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Modelling the T-55 (Somali Army variant)

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Abbreviations

CA	cyanoacrylate (superglue)
LHS	left-hand side
PE	photo etch
RHS	right-hand side

Contents

Modelling a Somali T-55

Subject:	*Somali National Army T-55, c.1991*
Base kit:	*Tamiya T-55A MBT (35257)*
Scale:	*1/35*
Additional detailing sets used:	*Eduard 35554 photo etch set* *Model Point 3516 barrel* *Modelkasten SK-59 workable track set*
References:	*Concord T-55/T-62* *Rossagraph T-55A Volume 1* *Vanguard 37 Modern Soviet Combat Tanks* *Osprey New Vanguard 102 T-54 and T-55 Main Battle Tanks* *Wings and Wheels Publications T55A and T55AM2* *C.B. Stevens' Photo Collection:* *http://membres.lycos.fr/France40/*

Introduction

The Russian T-55 MBT represents in my opinion the ultimate modeling subject due to the sheer volume of tanks produced and the vast number of users across the globe. The T-55 (and by extension, the T-54) included a large variety of minor sub-variants, engineering vehicles, major upgraded versions and other variants. Faced with the large amount of users and potential camouflage schemes, the modeler's greatest challenge is, "which version and scheme will I do?"

To this end, I decided early to build a reasonably standard version of the T-55, but would concentrate instead on superdetailing the already excellent Tamiya kit and choosing a unique paint scheme. I looked at Eritrean, Northern Alliance (Afghanistan), Rhodesian and other schemes, but in the end decided on a very garish three-colour scheme as used by the Somalian National Army. I was finally able to find a photo of the vehicle I wanted to depict at a Canadian soldier's website that showed a pair of knocked out Somali T-55s under a tree.

Construction

The Tamiya kit out of the box is the definitive T-55 model in 1/35 scale, but like every kit can be improved and refined using a combination of aftermarket parts and scratchbuilding. The goal of this particular build was to superdetail and improve the Tamiya kit and use a variety of paint and weathering techniques. Modellers looking to see how far the T-55 kit can be taken through extreme scratchbuilding and superdetailing are pointed to Nicola Cortese's work in the book Modelling 20: *Modelling the T-55 Main Battle Tank* (December 2005).

Construction of the Tamiya kit begins with the lower hull. Accuracy is very good here (especially compared to the old Esci kit which had major issues with suspension swingarm orientation) and basic construction goes quickly. On the rear plate I filled in areas which I would replace the Tamiya kit parts with Eduard PE parts, specifically the tow hook retainers and unditching beam mounts. I simply used some styrene to fill the holes and then smoothed these out with Tamiya putty.

Overall front RHS view of the finished, unpainted model. Note the use of masking tape to keep the Modelkasten tracks together until final assembly.

Overall rear RHS view of the built model. Note the gray surface of the turret; Gunze Sangyo Mr. Surfacer has been used to create a subtle cast effect.

Overall rear LHS view. Mr. Surfacer has also been used to create a cast texture on the exhaust shield mount area.

Overall front LHS view. In this image you can see the various plastic, copper, etched brass and turned aluminum components used to make the model.

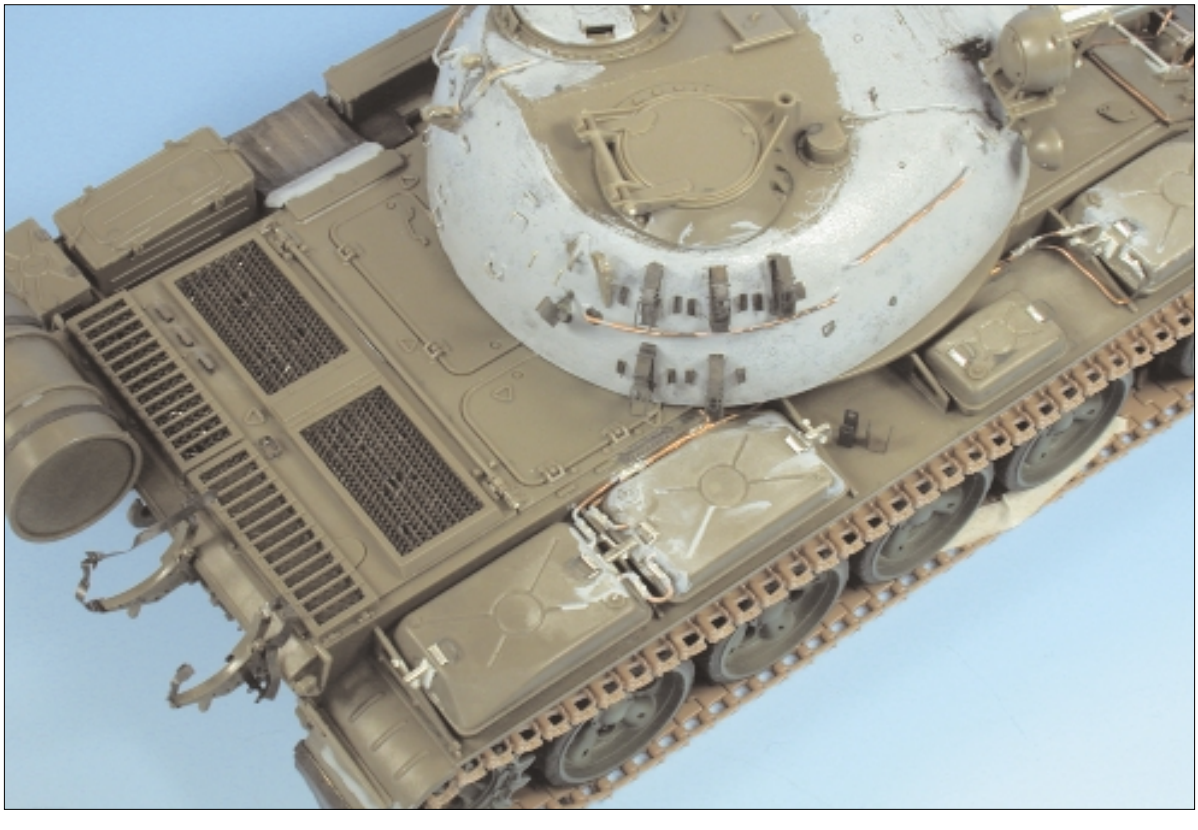
The LHS fender detail. Note the mount where the vehicle identification light has been damaged, as well as the Aber hinge. The torsion bar keeps the (removed) front fender in the “down” position.

This close-up gives a good indication of the work involved in replicating the headlight guard in copper wire. Note also the copper tubing used to replicate the electrical conduit for the headlights and side vehicle ID light.

The kit roadwheels are simply excellent and capture the "starfish" shape perfectly. Because I wanted to depict a vehicle with some battle damage, I decided to use my Dremel tool to damage the rubber portion of the roadwheels.

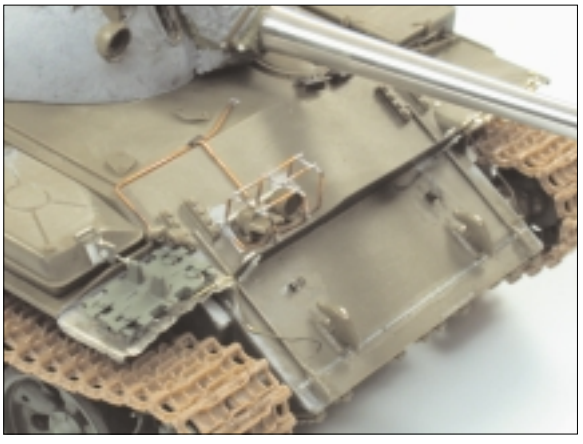
Moving onto the upper hull, I also filled in all the holes where I knew I would be using Eduard brass parts to replace Tamiya plastic parts, as well as the mounting points for the front headlight guard, which I was planning to recreate using brass rod. Seeing as I wanted a certain amount of battle damage on this model, I decided to saw off the front fenders and thin them out from under. The RHS one was sawn off further back because I wanted to rebuild part of the fender using lead foil and bend it all up. I made this part, glued it to the model using CA cement and then blended it into the body with some Gunze Sangyo Mr. Surfacer 1000. Seeing as this was the part of the fender that would hold the spare tracks links, I had to ensure that it was flat on the section where the spare tracks would be. Because the front hinged portion of the fender was missing, I also simulated the hinge being ripped off and drilled holes on the lead foil part.

The LHS front fender was a simpler affair, as I simply thinned it out from the underside and added an Aber brass PE hinge to represent the hinge which held the removed front fender section. Using .010in. brass rod I then added the torsion bars which are used to keep the hinged front fenders under tension. In keeping with the battle damage on the RHS, I twisted and mangled the torsion bar on this side. The front "splash shield" was replaced with the Eduard part along with some styrene braces. The Tamiya headlight parts were used but the headlight guard was made using brass rod. I glued these parts together using CA cement, but if I were to do this again, I would use a soldering technique as CA is simply too risky if you misalign the parts. Luckily it all lined up reasonably well first go. The Tamiya tow lugs were used and then augmented with the



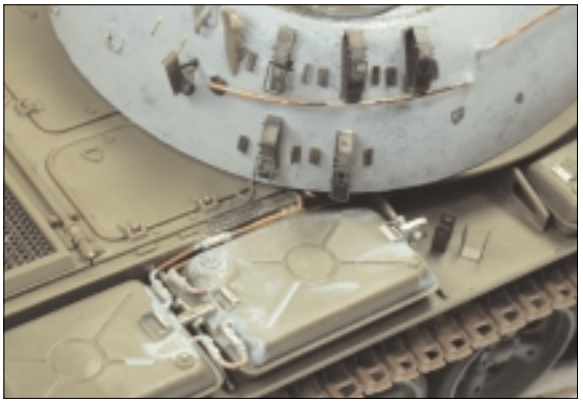
A close-up of the fuel cell plumbing and turret 12.7mm ammo box mounts. The fuel cell plumbing was made from copper wire with lead foil and punched plastic "connectors". The turret ammo box mounts are from the Eduard photo etch set.

This overhead view gives a good idea of the copper wire grab handles and tie downs which were added to the model. Also note the Modelpoint turned brass antenna mount and the shovel made from the Eduard photo etch set and plastic rod.



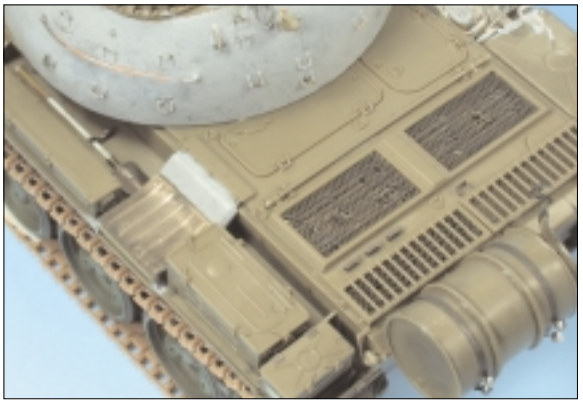
The front headlight guard was assembled from copper wire using CA glue. I would recommend soldering this type of assembly instead to avoid making a mess. Note also the very damaged front fender torsion bar, the scratch-built front fender (lead foil), and the spare track links and mounts.

The front LHS area. Note the weld seam going across the nose of the T-55. This was made using Tamiya putty and masking tape. Note the photo etched driver's periscope guards from the Eduard photo etch set.

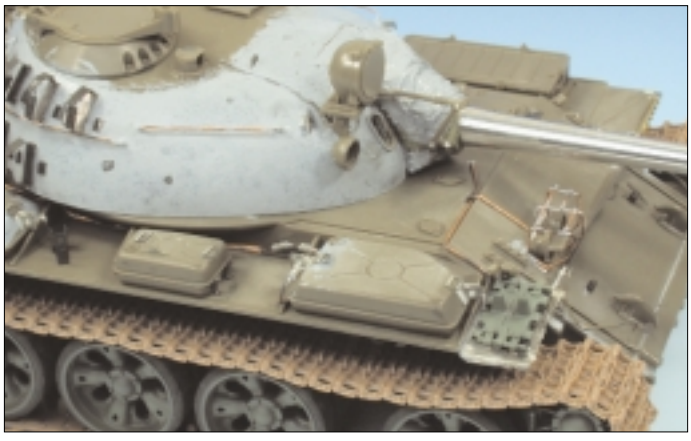


The turret rear RHS. The 12.7mm ammo box mounts are from the Eduard set, as is the MG mount. The small tie downs are from Aber. This image also shows the fuel cell plumbing, and the scratchbuilt fuel cell handles and mounts.

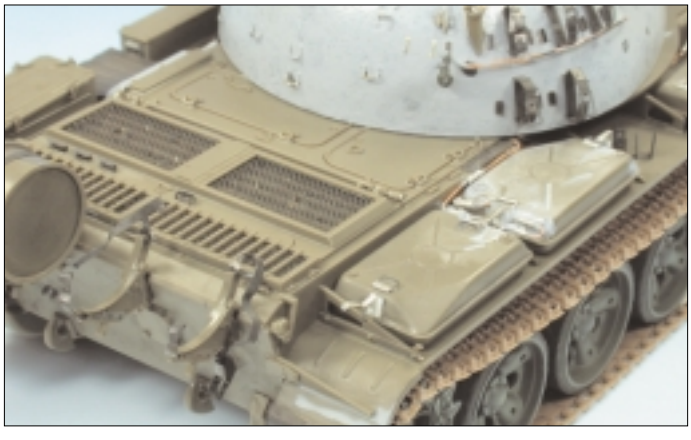
More details of the front fuel cells. Note that the fuel cells are all interconnected via a network of tubing. The tubing runs under the turret race extension. The smaller auxiliary cell features scratchbuilt handles and photo etch mounts from the Eduard set.



Details of the engine deck and turret rear. The Eduard photo etch engine screens have been battle damaged. The RHS fuel drum straps are also heavily damaged. On the LHS, the Eduard exhaust shield has also been given "the treatment" using pliers.



Close-up showing bolt details and wiring added to the turret IR searchlight. The roadwheels have already been pre-painted green. Note the photo etch tow cable mounts on the fender between the auxiliary cell and the rear cells, also from the Eduard etch set.



This image shows the rear plate in detail. Note the heavily damaged fuel cell straps, below which are the mounts for the unditching beam.

The rear mud flaps, hinges, and various tool box mounts are also from the Eduard set. On the turret tie downs, I used Mr. Surfacer to double check for errors and blends the welds a bit. This also unifies the various elements, allowing you to skip the primer stage when painting if desired.

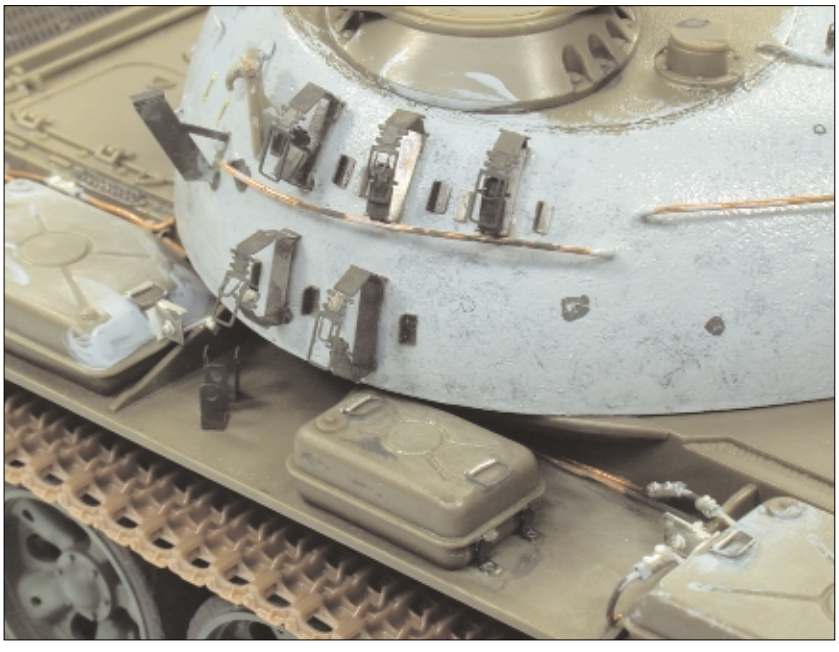
Eduard PE tow shackle clips, with one left just as the base without the moveable section. I also added a weld seam to the front plate using Tamiya putty.

Moving down the LHS of the hull I added various mounting brackets for the stowage boxes provided in the Eduard set, as well as electrical conduits for the vehicle ID lights. Eduard also provides the parts needed to add a shovel on the LHS hull, which Tamiya forgot to include with the kit. I also used the Eduard exhaust heat shield, which I twisted and bent using a set of pliers.

The top of the hull required some brass tubing to represent the electrical conduit protection for the front light array as well as the RHS ID lights. Moving to the rear of the upper hull, the main additions were the Eduard PE engine grilles, which I then damaged with an X-acto knife. Further to the rear, the fuel drum racks were detailed with Eduard straps.

Next I decided to tackle the busiest part of the hull, the fuel cell area on the RHS. After mapping out the piping arrangement using the excellent Rossagraph book, I used copper wire to simulate this. Once mapped out, it's a reasonably easy task. After the fuel lines were all in place, I used lead foil to replicate the hose clamps and topped these off with two bolts from a punch and die set. I removed the molded on grab handles from the fuel cells and replaced them with hand-made versions built from wire. Additionally I added the fuel cell supports located on each side of the cells (on the twin rear cells a larger version appears between the cells). Finally I added the Eduard rear fender mud flaps, after twisting them up with pliers.

Moving to the turret, I began by using the excellent Tamiya mantlet cover and glued the Modelpoint barrel in place. I then made the turret grab handles using copper wire, adding welds using Mr. Surfacer 500. I used the same techniques, albeit with smaller diameter wire, for the various tie downs located all over the turret. The Eduard 12.7mm ammo canister brackets were used, but no ammo canisters added, as I wanted the tank to look a bit sparse in keeping with the "beaten up" appearance I was aiming for. I also added the conduit and its protection tubing for the rear turret ID light. The kit cupolas are excellent, requiring only some casting marks and replacement of the grab handle with a brass wire replica. Wiring was then added for IR lights.



The turret mounted 12.7mm ammo box mounts. I decided to leave the boxes themselves off to add to the derelict and beaten up look of the vehicle.

This close-up shows the protector for the electrical conduit for the turret rear ID light, along with the electrical wire itself. Note the tiny Modelkasten wingnut on the AA machine gun mount. Additionally there are casting numbers on the loader's hatch and a wire grab handle too, which is a marked improvement over the molded Tamiya part. The periscopes later received clear acetate "lenses".

The 12.7mm DShK anti aircraft gun then received some Eduard parts and wiring to finalise the turret detailing.

The final construction step was to assemble the Modelkasten tracks. These are excellent and went together quite quickly. The Modelkastens are such a huge improvement over the kit vinyl tracks that I would say that they are the best investment your can make in improving the kit, dollar for dollar.

Painting and weathering

I began the painting process by priming the model using Tamiya primer. This ties in all the various metal, plastic (and if applicable, resin) parts used to make the model and give a neutral base on which to apply the basecoat. The three-

colour scheme for this model used a typical Russian green, a desert tan colour, and a garish green/yellow colour that resembles the interior of US WWII aircraft. Using my Iwata Custom Micron B airbrush, I began by spraying acrylic paints. I used Tamiya XF-57 Buff as the basecoat. This was followed by Tamiya XF-13 IJA Green, and finally the last camouflage colour, a custom mix of Tamiya XF-5 Green and XF-3 Yellow. The tracks were basecoated with Tamiya German Grey XF-63.

Markings followed next. These were Verlinden "Russian Numbers" dry transfers. Application was done to reflect the haphazard way which the Somalis painted on their vehicle markings. Once the dry transfers were in place I protected them from any further damage with a coat of Gunze Flatt Clear Hxx, and prepared for the wash phase.

Once this base layer was on the model it looked ghastly. Therefore, to tone down these colours, in particular the yellow/green, I used the Custom Micron to post shade the model using a very diluted (90% thinner) mix of Tamiya XF-1 Black and XF-10 Brown. I sprayed this mixture into all recessed areas to create an artificial shading effect. I also sprayed the mix along the camouflage demarcation line to soften the harshness created by the garish colours. Once this was done I used Tamiya XF-1 Black on the exhaust area and the main gun barrel tip.

Once this had dried it was time to begin the wash process. A wash is simply diluted oil paint mixed with thinners and can be used to both add depth to a model and/or modify its base tone. I began by applying a very light wash of raw umber to the model followed by heavily concentrated mixes of this same colour in recessed and near raised detail. I also dabbed on small dots of pure Winsor & Newton Raw Umber and streaked this to simulate rain streaks.

Once these washes had dried, I mixed up a heavily concentrated oil wash of Burnt Sienna to simulate rust that would be evident on such a battle damaged

Overall rear RHS view of the finished model. Note the variance in oxidation between the "regular" fuel drum and the red/yellow "Shell" drum. The fender-mounted fuel cells were given a rusty/oily treatment along with some heavy chipping.

Note the varying degrees of rust streaks on the turret grab handles. I tried to keep the rust inconsistent from handle to handle to give some visual interest and keep things realistic. Note the level of oxidation on the spare track links located on the front fender.

This overhead view shows the front splash shield area, which due to its sheet metal construction would "weep" rust down the front glacis. Note the heavy chipping on the driver's hatch and on the turret numbers; I also "mucked them up" with some post shading using my airbrush.

This view gives a good indication of the rust streaks descending from the turret grab handles as well as the level of oxidation on the sheet metal exhaust shield. The damage on the engine screens is very evident in this view.

Note the variance in paint texture for the gun mantlet cover, which in real life resembles a rubberized canvas, and the accumulation of dust on horizontal panels such as the front fenders and the top of the storage boxes.

This image shows the high degree of chipping, oxidation and "muck" on the front fuel cell. The main gun barrel and the lever for the IR searchlight have also received some major chipping.

This view shows the ugly state of the rear fuel cells. They have been chipped, rusted and then pasteled with dust. The "Shell" fuel drum has also clearly seen better days. Note the chipping on the engine deck, and 12.7mm AA ammo box mounts.

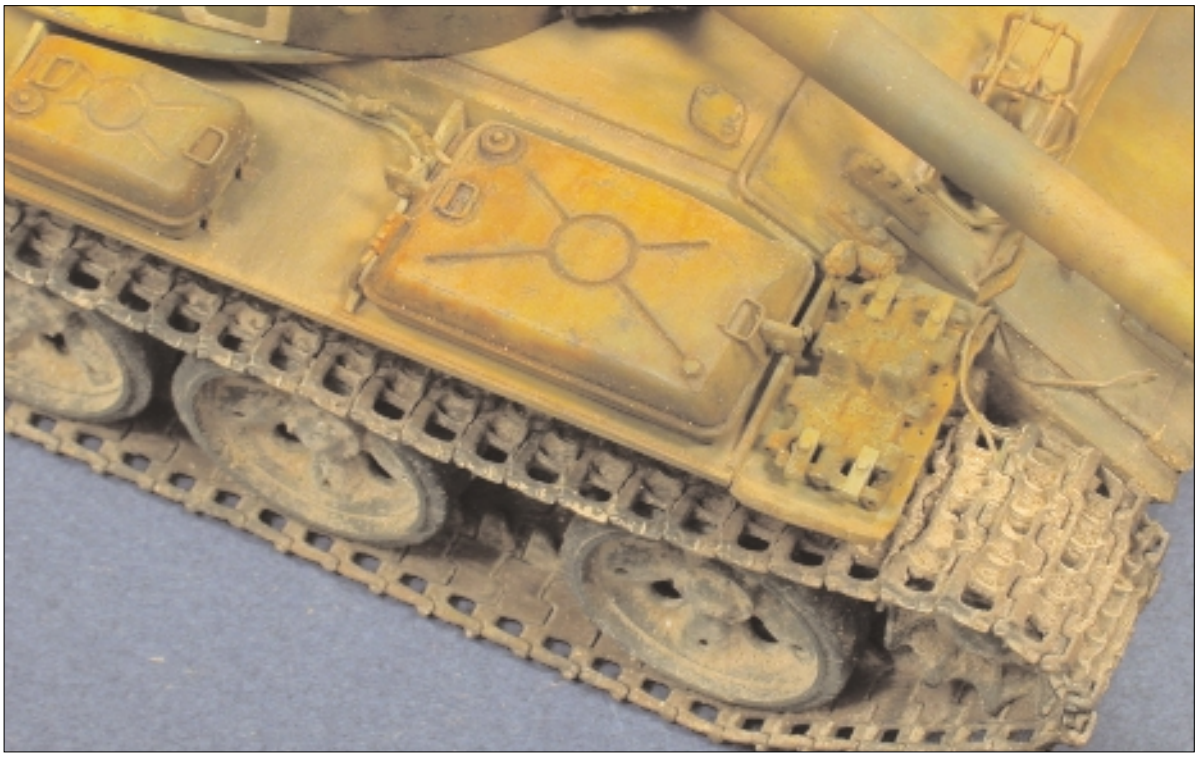
This overhead view of the turret shows the weathering of both turret cupolas to good effect. Also note the haphazard application of the turret numbers and heavy chipping on the turret race extensions.

vehicle. I concentrated on the fuel cells and fuel drums as well as the sheet metal fenders where damage had occurred. The sheet metal exhaust guard also received a liberal dose of this rust wash.

After the washes had dried I started to simulate the chipping that would occur on a battle worn vehicle. For this I used a 6B pencil, which is a very tedious process, but results in a much more scaled effect than using a paint-brush and paint. I paid particularly close attention to hatches and the fuel cells, places which would show greater wear. Although the paintbrush chipping method is effective from longer viewing distances, once under a macro lense it becomes obvious that the chips have rounded edges (real chips have jagged ones). Another chipping method which is highly effective is Nicola Cortese's "sponge technique", although this method takes considerable skill and patience to master (see Osprey Modelling 9: *Modelling the IS Heavy Tank*).

Once chipped, the model was ready for the pastel powder stage. I use Holbein chalk type pastels and grind them into a powder using sandpaper. The tracks were first to get this treatment. To begin the process I coated the tracks with Tamiya acrylic thinner to give the pastels some 'bite'. I let the thinner dry for a few seconds and then applied three different shades of rusty browns to the tracks to impart a diffused look. Once this stage was complete I applied dry pastels in a dusty colour mix to the roadwheels. This same mix was then used along with some darker shades over the complete model.

The exhaust shield, fuel cells and fuel drums were then covered in dry rusty pastel shades. By using the pastels in their dry form and not using any binder (i.e. thinners), you can get a nice surface rust effect while still letting the base colour show through. One fuel drum was painted in Shell Oil colours and then marked using a Tamiya decal from a 1/20-scale McLaren Formula 1 model kit. This fuel drum was also then given the same dry rust pastel treatment.



ABOVE Close-up view showing the pastel weathering of the Modelkasten tracks. This was achieved with several dust/sandy shades. The roadwheels received a similar treatment. Also in this shot, the chipping on the main gun barrel is very evident. Note again the condition of the spare tracks and the front fuel cell.

BELOW Close-up of the rear LHS engine deck showing damage to the engine screens and heavy oxidation of the exhaust shield area. Also note the heavy chipping on the engine deck hatches, which would be opened and closed on a continuous basis. As with other areas of the model, there is dust on the horizontal surfaces.

This view shows the weathering of the tracks to good effect. Note that some of the mud/dust has been sprayed onto the sides of the tank and the towing clevis mount. The storage bins have also been subjected to the chip, rust and dust treatment.

Close-up of the engine exhaust. The damage done to the exhaust shield with a set of pliers is clear. The exhaust has also left some black stains on the storage bins. Also note the damage to the roadwheels made using a Dremel tool and a round dental bit.

Because of the dissimilar metallurgy between the spare tracks and the fuel cells, I made the oxidation levels and tones different in these areas. Note that the rust has "leaked" onto the damaged front fender area.

The rear fuel cell area. Notice how the fuel lines run into the main hull area. I also chipped the turret AA gun ammo box mounts heavily. The small etch screen near the fuel cells is from the Eduard set.

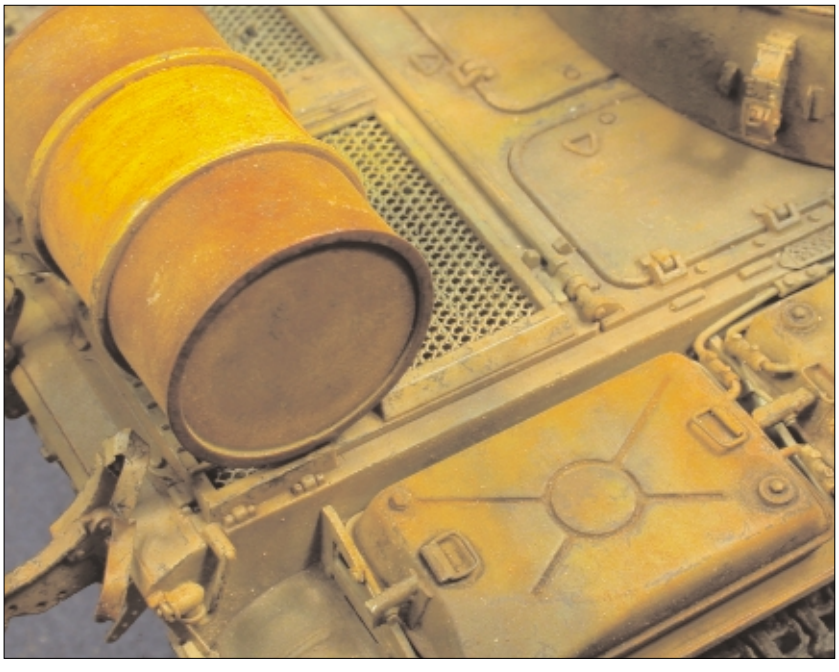
The gun mantlet area. The cast texture from the application of Mr. Surfacer to the turret surface is very evident in this view. I painted the mantlet cover to give it a "greasy" look, in order to accentuate the material used for this part.

The commander's cupola area, and the 12.7mm AA MG. The pencil method used for the chipping produces much more jagged results than paint a brush. I painted the AA MG mount a sand colour to simulate it being taken from another vehicle.

Summary

Overall, a very enjoyable project with a minimum of fuss to build and detail. With a base kit that falls together so simply, the superdetailing work is made that much easier. The only dilemma is deciding which T-55 variant to build next! For some further inspiration, take a look at the excellent work of Nicola Cortese, Sam Dwyer, and Graeme Davidson in Osprey Publishing's Modelling 20: *Modelling the T-55 Main Battle Tank* (December 2005).

A detailed view of the front fuel cell and spare track area.



The "Shell" fuel cell. Note the damage on the fuel cell straps, and the engine deck chipping.

ABOVE Overall view of the front RHS from a lower angle. The weathering looks less extreme than in the close-up images.

BELOW Overall view of the front LHS. The low stance of the T-55 MBT is evident in this shot.

ABOVE Rear RHS view from a lower angle. The rear mudflaps were damaged using pliers, painted black and then dusted up with pastels.

BELOW Rear LHS overall view. The dusty appearance of the running gear is shown to full effect.