

Rebecca Saliture photo

Building a Composite-hull Sherman

Model a Pacific-theater variant of the American medium tank

By Harry Andrews III

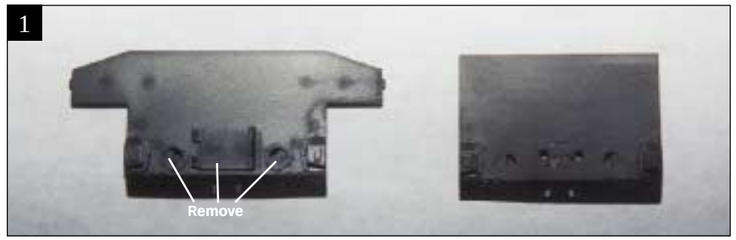
The Sherman tank, a mainstay of Allied armor during World War II, is either hated or loved. Those who hate it are quick to mention its shortcomings, such as its thin armor and undersized gun relative to German and Soviet tanks of the period. Those who love the Sherman reply that its engine was mechanically reliable, easy to construct, and had an adaptability that was nearly unheard-of in a tank.

The composite-hull Sherman, which used the front upper hull from a cast M4A1 and the back upper hull from a standard M4, was an example of that adaptability. Most served in the Pacific theater of WWII, and were frequently seen with snorkel stacks that covered the engine intake and exhaust, allowing their crews to drive ashore from a landing craft without flooding the motor with water.

To build my model of a composite-hull Pacific Sherman, I used Tamiya's M4A3 (kit No. 35122), Italeri's M4A1 (No. 255), Verlinden's Composite Hull with Wading Kit conversion (No. 755), and Eduard's photoetch set for the M4A3 (No. 35061).

Clean up. The first task was to clean up the Verlinden resin castings. Be sure to wear a particle mask and work outside to save yourself from the dust! A razor saw removed the casting plugs, except for the plug on the upper hull where I used a motor tool with a can-type cutting bit to remove it. I dry-sanded them afterwards with 400-grit sandpaper.

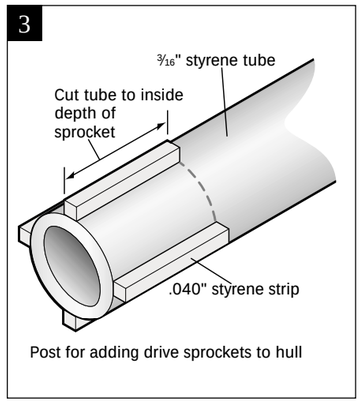
Lower hull. I used the Tamiya lower hull, for the cast detail on the kit's transmission cover and its accurate road and idler wheels. I modified the rear hull plate, using a motor tool to help remove the exhaust ports and hatch, 1.



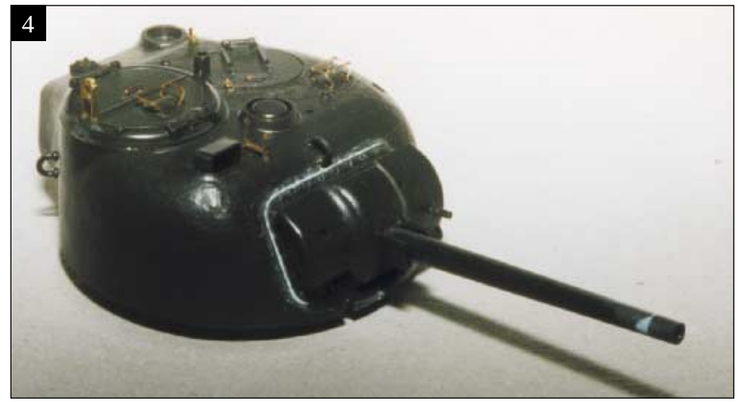
Tamiya's rear hull plate before (left) and after being modified; the exhaust ports and hatch were ground off with a motor tool. Rough edges are OK here, as the snorkel will cover most of the detail.



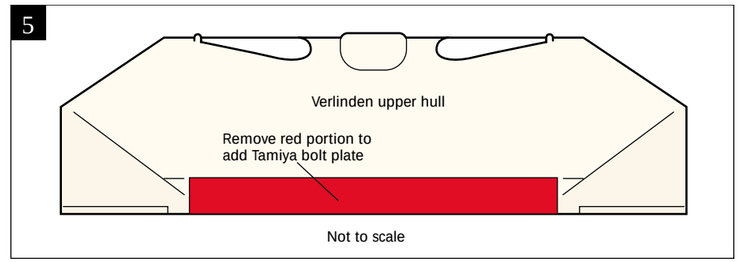
Italeri's drive sprockets had sinkholes that needed filling. Grind off the posts on the Tamiya hull so the sprockets will fit.



Scratchbuilding a post for the drive sprocket is a small and precise job. Dry fit before gluing.



Eduard's photoetched set for the Sherman adorns the turret. Harry opted to make handles from copper wire rather than use the photoetched ones supplied with Eduard's set.



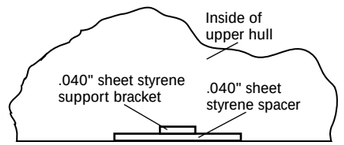
Upper hull modifications include the removal of this section to accomodate the Tamiya bolt plate. This spacer and support helps blend the Tamiya bolt plate into the hull.

The instructions, minus part Nos. C1, C14, and C15. I positioned the searchlight (B33) to face downwards. I left off the .50-cal. machine-gun, as I could find no photo of a Sherman wading ashore with the gun mounted.

Eduard's photoetched parts can be used for the old-style cupola (Nos. 5 and 44), the new-type sight (39 and 40), the old-type machine gun holder (45, 46, and 53), and the periscope guards (5). I made handrails out of copper wire instead of using the ones in the Eduard set. Install the catch for the loader's hatch (54, 55), and the hasp (13, 14). Note that part No. 45 is too long, and needs to be shortened about 7mm, 4. I did install the barrel rifling, but I now feel that it ruins the barrel's scale.

Upper hull. Verlinden's conversion hull is for the Italeri kit, so adding

6



Support brace installation

Using .040” sheet styrene, make spacers and blanks for the hull sponsons.

7



Harry removed the Italeri fenders and installed them on the Verlinden hull. A motor tool helped with the surgery.

8



As in most conversions, dry-fitting the parts from the kits you’re combining will reveal modifications you’ll need to make. Here, a notch is cut so that the upper and lower hulls will combine properly. Also note the placement of the supports for the hull sponsons.

Tamiya's parts to it will require some modification to make them fit properly. I picked between the two kits' parts based on which fit and looked better.

Remove the section of the upper hull where the transmission housing bolt plate meets the upper hull to add the Tamiya bolt plate, 5, since the Tamiya part is more cleanly cast and blends easier.

Next, measure the distance from the hull's lower edge, and make blanks for the hull sponsons using .040" sheet. I glued the support braces, 6, into place using super glue, then added the sponsons.

I wanted to replace the resin fenders on the Verlinden conversion hull, so I cut them off, 7. Then, I cut the Italeri kit's fenders free and carved a shallow groove in the Verlinden resin hull with my motor-tool to accept the Italeri replacements. Putty filled any visible seams.

I cut a small notch in the left fender near the resin hull to allow the lower hull to mate properly, 8. Next, I made hull side extensions out of .020" styrene and installed them, 9. These parts don't need to extend all of the way to the bottom of the lower hull – wading equipment covers the gaps.

I removed the tabs for the air intake cover and the tool brackets on the upper hull. Using putty, I filled in the holes for the lifting eyes and tail light guards. I used Italeri's kit parts for the headlights, tail lights, driver's hatch, ventilator cover, and gun cradle. I added the lifting eyes, the tools, the .30-cal. hull machine gun, and the siren from Tamiya's kit.

I used super glue to attach the photoetched parts, and I bent the photoetched light and siren guards over a round paintbrush handle. To complete the work on the hull, I made handles from copper wire and attached them with super glue.

Why don’t all Shermans have round corners?

Initially, US Army tanks during the 1930s were made of riveted armor plates with rolled plates used for their turrets. When the M3 medium tank was designed in 1940, one of its innovations was a cast turret.

Enjoying the success with that new design, the Tank Committee tried a larger component, which resulted in the M3A1 medium tank with a cast upper hull. This fit perfectly on the lower hull of the M3, and other than the upper hulls and dedicated components like bulkheads and firewalls, the two tanks were identical.

When the M3 concept was found to be flawed (the sponson-mounted 75mm gun having insufficient traverse to engage most targets in a running battle), two new tank designs, one with a welded upper hull and one with a casting, were put forward for a tank with a larger turret carrying the 75mm gun. The first one to reach prototype status, the T6, used the new cast hull with modified M3 running gear. It was accepted for production with minor changes, and the welded version was designated the M4 and the cast version the M4A1.

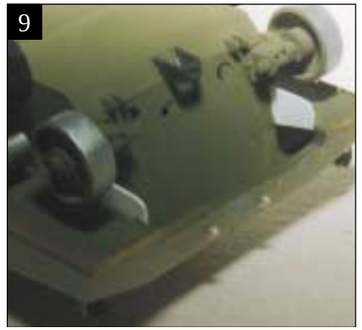
The M4A1 was built by the Lima Locomotive Company, which had facilities for casting the large parts, and the M4 entered production with the Pressed Steel Car Company, another railroad manufacturer. Again, other than dedicated components, the two tanks were identical.

The use of different assembly procedures and a large number of different manufacturers is what permitted the high production rate for Shermans during the war, which was one of the reasons the tank was ulitmately successful.

More than ten factories made nearly 50,000 Sherman tanks, each producing the hull that was best suited to each factory's capabilities.

– Stephen “Cookie” Sewell

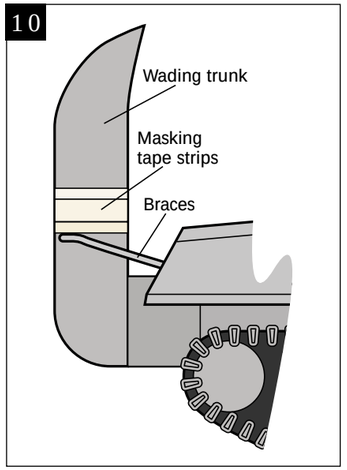
9



Two hull extensions (template below) must be added for the composite-hull design.



10



Deep-fording equipment allowed the Shermans to keep their engines dry as they waded through deep water. Waterproof tape ensured the seams on the snorkels wouldn’t leak.

11



The many facets of the conversion are apparent just prior to painting. The lower suspension will be masked before the rest of the tank is painted olive drab. Rereference photos inspired Harry to leave a few tools off, as soldiers always seem to have lost a few in the field.

Wading stacks. The wading stacks need to have braces added, 10. I used the braces from the photo etched tree. Masking tape cut into strips makes realistic waterproof tape to seal the stack seams. Super glue anchors the tape, 11.

Painting and decaling. I masked off the completed suspension and sprayed the rest of the tank Model Master Olive Drab. After careful referencing I discovered that Shermans within each particular unit tended to all use the same type of tracks, so I chose the rubber block tracks from the Italeri kit. I painted the rubber parts flat black, lightened with a few drops of flat white. The metal parts were painted gunmetal and drybrushed with Testor Steel. I next drybrushed the tracks overall with Pactra Earth Brown, and then installed them.

I cut a star from the Italeri decal sheet and used it as a pattern to draw the insignia on the sides of the hull and the turret. I made a darker olive drab by adding about 20 drops of flat black to a half-full bottle. This was sprayed over the patterns on the hull and turret to represent oversprayed insignia, which was common after it was learned that the enemy gunners would sight in on the

REFERENCES

Modeler's Guide to the Sherman Pete Harlem, Ampersand Publishing, 1999

Tank Battles of the Pacific War Steven J. Zaloga, Concord Publications, 1995

The M4 Sherman at War Steven J. Zaloga, Concord Publications, 1994

Sherman in Action Culver and Greer, Squadron/Signal Publications, 1997

SOURCES

Verlinden Productions
1011 Industrial Ct., Moscow Mills, MO 63362
✆314-356-4888
www.vls-vp.com

Eduard Model Accessories
Obrnice 170, 43521 Obrnice, Czech Republic
✆42-035-611-8186

Professor Weathers powders
Model Tec
P.O. Box 131391
Birmingham, AL 35213
✆205-520-0801

stars. The rest of the decals were scrounged from assorted U.S. armor kits to represent the 706th U.S. Army tank battalion on Guam.

I made a wash from Professor Weathers Grimy Black Powder mixed with water. The wash was applied to the entire tank. The next wash was made with Professor Weathers Filthy Brown powder, applied more heavily on the suspension than the upper hull.

Drybrushing commenced with a mix of four parts olive drab to one part white. I applied this over the entire tank. The ratio then dropped to 1:1, again over the entire tank. A final and very lightened one part olive drab to four parts white was lightly applied to the upper surfaces.

Metal surfaces were painted Model Master Gunmetal, then drybrushed with steel. Wooden handles for the tools were painted Pactra Earth Brown, then drybrushed with Model Master Sand. A grimy black wash finished the tools.

A clear flat overcoat was next, followed by a dusting of Filthy Brown powder on the suspension. I gradually faded the dusting upwards onto the hull for a realistic touch, 1 1 . I painted the tail lights gloss red, and the headlights Pactra Camouflage Gray. They were then given a coat of acrylic clear gloss, and I was sure to keep them level as they dried for the best effect. A dry-brushing of steel finished the headlights, except for the addition of clear plastic from a bubble-pack for the lenses.

This is a great project for a person with a few conversions under his belt. The project took me about 40 or 50 hours to complete, and would have been less had I assembled my reference materials first. Give it a try! FSM



Meet Harry Andrews III

Born in Aurora, Colorado, Harry attributes his fondness of the hobby to his father, a career military man and a model maker. Although Harry's first love is aircraft, the past several years have seen his new love, armor. "I like researching the subject as much as building the model," said Harry, who is a quality assurance manager in Cleveland, Mississippi.



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The square plates on the lower hull protect the driver and the ammunition from enemy fire.