

M15A1 CGMC Conversion

by DAVID BLACK

History

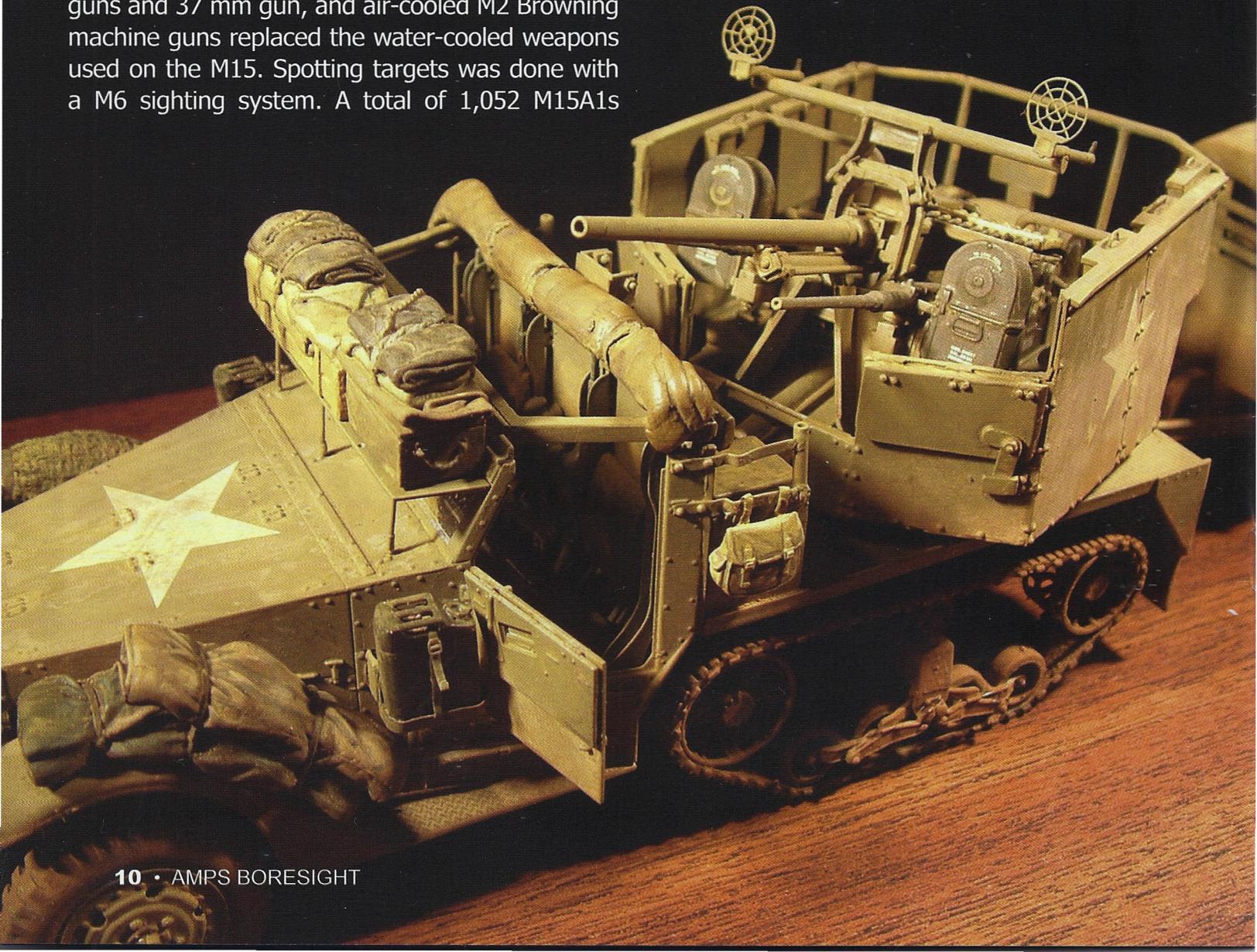
The M15 was equipped with the M42 armored weapon mount, in which two water-cooled M2 Browning machine guns were mounted above the 37 mm gun. A total of 680 M15s were produced in 1943 but because the M42 mount placed considerable stress on the M3 chassis, the M54 mount was introduced, and the resulting combination with the M3A1 Halftrack chassis was designated as the M15A1 CGMC.

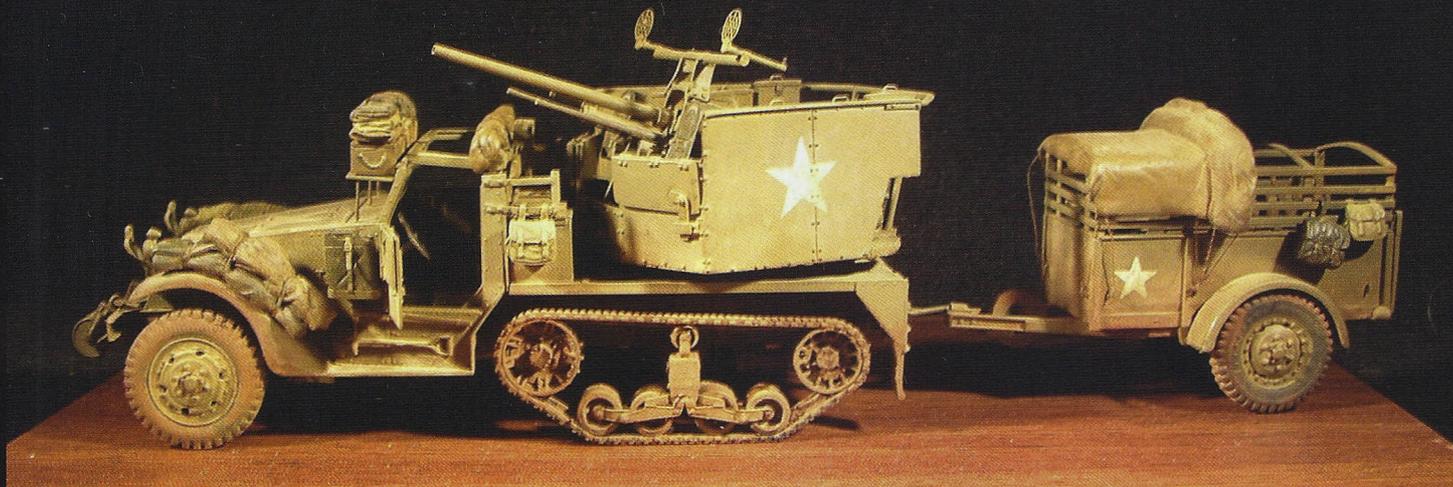
In August 1945, the M42 mount, and the M15 CGMC was finally classified as obsolete. The M54 gun mount reversed the places of the machine guns and 37 mm gun, and air-cooled M2 Browning machine guns replaced the water-cooled weapons used on the M15. Spotting targets was done with a M6 sighting system. A total of 1,052 M15A1s

were produced in 1943, with a further 600 being produced in 1944.

Service History

Officially designated T28E1 Combination Gun Motor Carriage, the M15 was a self-propelled anti-aircraft gun on a halftrack chassis. It was equipped with one automatic 37 mm (1.5 in) gun and two water-cooled 0.5 in (12.7 mm) M2 Browning heavy machine guns in a coaxial mount controlled by a M6 sighting system. Produced by the White Motor Company between July 1942 and February 1944, it served alongside the M16 MCMC.





The proficiency of this mobile weapon can be attributed to three characteristics: its mobility, enabling close support of combat troops in forward areas and to patrol roads over which heavy traffic must travel under constant threat of bombing and strafing; its flexible firepower, combining the volume of caliber .50 with the knocking power of the 37 mm; and the facility which the fire is controlled, by using the tracer stream from the caliber .50 to bring it on target before opening up with the full volume of armament. Numerous cases are cited in which a "mouse trap" effect has been obtained when enemy planes came in much closer on the initial caliber .50 fire than they would on a light cannon and were caught by the 37 mm.

The M15 was first used in November 1942 during Operation Torch. When engaging enemy aircraft, tracer ammunition from the machine guns was used to bring the main gun onto the target. Over 100 aircraft kills were claimed during Operation Torch and the Sicily campaign. 39 alone were claimed at the Battle of Kasserine Pass.

The M15A1 was an improved variant with air-cooled machine guns mounted below the 37 mm gun. Both M15s and M15A1s were also used in the Allied invasion of Italy and throughout the Western Front, including the Battle of the Bulge. They were often used in the ground support role, as Allied air superiority meant that there were few German

aircraft left to engage.

Kits

I used the Commander Models M15A1 MGMC (should be CGMC) as a starting point for the conversion. There are many mistakes and inaccuracies in the kit, but I will cover them more in the build sections.

DML M16 MGMC kit is used as the basis for the vehicle. This is a good kit as are all of the Dragon Halftrack kits. Not perfect, but what kit is?

I am also using parts from the Italeri Bofors 40mm Anti Aircraft Gun kit. This may seem strange, but after examining the kit, I am pretty sure Commander used it as a basis for their resin parts.

References

I began by reviewing the pictures I had taken of actual M15A1s at Ft. Jackson and Ft. Stewart. Jon Bernstein (Curator at the ADA Museum) also had pictures of the M15A1 at the museum. All in all, I had 222 pictures to work with.

Additionally I downloaded TM 9-235 37mm Auto Gun and Roy Chow sent me FM 44-59 Service of the Piece M15 and M15A1.

Hunnicut's Halftrack book was also consulted.



1

Build

Starting with the Commander conversion, I approached the building in the following order: 37 mm gun assembly, gun housing, gun mount and finally the gun-tub/deck. The halftrack rear deck also had to be modified.

Gun Assembly

The first problem encountered was the 37mm gun. The barrel was warped in two directions. I figured out that the Bofors barrel was the right length but too thick. So I sanded it down to the correct circumference, and I added a small piece of styrene tubing to the end (1).

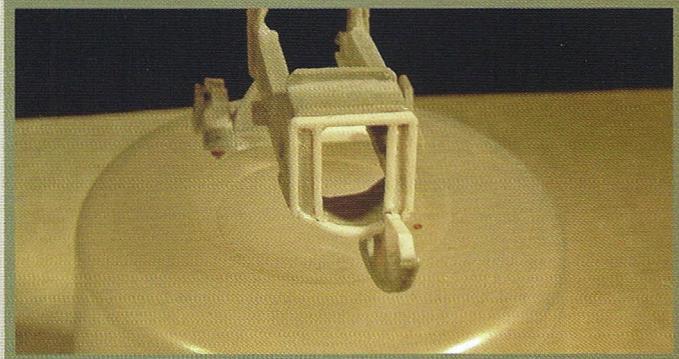


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Next, the rear of the 37 mm was too short, so I added a piece of styrene to make it the correct length (2).

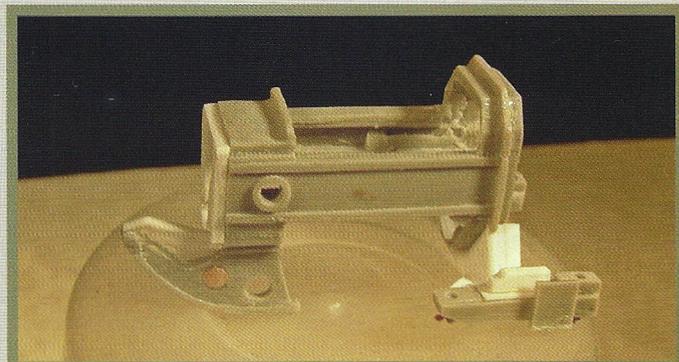
Gun Housing

There are three areas where modification had to be made, the rear casting, the elevating gear and the mounting assembly for the two M2 50 Cal machine guns.



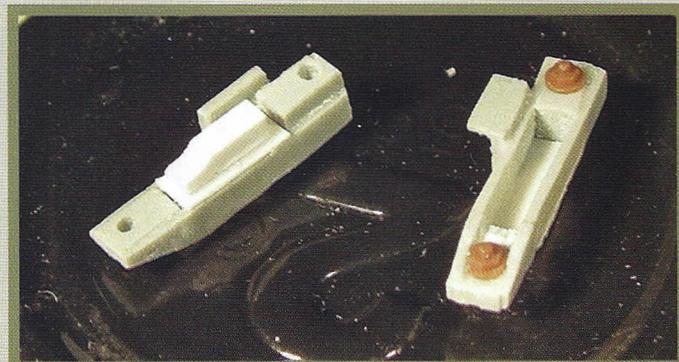
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The rear casting needed support fins and the sides needed closing. Both were done with thin styrene strips. The elevating gear was fixed by filling in the top part with sheet styrene capped with strip styrene and the rear-most hole was plugged with sprue cut to fit (3 & 4).



4

The mounts for the M2s were totally wrong, and the resin was warped, so I cut them off and started from scratch. Luckily I found three great pictures of the mounts being rebuilt on the Internet. These assisted me greatly in the fabrication of the mounts.



5

The only thing used from the Commander's kit are the gun holders, but they had to be modified by filing down the rear to the correct shape, adding bolts under the holders and shell guides on top/under the M2 (5). The gun holders are mounted to the Gun housing with steel triangle

mounts which I made out of sheet styrene. A styrene u-channel connects the triangles across the bottom (6). The gun holders are mounted to the triangles, and a reinforcing angular plate is added to the inside rear of the assembly.

Gun Mount

The Traversing mechanism is wrong for the M15A1. The top should be a rectangle, not a square. I corrected this by making the rectangle out of styrene and adding the bolts, handles, etc (7).

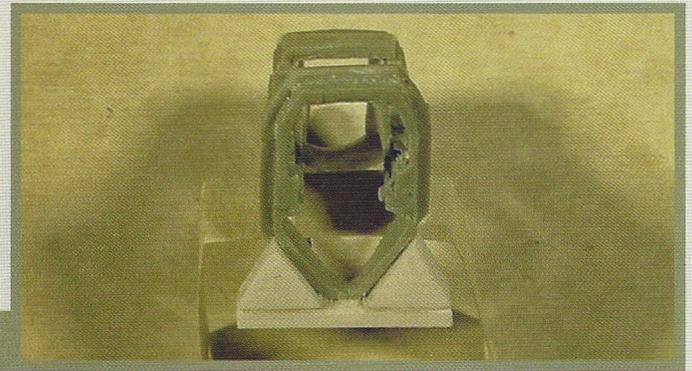
The elevating mechanism on the other side is cast correctly, but the casting is so poor that I had to cut it apart and re-attach the pieces to get it set correctly on the gun mount. Also it sticks out too far at the point that the elevating handle attaches, so that had to be shortened.

On the front, the shell casing slide and actuator only need minor cleanup, and the back of the slide needed to be extended to be properly positioned under the 37mm gun (8).

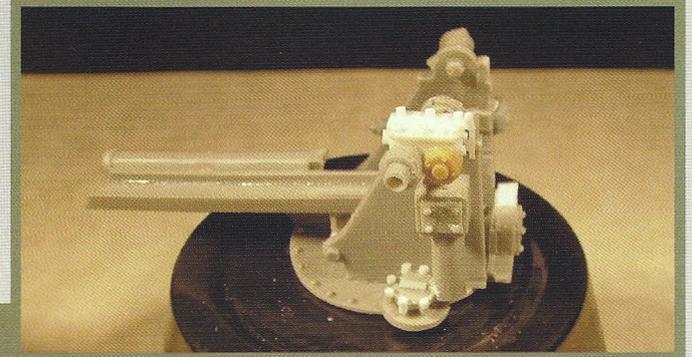
The foot pedals on the elevation control side, needed 1) a large rectangular box added behind the left pedal and 2) they need to be flip-flopped, because they are backwards. I did this by cutting them apart and re-mounting them correctly. The hole on the left pedal is too large, and there is no second high hole in the right pedal. I filled these. The rectangular box was fabricated out of styrene with bolts, plungers, etc. added as needed (9 & 10).

Gun-tub/deck

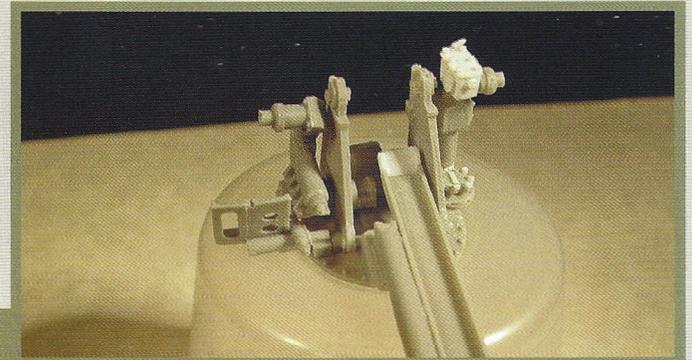
Commander Model's gun-tub/deck assembly needs major conversion. First up was the rear area of the tub. Starting from left to right, I added the sunken area under the traversing crewman's position. Next in the middle, the dimensions of the storage rack for the 50 cal drums are incorrect. Widthwise it was good, but lengthwise it was too short. Also it was mounted on top of the deck, when on the actual vehicle,



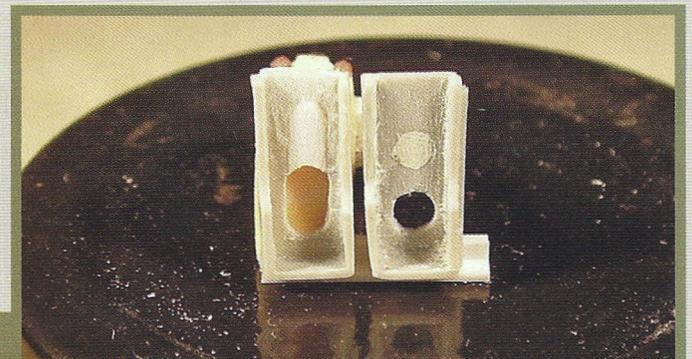
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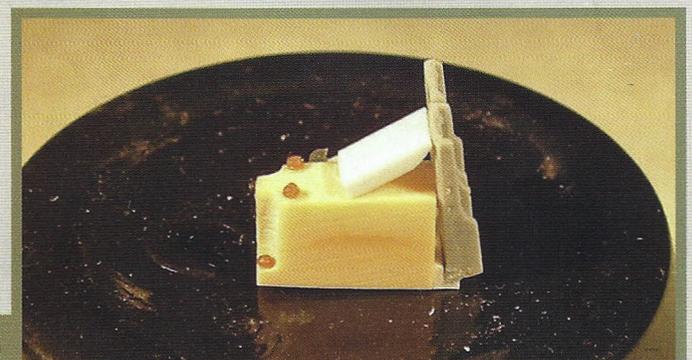
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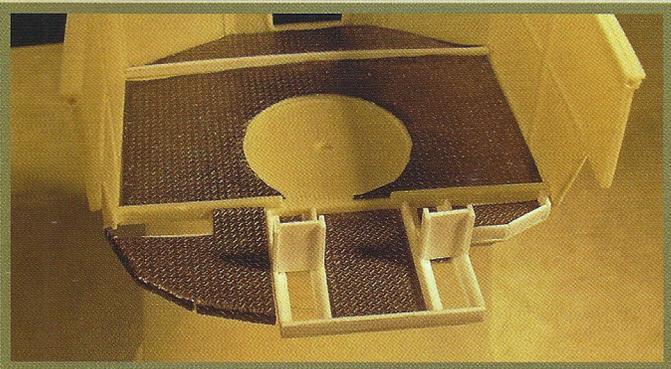
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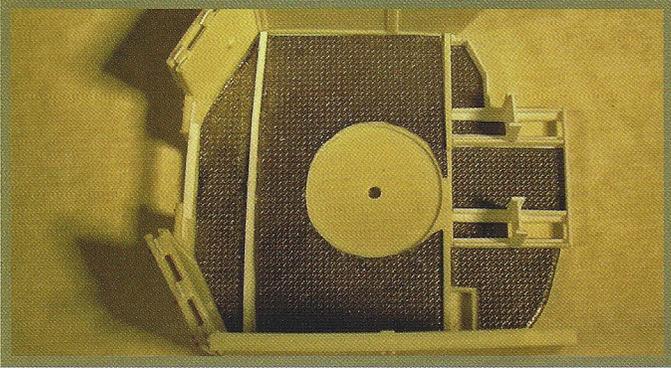
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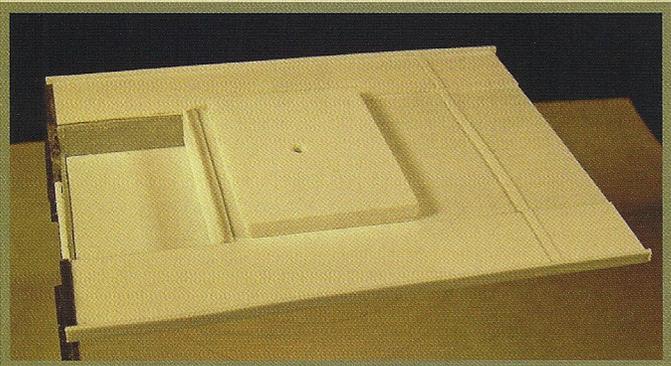
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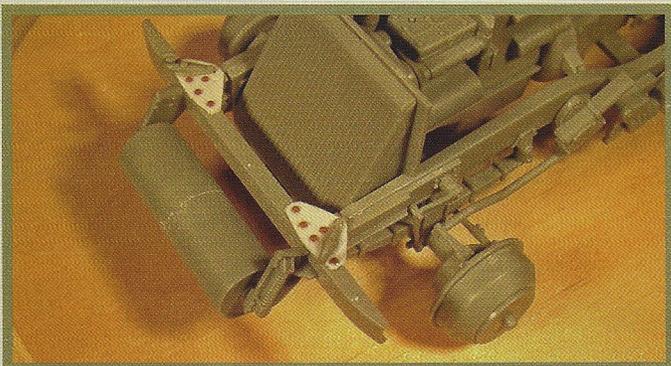
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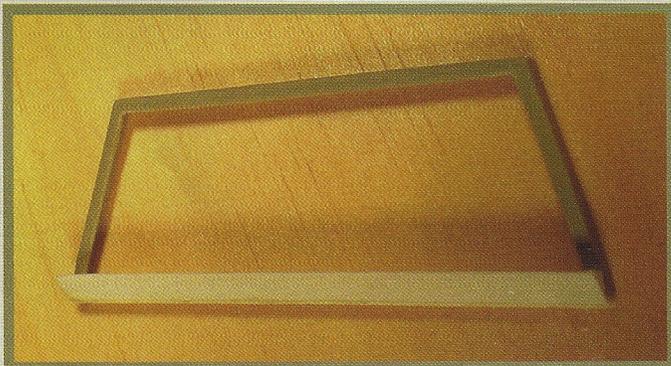
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14



15

it was flush with deck. I cut out the resin part and fabricated a correct one from styrene. On the right, I had to cut out the decking under the elevation crewman's seat and replace it with a correct dimensional area made from styrene. I then covered the entire deck area of the tub with Eduard floor plate (11 & 12). A second strengthening rib is added to the front of the tub forward of the gun mount.

Halftrack Rear Deck

The rear deck that comes with the Commander kit was unusable. It was severely warped. When I heated it to reshape it, it broke into pieces. My solution was to use the rear deck from the Dragon kit.

I first sanded down the features on the deck till it was perfectly flat. Then I covered the deck using the thinnest sheet styrene I could find. Next I cut out the rear portion of the deck where the ammunition storage box would be fitted. Larger sheet styrene strips were added under the front of the deck where the two fuel tanks had been located. I added the rear to the deck and thin styrene strips to the sides. A block of styrene was added as a gun platform support (13). I then set this aside until I started final assembly.

Halftrack Frame, Engine & Cab Areas

These were assembled per Dragon's kit instructions (steps 1 to 10). The only deviation was that the M15A1 had the roller on the front instead of the winch. The parts are in the kit, but marked as "Not Used." The sprue numbers for the parts to use are: C1, C2, C15, C16, C21, C23, C26, and D7 (x2). The triangular plates that go under parts D7, are not in the kit, but can be fabricated out of thin styrene. Also the plates on the front of the bumper that the roller arms fit into don't actually exist on the real vehicle. Sand them off and shorten the locator tabs on the arms (14).

Since the roller is used on the front, you will not need to use the power-take-off for the winch. The hole for the shaft needs to be filled in the front armor plate. I did this with styrene rod.

The top of the cab needs to be redone in the configuration for the M15A1. Commander Models provides one, but it is not correct. The correct configuration is fashioned from styrene strip and angle strip (15).

I also added four weapon holders and the rack for the spare lights to the rear wall of the cab.

Gun-tub Seats

The elevation and traverse crewman seats were made by wrapping plastic strip around a wooden jig that I made. The plastic was then heated with a hairdryer and cooled to help it hold the curved shape. Braces were added using styrene rod and a backrest was fashioned from seatbacks from the parts box. The finished back assembly was added to the bottom seating rail and the seat itself was added (16 & 17).

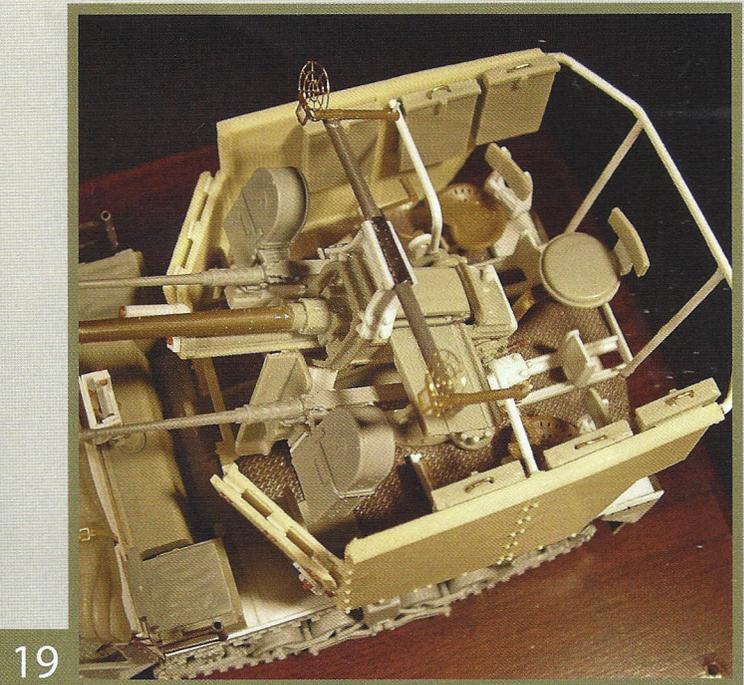
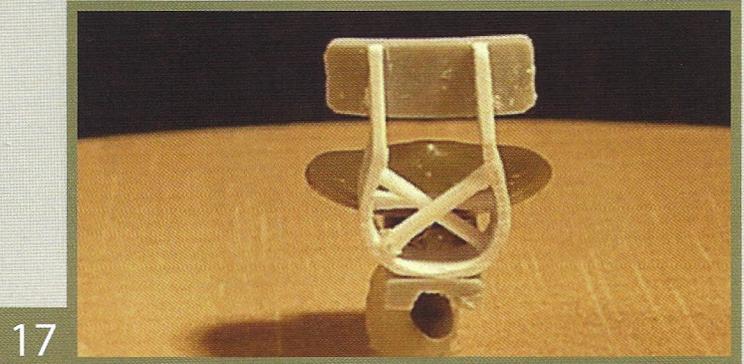
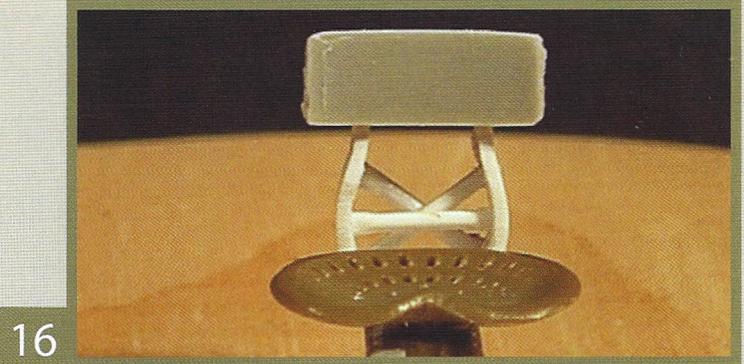
The gun commander's seat was made using the Commander Models kit parts. These were cut apart and then remounted on a piece of brass strip (18).

Gun Sighting System

I finally decided to use the sighting system that mounts to the front of the 37 mm gun housing. The M15A1 used two systems; the rear mounted system and the front mounted system. It appears that the front mounted system was used in late WWII and during the Korean War. Using photos from the actual vehicles at Ft. Jackson and Ft. Stewart, I fashioned the sighting system from tube and sheet stock (19). The "Spider-web" sights are from AFV Club's M2 machine gun set.

Trailer

The trailer was built using the frame from an old Italeri kit and a completely scratch built upper

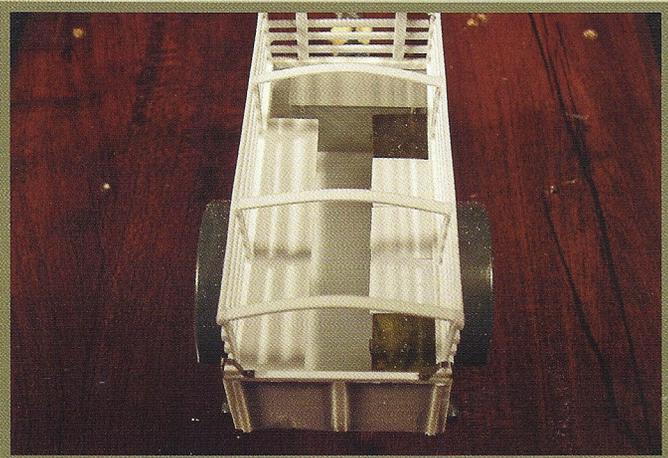




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structure. The wheels are from Squadron. I found a description of the specially equipped "Ben Hur" trailer used for the M15A1 on the Internet. It helped in fabricating the interior configuration for the trailer (20, 21 & 22).

Painting and Weathering

Painting was done with Model Master and Vallejo paints. The overall model was painted Model Master #4728 Olive Drab. Wheels and Track were painted with Floquil Weathered Black (OOP). Stowage, seats, canvas, etc., were painted with various shades of Vallejo Khaki, khaki Drab, Field Drab, and Olive Drab.

This was followed by an overall wash of AK Filter for NATO tanks. This is a brown wash and thinned down quite a bit. It dulls down the olive drab and blends the various colors.

A black wash followed this (after 24 hours), and then I used Dark Mud and European Dust MiG Pigments to add dirt and dust.

Decals

All decals are Archer, except for the markings on the 50 Cal "Tombstone" canisters. Unit designation and bumper numbers are made from Archer individual letters and numbers transferred to Monogram decal paper. 

