T-28C Trojan

There has been an explosion of kits in 1/32 scale in recent years — fighters, jets, even World War II bombers. But some of my favorite aircraft are L-birds (liaison aircraft) and trainers. When I heard about Kitty Hawk's T-28C, my hopes were high.

The box contains nearly 400 beautifully engraved parts with fine panel lines and scale-appropriate rivets. There are several options for the landing gear, a full engine and accessory bay, and all the parts and weapons from the earlier T-28B/D kit. Clear parts are boxed separately. Two tightly packed decal sheets contain colorful markings for five aircraft. There are photo-

etched (PE) seat belts and screens for the engine, two nose weights, and a 25-page instruction book with glossy color pages for the decal and painting guides. Paint call-outs are for GSI Creos Mr. Color.

I began by cleaning up the parts for the cockpit. Though the detail in the moldings is quite sharp, there is an abundance of mold lines and back flow on the ejector-pin marks. The excess plastic is in some awkward places to clean up.

The two-piece cockpit side walls allow for better detail in the moldings, but there's an additional seam to fill. Location tabs on the seats and tub help but do not "lock" things in place. I had a gap at the front, port corner of the cockpit tub, and the fronts of the seat buckets do not line up well.

Instructions for the PE seat belts left me confused. I finally referred to a pre-painted aftermarket set and left off Part PE5. I used the finely printed instrument panel decals, but their background does not match the dark gull gray called for in the cockpit. So, I painted the side console rather than use those decals. Parts B36 and B37, the instrument panel fairings, did not fit well and interfered with the fuselage and the canopy.

Careful alignment of the parts in the engine bay will pay dividends later, and detail painting and washes bring the engine to life. Be careful with all the small parts!

Step 7 calls for "Part E55" to be installed on the reduction-gear housing, but that is one of the cowl doors. I never did locate the

pictured part. Larger alignment guides for attaching the nose-gear well to the cockpit would have helped.

The instructions fail to indicate when or where the counterweights should be added. There is space next to the nose gear well, but an engine scoop will run through the port side (leave room for it). Leaving one of the cowl panels open, I chose to leave the engine and accessory bay off until after painting the fuselage.

I had trouble aligning the main gear well, which caused problems later with the wings. I suggest adding alignment tabs along the lower fuselage seam. I didn't and had a step along that joint.

It took me 10 minutes to figure out that the Part E55 is shown end on in Step 12, unlike its counterpart, E53, in Step 14. If you keep the cowl panels buttoned up, do not use parts E11 and E12, the hinges mounted to the intake trunk in Step 13. I had difficulty eliminating the seams for the tail-hook fairing; adding these to each fuselage half before joining them might fix this.

Aligning the wing halves, I had to remove pins that didn't match their locator holes. I also blanked off the holes for the pylons, filling them with Vallejo putty. After that, the wings went together quickly. I did have to adjust the flaps slightly; they are an incredibly tight fit. I never did glue mine down and can adjust them up or down as desired.

I decided to paint all subassemblies separately. I used Testors Model Master instrument panel black to paint the exhaust areas,



Kit: No. KH32015 **Scale:** 1/32

Mfg.: Kitty Hawk, www.kittyhawkmodel.com **Price:** \$94.99 **Comments:** Injection-molded, 391 parts (42 PE, 2 white-metal), decals **Pros:** Great surface detail; nicely detailed engine; separate control surfaces **Cons:** No option for open canopy; several poor fits; difficult PE belts; kit-supplied counterweights insufficient (tail dragger)



masked them off, and then used Tamiya white Fine Primer spray cans. The high-visibility markings are Mr. Color shine red.

Adding the wings to the fuselage, I found the main gear wells interfered with the fit of the wings. I ground them back until I could get a good fit. When I test-fitted the horizontal stabilizers they looked loose, but after painting all the subassemblies they were tight enough that I didn't need any filler. After adding the engine assembly, I did need to fill the joints in the multipiece engine cowl. Thinned white glue and careful brush-painting provided an acceptable result.

The decals were slow to release from their backing; some needed to be coaxed from it. Once they do float, they are thin and tear easily. The NAVY modex is connected by clear film only at the top and bottom of the letters. This helps prevent silvering but makes it hard to position. Even over a layer of Pledge FloorCare Multi-Surface Finish, some of the stencils silvered.

The provided weights were not enough, and the T-28 ended up a tail dragger. I tried filling the accessory bay with lead fishing sinkers but didn't come close to tipping the scales.

With its various trouble spots, Kitty Hawk's T-28 took me 80 hours. But, with patience, an experienced builder can obtain a highly detailed model. The results are worth the time and effort.

— Andy Keyes

Zvezda Msta-S

The Russian Msta-S self-propelled howitzer (named after the Msta River) entered service in 1989. It can fire various types of ammunition, including nuclear and rocket-assisted, up to 38 miles (62km) at a rate of 6-8 rounds per minute. Russia operates more than 600 of them, and many more have been exported to various countries, including Venezuela, Ukraine, Azerbaijan, and Morocco. This might portend a wide spectrum of painting and marking options, but the kit provides only Russian markings.

The build starts with the upper portion of the main hull. This went pretty smoothly and quickly for me as the parts fit snugly into place. All the hatches can be posed open or closed — there are details on the underside of all of the hatches, but no interior for the hull or turret.

The lower portion of the hull and the running gear also went together without a hitch. The link-and-length tracks fit perfectly with molded-in sag. However, with the side skirts on, most of the track is not visible.

The main chunk of the turret goes together quickly as there is no interior and each of the large sides is a single piece. After building the main walls of the turret, there were a few areas that I thought didn't fit correctly. But after looking at reference photos, there are areas on the real tank where panels have slight overhangs. So, be sure not to act too soon and sand these areas down.

Like the main hull, the hatches on the turret can be posed open and have details on the underside. But if you don't have a figure in the hatch, the lack of interior or gun breech on the inside would be obvious.

The main gun and travel lock are also movable. On the final model, the main arm of



Kit: No. 3630 **Scale:** 1/35

Mfg.: Zvezda, www.zvezda.org.ru

Price: \$66.99 **Comments:** Injection-molded, 451 parts, mesh, decals

Pros: Tight fits; great detail on small parts; plenty of movable parts

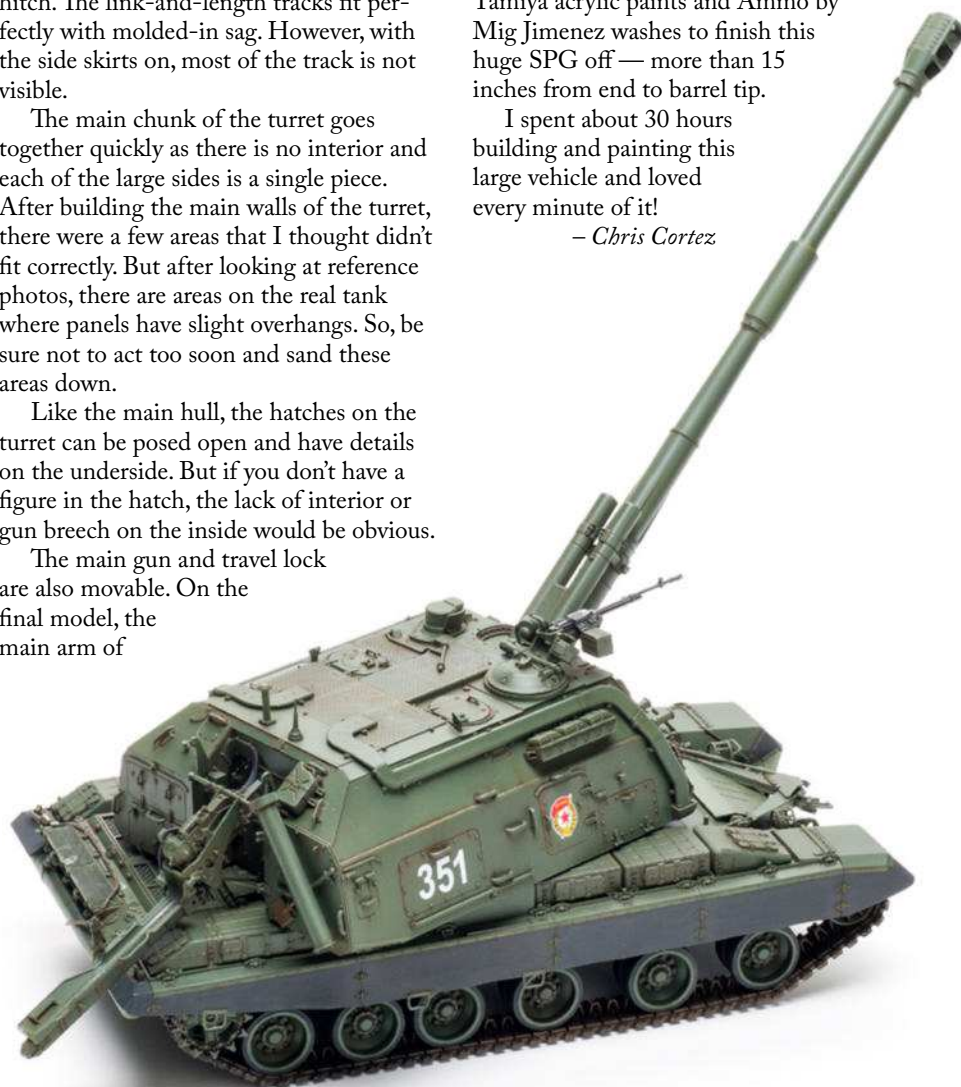
Cons: Sprue numbers hard to follow

the automatic loader is not movable and is slightly fragile; if you put it in the down position, as I did, be very careful during painting, as the loading arm sits lower than the bottom of the turret, making it easy to break as you set the assembly down.

The fits on this kit are great, and I would very happily suggest it to anyone with a couple kits under his or her belt. I used Tamiya acrylic paints and Ammo by Mig Jimenez washes to finish this huge SPG off — more than 15 inches from end to barrel tip.

I spent about 30 hours building and painting this large vehicle and loved every minute of it!

— Chris Cortez





Academy K2 "Black Panther"

South Korea's latest armored fighting vehicle, the K2, is highly advanced, with locally produced main weapon and ammo, and passive and active defense measures. Academy's release has many "extras," such as posable hatches, armor upgrades, together tracks, polarized lens stickers for the vision blocks, and markings for two vehicles.

The instructions are separated into two sets, starting with the turret. You have a choice of standard or uparmored versions.



Kit: No.13511 **Scale:** 1/35

Mfg.: Academy, www.academy.co.kr

Price: \$65 **Comments:** Injection-molded 687 parts (2 PE, string, lens-cover stickers)

Pros: Straightforward build; vision block lens stickers **Cons:** Complicated track build; no clear parts; silvering decals

Building up the turret from many parts was easy enough. The breech is put between top and bottom halves so it can be moved up and down. I laid down the photo-etched (PE) mesh for the bustle basket with super glue but left the jerry cans off for painting.

The tow cables ended up a little long; I cut them to 79mm, but I think 77mm would be better. The cannon barrel comprises three pieces. The polarized stickers have a clear mask over the lens, so painting after installation is easier. I used a wooden toothpick to peel off the clear mask after painting. These stickers give a color shift from right to left to replicate modern optical coatings. The add-on armor was left off until after painting.

The hull and running gear assemblies are made up from many parts. The hull sides and bottom went together without issues. The tow hooks (parts E26 and E27) would not fit into the front and back without sanding off part of the locator tab. The running gear and suspension were trouble-free and the hull top went on without gaps. I painted the hull at this point.

Each track link is made up from six parts that snap together. It's nice that they snap together, but it's a lot of trouble considering not much of the track is visible.

I cut the edge connectors, leaving a little sprue to hang onto while pushing them into place. The instructions indicate track run of 78 links per side. But they were too long, so I adjusted each to 76 links. I masked the rubber parts and painted the tracks Tamiya earth. If I wanted to make this build easier, I would shop the aftermarket for simpler tracks.

I painted the model with Testors Model Master dark tan, Tamiya olive green, Tamiya NATO black, and Vallejo ivory, using Silly Putty for masks. For the hull add-on armor, I painted with a 3:2 mix of Tamiya olive green and white, respectively, to match a picture of the vehicle I saw online.

The decals were a bit problematic. The small markings were OK, but the larger ones were translucent and they silvered. Decal solvent settled them. After spraying Model Master flat clear I applied a wash over the model. I added the paper flags with white glue; I am not sure how the flags are used on the real thing.

I spent 60 hours building and painting Academy's K2. Because of the complicated track build, I can only recommend this model to experienced modelers.

— Tom Foti

Platz Mitsubishi T-2

Platz's newest T-2 kit represents the "late type" or T-2(K) Koki with an internal JM61A1 20mm cannon in the port fuselage. The recessed surface detail on the kit's crisp, flash-free moldings is as fine and precise as you'll find on any state-of-the-art offerings. Options include open or closed canopies plus external stores, including drop tanks, a pair of nice AIM-9L Sidewinders, and a CBLS-200 practice-bomb dispenser with munitions. (More on the armament shortly.)

Raised relief as well as decals furnish cockpit detail, and both are excellent; I added masking-tape belts to the slightly basic seats for a little more interest.

Fit of the parts is generally precise, but the fuselage comprises five pieces and I had a little fit problem around the gun fairing panel where three of them came together.

The six-piece intakes include curved throats, a nice touch eliminating the see-through effect. The beautifully detailed three-piece wing features separate leading-edge extensions and drooped leading-edge slats.

Each landing gear comprises multiple parts. The main gear is a trailing arm configuration similar to the F/A-18, and the instructions show correct angles for the struts. But care still must be taken when assembling them and gluing them into the

fuselage, because just a slight change in their angles can result in a pronounced vertical travel of the main axle and a wing-low "sit."

Some confusion exists with the armament. Curiously, the parts map shows all external weapons as "parts not for use," but Step 9, the "Armaments Assembly" section of the instructions, details the construction of the CBLS mounted on the centerline rack. A separate sidebar diagram shows what stores may be carried on that station and the inboard and outboard underwing racks, plus wingtip-loaded Sidewinders. The box art and the painting/markings profiles show a totally clean aircraft, and my reference source (*World Airpower Journal*, Vol. 18) notes that although the T-2 could carry such weapons, they seldom did — and further states that T-2s never had centerline stations, either. Using that reference and internet photos, I added drop tanks on the inboard wing stations.

The gunsight is likewise omitted, although there are parts for it. I installed it because all my photo references showed T-2's had one.

The extensive Cartograf decal sheet provides complete markings for 11 different T-2s plus data block stencils for no fewer than 43 others, buildable by cutting out unused numbers from the sheet.



Kit: No. AC-21 **Scale:** 1/72

Mfg.: Platz, www.platz-hobby.com

Price: \$40 **Comments:** Injection-molded, 141 parts, decals **Pros:** Superb molding and detail; perfect decals

Cons: Some parts discrepancies in the instructions

Complete, extensive stenciling is provided — and if stencils make a model "pop," this one pretty much goes *boom!* I spent nearly as much time with the decals as I did with the rest of the build. The decals worked perfectly.

Platz kits are craftsman-quality, and the T-2 is no exception. Its many small parts and small decals suggest it might be better suited for the experienced builder, but, like many other high-end kits, the level of detail is up to the builder. A fine model can be made even without using all the small bits. I loved this kit!

— Walt Fink



QUESTIONS & ANSWERS

By Mark Hembree

Decal/PFM troubleshooting

Q I tried to use “Future” to coat an area where I was going to place a decal. I read in *FineScale Modeler* that it makes it easier to slide the decal on and position it. But it did not work. Does it have to be a heavy coat, or do you place the decal while the Future is still wet?

— Frederick Donley
Pullman, Wash.

A Frederick, when you said, “it didn’t work,” I’m not sure what went wrong. I can tell you what I know:

What was formerly called “Future” (Pledge FloorCare Multi-Surface Finish, to use its mile-long current title, or PFM) provides a gloss coat that is a smoother surface for decals. If you wait for PFM to dry before applying decals, give it at least 48 hours before proceeding.

I have heard people say applying PFM with the decal works well.

In any event, the idea is to prevent air from getting under the decal, which will result in “silvering.” When you place the decal, you should put water or PFM or decal solution on the spot, slide the decal on, and immediately mop out any bubbles underneath. (I do this by gently rolling a damp cotton swab across the decal.)

You can add a small drop of dish detergent to the water to break its surface tension.

To quickly explain decal solutions, there are two types: one, a setting solution, prepares the surface. It’s relatively mild — distilled water and vinegar can be used as a substitute, I have found, with similar effect.

The second, a decal solvent, effectively softens the decal so it settles more easily into surface features. Some decal solvents are pretty aggressive; test on an unused decal from the same sheet to see how it reacts. Some solvents will eat decals alive!

There is a limit to how much you can

manipulate the decal once it’s on. Especially when using a solvent, apply it and leave it alone until it dries. If the decal wrinkles up a little, that’s a good thing — leave it alone and it will smooth back out.

If, after it dries, you still see silvering, you can prick tiny holes in the decal and apply more solvent. Stubborn decals may take several such applications. If it is still not conforming to the surface to which it is being applied, you can apply heat with a hairdryer to make that pesky puppy lie down and stay.

When everything is dry, applying more PFM may smooth out the decal’s edges to make it look more like it was painted on.

With all of that being said, decals differ. What works for one sheet may not for another. *[Frederick wrote back to say he didn’t realize you had to wait that long for PFM to cure. That might have been the problem.]*

Building on commission

Q An individual has reached out to me to build a model for him. Do you know of anyone reputable to get advice on commission builds?

— Christopher Bowling
Louisville, Ky.

A I would look to our forum at FineScale.com or on Facebook for advice. Consider practical points: deadlines, pay, and an approval process. Is there a “good faith” payment you want to charge upfront? Make sure you understand your client’s expectations. Former *FSM* senior editor Paul Boyer says, “Don’t expect craftsman’s wages. Clients usually have a budget, and once you have an agreement it’s up to you to find the least costly way while staying on budget. If you settle on \$200 and work 50 hours on the model, you are not going to be eating well.”

MiG-31 Firefox?

Q Has any manufacturer ever made, in any scale, a replica of the experimental MiG-31 from the 1982 Clint Eastwood movie *Firefox*?

— Tom Archer
Calabash, N.C.

A Yes, in resin: Anigrand (1/144, 1/72, and 1/48 scale); Studio 2 (1/48 and 1/72 scale); and Planet X (1/72 scale).

Has any manufacturer ever made...a replica of the experimental MiG-31 from the 1982 Clint Eastwood movie Firefox?



Brett Avants used hairspray to style a beat-up finish on Wave’s 1/20 scale Archelon Ma.K. fighting suit.

Heads-up on hairspray (and other weathering)

Q I am considering using the hairspray technique for wear on my latest project. What I’ve read is that the technique involves a coat of hairspray over an undercoat of the color desired, followed by the acrylic base color, which is “scrubbed/dabbed” with a stiff brush using water or thinner to reveal the undercoat. Why hairspray? Won’t a typical clear coat work for this?

— David Titus, Annapolis, Md.

A Hairspray is easy to remove. Clear coat is not — it is designed to stay put. But other substances could be used. Before I heard of people using hairspray, I saw rubber cement used for the same purpose of selectively revealing an undercoat in patches, such as in Pat Covert’s rusty “Grundy Bros.” vehicles. He called the cement a “release agent.” Same routine: a rusty base coat; rubber cement where you want the rust to show through; top coat; then roll the rubber cement off and there is the rusty undercoat. A similar effect can be achieved using salt as the release agent.

Note the word *similar*. All these methods produce different results in how much and how the top coat is removed. Use a test piece to find what effects you like best. **FSM**

GET A MODELING PROBLEM?

Our Questions & Answers column is here to help. Email questions@finescale.com, or visit FineScale.com and click on “Contact Us.” We are not able to conduct lengthy research, such as answering questions on markings and unit histories. Mail volume and space limitations prevent us from printing every question. Please include your name, town, state, and a daytime phone number.

By Mark Hembree

"There's no one flying this airplane!"



A Boeing 377 Stratocruiser in June 1957; they began with Pan American in 1949 and were retired from airline service by 1963.

I have probably logged more hours on prop-driven airliners than most people my age. When I was very young, my dad took me along on business trips, usually on North Central Airlines, the DC-3s and Convairs with the "blue goose" on the tail. (Actually a duck, corporate name of Herman.)

But, oddly, the first airliner I remember was the mighty Boeing 377 Stratocruiser. That trip was seared into my memory by sheer terror. I was just 4.

Mom was taking me with her to New York City to visit my aunt. During a layover in Chicago, she kept me entertained by showing me how you could tell what flight crew members did on the plane by looking at emblems on their jacket or stripes on

their cuffs ... flight engineer, navigator, radio operator. A pilot was easy to pick out.

As we boarded the 377 through the aft door, I darted down the spiral stairs to the lounge on the lower level. "*Mark Gilbert Hembree*, you get back up here right *now*!" (The full name always denoted a final warning.) I bobbed back up and reported, "There's a basement on this airplane!"

And so we flew into the night. After dinner, a pilot who was deadheading to New York (as Mom explained later) walked back through the cabin (probably to the galley or the lavatory).

But I didn't know any of that. I looked at the stripes on this guy's cuff, pegged him for a pilot, and went hysterical.

First Mom, then a stewardess, and then the aforementioned pilot, all tried to calm me down and figure out what was wrong. Finally I was able to gasp, "*There's ... no ... one ... flying ... this airplane!*"

With some quick explanations, the stewardess led me to the front of the plane

and opened the cockpit door, revealing the grand vista of the Stratocruiser's flight deck. Gauges and lights twinkled like Christmas in the darkened cockpit as the crew turned in their chairs to regard me. The stewardess said, "Mr. Hembree is concerned that no one is flying this airplane."

There was laughter, and I was assured that everything was under control.

Considering I was 4, I remember much of that trip to New York City ... seeing the Empire State Building, lunch at an automat (it wasn't very good), a ride in an Isetta taxi. But most of all, I remember my big scare in the air aboard the Stratocruiser.

A few years ago, there was a C-97 (military cargo version of the 377) on display at AirVenture in Oshkosh. I walked up to the cockpit threshold, took a knee to assume the height of a 4-year-old, and a wave of *déjà vu* washed over me — the navigator's table, the canopy arching overhead, and a glittering cockpit where a five-man crew was indeed flying that airplane. **FSM**

Come fly with us

What are your earliest aircraft memories? Write to mhembree@FineScale.com and let us know.

U.S. MEDIUM TANK M4A3E8 SHERMAN "EASY EIGHT" KOREAN WAR

C Company, 70th Heavy Tank Battalion,
1st Cavalry Division, near Chilgok,
September 1950



"Rice's Red Devils"
C Company, 89th Tank Battalion,
25th Infantry Division, 1951

**1/35
SCALE**

1/35 U.S. Medium Tank M4A3E8 Sherman "Easy Eight" Korean War (Item 35359)

The M4A3E8 "Easy Eight" was a smooth-riding horizontal volute spring suspension (HVSS) variant of the Allied workhorse Sherman medium tank. Famous for its WWII deployment, it also appeared in the Korean War as the significantly demilitarized U.S. forces scrambled to react, taking on T34/85 tanks and other foes on the Korean Peninsula as the tide was turned and the conflict headed toward an uneasy armistice. Now, a Korean War Easy Eight joins the famed Tamiya 1/35 Military Miniature Series.

★This is a 1/35 scale plastic model assembly kit. ★The form of a Korean War M4A3E8 is expertly captured, with renderings of the various upgrades made to the tank. ★Late production Sherman deflector and gun shield canvas cover are authentically recreated, along with updated gun travel lock and radio equipment. ★2 marking options include a striking new interpretation of "Rice's Red Devils" tank based upon new sources. ★2 torso figures and field car parts included.

Length: 215mm, Width: 86mm

Authentic recreation of
canvas gun shield cover

Slide molded M2 mount
and barrel for superior
accuracy

Realistic, fuss-free
belt-type depictions
of T80 tracks



FOLLOW US ON



/TamiyaUSA



/TamiyaUSA



/TamiyaUSA



/TamiyaInc



©2018 TAMIYA

★Images show assembled and painted kits. ★Products may vary from images shown.

Tamiya America, Inc. | 36 Discovery, Suite 200, Irvine, CA 92618 | (800) 826-4922 | www.tamiyausa.com