

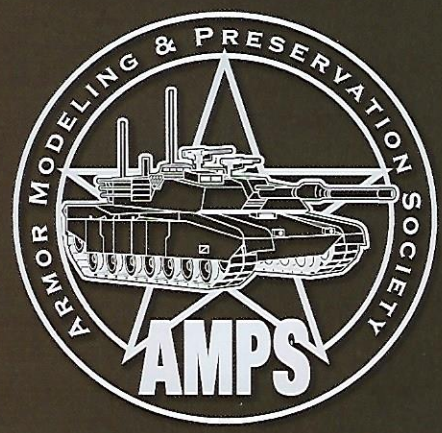
# B RESIGHT

THE AMPS MEMBERSHIP MAGAZINE

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**U.S. Army M59A1 APC • Modelpalooza AMPS  
2019 • Book Review: Solution Book - How To  
Paint IDF Vehicles • 2020 AMPS International  
Convention Update • Ordnance QF 2-Pounder  
• Local Chapter News & Upcoming Shows**





## History of the M59 (per wikipedia)

The M59 was an Armored Personnel Carrier (APC) that entered service in the spring of 1954 replacing the M75 APC. It had three key advantages over the M75: it was amphibious, had a lower profile, and was considerably cheaper to produce. Approximately 6,300 were built before production ended in 1960. Only one derivative of the M59 was built: The M84 mortar carrier. The M59 was replaced in service by the M113 family of vehicles in 1961.

The vehicle had a welded steel hull ranging in thickness from 0.375 inches (0.95 cm) on the top to 1 inch (2.49 cm) thick on the belly with the median thickness being 0.625 inches (1.59 cm). It had a single large compartment with the driver sitting at the front left and the commander sitting to his right. The driver was provided with an infra-red night vision periscope for driving in a buttoned-up position. The "A1" model had an M13 cupola with a .50-caliber M2 machine gun, for which 2,205 rounds are carried in the vehicle.

Inside behind the commander and driver were two benches which run down the sides of the vehicle for ten passengers. The benches could be folded up to make room for a single jeep. The passengers were provided with a ramp at the rear of the vehicle, which had an escape door set into it. Hatches on the top of the vehicle were also provided.

To keep costs down, instead of a single large engine, the vehicle used two smaller and less powerful civilian truck engines (GMC 302 inline 6-cylinder generating 146hp at 3,600rpm) mounted on each side of the hull. With a top road speed of about 32mph (51.5km/h), the M59 was considerably slower than the M75, its predecessor. In the water, it had a maximum speed of 4.3mph (6.9km/h).

The M59 carried 135 gallons (511 liters) of fuel, giving it a road range of approximately 120 miles (150 km).

The unreliability of the power system, along with the reduced armor protection provided compared to the M75, are the major disadvantages of this APC.

# U.S. ARMY M59A1 APC

BY  
DAVID BLACK





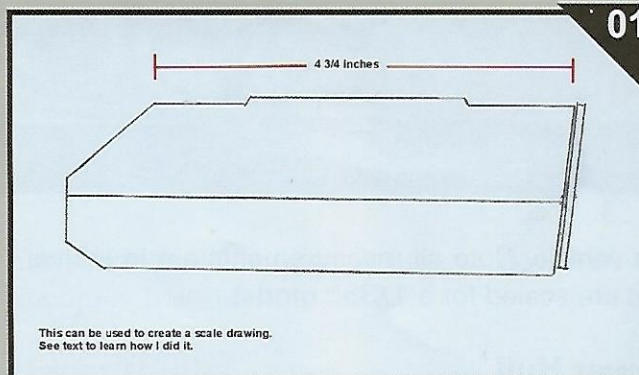
**A**fter building models for over 40 years and being serious about it for the last twenty, I have amassed a very large parts box. This was a large contributing factor to being able to do this M59A1 scratchbuild. I was able to glean and modify several parts from other kits that made the build immensely easier or in some cases made the build possible as I would have been lost as to how to fabricate those parts. I have endeavored to describe whenever other kit parts were used and what kit they came from, but in no way am I suggesting that you go out and buy a kit just to get one or two parts.

Secondly, I have tried to describe my building process, but in many cases giving the exact measurements or shapes of parts is impossible since there was an abundance of "trial and error" fitting. The best I can offer is to use reference pictures to determine shapes, sizes, and locations.



## Materials

I used components and spare parts from several vehicles as well as sheet, shaped and rod plastic to build this conversion. AFV Club's M41 Walker Bulldog kit, and spare parts from Academy and Tamiya M113 kits were also used and modified as needed to help with the build. I will describe which parts and how they were used in this article.



## Making a Scale Template

Using the line drawing (photo 01), I scanned it into my computer as a JPEG photo and inserted it into a Word document. I then set the document screen size to 100% and adjusted the photo until the measured 4.75" matched that on a ruler I held up to the screen. Once that was completed, I saved the document and then printed it. The 4.75" line on the drawing printed on the document measured exactly 4.75". I then made several copies of it for use during the build process.

I have also included five reference drawings (see page 17) that give you scale dimensions for







02

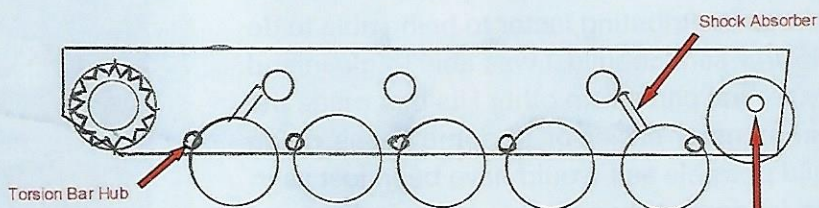


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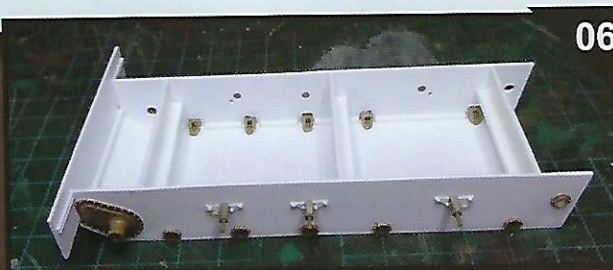


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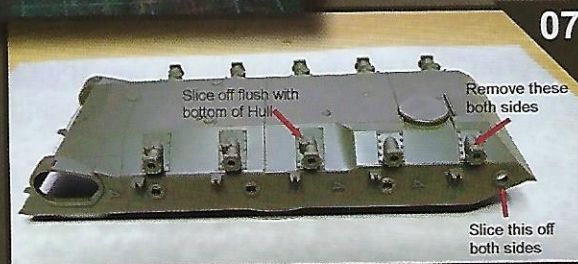
Wheel and Torsion Bar Placement



05



06



07

the vehicle. Note all measurements are in inches and are scaled for a 1/35<sup>th</sup> model.

### Lower Hull

The M59 uses the same T91 E3 track, road wheels, return rollers, drive sprockets (with modification), and idler wheels (with modification) as the M41 Walker Bulldog tank. But that is where the similarity ends when working with the running gear. Both the drive sprockets and the idler wheels on the M59 are solid, where the M41's are perforated (photo 02, 03). The drive sprockets from the AFV Club M41 can be used but must be filled to create the solid sprockets on the M59A1. To make the idler wheels, I scavenged two road wheels from an old M24 Chaffee kit and modified them to fit the M41 idler wheel mounts. The M41 has four return rollers, and the M59 has three.

Also, the shock absorbers are configured differently. Careful viewing (photo 04) of the M59 will help determine the differences and locations.

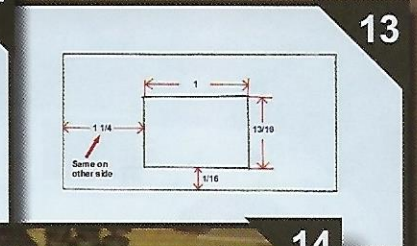
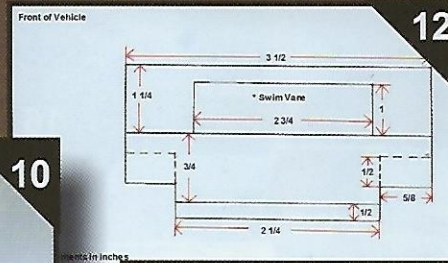
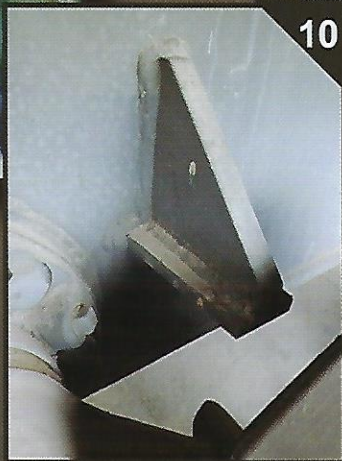
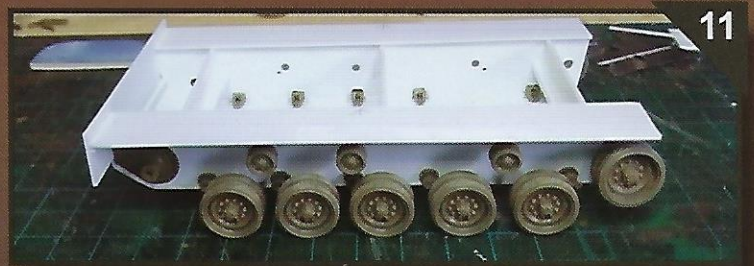
To start, I had to use measurements from an actual M59 (taken at the Armor and Cavalry Museum) and photos to determine and diagram the proper placement of running gear components (photo 05). Once that was done, I used the diagram to transfer and cut out the lower hull sides. Then I overlaid the diagram and located the positions of the individual components on sheet stock. Holes were drilled to accommodate the torsion arms and the mounts for drive sprocket, return rollers, and idler wheel.

Once the lower hull sides were prepared, I cut the bottom and lower front hull plate, and assembled these four parts (photo 06). I noticed that the sides tended to warp inward, so I added three internal supports made from scrap plastic sheet.

### Running Gear

The torsion bar mounts came from the lower hull of my M41 plastic kit (photo 07) and then holes were drilled in the M59 lower hull for the cut





pieces. Using thin card stock, I fabricated the side mounts for the return roller mounts. Appropriate bolts were added to the side mounts.

The idler wheel mount points were shaved off from the M41 lower hull using a razor saw blade and then mounted over the locator holes on the M59 chassis.

The drive sprocket mounting plates need to be sanded down flat to mount on the M59 hull. I cheated and used a razor saw to remove most of the back area and then sanded the rest. I also found that the mounting pin for the sprocket was now too big to fit behind the plate. This was an easy fix; I just drilled a hole in the hull to accommodate the pin (photo 08).

I fabricated the torsion arm bumper springs (three per side) and bumper plates (two per side) from sheet stock, plastic rod and plastic "T" beam (photo 09, 10).

Everything was test fitted and then I moved on to the upper hull sides (photo 11).

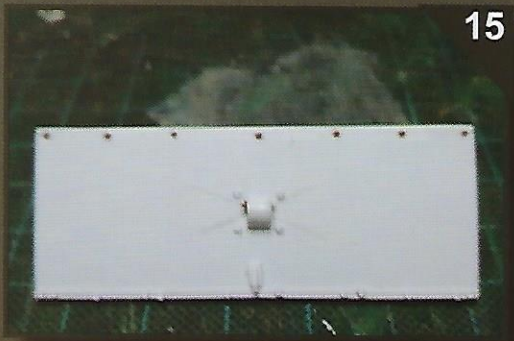
## Upper Hull

The upper hull sides were cut using the line drawing template (photo 1). Once cut, they were held together and then sanded to ensure perfect copies of each other. Next, the sponson plates above the running gear were cut. After test fitting, they were glued into place.

I then started working on the front glacis plate and the trim/swim vane. Both were cut using the scale measurements (photo 12, 13) and dry-fitted. I cut out the transmission access cover on the front glacis and then fabricated a new plate and mounted in the cutout (photo 14).

Bolts (made with a punch set) and the trim vane control arm (taken from an old M113 kit) were mounted to the glacis plate (photo 15).





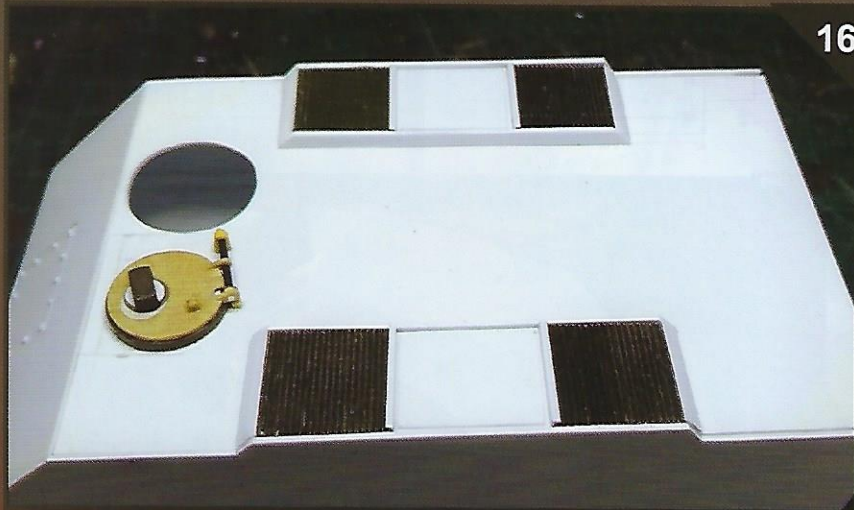
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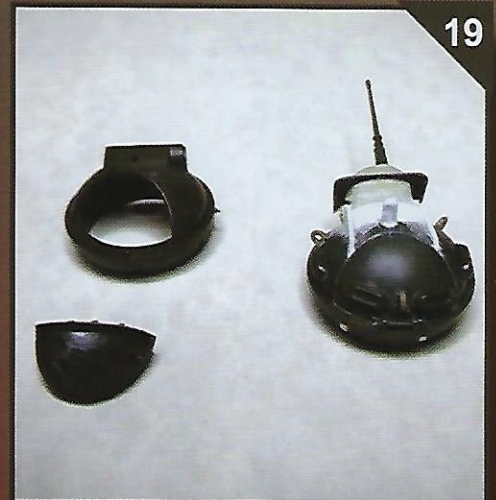
17



18



16



19

Once the trim vane was cut, I added an "L" strip to the bottom and a quarter round to the top. The control arm attachment point cover and the angle restrictor were fabricated from half round and "T" strip plastic. They were mounted according to photos of the real vehicles. Bolt heads were added as needed. Once everything was assembled, the front glacis was attached to the model (photo 16).

## Top Deck

The top deck has most of the details of the model. The first thing I did was go through my parts box and found radiator grills from several old M113 kits. I was lucky enough to find four which is what I needed. An alternate option would be to find a grill that could be cut to size, and then cast three more or find a friend with a 3D printer and have them print four for you.

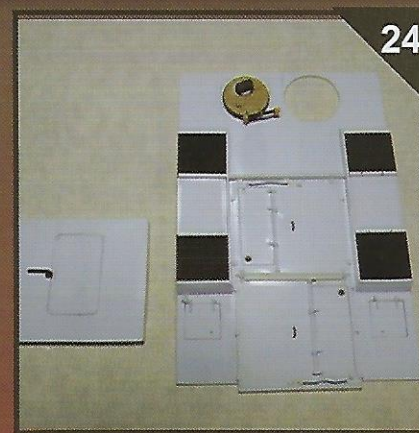
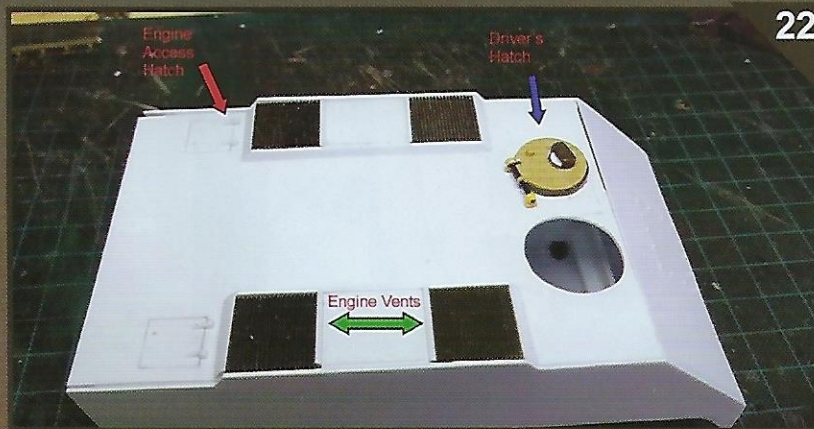
The M113 grills are a little over 1" by 1", and the grills needed for the M59 are 0.75" by 0.75". I cut and sanded down the back side so they were

closer to the correct thickness. Then I made fillers to go between them on each side of the top. Next, sides and ends were made and attached to finish up the mountings (photo 16).

The driver's hatch was next. It is the same size as the hatch on an M113 (photo 17). Again, I was lucky enough to find one in the parts box. Using a razor saw, I carefully sliced off the ring from the old M113 and then started on the hatch cover. Because of the location and orientation of the driver's hatch on the M59A1, I had to scratchbuild the torsion bar hinge and relocate the cover and opening for the infrared periscope.

The commander's cupola was fabricated next. I found a flamethrower cupola from an Academy M113, and even though it was not correct for the M59A1, it was close enough that I could redo it and add scratch parts to get a proper commander's cupola (photo 18, 19).





After cutting away the unusable parts from the flamethrower, I began by framing out the general shape of the M13 cupola. I then moved on to the gun shield and mount. This was made from a piece of round plastic tubing and a cut down M60 machine gun shield from the Academy M113 kit. The shape was fabricated from Apoxi Sculpt. Once the Apoxi Sculpt was shaped, I added the chin guard made from strip styrene.

Vision blocks, lifting rings, commander's periscope, and the canvas dust cover were added to finish the cupola. Again, I relied heavily on parts from the parts box and numerous photos of the real thing (photo 20, 21). The vision blocks are from the M113 kit.

I then cut holes for the engine access hatches at the back, made, and installed new hatch covers. Hinges were made and added. Handles will be added later since they are fragile and probably would not survive the remaining build (photo 22).

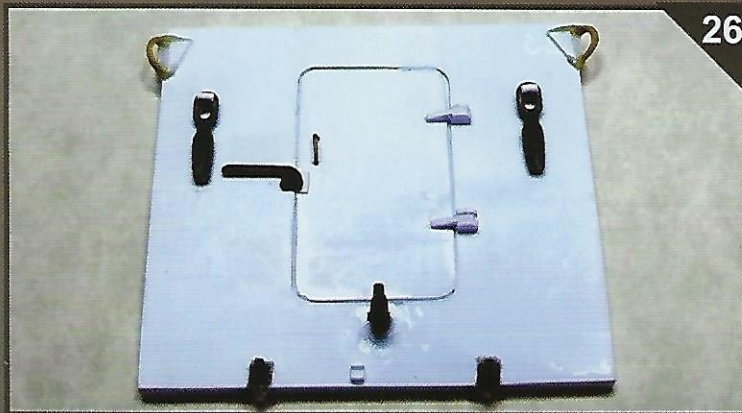
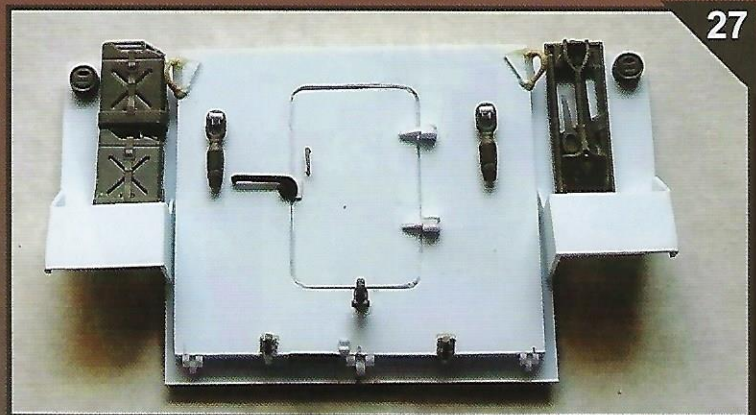
The two large cargo hatches are next. They could be removed to transport cargo or in some cases, a jeep. Possibly for use as a Cavalry/Scout version.

After cutting two pieces of sheet plastic, I cut holes to represent the troop hatches that were in the cargo hatches. After cleaning up the holes, I cut the plastic sheets to represent the hatches and installed them.

Next were the hinges, bumper, locking mechanism, and the unlocking chain for the troop hatches. The chain was from an etched brass set, and the rubber tube covering was lead wire. Once all of these were mounted, I fashioned the lifting rings and hold down brackets (cut from "L" strip) for the cargo hatches (photo 23). The bolts for the hold down brackets were etched brass taken from the PE parts box.

I then moved on to the rear ramp (photo 24).





## Rear Ramp and Back of the Vehicle

After cutting the rear ramp from several pieces of sheet plastic and then laminating them together to get the proper thickness of the ramp, I cut out a hole for the crew door and then cut a crew door from sheet plastic and mounted it in the hole on the ramp. Hinges were cut and mounted to the door along with a handle taken from Academy's M113. A grab handle was taken from the parts box and mounted on the door.

I moved on to the tow cable mounts next (photo 25). These were just plastic rod cut and formed into a "T," then glued into pre-drilled holes. The tow cable ends (from the M41 kit) were then drilled out and glued to the "T" mounts. The cable came from Eureka XXL LH-04, that I cut to size. I did not mount the cable but will mount it during the painting process. There is a small cable restraint at the bottom of the ramp that was cut from "U" channel and added. The tow hook is from the M41 kit as it was the same. Lifting hooks and hinges for

the ramp were fabricated and added to the top and bottom of the ramp (photo 26).

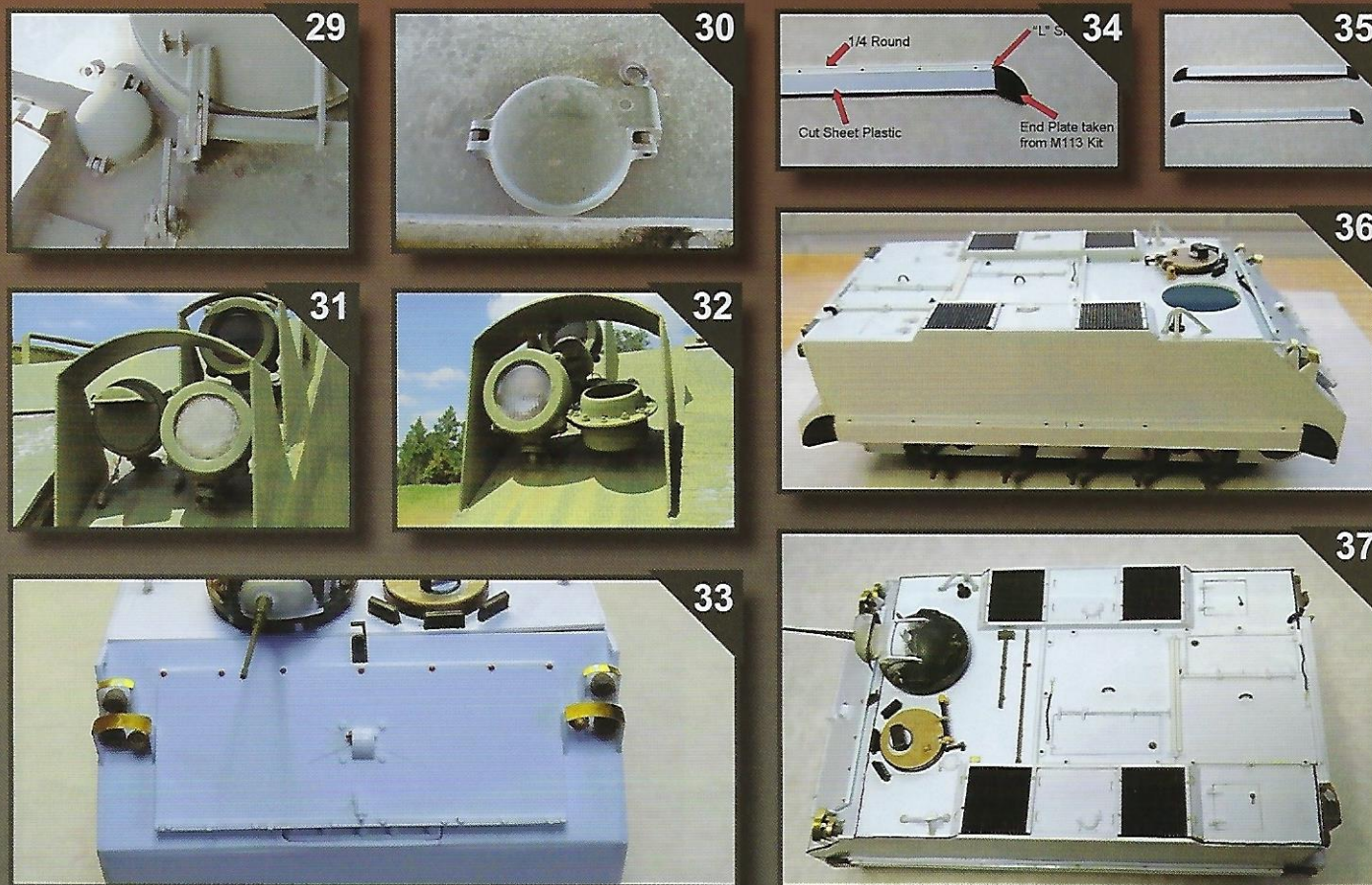
The rear fenders were cut and assembled using the line drawings. They were then mounted to the rear panel of the vehicle. Once these were dried, I assembled and added the two water cans to a tool rack I took from the AFV Club M41 kit. I did switch the gasoline pour spouts for water pour spouts on the cans (photo 27).

Next the rear panel was glued to the rest of the vehicle (photo 28).

## Side Projects and Small Details

A side project was started next. The filler caps for the M59 had to be fabricated as I could not find anything close to them in the parts box or from the M41 kit. I made them from three circles that were cut from sheet stock with a punch set. I then shaped them with a file and fabricated hinges and locking mechanism for each cap. All of these were





glued to the caps and then sanded to shape. A small etched brass ring was added to each cap to represent the locking pin (photo 29, 30).

The front lights and siren were taken from the AFV Club M41 kit. They had to be mounted directly to the front glacis without the use of any of the mounting parts from the kit. Again, I used pictures of the actual vehicle as the configuration of the lights and siren are somewhat different from other APCs (photo 31, 32).

Light guards and front lift hooks were fashioned from sheet stock and scrap etched brass from parts trees. Using the line drawings that I previously made, I cut the lift hooks and the light guard sides. The brass was cut, sanded to shape, bent, and attached to the tops of the light guard sides (photo 33).

Road wheel arms, shock absorbers, and road wheel arm stops were added to each side of the

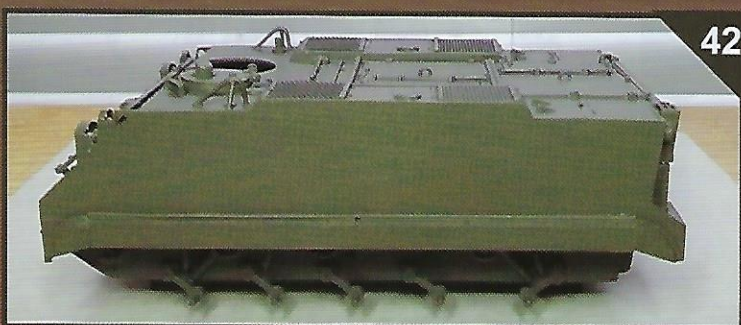
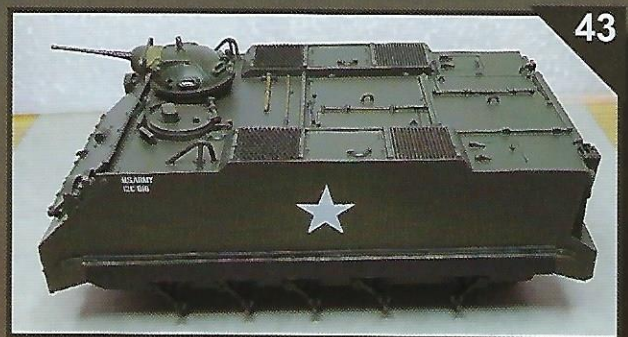
model. This was done now since they needed to be in place before the swim shrouds are added later.

Now I started on the swim shrouds. I made these from sheet stock cut into strips, small half round strip and "L" strip. I cut the ends off the swim shrouds from the Academy and Tamiya M113s that I had in the parts box. These ends were then reshaped to look like the ends used on the M59. Then I assembled the various parts to get the new swim shrouds for the M59 (photo 34, 35, 36).

The rest of the details, handles on the engine access hatches, footman loops on the grill areas, "Tanker's Bar" and the sledgehammer to the top deck, were then added (photo 37).

The brush guards for the radio antennas were made from heated and shaped plastic rods. I used photos of the actual vehicles to determine the correct shape. Once mounted on the model, I used





Epoxy Sculpt to make the weld seams around the bottoms. The antenna mount came from the parts box, probably from an M113 model (photo 38).

### Weld Seams

Weld Seams were Archer Fine Transfers' welding seam decals placed according to the photos I took at Ft. Benning. Since the vehicle is of steel construction, there are numerous welded seams. Some of them are heavy and some are what I would consider normal to small (photo 39-41).

### Tracks

I used AFV Club's T91E3 tracks for this build. The quality is good, and the individual tracks snap together quite easily. The one downside is that the track pads are plastic rubber (like the rubber band tracks), and they do not hold paint well. They are cast in black, so you can go without paint. But if you want to show wear, then they need to be painted. If I had it to do again, I would put the

tracks on prior to mounting the drive sprockets and the idler wheels, as the clearance is tight. It makes it a little more difficult with those two parts mounted.

### Painting the Vehicle

I used Ammo by MiG 0081 US Olive Drab Post WW II (FS24087) as the base coat for the model. This was followed by a gloss coat so I could start putting on decals (photo 42). Next a dull coat was applied to set the decals and then a semi-gloss coat since this color OD was semi-gloss. I allowed each coat to dry for 24 hours. Road wheels and the swim shrouds were painted with Lifecolor #1606 Black and Rubber shades Tire Black. Periscopes and vision blocks were first painted with an off-white, then clear green was added.

Once those dried, I added a gloss coat. The tracks were painted with Mission Models 002 Cold Rolled Steel and washed with a Brown wash to bring out detail.











# PHOTOS OF M59 APC

TAKEN AT THE ARMOR AND CAVALRY MUSEUM RESTORATION FACILITY

