Special Stuart



Ron converted Tamiya's 1/35 scale M5A1 Stuart to the earlier M5 configuration by modifying kit parts and adding a simple scratchbuilt interior.

Convert Tamiya's classic M5A1 tank into an M5

Story, photos, and illustrations by Ron Poniatowski

Over the years, I've built several of Tamiya's Stuarts. Some were standard M3s or M5A1s, while others were modified. For this project, I decided to convert the M5A1 version of the kit into the earlier M5 variant. It's not a difficult project; fancy conversion kits or advanced scratchbuilding skills are not required.

Shaping the turret. The most notable difference between the M5A1 and the M5 is the shape of the turret. The M5's turret is similar to that of the M3A1 Stuart, but there are early and late styles of M5 turrets. I wanted to build one with the late style, which had the upper side armor flush welded to the roof (as opposed to the early M5's beveled, M3A1-like configuration).

To get the proper turret shape, the bustle (rear overhang) had to be eliminated. It's easier to do on an assembled turret, so I began by assembling the turret sides, main gun, front, forward roof, and back plate.

I carefully removed the position guides for the machine gun shield on the turret's right side and for the grousers on the left, as well as the details for the roof-mounted searchlight. The holes for the searchlight and grab handles on the tank commander's side were filled and sanded.

I scribed a guide line straight up each side of the turret wall where the curve of the turret's front half meets the bustle, **1**. Starting at the rear of the turret, I cut forward between the top of the turret guard (the angled lip at the base) and the bustle base until I reached the two scribed lines. Then I cut down from the top along the lines to the first cut, **2**. The bustle dropped away neatly, and I cleaned up the freshly cut edge with a file.

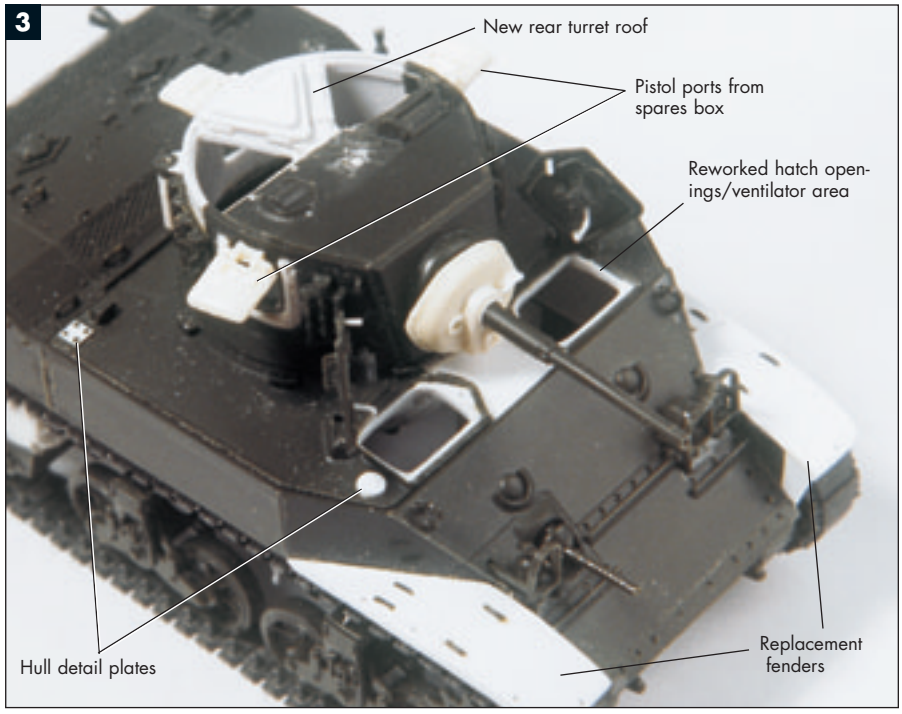
The new rear turret wall was formed from a strip of .030" styrene the same height as the turret's side armor. I careful-



Ron used the back edge of a hobby knife to scribe the line where the bustle would be cut from the turret.



Using a razor saw, Ron cut away the bustle and prepared the turret for the new rear wall.



Made mostly from sheet styrene, Ron's modifications stand out well before being hidden by paint. This view illustrates the new turret rear, which is the most distinctive feature of the M5 variant of the Stuart.

ly bent it over the edge of my work table to give it the necessary curvature. After trimming and adjusting it to fit the turret, I cemented it in place.

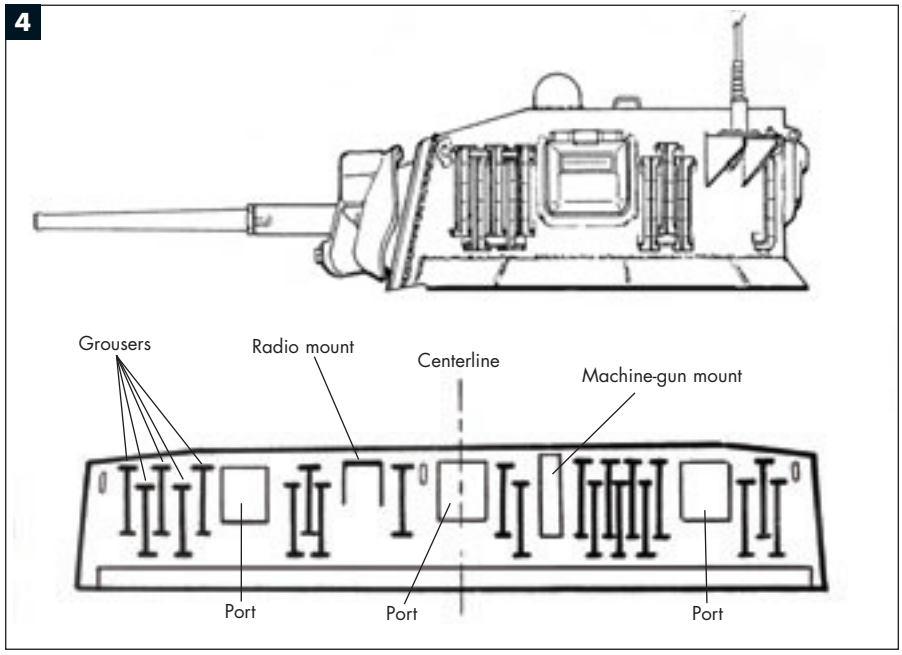
The M5A1's 37mm gun used the later M44 gun mount, so I pulled an earlier, correct M22 mount from an M3 tank kit and installed it on the front of the turret.

Exterior turret detail. The new rear turret roof was cut from a semicircle of .020" sheet styrene. I used an architect's circle template to scribe an accurate radius. Panel lines representing closed hatches could have been scribed into the plastic, but I chose to cut mine open because I intended to give my M5 simple interior detail.

The roof was glued into place and allowed to set, then filled, filed, and sanded. The gunner's hatch opening on the left side had to be extended into the portion of the roof from the kit, **3**.

The early M5 turret had three M3-style pistol ports, though on later vehicles they were often welded shut. On previous M3/M5 projects, I had scratchbuilt them, but this time I just used M3 ports from my spares box.

The splash guards around the ports, which also helped deflect bullets and shrapnel from the seam between the port covers and the turret wall, are strips of styrene with textured putty "welds." An old hobby knife tip was just the tool for the texturing.

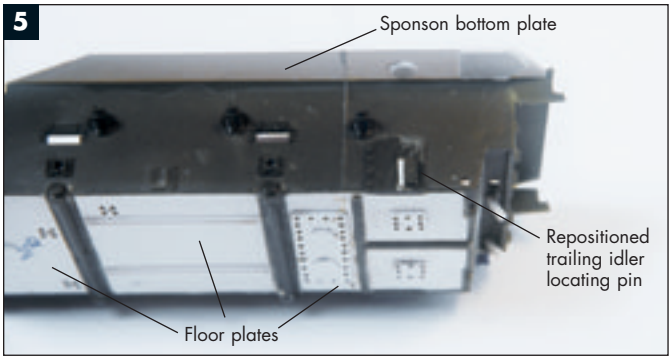


A profile of the turret (top) and a placement guide for the details (not to scale).

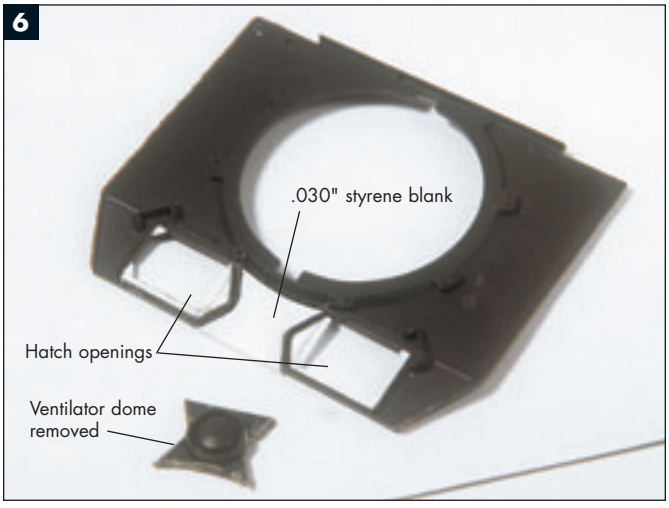
The rear of the turret received an antenna platform made from the top portion of the M5A1 mount (kit part C35) and two .010" styrene sheet "fillets." Stretched sprue formed the connecting cables under the mount, but I didn't install the antenna until after painting (many M5s didn't even have antennas!).

I scratchbuilt the external .30-caliber antiaircraft machine gun's mount from .010" sheet styrene and sprue. The kit's lifting eyes are fine, so I used them but corrected the rear eye's shape by filing the ends flat.

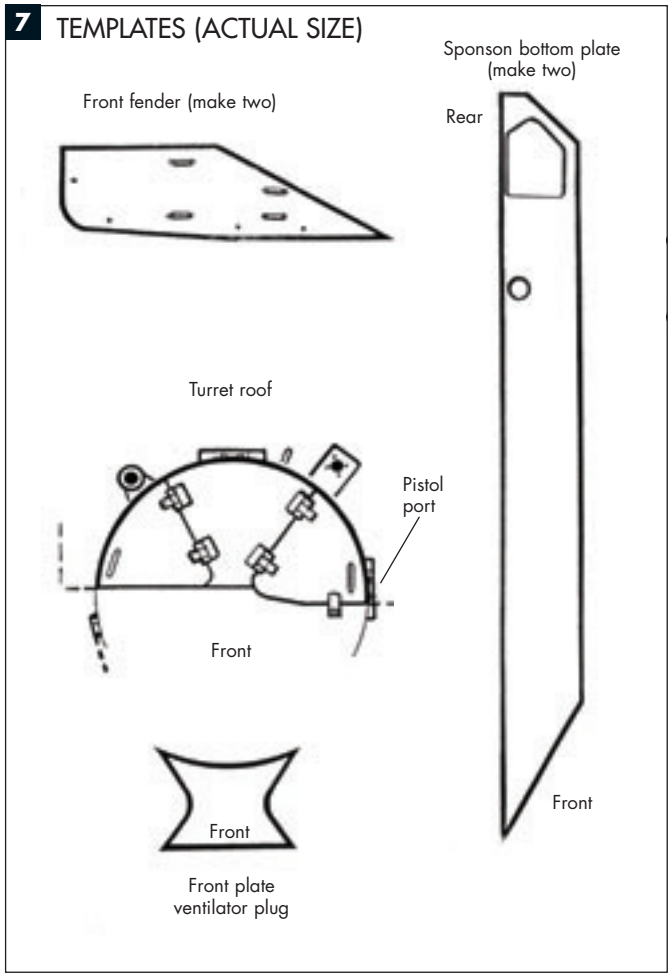
When the M3's fender boxes were eliminated from the M5 hull, to be occu-



New floor plates and sponson bottom plates were added, all from .030 styrene. The locator pin for the trailing idler was moved rearward two scale inches.



The ventilator dome and surrounding armor were removed and replaced with a blank of .030" styrene. The roughed-in hatch openings are also visible here.



These templates may be copied for your own use only. To convert them to other modeling scales, make copies at the following percentages: 1/48 – 73%, 1/72 – 49%, 1/76 – 46%.

pied by sponson fuel tanks, the grousers were relocated to the turret's exterior. Grousers are track shoe extensions that improve the track's ability to grip on wet or soft ground. When not in use, grousers were often mounted around the exterior of the turret or hull where they could serve as additional armor.

The M5A1 kit comes with more than enough grousers for the M5, though some need to be cut to length. The placement guide, **4**, indicates the correct location of each grouser.

Hull modifications. Like many older Tamiya kits, the M5A1 has "motorization" holes and battery mounts in the hull. Plugging the holes would be easy, but cutting away the extras inside the hull was a problem. Cutting would leave marks from the saw or motor tool that would have to be cleaned up before I could add the interior.

I decided to cut out the kit floor and replace it with new floor plates made from .030" sheet styrene to hold the interior detail, **5**. Bogie assembly mounts run across the floor, so I had to cut out and replace three separate floor sections. When I was done, the new floor was smooth and ready for detailing.

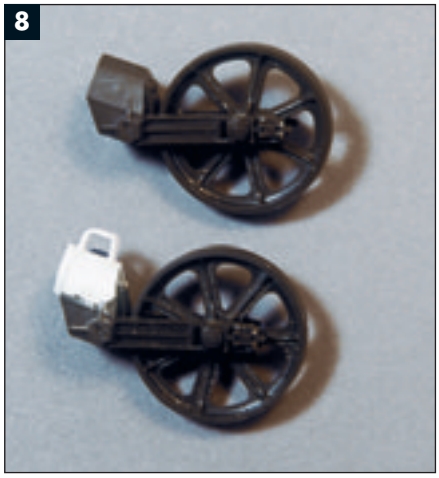
Hull details. The shapes of the driver and co-driver/bow gunner hatch openings should be more squared off than they are on the kit. I blocked them into the basic shape using .030" sheet styrene and finished shaping them after I removed the ventilator dome between the driver's and bow gunner's hatches.

Early M5s didn't have a ventilator between the driver and co-driver/bow gunner hatches, so I left off part C17 and removed the ventilator detail by cutting along the hatches' splash guards with a jeweler's saw, **6**. I cleaned up the saw marks with a needle file, and then filled the void with .030" sheet styrene cut to shape following a template, **7**. I punched out a circle of styrene for the small plate outboard of the co-driver's hatch, **3**.

Stuart hatches were nothing more than half-inch-thick welded armor plate assemblies, so there's no recessed "rabbet" detail on the edges of the hull openings as in the kit. I marked the correct contour of the hatch openings, then cut and filed them into shape. Sheet styrene and putty represent the padding around the interior of the openings that kept the driver and his assistant from getting their teeth knocked out during rough maneuvers.

Tamiya's hatch doors are OK but can be made better. I removed the inside periscope detail with a saw, then filed the hatches to the correct thickness. I added locking pins and triangular closing handles made of .010" styrene rod. The inner contour of the reshaped openings was traced onto the doors and stretched sprue was used to represent the rubber seal.

To finish the upper hull, I blanked in the sponson bottom plates with .020" sheet, **5** and **7**, adding fuel tank drain covers and air filter access plates. I cut off the kit's front fender sand shields and replaced them with .020" sheet styrene



Here are the kit's M3-style idler (top) and Ron's modified idler.



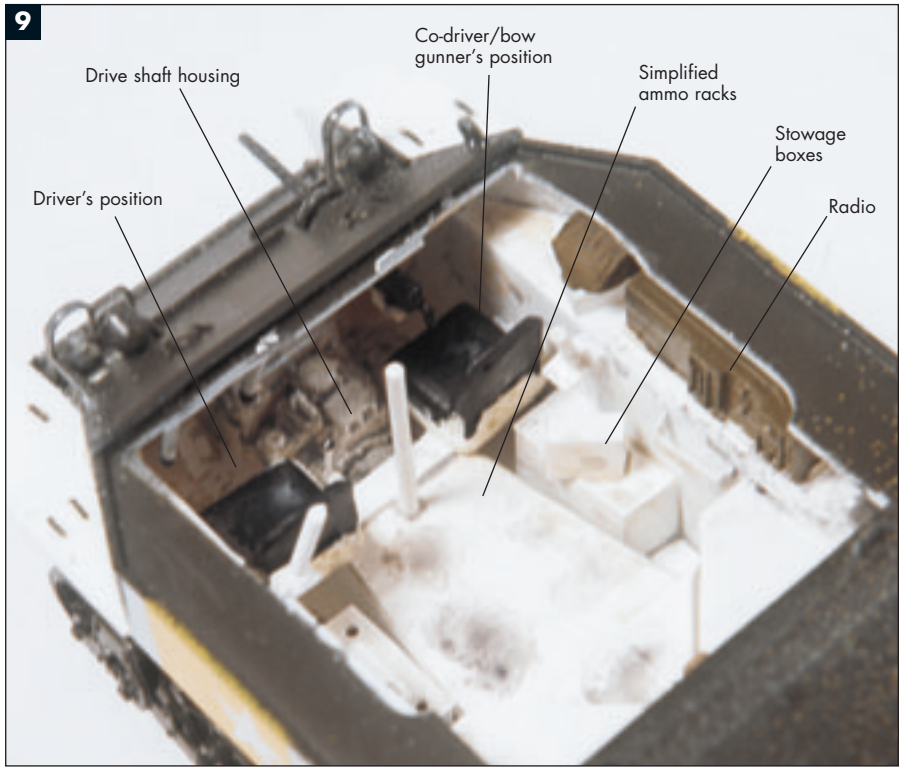
A decal star protected the gloss insignia yellow paint from the olive drab top coat. It was a simple matter to peel off the decal with masking tape to reveal a crisp yellow star underneath.

blanks, **3** and **7**. The strengthening "lip" downturn on the fenders was replicated with .010" strip styrene.

The small round plate on the upper hull's right rear had to be cut off and replaced with a square M5-type plate, **3**. The left side received a stretched-sprue antenna with a mount fashioned from the kit's antenna base (parts C26 and C35).

I thinned Tamiya's heavily molded headlight brush guards with a hobby knife and needle files. The best way to do this delicate work is to leave the guards on the sprue and thin them little by little.

Suspension. The kit's suspension is fine for an early M5 in almost every respect. Did you notice I said, "almost?" The M5's twin Cadillac engines gave the M5 more power and more speed, but they also gave it additional weight. To counter this, the trailing idler was moved back two inches in order to accommodate a larger spring and spring housing. This is noticeable as a "bump" on the front of the idler's spring housing.



Ron wanted a quick and simple hull interior rather than a superdetailed one.

Stuart story: M3 vs. M5

The M5 was an improved variant of the M3A1, the standard U.S. light tank at the beginning of World War II. The Stuart name was originally given by the British to their Lend Lease M3s, and the name eventually stuck to the entire M3/M5 family.

M5 development began in October 1941, and the prototype was finished by the following April. The first production M5s started rolling off the line in December 1942. A total of 2,074 were built. Later, the M3A3 turret (with a rear extension added to accommodate radio gear) was mated to the M5 chassis and hull to create the M5A1, the final variant of the Stuart line.

The M5 had a fully-welded homogenous hull and turret, thought to be safer for the crew than the M3's riveted armor plates. Two Cadillac auto engines replaced the M3's Continental radial aircraft engine, necessitating a hump on rear deck to accommodate the taller but shorter new engines. A benefit of this arrangement was more room in the fighting compartment. The Cadillac powerplant proved extremely reliable, which led British tank crews to nickname their Stuarts "Honeys."

Like the M3A1, the M5 carried a crew of four: gunner, tank commander, driver, and assistant driver/bow gunner. It was armed with a 37mm M6 antitank gun and three .30-caliber machine guns.

After the Stuart's first combat, crews called for a more powerful gun. The attempts to mount a larger 75mm gun showed the Stuart was too small to hold anything larger than the original 37mm weapon. It was no match for German tanks and was generally relegated to infantry support and patrol duties. Many were supplied to French, British Commonwealth, Chinese, Russian, and Polish forces through the lend-lease program.

In the Pacific, M5s and M5A1s served on the front lines until the end of the war. In Europe, the M24 Chaffee (using the same Cadillac engines and transmissions) started taking over the Stuart's front-line duties in late 1944.

– Lawrence Hansen

11



Ron's M5 has been painted and weathered, and the distinctive markings of the 70th Tank Battalion in North Africa in 1943 have been applied. All that remains to be added is the antenna.

I used an engineer's scale to determine that 2" in 1/35 scale is .057" and moved the trailing idler's mounting pin back accordingly, **8**. I punched out .040" and .020" styrene discs for the idler spring housings (close enough to .057") and cemented them to the front of each housing. They were then filled and filed to the correct contour.

I also added a skid to the top of the idler spring housing; this wasn't always installed on M5s, but I saw it on an M5 preserved in Colorado. The skid is nothing more than a strip of .020" styrene bent to shape and cemented into place on each housing. It gives the model's suspension system an extra touch of authenticity.

Interior detail. Working mostly with .010" and .020" sheet and spares-box bits, I detailed the interior, **9**. I added an engine compartment bulkhead, drive shaft housings, driver's and bow gunner's positions, seats, simplified ammo racks, a radio, and some small electrical equipment. I just wanted to create the impression of an interior glimpsed through the hatches, so I didn't get carried away.

After the interior was painted, I glued the upper and lower hull halves together and filled the seams with putty. A big gap between the front plate and lower hull had to be bridged with strips of styrene before applying putty.

Paint and markings. I painted my M5 with Testor Model Master olive drab straight from the bottle. Selecting markings was easy. I'm an associate member of the 70th Tank Battalion Association, so I wanted to depict one of the battalion's M5s used in North Africa in late 1942 and early '43. I chose vehicle C-17 of Charlie Company, based on a photo taken when the unit passed in review for President Roosevelt in January 1943.

The huge white recognition star on the front plate came from my spares box and helps make the model distinctive. The yellow stars were produced by first painting the area yellow and placing a decal over it before applying the main hull color, **10**. When the main color was dry, the decal was removed with masking tape, leaving the star in yellow.

My reference photo of C-17 wasn't clear as to the yellow numbers on the forward side plates, so I guessed. The U.S. flags on the hull sides are from an M3 Lee kit's decal sheet.

After the markings were applied, the tank was sprayed with clear flat and weathered, **11**. I went easy on the weathering because I didn't want my Stuart to look overly worn and grungy. After all, it represents a vehicle that had been thoroughly spiffed up to look its best for the president! **FSM**

REFERENCES

Stuart: A History of the American Light Tank, Volume I Richard P. Hunnicutt, Presidio Press, Novato, California, 1992

Stuart: U.S. Light Tanks in Action Steven J. Zaloga, Squadron/Signal Publications, Carrollton, Texas, 1981