



**Inside This Issue**

Meeting Minutes.....1-5

Upcoming Events.....5-7

New Releases.....8-9

Members Build Blogs.....9-10

Club "Contest" .....N/A

New Techniques.....N/A

Interesting Articles.....10-19

USA AFV Register.....20

Support Our Vendors.....20-21

Classified Ads.....21-22

The Day Room (Editor)...22-23

Welcome to the latest issue of our newsletter. We try REALLY hard to publish this each month, but sometimes stuff happens, or you know, CRS flair ups occur. Of course, what's published in this newsletter is probably out of date, known by everyone already, or completely off-topic. Maybe everyone will like the pretty colors, but then your ink cartridge will probably run out after only printing a couple pages. This paragraph is what's known as "filler text", which we needed since we added the snazzy table of contents and this area was kind of empty.

Additionally, we have returned the "Classified Ad" section to the newsletter. This section will give you a space to advertise items you want to barter, swap, sale or trade. Or even a request for research material. Check it out. Contact the seller directly. Note personal email addresses are not listed on the public site. Contact the seller directly via his/her email addresses.

Check out our website for more info & photos:  
<http://www.ampscentralsouthcarolina.org/>



Visit us on Facebook at:  
<https://www.facebook.com/ampscentralsouthcarolina>

**Regular Meeting Minutes, 8 February, 2017**

Our last meeting was held on Wednesday, February 8, 2017 from 6-8 pm at the HobbyTown store in the Publix Shipping Center (North Pointe Shopping Center), Two Notch Road, Columbia (NE). We had 20 members and guests in attendance who brought 26 models or other items to the meeting. The new owner of our hosting HobbyTown store, Jason, was present and introduced himself. Welcome, Jason! For the Raffle, we had a Tamiya 1/35th scale "Centaur C.S. Mk. IV

*British Cruiser Tank Mk. VIII, A27L*", # 35232, which was won by Mike Roof. That makes two months in a row for Mike. He should have bought a Power Ball ticket instead.

1. T-34/85 Mod. 1944 (DML + scratch built Engine Louvers, Fuel Tank Straps, Master Club Tracks, Aber PE & Barrel), 1/35 – Tom Wingate **[T-34 Group Build]**
2. T-34/85 Mod. 1944 (DML + scratch built Engine Louvers, Fuel Tank Straps, Master Club Tracks, Aber PE & Barrel), 1/35 – Tom Wingate **[T-34 Group Build]**
3. T-34/85 (DML + Aubis Creations Resin Turret, Self-cast resin details, bent wire, RB Model barrel), 1/35 – Steve Reid **[T-34 Group Build]**
4. T-34/76 Pressed Turret (DML + Tamiya Turret, Master Club Tracks), 1/35 – Dave Varettoni **[T-34 Group Build]**
5. T-34/76 Factory No. 122 (AFV Club + Detail Master Wiring, Fruilmodel Tracks), 1/35 – Phil Cavender **[T-34 Group Build]**
6. T-55A (AMT + RB Models 100mm D-10T Metal Barrel, Tamiya Tracks), 1.35 – John Currie
7. T-34/85 (DML #6810 + Eduard PE), 1/35 – Carl Wethington **[T-34 Group Build]**
8. M5 High Speed Tractor (Commander Models Resin kit), 1/35 – Carl Wethington
9. M8 75mm Howitzer Motor Carriage (Tamiya + LOTS of scratch built parts), 1/35 – Carl Wethington
10. M4A3E8 Sherman "Easy Eight" (Asuka), 1/35 – Michael Child
11. King Tiger Panzer Kampfwagen PzKw VI TigerII "Königs Tiger" (Sd.Kfz182) (finishing uncle's 1970s build; Tamiya), 1/35 – Dave Cicimurri
12. Universal Carrier Mk. II (Tamiya), 1/35 – Henry Horlbeck
13. Sd.Kfz. 2 Kleins Kettenkraftrad (Tamiya), 1/35 – Kevin Cook
14. French Guard Chasseurs (HAT), 1/72 – Kevin Cook
15. French Elite Infantry, Voltigeurs (Zvesda), 1/72 – Kevin Cook
16. T-34/76 M42 (Italeri Fast-Build), 1/72 – Tom McCoy **[T-34 Group Build]**
17. Medieval Italian Nobleman #1(Aitna), 1/9 – Tom McCoy
18. Medieval Italian Nobleman #2(Aitna), 1/9 – Tom McCoy
19. Viking (Amadi), 75mm – Tom McCoy
20. T-34/85 (DML + Master Club Tracks), 1/35 – Trevor Edwards **[T-34 Group Build]**
21. German Super Tank Maus (DML + Fruel metal tracks, Eduard PE, Aber metal Barrels), 1/35 – Trevor Edwards
22. Pz.Kpfw. II Ausf. J (VK16.01) (Flyhawk), 1/72 – Bob Kerfonta
23. British Dingo Mk.II Scout Car (Tamiya + ValueGear Stowage), 1/48 – Bob Kerfonta
24. Jagdpanther Tank Destroyer G2 (S-Model + ESCI Road Wheels, scratch-built Engine Screens), 1/72 – Tony Abbott
25. Sd.Kfz. 2 Kleins Kettenkraftrad w/ Trailer, Puchen & Falchurmjuagers (Tamiya, DML + Royal Model PE, Tiger Works resin base), 1/35 – Shawn Ramsey
26. Dutch House (MiniArt + scratch-built cork Cobblestone Road, Sidewalk & Wall), 1/35 – Shawn Ramsey

Photo Album on our webpage: <http://www.ampscentralsouthcarolina.org/meeting-photos.html>

**Business items:**

1) Treasurer's report: Current bank balance is approximately \$4,072.04. Cash on-hand is approximately \$200. Dave V. filled in for the treasurer, Ralph, this month. (Thanks, Dave!)

**Note:** We still had two outstanding NACM reimbursements. Carl paid his this month, so if you're the last member pending, please see Ralph and make good your pledge.

**Reminder:** Club dues of \$12 per member for 2017 are now due. Please see the treasurer, Ralph Nardone, if you need to pay your dues.

2) Our meeting location, the HobbyTown store, is under new ownership as of February 1<sup>st</sup>.

The new owner, Jason, introduced himself to the members present. Jason also presented us with a check for \$230 for various show support and sponsorships. This year, for the first time ever, our local HTU will vend at our show. Jason has also graciously sponsored a contest category and a special award, as well as making a substantial donation to our raffle. (Thank you, Jason!)

3) We have extended an invitation to the "Military Timeline Impressions" (MTI) club to display their militaria collections and present living history impressions at our June show. I have received a tentative acceptance of this invitation. Unfortunately, by the time of our meeting, we have not heard any more information from the MTI folks.

4) Briefly discussed our Saturday Club Build Day which was held on January 21<sup>st</sup> at Mike Roof's house. We had a smaller than usual crowd, only around 9, counting Mike and Sheila.

5) 2017 Contest Vendor Coordinator, Tim Darrah, update / report. Tim has begun to send out formal vendor invitations.

6) Our website conversion to v7 Web Builder has been completed. However, there are still some bugs to be worked out in regards to how the new software operates and how we can use it to manage our website. Jeff is working these issues, but anyone in the club with experience building and managing websites is invited to lend a hand.

7) Our 2017 Contest Vendor Coordinator, Timmy, has already sold some tables. We should have our initial promo materials (contest flyers and contest poster) ready for the Atlanta AMPS Show next month.

8) 2017 Contest Raffle Coordinator, Phil Cavender, update / report. Phil volunteered to be the contest raffle coordinator. Phil has mailed out 167 raffle donation solicitation letters. Club members are encouraged to donate a kit or two to the raffle.

9) Jeff has completed our contest poster and flyer. Both of these have been sent out by email to other AMPS chapters in the AMPS South Region. Hard copies of both will go to Atlanta.

Awards and category sponsorship solicitation letters have been sent out by email to all the AMPS South Region Chapter contacts.

10) Discuss the option of obligating funds to purchase an advertisement in the State Newspaper for our June show. We reviewed the advertising options and fees. A 1/8 page advert in the weekly "Go Columbia" special edition appears to be the best fit. Cost would be \$156 + tax. A vote was deferred until a later date.

11) No new business was raised.

**Regular Show & Tell:** See the meeting photos for all of the completed and works in progress brought to this month's meeting!

## Tentative Agenda, Regular Meeting, 8 March, 2017

Our next regular meeting will be held on Wednesday, March 8, 2017, 6-8 pm, at the HobbyTown store in the Publix Shopping Center (North Pointe Shopping Center), on Two Notch Road, Columbia (NE).

### **Tentative Agenda Business items:**

**1) Treasurer's Report:** Current bank balance is approximately \$4,072.04. Cash on-hand is approximately \$200. Pending deposits \$307. Pending expense for March \$1,000 venue rental.

**Note:** We still have one outstanding NACM reimbursement. Please see Ralph if you're the last member who has not met your \$25 pledge.

**Reminder:** Club dues of \$12 per member for 2017 are now due. Please see the treasurer, Ralph Nardone, if you need to pay your dues.

**2) Updates for our June, 2017 show:**

**Venue –** No change in February. Mike will meet with the venue manager this month and pay our rental, \$1K, and request our event insurance certificate from the AMPS Treasurer, Tom Faith.

**Vendors –** Tim has sold or has reservations for 13 tables. This should bring \$390 if all the vendors show.

**Raffle Donations –** Phil continues to send / re-send solicitation letters. We have had a number (about 20 at this time) of letters returned as undeliverable. We have received six major donations, but not nearly enough items so far for a good raffle. The club needs to at least begin considering outright purchasing of raffle items. We don't need to pull the trigger on this immediately, but if the raffle situation has not improved in a major way by the end of April, this may be our only option to putting on a really nice raffle.

**Awards Sponsorships –** We have received a total of \$250 so far for category / award sponsorships. If you know of someone who might be interested in having his or her business promoted on our website, please hit ask them to sponsor a skill level, a category or a special award.

**3) Club members need to step up with individual raffle donations and selling award sponsorships.** If you can afford it, please donate at least one kit or modeling related item to the raffle. Kits in "as new" condition are the most desirable.

**4) Question:** Do we want to sponsor an award or category for the 2017 AMPS I-Con? Discuss and vote. If we want to do this, we need to do it ASAP.

**5) We have still not received either a positive or negative response to our invitation from the Military Timelines Impressions group.**

**6) Floor will be open for new business.**



**Regular Show & Tell:** to follow the business portion of the meeting. Finished models, works in progress and cool new stuff – Bring it all with you to share!

*Mike Roof*

REMINDER: **The HobbyTown store will close at 7:00 pm (1900).** This means that all purchases at the store must be made before then so that the cash registers can be closed.

6:15 pm (1810): Admin business and Show & Tell.

6:50 pm (1850): Break: Shopping & Social Mixer. Cash registers close at 8:00 pm.

7:10 pm (1910): Reconvene: Continue Show & Tell: Builds and WIPs

8:00 pm (2000): Meeting ends (officially)

*Regular meetings are held on 2<sup>nd</sup> Wednesdays of each month at 6:00 pm (1800) at the HobbyTown store, 10120 Two Notch Road, Suite 5, Columbia, SC 29223, (803) 736-0959.*

## Up-coming Events


**AMPS 2017 International Convention**, Crown Plaza Hotel, 18 Old Ridgebury Road, Danbury, CT 06810, Phone: (203) 794-0600, April 20 to 22, 2017. See the AMPS Homepage for info at: <http://www.amps-armor.org/ampssite/default.aspx>



The graphic features a background image of a tank firing a shell in a field. Overlaid on the image is the text "AMPS 2017 INTERNATIONAL CONVENTION" in large green letters. Below this, in yellow, is "April 20 to 22, 2017", "Crown Plaza Hotel", and "Danbury, CT". In the bottom left corner is a circular logo with "AMPS 2017" at the top, a tank illustration, and "WATCH THE BIRDIE" at the bottom. In the bottom right corner is the AMPS logo, a circular emblem with "ARMOR MODELING & PRESERVATION SOCIETY" around the perimeter and "AMPS" in the center.

**The 2017 IPMS Region 12 Regional Model Convention & Contest** hosted by the Gaston County Model Builders. Theme: "1967 Vietnam, Summer of Love & Pony Cars". Saturday April 29, 2017 from 9AM to 5PM at the Gaston County Citizen Resource Center, 1303 Dallas Cherryville Hwy, Dallas NC 28034. More information and show flyer can be seen at this web address: <https://www.facebook.com/Gaston-County-Model-Builders-720440641408226/timeline/>

**The 2017 IPMS Region 12 Regional  
Model Convention & Contest**

 **Gaston County Model Builders**  
present

**1967:**  
***Vietnam, Summer of Love & Pony Cars***

Bonus Theme:  
**"A long time ago, in a galaxy far, far away..."**  
(40 years of Star Wars)

Saturday, April 29, 2017  
9:00 a.m. to 5:00 p.m.

Gaston County Citizen Resource Center  
1303 Dallas Cherryville Hwy  
Dallas, NC 28034

**73 Contest Categories - 13 Special Awards - Vendors and Raffle**  
Vendor setup on Friday, 28 April 9:00 a.m. to 5:00 p.m.  
and Saturday, 29 April 7:00 a.m. to 9:00 a.m.

Contest Registration: \$10 first three models, \$1 for each additional entry  
General Admission: \$2 - Juniors 16 and under free

Directions: Interstate I-85 to exit 17 (Gastonia, NC), take Hwy 321 North to Dallas-Cherryville Hwy, Rte 279 (under overpass to off ramp), go west on Dallas-Cherryville for about one half mile, building located on left

For more information visit Gaston County Model Builders on Facebook  
or contact Roger Woods (sky4raider@gmail.com or 704-824-2654)  
On line contest rules, categories and registration forms are at  
<https://sites.google.com/gastoncountymodelbuilders/>

 Sponsored by 4H Clubs of Gaston County

Separate awards for Best Vietnam War subject, Best Summer of Love subject\* & Best 1964-1967 Pony Car\*\*, plus Best Star Wars subject. \*Summer of Love subject - any peace loving machine, figure or diorama from the era; examples are transport plane, hospital ship, VW microbus, hippie, etc.; \*\*1964-1967 Pony Cars include Ford Mustang, Chevrolet Camaro, Chevrolet Corvair, Pontiac Firebird, Plymouth Barracuda, Rambler Marlin and AMC Javelin

**AMPS Central SC "Wildcats" Model Show and Exhibition:** June 10, 2017, South Carolina (SC) NG Armory & SC Military Museum, 1225 Bluff Road, Columbia, SC 29201. The theme for this show is 50 Years Later: 1967 Arab-Israeli "Six-Day War".  
<http://www.ampscentralsouthcarolina.org/>





# AMPS CENTRAL SC "WILDCATS"



## 50 Years Later:

# 1967 Arab-Israeli "Six-Day War"



## MODEL SHOW & EXHIBITION

9am – 6pm Saturday  
June 10, 2017

SC NG Armory & SC Military Museum  
1225 Bluff Road  
Columbia, SC 29201  
I-77, Exit #5  
[www.ampscentralsouthcarolina.org](http://www.ampscentralsouthcarolina.org)



**Theme Award Eligibility:** AMPS qualifying model subjects from any of the four main combatants – United Arab Republics (UAR aka Egypt), Syria, Jordan or Israel as employed in the theater of operations bounded by those same four countries including their national land areas during the period of 5-10 June, 1967. Subjects must be depicted in the appropriate markings and / or color schemes and with the appropriate time-period technical features to be eligible. Model subjects from other nationalities that were actually present within the above defined area are only eligible if they appropriately depict vehicles or equipment as they would have actually appeared when supplied to one of the four main combatants during the war. Model subjects from other nationalities that were not actually present within this area are not eligible for the theme award even if they are otherwise historically or technically correct for the time period. Any questions about eligibility will be decided by the Chief Judge whose decision will be final.

### AMPS Central SC "Wildcats"

Model Show and Exhibition, June 9-10, 2017  
SC National Guard Armory and SC Military Museum  
1125 Bluff Road, Columbia, SC 29201

Show Theme: **50 Years Later:** 1967 Arab-Israeli "Six-Day War"

**Theme Eligibility:** AMPS qualifying model subjects from any of the four main combatants – United Arab Republics (UAR aka Egypt), Syria, Jordan or Israel as employed in the theater of operations bounded by those same four countries including their national land areas during the period of 5-10 June, 1967. Subjects must be depicted in the appropriate markings and / or color schemes and with the appropriate time-period technical features to be eligible. Model subjects from other nationalities that were actually present within the above defined area are only eligible if they appropriately depict vehicles or equipment as they would have actually appeared when supplied to one of the four main combatants during the war. *Model subjects from other nationalities that were not actually present within this area are not eligible for the theme award even if they are otherwise historically or technically correct for the time period.*

**Adjudication of Eligibility:** The Chief Judge will have the final say on the eligibility of any model entered in the show, to include eligibility for the Show Theme Award. It is the modeler's responsibility to provide any proof of eligibility (photos, textual descriptions, etc.) if requested by the Chief Judge or his designated representatives. **However, the Chief Judge's rulings will be final in all cases.**

## 2017 New Releases

- **Sd.Kfz.182 King Tiger (Henschel Turret)** – Meng, 1/35<sup>th</sup> scale, kit #MGK TS031



- **8.5 cm Sturmgeschütz auf Fgst. T 34, Jagdpanzer SU-85 (R) w/ CREW** – MiniArt, 1/35<sup>th</sup> scale, kit #35229



- **US Heavy Tank T29E3** – Takom, 1/35<sup>th</sup> scale, kit #2064





- T-34 Wheels set, 1943-44 series, MiniArt, 1/35<sup>th</sup> scale, kit #35242



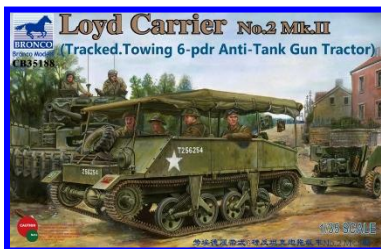
## Members Build Blogs

Build Blogs give an in-depth review of the construction process and allow the builders to share their knowledge. We are fortunate to have some of the members in our club with build blogs on modeling web sites.

Mike Roof has 2 on Track-Link.com:



MiniArt T-44 Soviet Medium Tank, Kit # 35193  
[http://www.track-link.com/forums/site\\_blogs/27686](http://www.track-link.com/forums/site_blogs/27686)



Bronco Loyd Carrier No. 2, Mk II (Tracked Towing 6-pdr Anti-Tank Gun Tractor), # CB35188, towing a Riich British Ordnance QF Mk. IV A-T Gun 6 Pdr, # 35042  
[http://www.track-link.com/forums/site\\_blogs/22053](http://www.track-link.com/forums/site_blogs/22053)

Jeff Nelson has 1 on Armorama.com:



Fine Molds Japan Ground Self-Defense Force Type 60 APC, FM40  
[http://www.armorama.com/modules.php?op=modload&name=SquadBox&file=index&req=viewtopic&topic\\_id=213731&page=1#2056793](http://www.armorama.com/modules.php?op=modload&name=SquadBox&file=index&req=viewtopic&topic_id=213731&page=1#2056793)

Additionally, Jeff did an In-Box-Review of this kit.  
<http://armorama.com/modules.php?op=modload&name=Reviews&file=index&req=showcontent&id=9272>

Keith Frape also has 2 on Armorama.com:



Chieftain Mk. 7 ARRV (Tamiya + Accurate Armor Conversion)  
[http://www.armorama.com/modules.php?op=modload&name=SquawkBox&file=index&req=viewtopic&topic\\_id=241027](http://www.armorama.com/modules.php?op=modload&name=SquawkBox&file=index&req=viewtopic&topic_id=241027)



Up Armored Scimitar LEP with Bar Armor (AFV Club + Castoff Models Conversion)  
[http://armorama.com/modules.php?op=modload&name=SquawkBox&file=index&req=viewtopic&topic\\_id=212968](http://armorama.com/modules.php?op=modload&name=SquawkBox&file=index&req=viewtopic&topic_id=212968)

### Interesting Articles – AMPS Atlanta Show Results

Several members of our club had a great showing at the Atlanta AMPS Show last month. Preliminary results for the Wildcats are:

<u>Description</u>	<u>Modeler</u>	<u>Skill Level</u>	<u>Award</u>
1. T-34/85 Mod. 1944 (DML + scratch built Engine Louvers, Fuel Tank Straps, Master Club Tracks, Aber PE & Barrel), 1/35 scale	Tom Wingate	Advance	<b>GOLD</b>
2. Tiger 1 Late Production Pz.Kpfw.VI Ausf. E (DML + Model Club Metal tracks) 1/35 scale	Tom Wingate	Advance	<b>GOLD</b>
3. Sd.Kfz.186 Jagdtiger Porsche Production Type (DML + Spade Ace Tracks, PE extras, scratch Radiator & Fans), 1/35 scale	Tom Wingate	Advance	<b>SILVER</b>
4. Sd.Kfz. 251/22 Ausf. D (251/22 conversion of Tamiya & Dragon kits), 1/35 scale	Tom Wingate	Advance	<b>SILVER</b>
5. T26E4 Super Pershing Pilot #1 (Hobby Boss + Fruel metal tracks, metal barrel) 1/35 scale	Trevor Edwards	Intermediate	<b>GOLD</b>
6. Grey Knight Terminator Champion (Games Workshops), 28mm	Rebecca Hettmansperger	(Figure Society Show)	<b>BRONZE</b>
7. Jagdpanther Tank Destroyer G2 (S-Model + ESCI Road Wheels, scratch-built Engine Screens), 1/72 scale	Tony Abbott	Intermediate	<b>SILVER</b>

8. "Brother versus Brother" Figure Vignette 54mm	Tom McCoy	(Figure Society Show)	<b>SILVER</b>
9. "Confederate Navy" Vignette 54mm	Tom McCoy	(Figure Society Show)	<b>BRONZE</b>
10. "Mountain Man" Figure 54mm	Tom McCoy	(Figure Society Show)	<b>BRONZE</b>
11. Sd.Kfz. 2 Kleins Kettenkraftrad, Ramcke Brigade (Tamiya), 1/35 scale	Kevin Cook	Intermediate	<b>SILVER</b>
12. Sd.Kfz. 234 Armoured Car with Pak 40 (Airfix), 1/76 scale	Kevin Cook	Intermediate	<b>BRONZE</b>
13. German Trench Raider, 1/72 scale	Kevin Cook	(Figure Society Show)	<b>BRONZE</b>

Well done, Wildcats!

## Interesting Articles – T-34 Group Build

### ***AMPS Central South Carolina "The Wildcats" T-34 Group Build***

During our meeting this month, hopefully we will get a report on the results of this group build and entry/display at the AMPS Atlanta Show. We decided at our August club meeting that we would have a group club display of the T-34 Group Build Models at the **Atlanta Armor, Figure, and Modeling Contest and Exhibition** to be held 17-19 February, 2017 at the Atlanta Marriott Century Center. Several members of our club are participating in this endeavor. So as a note: let's get the builds done so we can make a great showing in February. So far we have the follow modelers participating:

1. T-34/85 No. 183 Factory "Berlin 1945" (Academy), 1/35 – Daniel Karnes
2. T-34/85 Mod. 1944 (DML + scratch built Engine Louvers, Fuel Tank Straps, Master Club Tracks, Aber PE & Barrel), 1/35 – Tom Wingate
3. T-34/85 (DML #6810 + Eduard PE), 1/35 – Carl Wethington
4. T-34/76 Factory No. 122 (AFV Club + Detail Master Wiring, Fruilmodel Tracks), 1/35 – Phil Cavender
5. OT-34 (DML), 1/35 – Ben & Noah Brandes [father/son build one each]
6. T-34/76 Factory No. 112 (DML + Kit Maker/Tank Workshop resin Turret, Bits Krieg Boxes & Fuel Tanks, scratch built applique armor), 1/35 – Tim Darrah
7. T-34/76 (Darius Miniatures "Wedgie"), 1/35 – Steve Reid
8. T-34/85 (DML + Aubis Creations Resin Turret, Self-cast resin details, bent wire, RB Model barrel), 1/35 – Steve Reid
9. T-34/76 M42 (Italeri Fast-Build), 1/72 – Tom McCoy
10. T-34/85 (DML + Master Club Tracks), 1/35 – Trevor Edwards



11. T-34/76 Russian Tank, 1942 Production (Tamiya), 1/35 – Mike Roof
12. T-34/76 Pressed Turret (DML + Tamiya Turret, Master Club Tracks), 1/35 – Dave Varettoni

Steve Reid has graciously volunteered to be the main point person for questions concerning you build. He has spent several years dedicated to building Soviet Armor and is a wealth of knowledge. In addition, he not only casts resin parts, but he has an extensive library. **Contact Steve directly.**

## Interesting Article – How Toy Model Kits Are Made

### Background

Scale models or model kits are produced by the millions and give hours of pleasure to hobbyists. They're sold in specialized hobby and craft stores as well as toy, department, and drug stores—even supermarkets may carry them. "Scale" indicates that the model is a miniaturized version of an actual object, like an automobile, made to a specific fraction of the real thing. Scales typically range from 1:24 to 1:100; a 1:24-scale model is 1/24th of the size of the real object. Common scales are 1/24, 1/48, 1/72, and 1/100. Many of the same engineering skills go into producing scale models as into the real machines represented.

Model kits are made in approximately five skill levels. Snap-together models provide all the pieces with tiny tabs that fit in specially shaped holes. The plastic pieces are made in the same colors as the original; and virtually no tools, adhesives, paint, or other equipment are needed to build them. The plastic parts simply snap together in a sequence depicted on an instruction sheet; these models are an excellent introduction to the kinds of pieces in a model kit and prepare a novice builder for the next step. The next three levels are beginner, intermediate, and advanced. The level is described on the box containing the kit, and, as the names suggest, the kits become increasingly complicated with more steps in assembling and detailing the models. The most advanced kits are called customized kits and provide the model builder with a variety of styles of engines, bumpers, hubcaps, and other details of an automobile (for example), as well as options for making a truly unique model suiting the builder's imagination.

### History

Model-making is as old as civilization. Scale models of buildings, boats, and furniture were buried in tombs of ancient Egyptians to represent possessions the dead took into the next world. Many ancient models survived in the tombs while the original objects did not; these have given historians an understanding of what life in ancient civilizations was like. During the Napoleonic Wars (1799-1815), French prisoners of war carved beautiful model warships from wood scraps; these models are so detailed that they have become documents of warfare and ships lost at sea. They are also highly prized today among antique collectors.

During the Industrial Revolution of the eighteenth and nineteenth centuries, inventors of new tools, machines, artworks, and other objects began by building models of their ideas. Industrial technology was found to have its own beauty, and large machines like locomotives were admired and copied in miniature. Early in the twentieth century model ships and airplanes were sold in kits. Balsa wood pieces were machine-cut to fit together easily and could be painted and rigged like the originals, although they were fragile. In the 1920s, some firms produced scale models of their

products out of metal and wood as promotional models. Citroen, the French car manufacturer, produced delightful models that are now valued collectibles.

World War II moved modeling into a full-scale industry and hobby for two reasons. First, plastics were invented and perfected during the years before and during the war. Their versatility made them ideal for mass-produced model kits. Second, the machines of the war stimulated the public's interest in modeling. Slim fighters and heavy bombers intrigued many hobbyists who saw the real aircraft flying overhead on the way to war. The exploits of navy ships, both small and large, in the Pacific also fired imaginations. When soldiers and sailors returned home, they had more time and money for recreation, including building models of the machines they knew so well. Monogram Models introduced its first kits of warships in 1945.

The returning war veterans were also able to afford the automobiles that rolled off Detroit assembly lines; they also built models of the cars they owned—and the ones they dreamed of. In 1951, Revell introduced its first all-plastic model kit of an early automobile: a classic 1910 Maxwell, in which the driver was a scaled-down version of radio comedian Jack Benny. By the mid-1950s, more detailed kits and models that could be customized appeared. By the 1960s scale modeling was a full-fledged hobby with thousands of models covering hundreds of subjects. By 2000, the scale-model industry had produced more automobiles than all the automotive giants of Detroit combined.

In the 1960s, the scale-model industry expanded into ancient history and science fiction. Models of dinosaurs that once roamed the earth, monsters like Godzilla, superheroes like Superman, television characters like the Lone Ranger, and celebrities like Elvis Presley were mass-produced in scale form. The scale-model manufacturers also provided outlets for the public's interest in the Space Race during the 1960s, and models of the newest spacecraft were often on the hobby store shelves before the real-life vessel had taken flight. Fantasy followed here, too, with models of starships and intergalactic craft that have flown on television and in the movies. As techniques for precision casting of true-color parts continued to improve, scale models became important teaching tools. Detailed anatomical figures that can be snapped apart and reassembled are members of many classrooms, as just one example.

## **Raw Materials**

Plastic is the essential raw material for the majority of scale models made today. The plastic used to mold the parts is purchased in bulk quantities by the manufacturer. These pellets are purchased in common colors, but additional pigments can be added to the plastic while it is being melted. Printed items, including decals, the instruction sheet, and the box are also important parts of model kit. The box front usually bears a full-color photo or an artist's detailed depiction of the completed model, or a photo of the original object (like an automobile). Designs, layouts, photos, and artwork are prepared by artists in the model-maker's design studio; they are printed by specialized printers.

Paints and glue for assembling and detailing the model are not part of the kits. These are manufactured and sold separately because they have shorter shelf-lives, might leak inside the box, and could damage model parts as they move. Major model manufacturers produce or market their own brands of paint, glue, and assembly tools.

Other raw materials for models include balsa wood. Before the development of plastics, this was the prime material for model building, and it was sold in lengths and widths like small boards. Sometimes the balsa wood had outlines stamped on it that the builder could follow when cutting out pieces; other times an appropriate assortment of wood was packaged together with a set of

patterns and instructions printed on paper for the model builder to follow. More often, the model builder used imagination and skill to scale, cut, assemble, and detail wood models. Balsa wood is still sold for model building, but it is far outclassed in volume by the plastic model industry.

## Design

From inception to production, creating a new scale model kit can take a full year and cost the manufacturer an investment of up to \$250,000. For the scale model of a classic automobile, for example, the design process begins with pure research: taking hundreds of photographs of a working example of the car. The car is photographed inside and out; pictures are taken of every detail and from many angles, and measurements are photographed along with the object for the designer to use in the studio to reproduce the car exactly.

For a new car design, car manufacturers give model makers computerized information on part specifications—sometimes even before the first actual automobile has been assembled—in a highly confidential process. The model designer uses Computer-Aided Drafting and Design (CADD) software to sort this information and create the measurements and configuration that will be used to make a scale design. The designer transfers this information to a set of drawings that will be used to make the molds for the model. This process can consume several hundred hours of engineering time.

From photographs, computer data, and paper drawings, the design moves to pattern-making phase. Skilled artists follow the designer's drawings and carve out a pattern model from balsa or other soft wood. The pattern model is made at two to three times larger than the scale of the model kit, allowing additional details to be added to the pattern. This also proves the accuracy of design and provides a basis for all of the molds that will be made of the car parts. As they carve the pieces, the pattern makers fit them together. Accuracy in pattern-making is within several ten-thousandths of an inch (fractions of a millimeter).

When the wooden pattern model is complete, each part is coated with an epoxy resin, a plastic material that hardens as it cures. The wooden piece is removed from the resin, and the resin has trapped the shape of the piece in a cavity mold. A core mold of resin is made from the cavity mold; the two fit closely together, but there is a small space between them. The plastic model part will be formed in this space. Preparation of the wooden pattern and the resin molds takes over 1,000 hours.

Meanwhile, other design engineers use the design drawings to lay out the "tool," the metal cast of a number of parts that will be molded on a single form of plastic called a tree. The tree is usually roughly rectangular along its outer edge so it will fit in a box. Several standard box sizes are used. From the central "trunk" of the tree, a number of plastic "branches" or arms protrude. The end of each branch narrows to a node where it joins a piece of the model. The model piece can be snapped off for assembly. The tool designers also use CAD to map out the tool layout. They must design the orientation of each model piece on the tree to precise angles so that, when the plastic is injected in the tool, it fills all the cavities. The trees are also designed to release quickly from the mold.

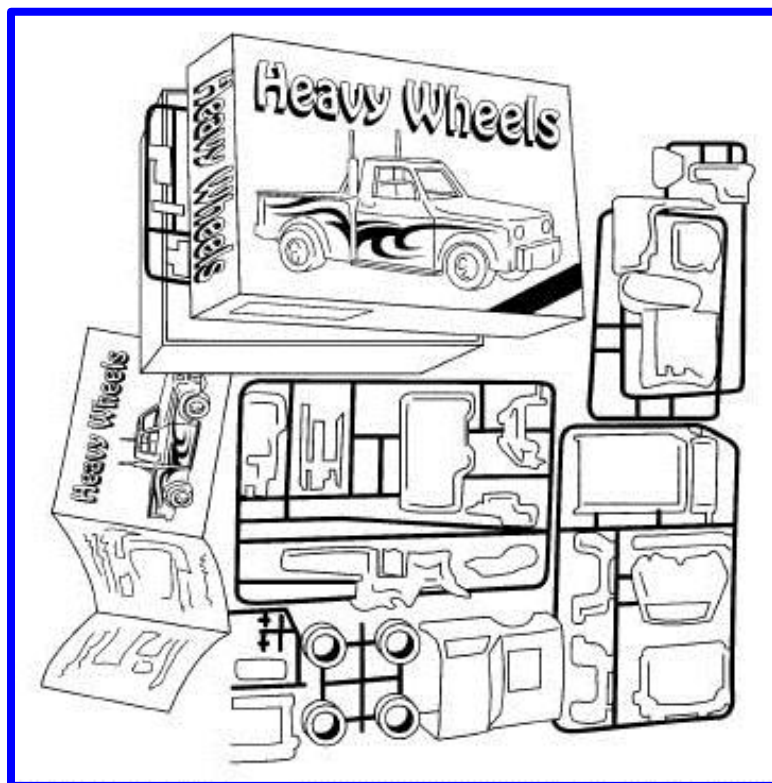
The resin molds are used to make the individual tools for each of the model parts, using a pantograph to copy the exact shape of each piece and draw it at the smaller scale of the actual model. The pantograph has two needle-like parts: one is run over the surface of the resin mold while the second, a cutting blade, carves the steel to the same shape at the correct scale. When the tool maker has completed the scaled tool, he polishes it to a high sheen and adds more details by hand. Some of these details are too fine to be seen by the naked eye.



Another set of designers works on the paper portions of the kit. To develop the instructions, the designers take the pattern model (and sometimes samples of the first production run of the plastic model) apart and reassemble it. They describe the steps as they go, writing and drawing them as instructions. Other artists look at the photographs of the real automobile and design decals for the model. These may be copies of real decals on the car, or they may be other design features like racing stripes. Sometimes, more research is needed to capture these details. The illustrations on the box lid are also created. These serve the model builder as a color reference guide, so they must be true to both the original automobile and the decals made for the model. The illustrations on the lid may be photographs of the real car or artists' impressions. The box lid for a model of a Fokker triplane, for example, may show the Red Baron's famous airplane in a dog-fight. Elsewhere on the lid, the artists describe the kit, its level of difficulty, the parts enclosed, and the manufacturer's details.

### The Manufacturing Process

1. With the many design steps now complete, the individual steel tools for the separate parts of the model are taken into the factory where they are placed in a larger frame called the die, which can weigh more than 1/2 tons (1.4 metric tons). With the two halves fitted together, the die looks like a large steel box from the outside. It is lifted with a hoist into the cavity of the injection molding machine.



*An example of a toy model kit.*

2. In a separate part of the injection-molding machine, the fine, confetti-like pellets of plastic are poured into a storage hopper above the machine. When molding is about to begin, the pellets are fed into a heating chamber where they are melted at a temperature of 500° F (260° C). The liquid plastic is pumped into the cavity of the injection molding machine where the tool is contained. The pressurized liquid plastic is injected into the tool at a pressure of 1,000 lbs per square in (58 kg per square cm). Aided by the careful layout within the tool, the combination of

high pressure and high heat forces the liquid plastic into every crevice of the tool. In several seconds, the tree forms, the plastic cools, and the tool opens slightly allowing the plastic tree to fall out onto a conveyor belt. The injection machine closes the tool again, and more plastic is injected for the next tree of parts. The trees are injection-molded at a rate of about two trees per minute.

Any gaps around the edges of each tree will also fill with plastic. These appear on the trees as paper-thin excess and are called flash. When the model builder begins making a model, the flash must be trimmed off.

3. At another machine, the clear plastic parts like the automobile windshields, are molded. Rubber tires are produced by a third machine, and other specially colored parts may be produced by yet another machine in the plant. Chrome parts, like the radiator grille, are first injection-molded then placed on the conveyor where they move to a dipping machine that picks individual trees off the conveyor and dips them in a metallic coating. The dip dries quickly, the machine redeposits the chrome-colored trees on the conveyor, and they move toward the package assembly area.
4. At the package assembly area, assembly-line workers sit along one side of a conveyor belt that feeds box bottoms to them. They select one of each of the trees of model parts from a series of bins behind them, slip the trees into plastic bags, add sheets of decals and folded instructions, close the bag, and put it in the bottom of the box. The bottoms travel along the conveyor to a machine that caps them with lids and seals the box ends or covers the boxes with shrink wrap. Boxes are multi-packed in cartons and taken to the shipping department.

## **Quality Control**

Making scale models is design intensive, with much of the process taking place in the design studio rather than the factory. Designers are extremely knowledgeable about their subjects, whether warships or cartoon heroes, and are highly attentive to the details in their designs. Designers can reject work at any point in the process. A review board approves the initial design concept, the design drawings, pattern and tool making, and samples from the first production run of the plastic model. In the factory, quality-control personnel observe the injection molding and dipping processes. Quality-control personnel observe the assembly line, and when kits have been assembled, sample boxes are pulled from the line and checked to confirm that all parts are present.

## **Byproducts/Waste**

Toy model manufacturers are able to recycle much of the waste associated with manufacturing plastic models. Plastic waste can be melted and remixed in future batches. Steel from tool making is collected and sent to a metal recycler. Paper products are made from recycled paper.

## **Safety Concerns**

Safety for factory workers is particularly important for the pattern and tool makers and personnel that control the injection-molding process. Pattern and tool makers wear gloves and safety glasses as they carve out patterns, make resin molds, and etch steel tools with the pantograph. The area where resin molds are made is equipped with ventilation hoods. Operators of the injection-molding machines wear heavy gloves to protect them from the heat generated by the machines. The machines themselves are fully automated and require observation only.

## The Future

The health of the toy model kit industry has a number of positive indicators. In the 1990s, modeling giants Revell and Monogram merged, and, as of 2000, made 10 million kits a year. Model-making clubs like the International Plastic Modelers' Association have branches in many cities, in large businesses, and on the Internet. Fairs and other displays often have model-building contests as well as exhibitions of models and dioramas; these include not only "scratch-built" models (the highest level in which the hobbyist makes all the parts and details by hand to complete a model) but manufactured kits from snap-together through customized models.

The fascination of the toy model kit has several elements. It is a construction hobby that requires handwork and skill to shape a collection of small pieces into a completed work of art. The investment required can begin with only pocket money for a few tools, finishes, and a kit. Toy model kits are outstanding teaching tools. Research has gone into their design, and students can learn from personal research about the actual object such as when the automobile was manufactured, which airlines fly particular plane designs, and how a comic strip artist created his character. With tie physical parts provided in the model kit, the model builder can use patience, thought, handwork, and imagination to transform history, science, and popular culture into three-dimensional models of objects that were or that may be in the future.

<http://www.madehow.com/Volume-6/Toy-Model-Kit.html>

### Interesting Articles – Today in Gulf War History: February 24, 1991

Remembering the Gulf War - Operation Desert Storm  
February 24, 1991 at 10:00am



Today in Gulf War History – February 24<sup>th</sup>  
[C+201 D+39 G-DAY; GROUND CAMPAIGN BEGINS]



## Part I

### USA Today Headlines for Sunday, Feb. 24

- GEN Norman Schwarzkopf hails first day of allied ground offensive as "dramatic success." Allied casualties are very light; more than 5,500 Iraqis are captured.
- Saddam Hussein urges troops to kill "with all your might" in radio speech.
- More than 300 attack and supply helicopters strike more than 50 miles into Iraq, largest such assault in military history.
- Queen Elizabeth II, in first wartime broadcast of 39-year reign, tells her country she has prayed for victory.
- Iraq fires two Scud missiles into Israel; no injuries.

At 0400 (Desert Time), assault elements of 1<sup>st</sup> Marine Division (1<sup>st</sup> Battalion, 5<sup>th</sup> & 7<sup>th</sup> Marines, supported by 3<sup>rd</sup> Tank Battalion) and 2<sup>nd</sup> Marine Division (6<sup>th</sup> Marines and armor) launched attack, easily breaching Iraq's vaunted defense lines of minefields, barbed wire, bunkers and berms. Marines spearheaded attack, with USA Paratroopers, Air Assault Forces, Special Forces, and ground forces of the UK, Saudi Arabia, Kuwait, Egypt and Syria. Within 9 hours, Marines destroyed numerous Iraqi tanks and bunkers, seized the Burgan oil field and Al Jabbar Airfield, and captured thousands of Iraqi troops.

Amphibious feint attacks under naval gunfire are launched in Arabian Gulf.

The extent and importance of coalition air supremacy is obvious from the start of the ground campaign. SOCCENT helicopters penetrate deep into Iraq to infiltrate Special Forces reconnaissance teams.

An entire brigade of the 101<sup>st</sup> Airborne Division (Air Assault) moves by helicopter to take forward operating base COBRA, located about 35 km southeast of As Salman, Iraq, securing it at 240740Z. Other units quickly penetrate Iraqi forward positions and drive deep into Iraq and Kuwait, always supported by a massive Close-Air-Support (CAS) and Combat-Air-Patrol (CAP) umbrella.

With the exception of one engagement between Marine task force and an Iraqi armor unit, resulting in Iraqi tanks and troops retreating, only light contact with Iraqi forces. Iraqi troops are reported to be retreating, not engaging and surrendering. Some contact with Republican Guard troops.

Assessing the state of Iraqi forces just before the onset of the ground offensive, COMUSARCENT estimates that they have lost approximately 53 percent of their artillery, 42 percent of their armor and likely large numbers of personnel at all echelons. As a result, he believes that "Iraq's capability to maneuver and conduct multi-division offensive and counteroffensive operations is reduced".

Neither the Iraqi Air Force nor the Navy respond to the coalition ground assault. Resistance on the

ground is light and uncoordinated, and USCINCCENT believes that prisoner-of-war reports that units would surrender in mass appear to have been accurate.

U.S. Navy, along with UK, Saudi and Kuwaiti naval forces are conducting carrier air, minesweeping, and amphibious missions along the east coast of Kuwait. USS MISSOURI and USS WISCONSIN fired at targets in occupied Kuwait in support of ground offensive. Maritime intercept operations also continue with USS SAMUEL B. ROBERTS recording 100<sup>th</sup> interception.

Two Iraqi aircraft flew to Iran.

Iraq fires individual Scuds at Riyadh and King Khalid Military City. Two Patriot SAMS destroy the first Scud and one destroys the second. Another Scud is launched at Riyadh and is destroyed by two Patriot SAMs. From its anti-Scud experiences, the 4<sup>th</sup> Tactical Fighter Wing (Provisional) reports that the Iraqis often launched their Scuds under the protection of low cloud ceilings, which greatly restricted coalition quick-reaction air attacks.

#desertstormhistory #rememberingthegulfwar #rgw26

## Interesting Articles – Modeling Assistance Request

*"I was wondering if anyone might be interested in helping me build up a permanent (as in once finished, the models are donated) display for the 55<sup>th</sup> Fighter Squadron's 100-Year Anniversary / Reunion to be held at Shaw 23-25 August 2017? They would be 1/72<sup>nd</sup> scale and cleanly built.*

*The list includes the following aircraft:*

- P-12B
- DH-4
- P-26A Peashooter \*
- P-36A Hawk \*
- P-40B Warhawk \*
- P-39 Airacobra
- P-38J Lightning
- P-51B or D Mustang
- F-84F Thunderjet
- F-100D Super Sabre
- F-111E Aardvark
- A-10A Warthog
- F-16C Viper

*\* I'm going to start with the P-26, P-36 & P-40.*

*Please let me know if you'd be willing to help. I do have some reference material on hand and have asked my contact in the 55<sup>th</sup> to supply me with more.*

*Also, please note that we are not getting reimbursed for the cost of the kit, supplies or labor.*

*Thanks."*

Tim Darrah

AMPS #2545  
IPMS/USA #8821

## The USA Historical AFV Register

Mike Roof has provided us with a great link he found that may be of interest to all.

"For those who are interested in preserved AFVs or photographing them for research, here's a link to the latest issue of the AFV Register Organization's "The USA Historical AFV Register."

The register is broken down by state and city, with the AFVs listed along with their exact locations (to include GPS lat/long coordinates). This is a good list to keep saved on your computer.

If you travel around you can plan accordingly (look up your travel destination or itinerary stops to see what interesting AFVs might be there), and if you need reference material on a particular vehicle, you can often contact one of your "virtual" friends online who lives near an exhibit to take some pictures for you".

## The USA Historical AFV Register

*Armored Fighting Vehicles Preserved  
in the United States of America*

V4.0

March 2016

**Michel van Loon  
Neil Baumgardner**

For the AFV Association



<http://afvregister.org/Downloads/The%20USA%20Historical%20AFV%20register%204.0.pdf>

## Support Our Local Vendors



10120 Two Notch Road, Suite 5

Columbia, SC 29223

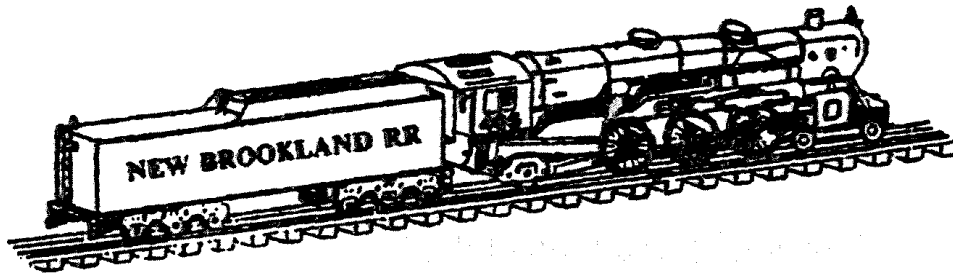
(803) 736-0959

<https://www.hobbytown.com/columbia-e-sc/l57>

HobbytownColumbiaSC@gmail.com

(\* Denotes New Store Hours

*Sunday	12-5
Monday	11-7
*Tuesday	Closed
Wednesday	11-7
*Thursday	11-7
*Friday	11-8
Saturday	10-8



405 State Street  
West Columbia, SC 29169  
(803) 791-3958  
Mon – Sat, 10am to 6pm



5633 Broad Street  
Sumter, SC 29154  
(803) 983-5084  
Mon – Sun, 2pm to 7pm



## Classified Ads

All submissions for entry into the Classified Ads section should be submitted to the editor two (2) weeks prior to the monthly AMPS meeting. Next submission deadline will be February 22, 2017.

### For Sale:

- 1) Cyber Hobby M1 USMC includes Tamiya figures, stowage, and PE set \$25.
- 2) Trumpeter BMP3 \$35.
- 3) Dragon M4A3 HVSS Flamethrower \$30.

Contact Trevor Edwards.

**For Sale:** Tamiya T34/ 76 with New Connections metal gun barrel and Eduard photo-etch for sale -\$48. Contact Tom McCoy.



**For Sale:** Eliere Tolan wants to sell a DML1/35 King Tiger, Henschel turret with zimmerit (kit 6208). He also has two photo etch sets (Eduard and Voyager) and two aluminum gun barrels as well. The kit has been opened, but not the bags. This is an early version kit and does not have the molded on zimmerit that later versions of this kit does, but the kit does have Atak zimmerit, which can be applied separately if so desired. \$60.00. Buyer pays postage. See Wildcats Build Site on Facebook for pictures. **Contact Eliere Tolan.**

**For Sale:** John Sherrer has a large number of DML/Dragon figure kits that he would like to begin divesting himself of in the coming months. They are too numerous to list. Contact John directly for specific kits he has in his stash. **Contact John Sherrer.**

**For Sale:**

- 1) 1:35 Trumpeter German s.F.H. 18 Field Howitzer ~ \$28.
- 2) 1:35 Tamiya German 4x2 3 ton cargo truck (Opel Blitz). Extra German fuel/oil drums and Jerry cans included. ~ \$25
- 3) 1/72 Italeri B-17 Fortress Mk. I (re-box of the Academy B-17 C/D with 7 marking options; 3 U.K., 4 U.S.). I assembled the main landing gear and removed the main wings from the sprues, but other than that the kit is like new. ~ \$25

**Contact Ben Brandes.**

**Wanted:** I am looking for the Eduard (35 233) 1/35 photoetch M110A2 SPH update set for the Italeri M110/M1102, and M107 kits. As with the Hobby Fan resin Kit, I kept waiting to buy one until it also was gone! -- Are you picking up a recurring theme here? **Contact Carl Wethington.**

**Wanted:** I am looking for the Hobby Fan (HF001) 1/35 resin M110A2 SPH update set for the Italeri M110/M1102, and M107 kits. As you can tell from the item number it was the first resin detailing kit make by Hobby Fan. It was an excellent set that replaced much of the traditional Italeri soft detail, and included an outstanding loader / rammer section. I kept waiting to buy one -- until, well, it was gone! If you come across one, I would be glad to "rent" the set to make resin masters for my M110 and M107 kits. Thanks for any leads you can offer!

**Contact Carl Wethington.**

**“The Day Room”**

*In the US military, most company-level units have a “day room” in the barracks where the troops hang-out, relax, and BS. When you want to learn the latest in “rumor control,” you swing by the day room and chat-up the Joes and Janes hanging out there. They might not always get it right, but they’re always willing to tell ya just what they think! So, welcome to “the Day Room...”*

Well, folks, this is the 12<sup>th</sup> issue I've had the pleasure to be the editor. Don't forget about the upcoming events to show our support.

Also don't forget to send me your favorite techniques you've learned through the years. We all would benefit. I'll include them in our next newsletter.

Finally, if you aren't a member of AMPS, now is the time to join. **Join AMPS Now!**

[www.amps-armor.org](http://www.amps-armor.org)

Happy modeling,

*Phil Cavender*

Editor, "The Wildcat", AMPS Central SC "Wildcats"



NACM "Memorial Paver Program" Chapter Donation Challenge

**Who is up to the CHALLENGE?**