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NOV / DEC 2022 • £6.95 UK \$16.99
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VANTAGE POINT

ARON VRBOVSZKI GETS
HIS JUNGLE BOOGIE ON



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AFV Modeller is published Bimonthly by
AFV Modeller Ltd
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East Moor
Stannington
Northumberland
NE61 6ES
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Fax: 01670 820274

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ISSN 2755-2209



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VANTAGE POINT

Aron Vrbovski has a little
Jungle-Boogie in his sights
with AFV Club's M113 ACAV





The M113 armoured personnel carrier was developed by the FMC (Food Machinery Corp.) based on the M59 and M75 armoured personnel carriers from the 1950s. The first prototype M113 was produced in 1957. The US Army adopted the vehicle in 1960. Kaiser Aluminum and Chemical produced the aluminium required for the development of M113.

The main design features of the vehicle include fully enclosed armour made with 5083 aircraft-quality aluminum alloy with most of the other components of the vehicle also made of light alloys. The vehicle is designed to provide safety from small firearms and artillery shell splinters.

The vehicle has had more than 40 variants. The basic variants include the M113A1, M113A2, M113A3 and M113 ACAV. M113A1 was introduced in 1964. It has a 215 hp (160 kW) diesel engine. M113A2 was produced in 1979 and featured cooling and suspension improvements. M113A3 was introduced in 1987 and featured battlefield survival enhancements, a more powerful engine, external fuel tank and better protection than the basic model.

M113 Armored Cavalry Assault Vehicle (ACAV) variant was introduced during the Vietnam War in 1966. It is equipped with additional 7.62mm M60 machine guns along with the M2 .50 cal. machine gun. It is also fitted with additional armour, such as a mine protective kit under the hull.

The Vietnam War was the first combat opportunity for "mechanized" infantry, a technically new type of infantry with its roots in the armoured infantry of World War II, now using the M113 armoured personnel carrier. In addition, armoured cavalry squadrons in Vietnam consisted largely of M113s. The M113s were instrumental in conducting Reconnaissance In Force (RIFs), search and destroy missions, and larger assault.

Building the AFV Club M113 ACAV

For a long time Tamiya's M113 ACAV was the best option to model this vehicle, but in 2017 AFV Club released their own version with new tooling. The parts have very fine details without the need for any upgrades. I was amazed at how fine the moulding is, other manufacturers would maybe look to PE or resin parts but AFV Club have done a great job so I decided to build this M113 out of the box, to see what can be achieved from it without aftermarket parts. The only thing I replaced were the tracks with Friulmodel white metal working tracks. Everything went fine in the beginning, I started with the suspension and the road wheels. The torsion bars are so thin and soft that they actually work as the real ones, a nice feature which helps modelling this vehicle in a diorama. The strangest thing about this kit was the plastic itself. It is far softer than other brands so I quickly realised I would need to take extra care. The main problem I found was the fit of the upper hull panels which needed a little persuasion and sanding here and there.



Apart from this no major fitting problems held me up. The details of the main gun are probably my favourite feature, the M2 0.50 cal. machinegun is one of the best I have ever seen in plastic. There were some different versions of the ACAV; some had additional armour on the front plate and some were fitted with the XM-134 minigun, we get both in the kit as an option. However I decided to go for the more usual classic set-up as a flashback to my childhood when my favorite model kit was the Tamiya M113 ACAV.



Painting and weathering

Examining many period colour photos it is obvious that these vehicles wore a really dark green colour. The first task was to reproduce this special dark green. My biggest inspiration was John Rosengrant's magnificent M48 on his 'Leave no man behind' diorama. Actually the colours are not the same. His M48 is a US Marine vehicle my M113 is belongs to the Army.

My choice was to mix my own colour. I have used Mr Hobby H59 IJN Green and Tamiya XF-18 Medium Blue. But first of all I painted the whole vehicle in aluminum and the gun shields in rust brown because those parts were made from steel. My plan was to use the hairspray technique for the chipping. I used a good quality hairspray straight from the can. After a few minutes of drying I applied the base green colour. I have waited again a few minutes, and than started to chip of the paint with various brushes and warm water. The paint chipped off really nicely so everything was as planned. I left the model for a day or two to dry completely.



For weathering I have used pigments and artist's oils. I don't like to use just raw pigments for many reasons. They do give a very flat look and have some interesting abilities, but without fixing they come off easily and soak-up any thinner or paint from the next layers applied. This may come in handy in some cases but not every time, so I decided to use artist's oil colours first. Earth tones were mixed, buff, red brown, dark brown and green-grey.

These mixed oils were applied as filters and washes building up more and more layers creating areas where they were thicker and almost cover up even the base colour. In addition to these layers, some times pigments were also mixed into the paint or just used diluted, but after pigments came oils again, to fix the pigment layer. No exact recipe on this, the more layers and colour shades we use the more realistic the final look. But something was missing. The base colour was a very dark green, so I used light colours for the dust and dirt. But details still not were as visible as I

wanted. I applied a dark brown pin wash. Because I used oil paints for the weathering I was able to apply the pin wash over these dirt layers, and the details appeared now as I wanted them. I don't like to use varnish at all on my models. I believe if I use the proper paints for the job, there is no need to seal the layers with varnish. Varnish often can alter the colour tones or can just ruin the finish so I don't use them unless absolutely necessary. After dust and pin washes I made some mud splatters from light and dark earth colours to add some variation. Fuel stains and oil splatters were applied heavier around the exhaust, the vents and the fuel cap. On the side of the vehicle the dust layer was scratched horizontally as foliage would scratch the surface continuously. Finally, I used gloss varnish applied by brush on the tracks to give wet look as the M113 just crossed a little stream. For the wet splatter I have also used diluted clear varnish.





The base

First, blue styrofoam was cut to shape making the rough lines of the terrain. It was fixed to the wooden base with white glue.

Then the terrain itself was created from modelling clay. This material air-hardens in about 24 hours. It is very easy to work with. I rolled out sheets from it and covered up the styro foam. It is recommended to use some white PVA glue under it for a better hold.

While the clay is soft it can be shaped easy with water moistened fingers or brush. I have added small stones and the remains of an old temple statue using plaster wall parts and a resin Buddha head.

After the base was covered fully in clay and the material set, I have covered the sides with styrene sheet. Diluted clay was applied to the head with a rough brush in order to create stone texture. An old M113 kit was used to create the track impressions in the clay and to help determine the overall layout. After the clay dries out some cracks may appear, these could come in handy if the environment needs it or easily filled by adding more clay blended with water.



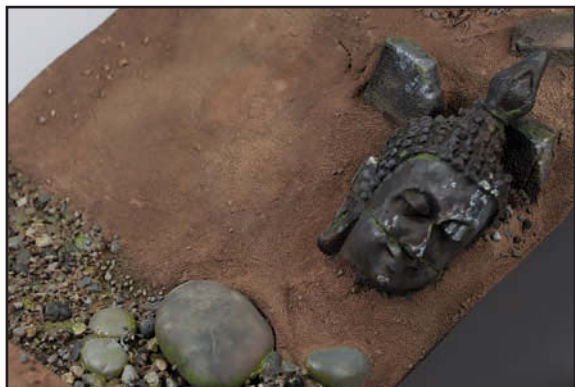


After masking out the sides, Tamiya Flat Earth and Buff was sprayed on using Buff only as highlight on some areas. Stones, rocks and the Buddha head were painted separately with Vallejo acrylics using earth tones. Greens were added to simulate moist areas, and moss in and near the stream's bank. Small natural roots and ground natural leaves were used for the earth foliage, both fixed with PVA glue.

To create the final texture of the terrain sand was added with a small sieve and white glue was used again to fix it. It is also a very controllable method. I recommend to work on smaller areas at a time. Not only sand but small rocks and roots can also be added into the wet glue. Before painting the whole base was primed with black acrylic spray. This tough layer helps to seal the surface before painting, and it also creates a nice black finish to the sides of the diorama. I personally recommend spray can paints because of the smoother, heavier finish and stronger surface.



Hemp was used for the grass. I like it better than artificial material because it's natural strands look more realistic to me, and I can cut it at the desired length to suit. After all the material was glued into place, the whole base was given an oil wash to blend together the foliage and the ground. In this step the ground became a bit more red to get that familiar Vietnam earth tone.





In the final phase the grass was airbrushed green and laser-cut paper jungle plants were used to make the foliage more interesting. These paper plants however need some treatment before use. I recommend to lightly spray them to the desired green and coat them with gloss clear because jungle plants are never matt. The main mass of the foliage was made from Miniature's products.

Figures and accessories

The whole concept of this diorama started with one picture showing an M113 in a very steep position, and on the top of the vehicle there was a crew member standing trying to see further in the distance. I immediately knew that this composition was my aim but with more of an interesting dynamic; Bravo-6 sniper figures popped into my mind as a nice scene.

My idea was that the vehicle stopped and the experienced Special Forces guys try to take out some enemy sniper in the distance. Meanwhile, the crew and the grunts take the opportunity to chill a little. Bravo-6 figures were used, with some minor modifications. The stowage, food and water containers and the radio are from Legend. Some maps and posters were added to make some interesting details. All of them are from the 1968-69 period.





The water was made from clear resin, coloured with Gunze acrylics, on the top Abteilung 502 Acrylic resin was used to create movement. The water was only added after the vehicle was finished and fixed in place.

The masking tape damaged my satin black edging but was easily repainted.







Conclusion

Sometimes inspiration for the whole concept of a diorama is complete in a few minutes and not much changes from concept to completion. These projects are the easier ones because we have a clear picture in our head. This diorama was exactly like that. A clear vision that guided me through the whole build.







2014

BMR 1

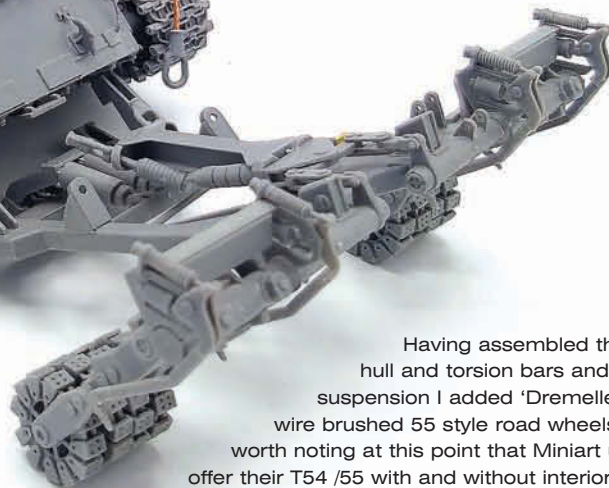
ZACK SEX RETURNS TO ONE
OF HIS FAVOURITE SUBJECTS

Having modelled Miniart's early Afghan BMR 1 mine clearing vehicle I was drawn to building one of the later Ukrainian army variants utilised during the earlier conflict in the east of Ukraine, which started in 2014; a war involving Moscow DNR and LNR proxies and covert Russian deployment in stark contrast to the current attempted invasion.





Miniart has really been working it's way through the list of T54 /55 variants over the last few years. Including in this deluge of types are the SUU 122/54 based series. Of the six types released by Miniart three included mine clearing variants used in Afghanistan by Soviet engineers utilising three types of mine rollers.



These included the KMT 5 / 7 and 9 series as outlined in the earlier KMT 5 based article. Miniart Kit 37043 features solely Ukrainian options in a number of distinctive camouflage finishes including dirty olive drab, a filthy old UN white scheme along with a three colourful which reminded me of a fairly modern NATO brown, green and black scheme. These variants all featured the KMT 9 mine roller.

Before examining painting and pigments it is worth mentioning that the construction phase of this series of models involves a fair amount of extremely detailed work, whether that be finicky etched details or extremely delicate, thin and very breakable wirings, grab handles. You will snap a percentage of these in your fingers as you attempt to delicately cut and sand them, yes some of parts needed to be coated with a drop of watery super glue or replaced with wire grab handles etc. The point however is that Miniart actually gives you everything you need in their kits in the forms comprehensive etch sheets but manageable sized at that, along with the delicate plastic light guard assembly parts and other minor fittings. Even being patient and careful I managed to break, crumble and ping across the room a number of these tiny parts. Having already worked my way through a number of Miniart kits I can honestly state that yes they take time to construct and a little more time to Dremel suitable wear and damage, a Tamiya kit these are not yes you will feel after a few nights that you have been working in a miniature Soviet tank factory in the mid 80s, but that's what we want right ? The end result is worth it I promise.

Having assembled the lower hull and torsion bars and suspension I added 'Dremelled' and wire brushed 55 style road wheels. It is worth noting at this point that Miniart usually offer their T54 /55 with and without interiors and engine for an extra tenner. The BMR 1 variants don't come with interiors which suited me as I had set my mind on building the three mine clearing variants and wasn't pushed on building any with interiors. As I assembled the upper hull I decided to replace the kit's excellent plastic spare tracks with Fruil metal types as these could be treated with Wilder rust fluid, sprayed over and then have the paint removed with air brush cleaner, revealing the natural looking metal tracks. Besides this the only other deviation from the standard assembly was distressing the side skirts and removing the front mud guard sections.





Spray job with Arty...

Upon the completion of construction stage , the final stage being super gluing of fins to the engine deck mesh guards I gave Arturas Skyrus a shout " Bring over the air brush we're ready ta Rock n Roll". Arty is a keen WW2 modeller who served in the Red Army driving MTLBs and 2S1s as dragooned teenager in the late 80s. We normally have at least one or two spraying days a month, which involves priming, camo coating or finishing various batches of models that we are both working on. This approach involves a lot of beer, suitable snacks, a lot of heated debate over mixing colours, application approaches and whether I'm completely over doing the pigments

The first step was blasting some Dark Iron XF - 84 around shadow areas , in around the edges and side skirts , this spray job Arty finished with aplomb but I was chomping at the bit to have a go at the worn and mottled camouflage scheme, starting with an overall green scheme made up of a mixture of XF- 21 Sky and XF-67 NATO Green. Having examined various photos of the real thing in Ukrainian service it was quite noticeable that the overall green paint job was fairly patchy.



I said to Arty give us a go of that, and took the air brush with the greeny mix which I then proceeded to spray on to the model as I saw fit based on images on my laptop in front of me.



Arty threw his eyes to heaven and definitely didn't approve , that's not right , I heard him muttering ...its exactly what we need I argued look at the photos...with the greenery added we stopped for lunch, I wondered would I be flying solo for the rest of the project...





Having unruffled Arty's feathers I graciously shared spraying on the XF-64 Red Brown following the Miniart instructions and real photos. The last patches of camouflage involved thinned down NATO Black XF-69 again in line with the excellent Miniart colour instructions.

After cleaning up and a few more beverages Arty headed for the hills and I took out a range of Wilder pigments including dried mud, dark mud these were applied in various ways either as washes on horizontal areas, or splattered and flicked on to lower sections of the hull and tracked sections. Over this I applied general lamp black oil paint washes and specific black and raw lumber pin washes around hard edges and bolt heads. Next I used a 6B pencil to apply a metal sheen to various hard edges. Finally the whole vehicle was dry brushed with lamp black oil paint, virtually worn off a medium sized Oil paint brush. These effects and finishes were repeated back and forth until I was satisfied with the result. I then applied the same Russian mud pigments to a small rectangular base on which the Ukrainian BMR -1 positioned. The final act was to add a suitable vehicle commander which consisted of a Miniart Egyptian tank commander figure with a Hornet head, a Miniman Soviet tanker's helmet along a pair of Academy goggles.

In conclusion...

I have gotta say I really enjoyed building this kit no end, and never thought I'd see the day when a plastic kit manufacturer would produce a bunch of BMR-1s, not to mention a KMT 9 mine roller (also available as a independent kit, I have seen one photo of a KMT 9 mounted on a T62 M in Afghanistan, for those who fancy a interesting T62 addition). As I write this article Ukraine is vigorously fighting for it's freedom in a series of counter offensives in the Southern Kherson region, six months into this barbaric war inflicted on the Ukrainian people. I am personally reminded of all the fine Ukrainians I met in Kyiv and Lviv in 2016 including tank men who were proud to show me around their T64 BVs, they are regularly in my thoughts as this ghastly war of Vladimir Putin doing plays out the TV and internet. I with many others wish Ukraine victory in life and death struggle for their nation and people.

In contrast the lighter tones of the earlier version of the BMR-1





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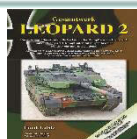


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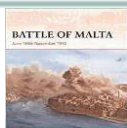
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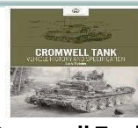
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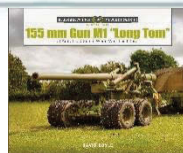
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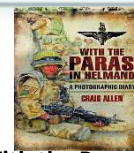
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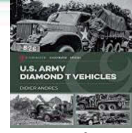
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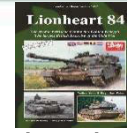
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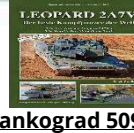
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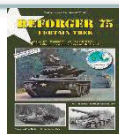
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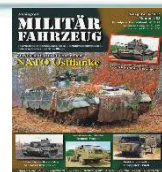
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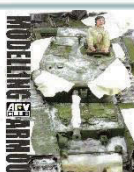
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The rear end of Chieftain Main Battle Tank 03EB61. The Chinese Eye on the turret identifies this as a tank from the 1st Royal Tank Regiment. The black and white convoy marking identifies it as call sign '12' from H Squadron of the regiment.

Photographs by David Parker
Captions by Richard Stickland

HARD



The battered remains of Conqueror Mk 1 Heavy Gun Tank. Most of the fittings from the hull and turret are missing and both are peppered with penetrations from HEAT rounds.

How could we turn down an invitation of a guided tour of our local live-firing range?



The remains of a Czechoslovakian T-54AR "Reka" tank with multiple HEAT round penetrations to the front of the turret and hull. The track guards and other fittings have been almost completely stripped away from years of incoming rounds.

TARGETS



Twenty-three per cent of the rugged Northumberland National Park in North East England is owned by the UK's Ministry of Defence and used as a military training area including live ammunition against hard targets. Otterburn is the UK's largest firing range covering ninety-three square miles and provides training for up to 30,000 personnel every year.

The site was established in 1911 with the National Park established 45 years later, Otterburn is the only place in the UK where MLRS can be fired (requiring 11 miles long and 2 miles wide) and artillery such as the AS-90 are also used for training. For obvious reasons public access in certain areas is restricted so when we received an invite from friend and contributor to AFV, Richard Stickland, to a guided tour to photograph some of the interesting hard targets we were off like a shot!



Chieftain 03EB31 again. The front of the turret and the area of the hull behind the driver's hatch have been upgraded with Stillbrew armour which was only fitted to Mk 10 and Mk 11 tanks. This is the 'bad' side of the tank. It's the side that facing the firing points and has therefore suffered the most damage.

Middle Left: Most of the vehicles have had their engines removed but the TN12 gearbox is still in place in 03EB61.



The track guard on the 'bad' side has progressively disappeared in the face on unremitting attacks.



The empty compartment for the NBC filtration equipment in the rear of the turret. A lot of salvageable equipment is removed before the vehicles are placed on the ranges, sometimes whilst they are on the ranges.





Although 03EB61 entered services as a Mk 2 in August 1967, the presence of the TOGS barrette on the side of the turret on indicates that it finished life as a Mk 11. Non armoured metalwork is susceptible to damage from small arms and fragments.



The barrel of the tank was painted gloss black. Originally this would have been covered with a thermal sleeve. The Infra-red reflecting NATO Green paint quickly loses its colour whilst in service and even more so after years on a gunnery range. The "Chinese Eye" on the turret's Stillbrew armour identify this as a tank from the 1st Royal Tank Regiment. Centre Right: The aluminium smoke discharger is noticeably more eroded from incoming rounds than the adjacent steel

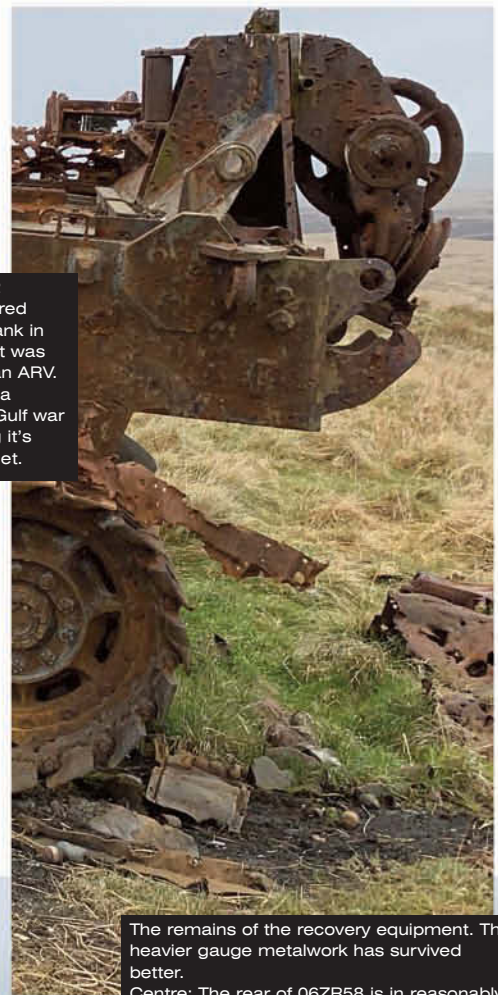


This is the 'good' side of 03EB61 set in the stunning surroundings of the Northumberland countryside. The name 'HERMOSA' was found on the remaining hull side bin.





Centurion ARV Mk2 06ZR58 which entered service as a Gun Tank in November 1947 but was later converted to an ARV. It was deployed as a reserve in the first Gulf war and is now finishing it's days as a hard target.



The remains of the recovery equipment. The heavier gauge metalwork has survived better.

Centre: The rear of 06ZR58 is in reasonably good condition, but the track pads have been completely burnt off the 'Hush Puppy' tracks on the 'bad' side. The 'bad' side is devoid of most fittings and completely rusted. The lighter orange rust indicates areas of most recent impacts. Armoured steel slabs that have been cut from warships have been used to prolong the life of the target.





An Alvis Saladin Mk 2 Armoured Car on the top of a hill. Some traces of the original paint remain in spite of the exposure to incoming fire and the harsh weather conditions. Four of the six wheels were retained to enable the target to be moved around but it is slowly being absorbed into the landscape now.

Centre Left: The aluminium cooling fans stand in stark contrast to the surrounding rusted steel. This is where good research pays off. I have seen numerous beautifully made models of tanks spoiled with 'rusty' aluminium

The front of the Saladin traces of sand and green paint indicate possible former service in Cyprus. The yellow '9' would have been painted on the range to help identify the target.

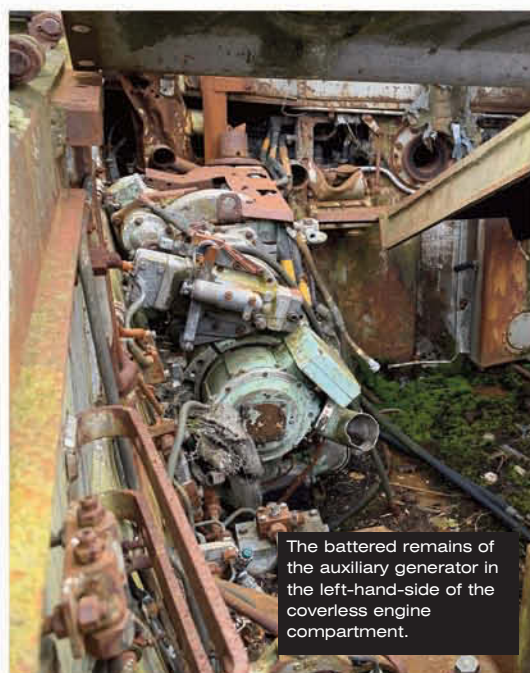
Chieftain Mk 11 Main Battle Tank
11FD39. Heavily weathered and stripped
of useful bins and fitting but otherwise
reasonably intact.





As with the previous Chieftain the barrel is painted in gloss black, albeit heavily weathered. The remainder is painted in NATO green and black with plenty of rust showing through and algae growing on the North facing side. The convoy marking indicates a 'D' Squadron tank and the blue on the TUAAM box on the turret are the remains of a D Squadron, 1st Royal Tank Regiment marking.

The penetration hole from a HEAT round in the Stillbrew armour is surrounded by rusted steel where the heat of the detonating round has burnt off the paintwork.



The battered remains of the auxiliary generator in the left-hand-side of the coverless engine compartment.



Detail showing the transition of painted to rusted metalwork, faded paint and algae. The remains of the name 'DINNAKEN' on a hull bin verifies that this is a D Squadron, 1st Royal Tank Regiment tank

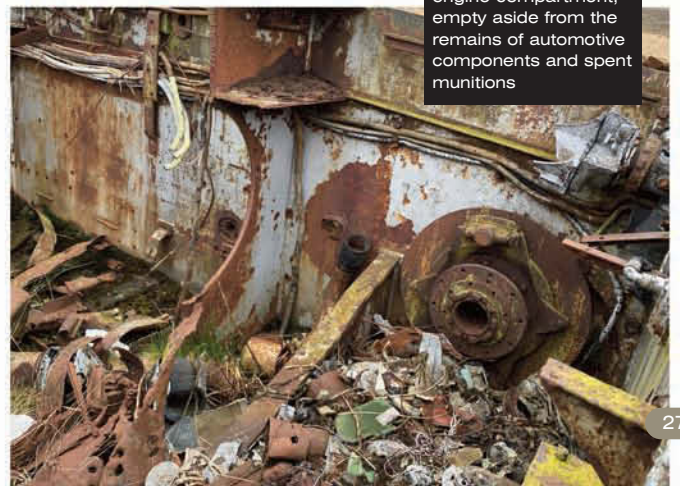




The rear of the tank showing white paint applied over the already rusting hull and bleached with further rust stains

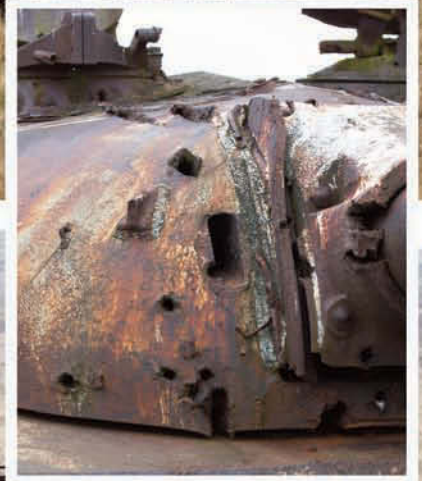


The inside of the engine compartment, empty aside from the remains of automotive components and spent munitions





Cold War foes share the same fate. This is one of two Czechoslovakian T-54AR "Reka" medium tanks on the Otterburn ranges. How they came to be there isn't clear.



The front of this tank was facing the firing position and has suffered significantly more damage as a result. The white paint and bogus marking were applied whilst it was on the ranges.

Detail of the front of the turret showing penetrations and severe weathering
Bottom: This side shows a reasonably well balanced mix of original paint, range paint and various stages of rust. The tones complement the surrounding landscape.





The rear of the same T-54AR. Although there are fewer penetration holes on this elevation internal fires have burnt the paint off of the thin armour.



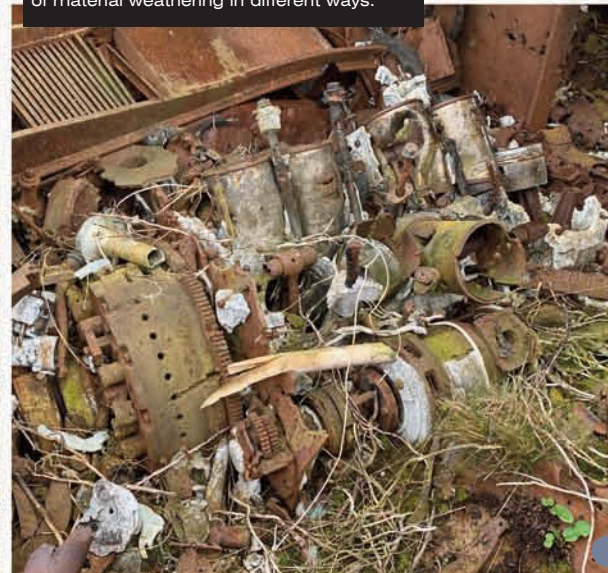
The engine covers show the upgrades to the original tank to enable it to deep ford rivers and hence the name "Reka" which translates to "River"



A Conqueror Mk1 Heavy Gun Tank devoid of almost all of its running gear and laying belly down on the peaty soil. The rear turret basket has been mangled from years of attacks. The engine compartment is full of all sorts of debris including the jumbled remains of the gearbox. The tank is one of the few features in the bleak landscape and as such has been made the home of a bird of prey who has nested on the commander's cupola. This is an indication of how seldom this particular target is used.

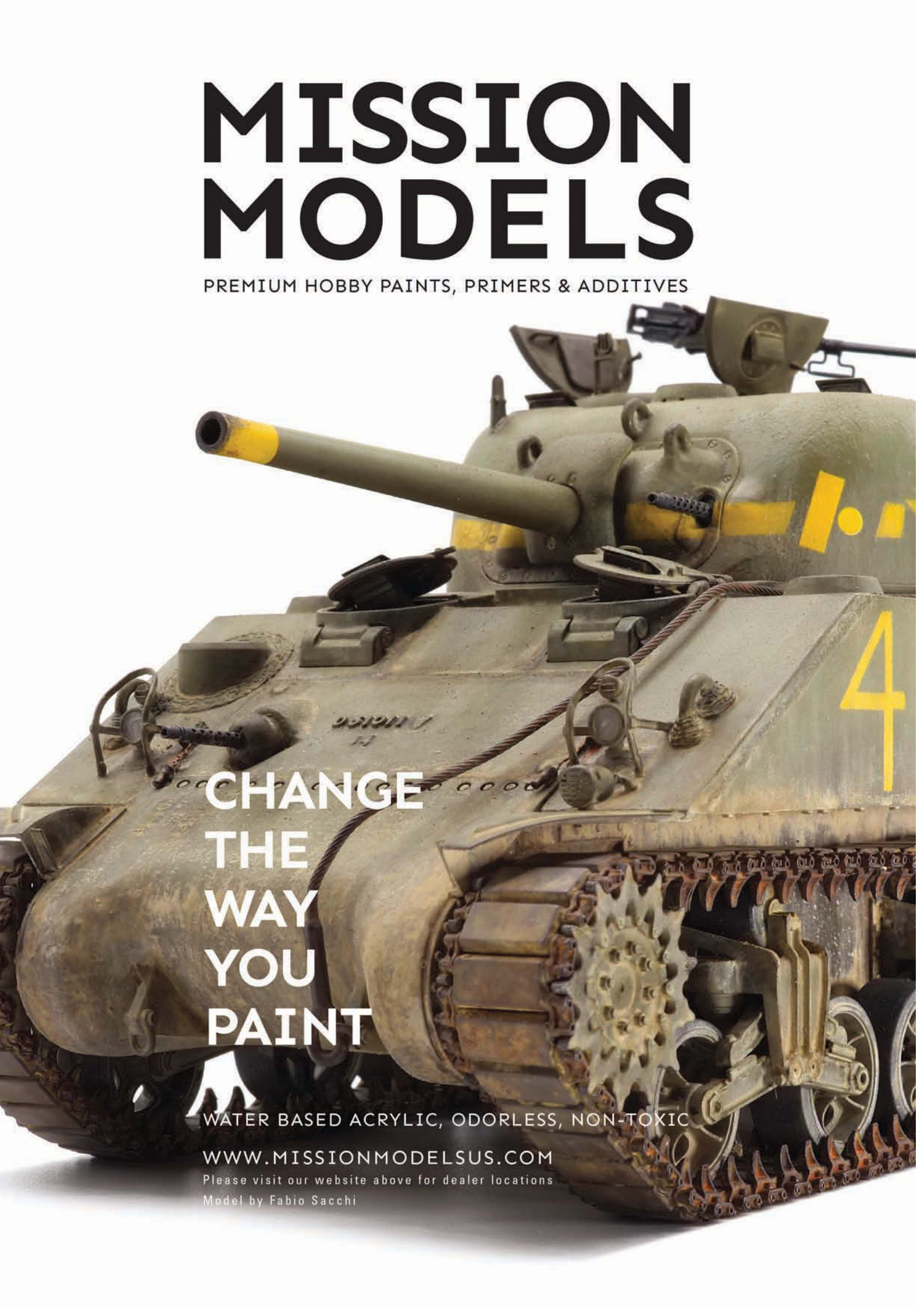


the remains of the engine with various types of material weathering in different ways.



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Model by Fabio Sacchi

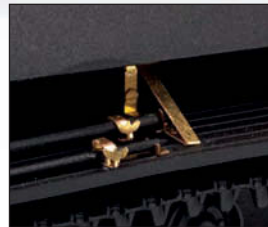
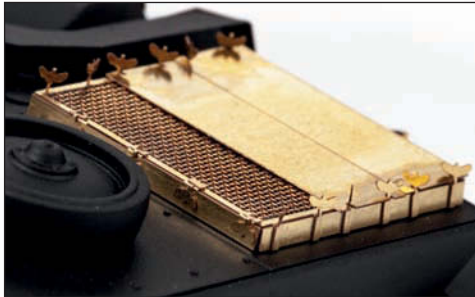
BEST BRASS AROUND

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T-70B

1/35 Zvezda

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BT-2

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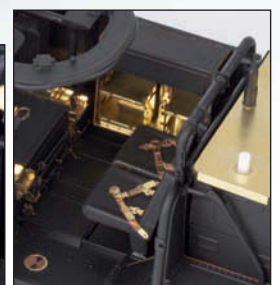
Cat. No. 36490



Coyote TSV

1/35 Hobby Boss

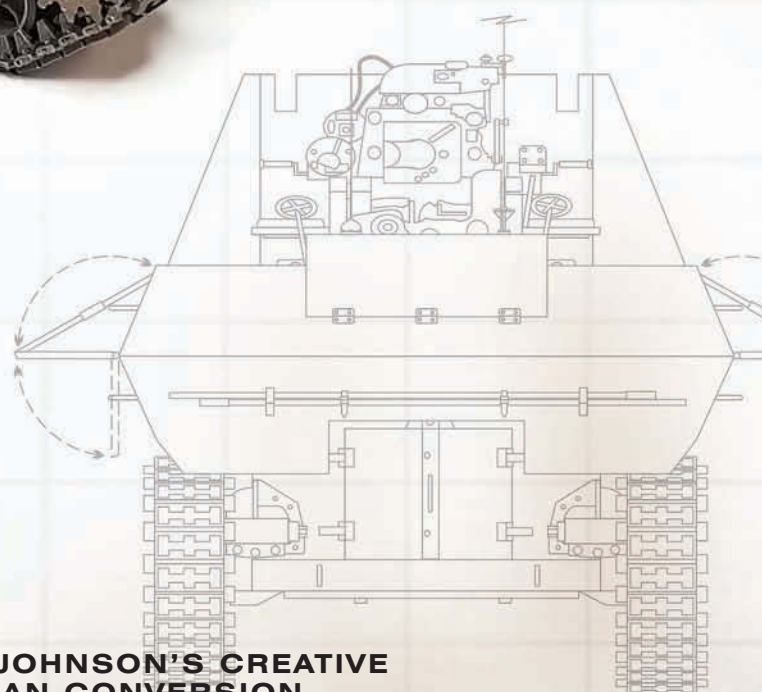
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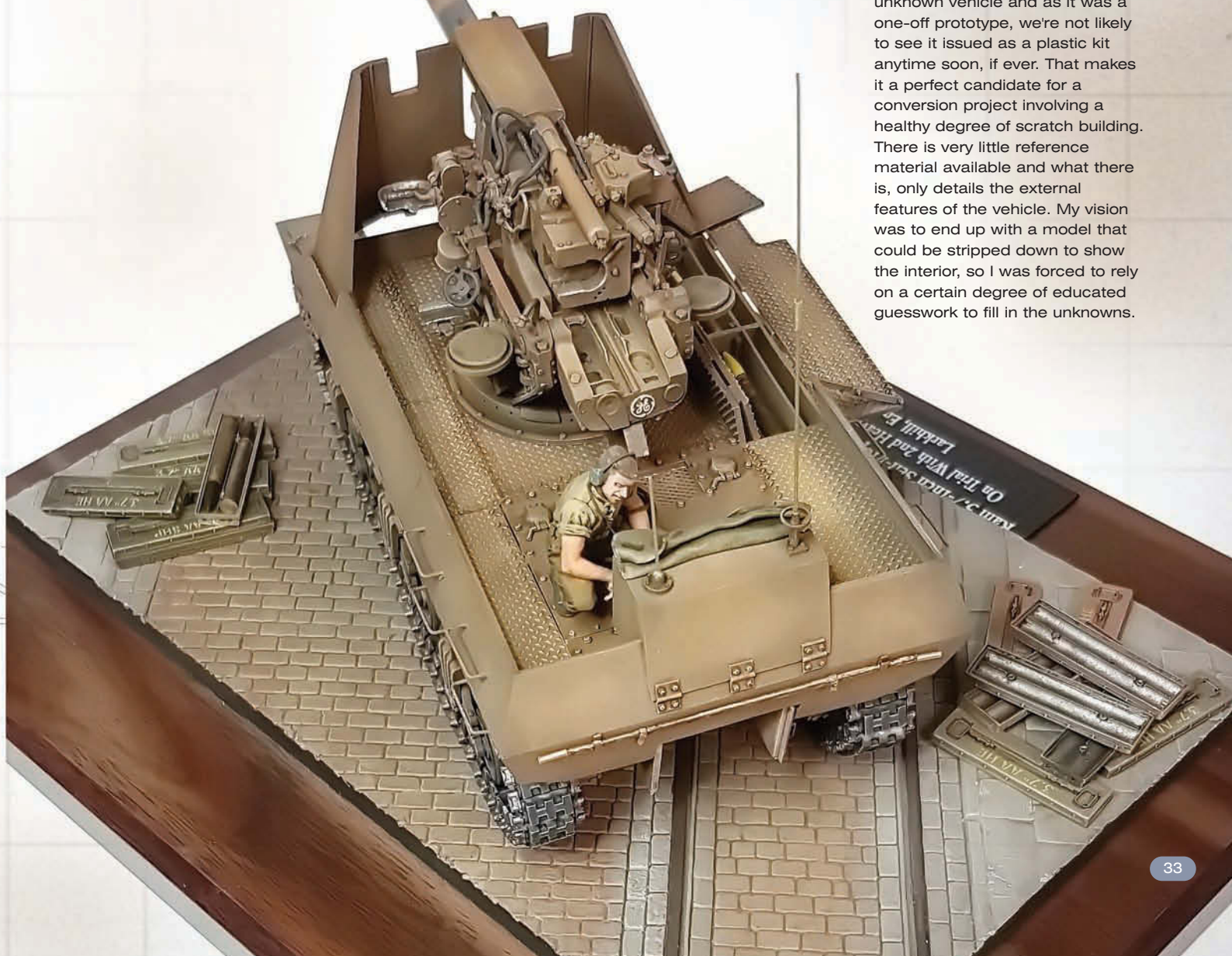
BIG BANG BANG





The Ram QF 3.7-inch Anti-Aircraft, Self-Propelled Gun

is a relatively unknown vehicle and as it was a one-off prototype, we're not likely to see it issued as a plastic kit anytime soon, if ever. That makes it a perfect candidate for a conversion project involving a healthy degree of scratch building. There is very little reference material available and what there is, only details the external features of the vehicle. My vision was to end up with a model that could be stripped down to show the interior, so I was forced to rely on a certain degree of educated guesswork to fill in the unknowns.

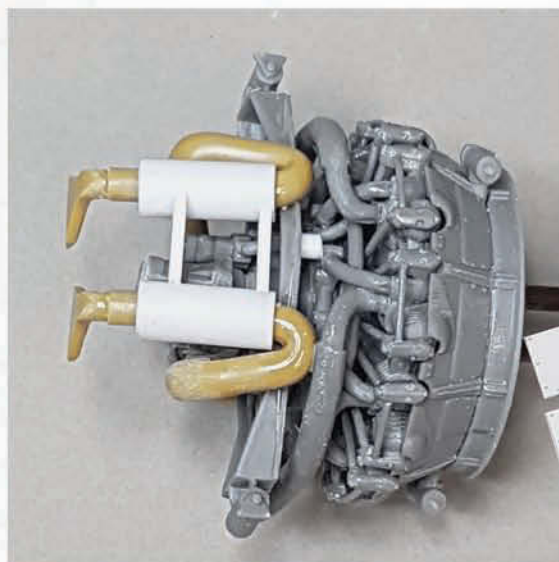


In May, 1942, the Canadian Army Overseas identified a requirement for a long range, self-propelled, heavy anti-tank platform based on existing components produced in Canada. A Ram tank chassis mounting a British QF 3.7-inch Heavy Anti-Aircraft Gun was quickly identified as fulfilling the main requirements of the design. With the inclusion of the 3.7-inch gun though, the proposal changed direction into a self-propelled anti-aircraft platform first, which could also be employed in an anti-tank role.

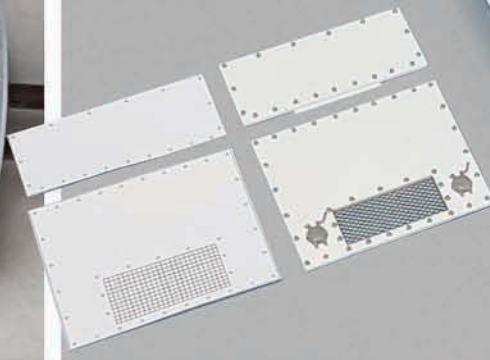
Montreal Locomotive Works modified a Ram chassis for the project in July, 1942 and it was shipped to General Electric Company in Peterborough, Ontario. Known at the time as Genelco, it produced the British QF 3.7-inch Heavy Anti-Aircraft gun under licence. Genelco modified the gun and its platform and mounted it on top of the Ram chassis. After initial testing and modification, Genelco also designed and produced a wooden mockup hull. The vehicle was sent back to Montreal Locomotive Works which undertook to manufacture the actual armoured body. In its final form, the Ram 3.7-inch SP incorporated drop down front and side panels to provide an expanded platform area for the gun detachment when firing the gun. Forty rounds of 3.7-inch ammunition was stowed; sixteen in ready round lockers and the remaining twenty-four in ammunition lockers on the chassis floor.

For communication requirements, a No.19 wireless set was mounted in an armoured box in the rear plate of the hull. While admittedly an inefficient location, there was really nowhere else to put it.

The lone prototype was shipped to the United Kingdom in November, 1942 where it underwent trials with 2nd Heavy Anti-Aircraft Regiment, RCA. While it exhibited good mobility over rough terrain, could fire on the move, and was able to be brought into and out of action quickly. However the design faults outweighed the positives. Internal ammunition storage was difficult to access, and because of space constraints, the gun detachment found that serving the gun was much less efficient than with the towed version. Furthermore, in the anti-aircraft role, the raised side panels interfered with both ammunition handling and the gun's traverse. In the anti-tank role, the vertical volute suspension proved inadequate in absorbing the gun's recoil, the armour protection was inadequate, and digging in the vehicle was made much more difficult due to an excessively high silhouette. In June 1943, the project was terminated with the 3.7-inch gun being returned to its original towed configuration, while the Ram was repurposed as an experimental towing vehicle.



The hull of the model is all roughed in with 1 mm sheet plastic. Paper templates make it easy to transfer bolt head locations to plastic parts by simply poking the tip of a sharp #11 blade through each one, into the plastic part below.



The Wright Continental R975/C1 was equipped with a fishtail exhaust system so I had to adapt the existing MiniArt engine by using the fishtail parts from a Tasca Sherman II 'Direct Vision' kit. I also used sprue runners from that kit which I heated and bent into shape for the exhaust

Construction Begins

As the first step in the project, employing the limited information I had on hand, I made line drawings of the vehicle using a computer assisted drawing program. To get started, I had one straight-on side view photograph that I could scale to a 1:35 scale Ram suspension I had previously drawn for another project. Once that was done, I could use the photo as a guide to laying out the rest of the vehicle.

I chose MiniArt's Grant Mk. I with interior as my starting point for the project, as it has an engine, interior parts to pick and choose from, and I already had the kit on hand. I began by leveling the tops of the chassis sides to provide a flat topped engine compartment. As the Ram SP had fishtail exhausts and external round air cleaners, I used the rear chassis plate from Tasca's Sherman II (Direct Vision) kit as it has the requisite details. I re-routed the exhaust on the MiniArt engine to line up with the fishtail exhausts, which were also taken from the Tasca kit. I snipped off two lengths of sprue runners for the exhaust pipes and heated and bent them to shape. In laying out the basics of the upper hull, I began by making the sponson floor plates, the fender stowage lockers, and configuring the rear end. I used 1 mm (40 thou) sheet plastic throughout the hull construction process.

Not being a CAD user, or set up do 3D printing, I still do everything the old fashioned way with a knife, ruler, and styrene. I find my computer assisted drawing program handy when laying out parts that have rivets and bolt heads. In this instance, I drew the engine compartment access plates, printed and cut them out of paper,

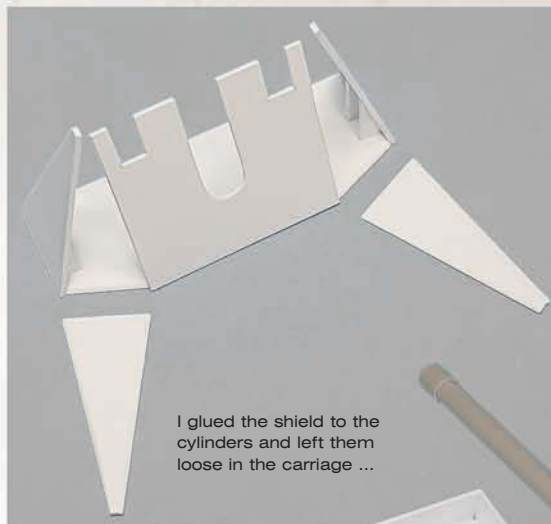
and used them as templates to make the sheet plastic parts. To mark the bolt pattern, I poked a sharp #11 blade tip through each bolt head on the template into the plastic, to mark their placement.

It seemed to me that as the gun detachment would be moving around the deck of the hull in boots shod with heel and toe irons, tread plate flooring would be a logical choice to prevent slipping. I used a diamond plate pattern for the high traffic areas around the gun and on the floor of the chassis. I came to regret that decision somewhat as the 1 mm tread plate sheet I bought on eBay is the most brittle styrene I've ever had the misfortune to deal with. Scoring and snapping it my usual way either resulted in ragged edges or the sheet shattering along the scored line so I was forced to score it almost completely through for each and every cut. However, after painting it, I like the patterned effect so it was worth the aggravation.

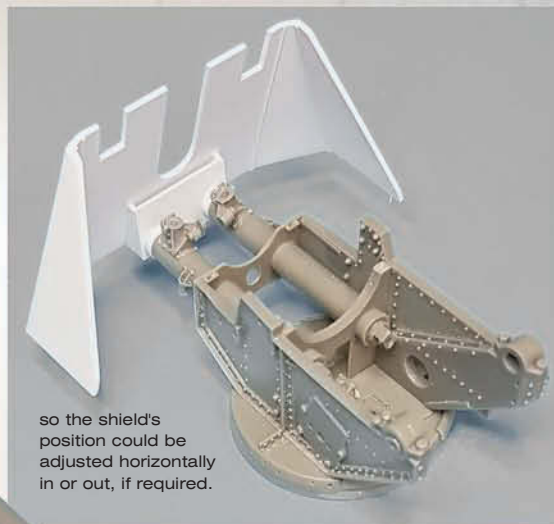
Early on in the project, I decided to show off the unique features of the vehicle and towards that end, I lowered the right side drop panel, and opened up the ready round and fender stowage lockers. With no references to assist me, I made simple ready round racks from square plastic rod. The rounds themselves are supplied in the Accurate Armour QF 3.7-inch gun kit. I filled the fender stowage locker with a generic piece of Value Gear stowage. By leaving the left side panel in its raised position and the lockers closed, the viewer is able to see the SP in both travelling and firing configurations.

To construct the gun shield, I measured and cut out a template for its base and added angular supports for the gun shield parts. Once the shield was cemented together around the base, I soaked the template and supports with Tamiya cement and removed them.

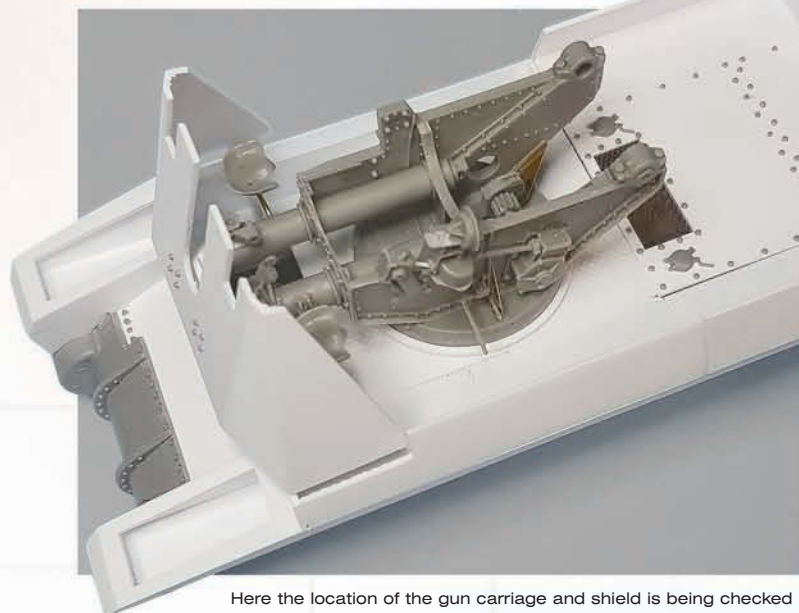
I had no idea how the gun shield was actually mounted on the gun carriage but the spring cylinders proved to be perfect for my purposes.



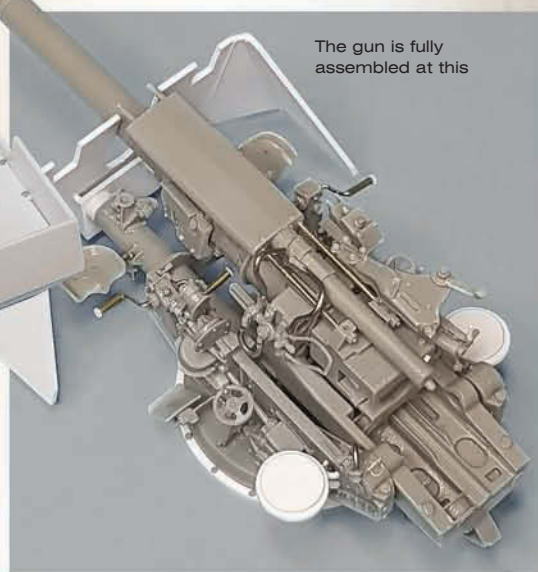
I glued the shield to the cylinders and left them loose in the carriage ...



so the shield's position could be adjusted horizontally in or out, if required.



Here the location of the gun carriage and shield is being checked in relation to the front and side panels, and the engine compartment covers. Everything fit together as I hoped it would.



The gun is fully assembled at this

I replaced the resin elevation and traverse cranks with ones made from brass wire and hollow brass tubing. I also added the two additional gun layer's seats and controls. Lastly, I made a collar to go around the base which I also used to level the gun shield in relation to the drop down side panels.

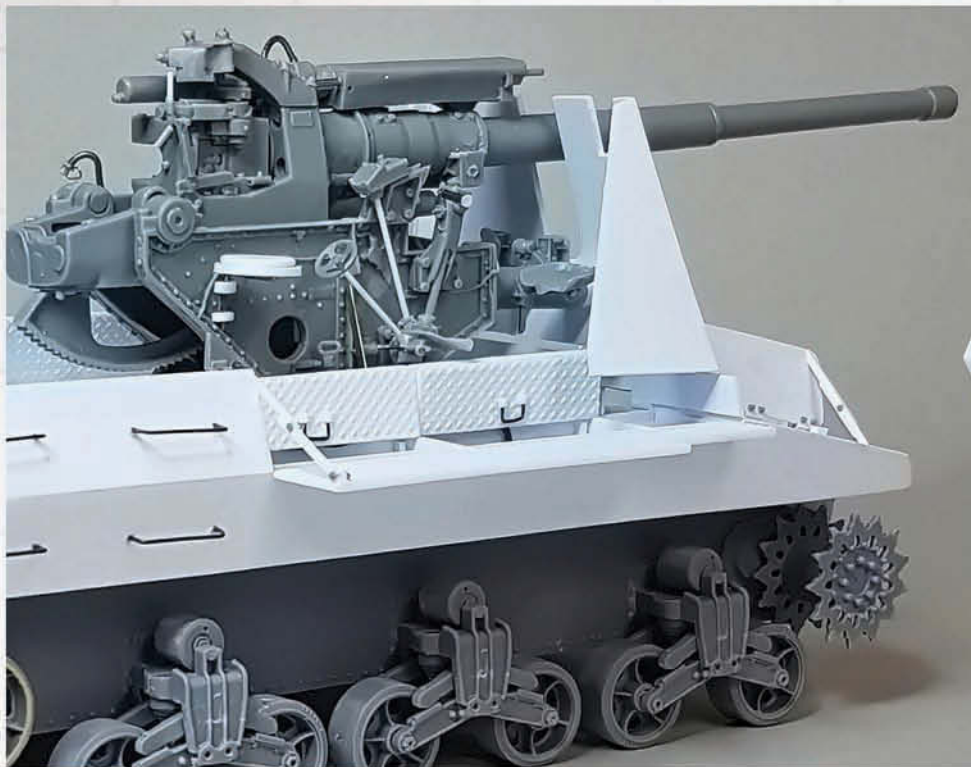
One of the design features that had me scratching my head was the No.19 wireless set mounted in an armoured box over top of the engine deck. The fact soon became apparent that there's really nowhere else to put it as the ammunition stored in the hull, and the necessity to be able to handle it, precluded the set from being located there. There is a hinged flap on the outside of the box which indicates to me that the set could be operated from the ground, but when operated from the vehicle itself, the operator was forced to squat, sit, or lay down. Ultracast has a squatting Commonwealth soldier in their line which is perfect to illustrate the shortcomings of this wireless location. To make the figure look like a Signaller on radio watch, I added simple headphones, a handheld microphone, cords made from lead line, and a helmet slung over his arm. The No.19 set is a Panzer Art item to which I added a protective guard made from copper wire. The two antenna bases came from the Tasca kit and I used plastic rod for the aerials. The 'B' aerial came in four foot length sections, so I used a short length of hollow brass tubing to depict the joint between the two rods.

Years ago, I picked up a wire bending tool called the 'Bendicator'. While it's awkward to use, it's handy when making multiple, same sized grab handles. I used the tool to form brass rods into the eight grab handles located on the rear sides of the hull. As the inside surfaces of the hull are visible, I drilled blind holes in which to set the handles so their ends wouldn't show. Sinking the legs of the handles into the plastic also served to strengthen the joint when they were glued in place.

Before going too far in constructing the Ram SP hull, it was necessary to assemble the Accurate Armour QF 3.7-inch Gun carriage, together with a scratch built gun shield. This was so I could determine the location of the gun on the vehicle's deck, and for the dimensions of the cutouts in the drop panels. The cutouts

permitted the unobstructed traversing of the gun. As a resin model, the QF 3.7-inch gun is well cast, but as with most resin kits, care must be taken during its assembly as the instructions are basic at best. To make the gun shield, I used my reference photos to determine its approximate height and shape and drew it on my computer. I then cut out a plastic template of the base and assembled the shield sections around it at their proper angles. Once the shield was together, I removed the template. I had no idea how the shield attached to the carriage but the spring cylinders protruding from the carriage were perfect for the job. There were two additional seats, together with hand wheel controls on the carriage, so I added those, as my reference photos show both forward and rear seats in use by the gun layers. I also added a collar cut from 1 mm sheet plastic around the base of the carriage and detailed it with Meng bolt heads. The collar was critical in hiding the up and down micro adjustments of the gun's base to level the gun shield with the side panel cutouts.

In one reference photo I could just barely make out an engine crank stowed on the glacis plate and in another, there was a folded gun crutch. A set of gun cleaning rods appeared on the rear of the hull in yet another photo. As I worked my way through the project it was obvious that the Ram SP went through a considerable number of detail changes during its short trial period! Always recognizing that the more detail a modeller can add to a model is the best approach, I made the crank out of a length of brass rod and some hollow brass tubing. I crimped the business end to add extra detail and added a plastic hand stop at the handle end. I made the gun crutch from plastic tubing and detailed its plastic brackets with Meng nuts and bolts. The cleaning rods were made with plastic rods and hollow brass tubing. I used masking tape with photo-etch buckles for the straps.



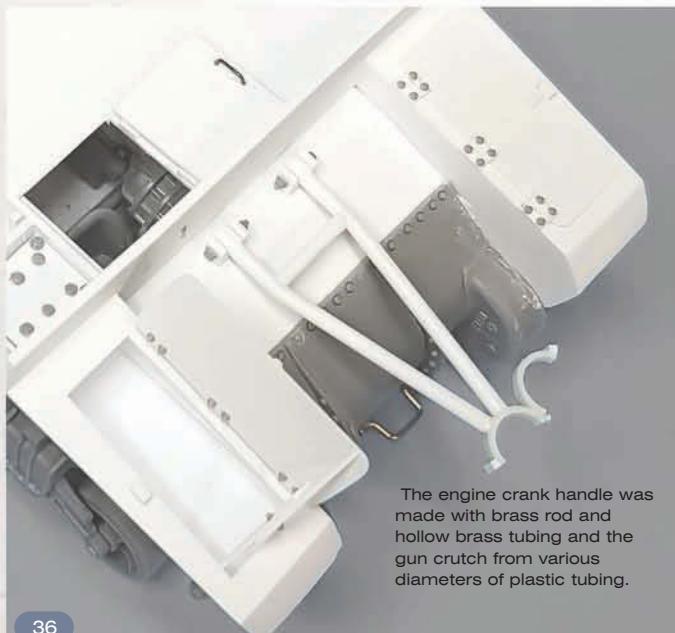
In regards to the interior of the Ram SP's chassis, I knew that there was a pedestal for the QF 3.7-inch gun and storage for some of the 3.7-inch ammunition. As the gun assembly weighed at least eight tons, its pedestal mount must have been a robust one. Just to complicate matters, it had to straddle the driveshaft tunnel and still leave room for the ammunition stowage. With no references to assist me, I made mine out of plastic 'H' beam. It seemed like a logical choice, and one that the engineers in the original conversion project might have employed when faced with a restricted timeline to complete the conversion. The ready round lockers in the sponsons hold sixteen 3.7-inch rounds, so that left twenty-four more, somehow stowed in the interior. To address that requirement, I made two storage lockers that fit on either side of the driveshaft tunnel, and they don't interfere with the pedestal. Ammunition handling under the deck of this vehicle must have been an awkward and tiring job!

The MiniArt kit includes a set of individual link WE210 rubber 'I' block tracks but there are five parts per track block. That's more frustration and monotony than I care to subject myself to, so I substituted a set of RHPS (Now Panda Plastics) individual link tracks instead. There is no appreciable difference in dimensions or quality between the two sets, and the RHPS set is much quicker

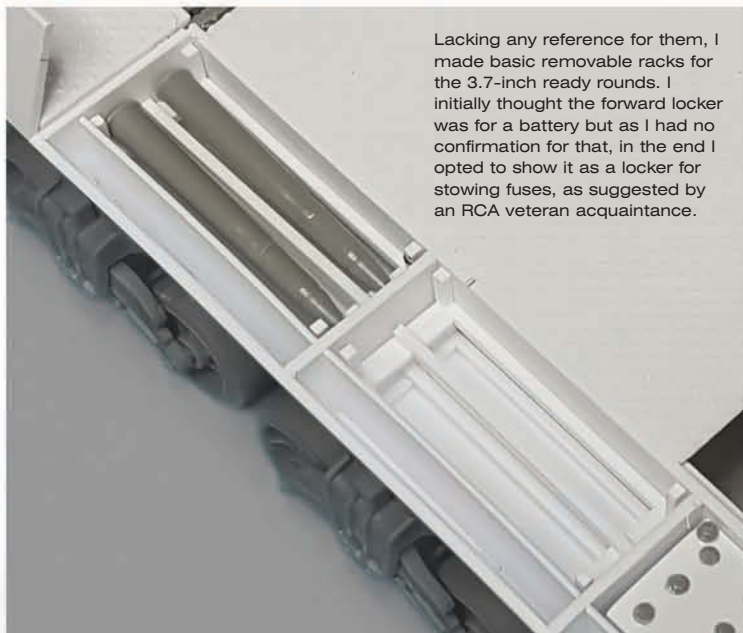
and enjoyable to assemble. By placing a drop of white glue on each end connector stud, the end connectors don't fall off and the track runs remain fully workable.

Off To The Paint Booth

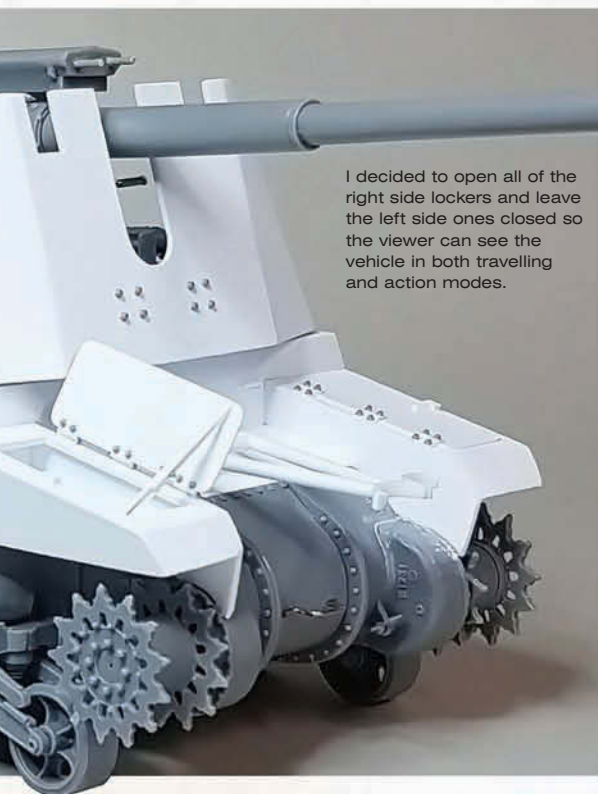
I primed the model with Mr. Surfacer 1500 Black which also served as a black base. I generally employ a colour modulation approach in my painting and I followed suit in this project also. There is always controversy in the modelling community about correct colour shades but I never worry too much about that as the weathering process always alters what you start out with. It's the final result that matters, so I just try to ensure that I'm 'close' with the base colour. In this instance, as the Ram SP was built in July 1942, I began with a base coat of AK Real Colors S.C.C.2 Brown thinned with Mr. Color Leveling Thinner. I misted it on to build up the colour slowly, while ensuring that the black base wasn't overwhelmed. Lightening the base shade progressively with Tamiya Deck Tan, I misted on repetitive coats, highlighting panels and raised surfaces to provide depth to the finish. Following the base coat, I did almost all of the detail painting with Vallejo acrylics. Once satisfied with my colour scheme, I sealed the model with Vallejo Acrylic Premium Gloss, preparatory to adding the



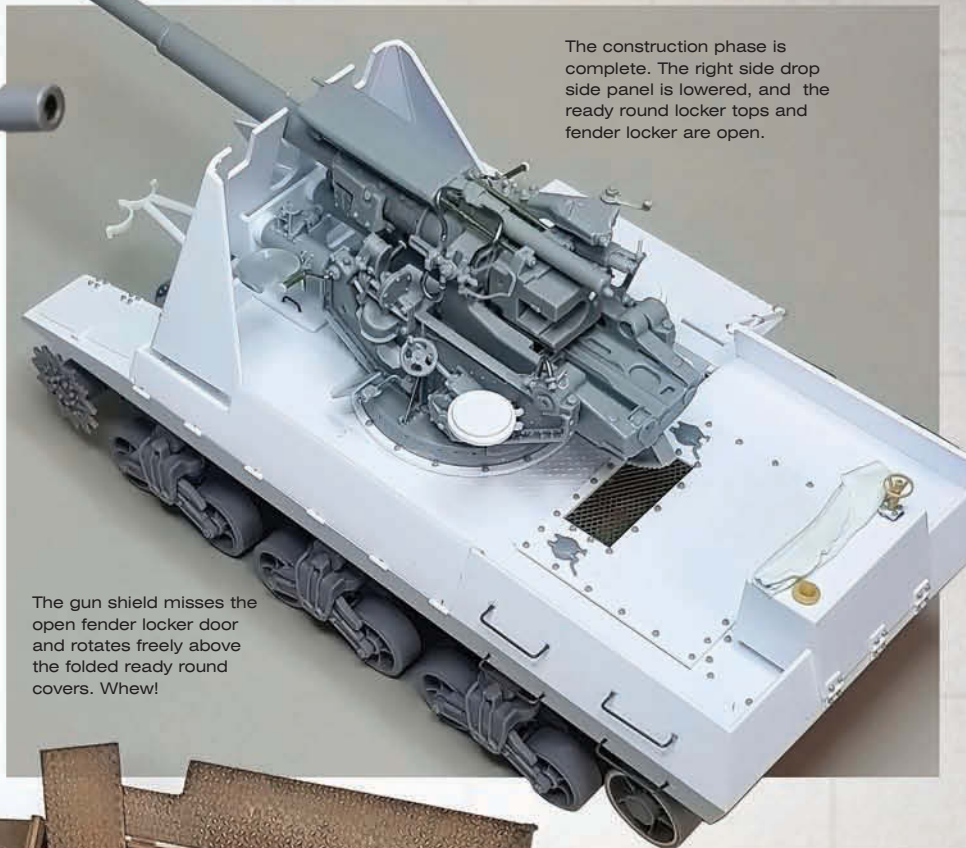
The engine crank handle was made with brass rod and hollow brass tubing and the gun crutch from various diameters of plastic tubing.



Lacking any reference for them, I made basic removable racks for the 3.7-inch ready rounds. I initially thought the forward locker was for a battery but as I had no confirmation for that, in the end I opted to show it as a locker for stowing fuses, as suggested by an RCA veteran acquaintance.



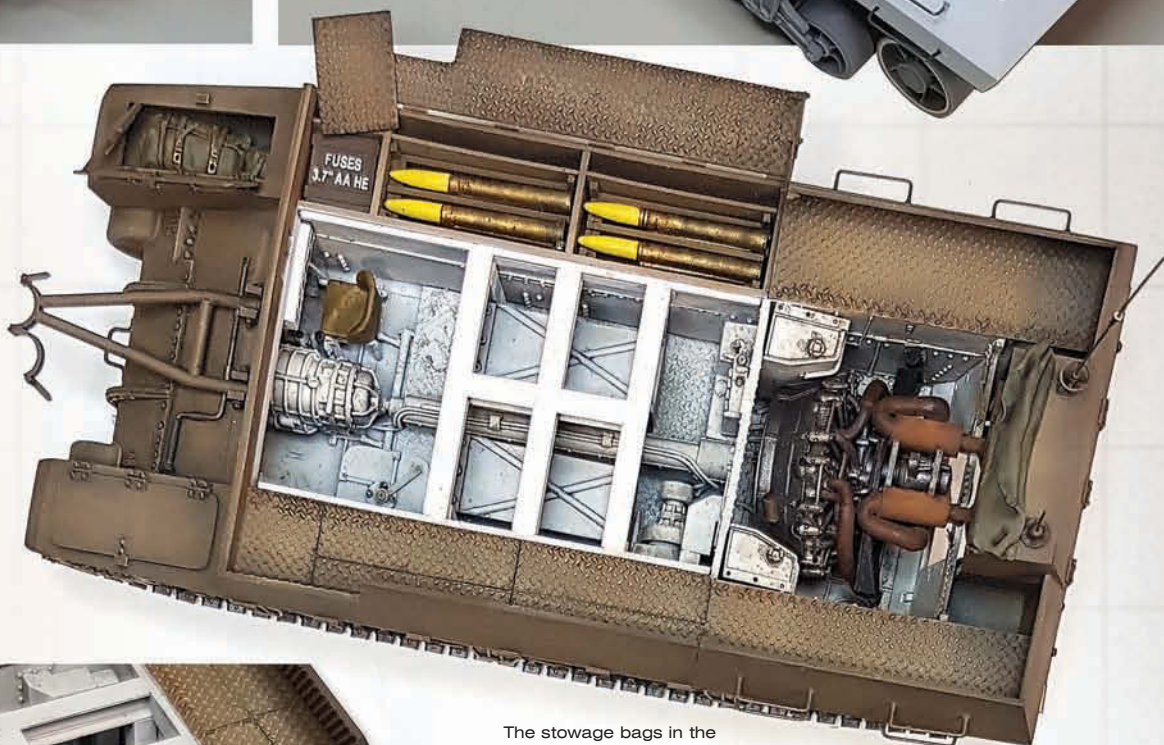
I decided to open all of the right side lockers and leave the left side ones closed so the viewer can see the vehicle in both travelling and action modes.



The construction phase is complete. The right side drop side panel is lowered, and the ready round locker tops and fender locker are open.

The gun shield misses the open fender locker door and rotates freely above the folded ready round covers. Whew!

My meagre references mentioned that the 3.7-inch gun sat on a pedestal, but that was the extent of the information. Just to complicate matters, it had to straddle the driveshaft tunnel while also leaving room for the stowage of twenty-six rounds of ammunition. I made my pedestal out of 'H' beam plastic, braced against both the floor and the sides of the hull. As the gun assembly weighed in excess of eight tons, the pedestal had to be robust, and in a hurried conversion program such as was the case with the Ram 3.7-inch SP, the engineers might well have employed 'H' beams. The ammunition lockers are visible under the pedestal.



The stowage bags in the fender locker are generic ones from the Value Gear line. I applied AK's Ultra Matte Varnish to them for a dead flat finish. The pedestal support for the 3.7-inch gun figures prominently in the hull interior.



Ghost White Toner Is A Game Changer

The markings were simple white ones and they were restricted to either side of the front of the hull and with stencils on the sides of the 3.7-inch gun carriage. I admit that I was sorely tempted to add some colour to the model with the addition of the formation and arm of service markings of 2nd Heavy Anti-Aircraft Regiment, RCA! Unfortunately, the trial period must have been too short as they just don't appear in any of the reference photos I have. As white markings are commonplace in military modelling, and I'm led to believe that dry transfers are disappearing from the marketplace, I invested in a colour laser printer and a Ghost White cartridge awhile back. Now I can make my own colour and white decals. It's really quite a simple, and most importantly in regard to white markings, they're perfectly opaque. This decal printing setup opens up a world of possibilities in my choice of what to build as I'm no longer restricted to commercial decal options. With the decals in place, I applied a coat of Vallejo Acrylic Premium Satin as a sealer in preparation for the weathering process.

The Finishing Process - Can You Teach An Old Dog New Tricks?

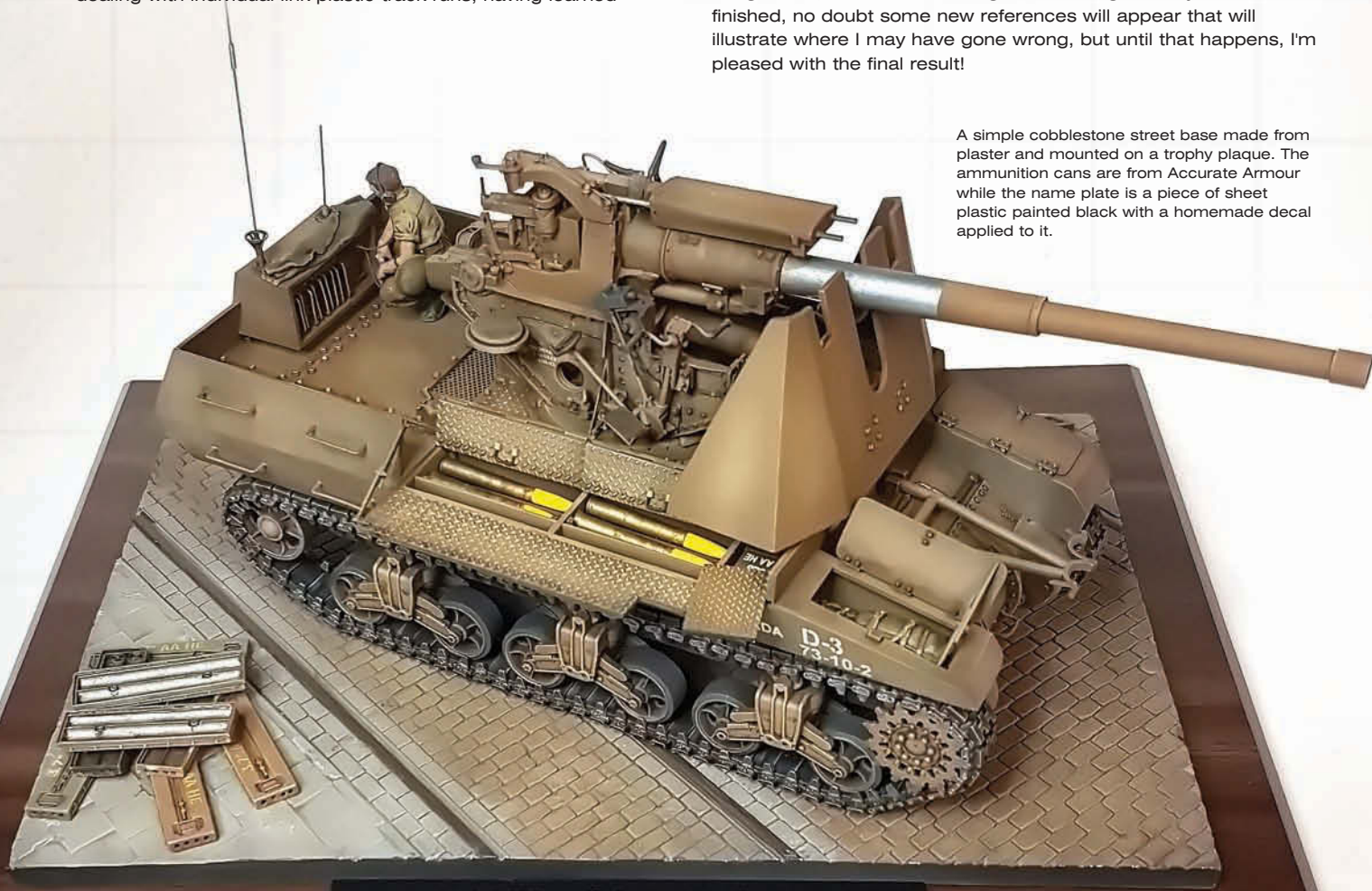
Well, maybe. Personally, I think I'm a bit of an old fashioned modeller as I tend to stick with a process that seems to work for me. That involves the use of a series of oil paint filters, washes, and pin washes that I mix myself. I still dry brush with enamels too! I find I have more control with oils than with pigments, and they're more forgiving of my inevitable mistakes. Having said that, I don't ignore pigments, but I restrict them to small areas where I can control them better. Exhausts are a perfect example where I often use MIG's Vietnam Earth pigment as to my eye, it looks quite realistic as light coloured rust. I also employ acrylic washes when dealing with individual link plastic track runs, having learned

through experience that oil washes will often wreak havoc by causing them to literally fall apart. I'm not a complete dinosaur though as I'm also experimenting with AKs coloured pencils to good effect. When I'm happy with a particular weathering effect, I seal it to preserve it from additional effects. When I'm more or less happy with where my weathering is (Is one ever really happy?), I apply a final matt coat. For figure uniforms and cloth or canvas materials, I use AK's Ultra Matt Varnish these days as it gives me a dead flat finish.

The base for my model is a plaster cobblestone street section made by a Toronto IPMS club member and sold at one time under the name of 'Barbakan'. I brush painted it with Tamiya acrylics, followed up with the usual process of washes, filters, and dry brushing. I mounted it on a simple awards plaque and lastly, to finish it all off, I added a couple of jumbled piles of Accurate Armour ammunition cans. The nameplate is a piece of 1 mm sheet plastic painted black. I printed out the title as a decal and applied it in the usual fashion.

The Ram QF 3.7-inch SP is a vehicle I've wanted to build for years now, but I kept putting it off, always hoping that more references would become available, and that a 3.7-inch gun would appear as a plastic kit. I'm glad that I finally took the plunge as I now have a rather unique model to add to my collection. It was well worth the time and effort I invested in it. To be completely honest, there was also some angst along the way when I failed to look far enough ahead during the construction phase! However, I really do enjoy researching and building lesser known military vehicles and this one certainly met that criteria. All in all, it took me three and half months from start to finish, putting in an average of one hour a day at the bench. It's not a perfect model by any stretch of the imagination, as I had to make guesses along the way. Now that it's finished, no doubt some new references will appear that will illustrate where I may have gone wrong, but until that happens, I'm pleased with the final result!

A simple cobblestone street base made from plaster and mounted on a trophy plaque. The ammunition cans are from Accurate Armour while the name plate is a piece of sheet plastic painted black with a homemade decal applied to it.



**Ram 3.7-Inch Self-Propelled Anti-Aircraft/Anti-Tank Gun
On Trial With 2nd Heavy Anti-Aircraft Regiment, RCA,
Larkhill, England, January, 1943**



The grab handles on the hull sides were made with brass wire and bent into shape with a 'Bendicator' tool I picked up years ago. While it's a bit awkward to use, it excels in making repetitive same sized handles. The 'A' and 'B' No.19 set aerial bases came from the Tasca Sherman II kit.

Just visible in this photo are the open engine compartment doors. The rear engine compartment plate and doors came from the Tasca Sherman kit as they have the correct features for a vehicle equipped with fishtail exhausts.

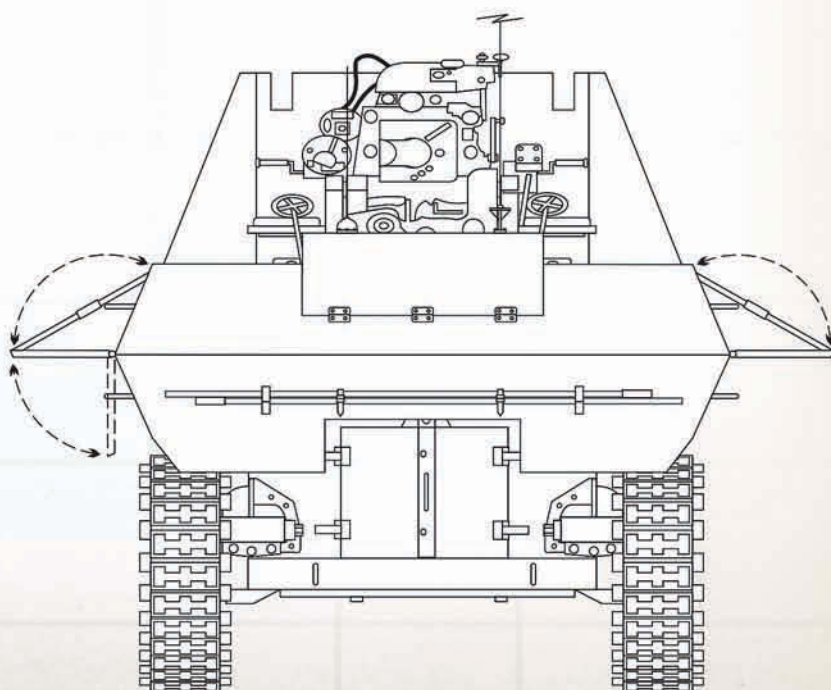
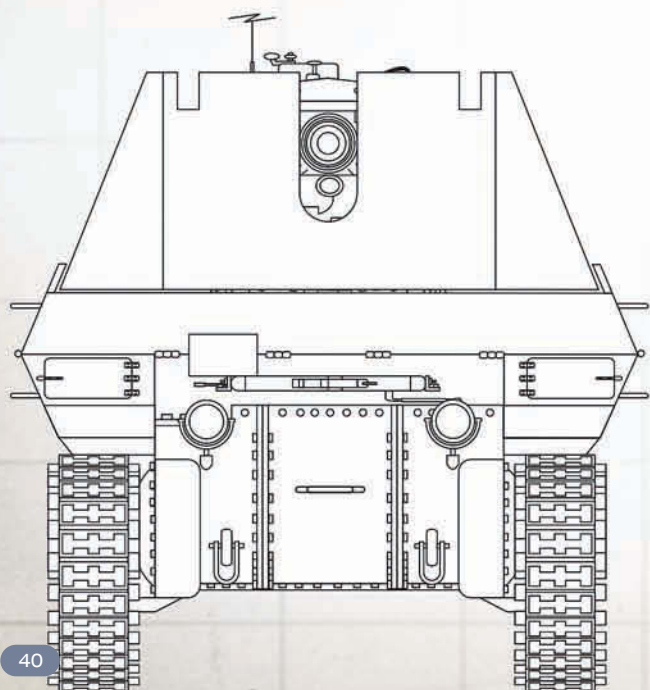
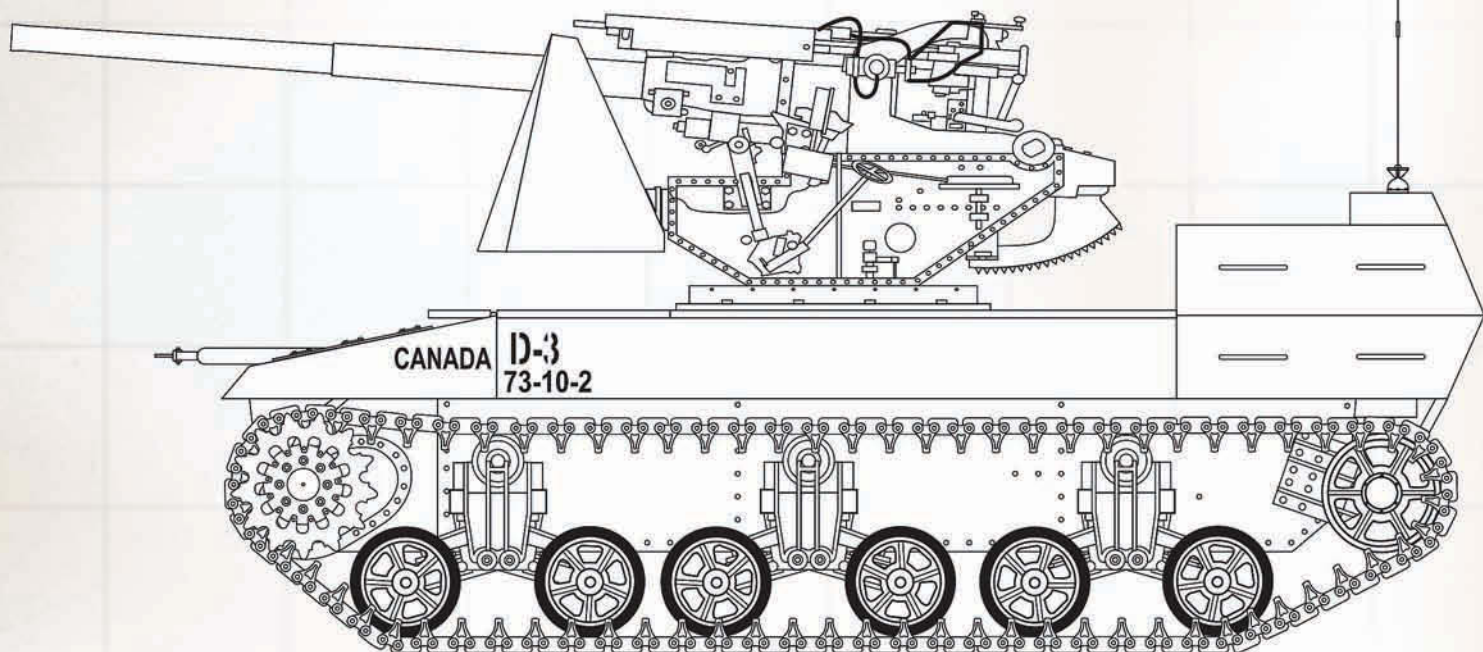
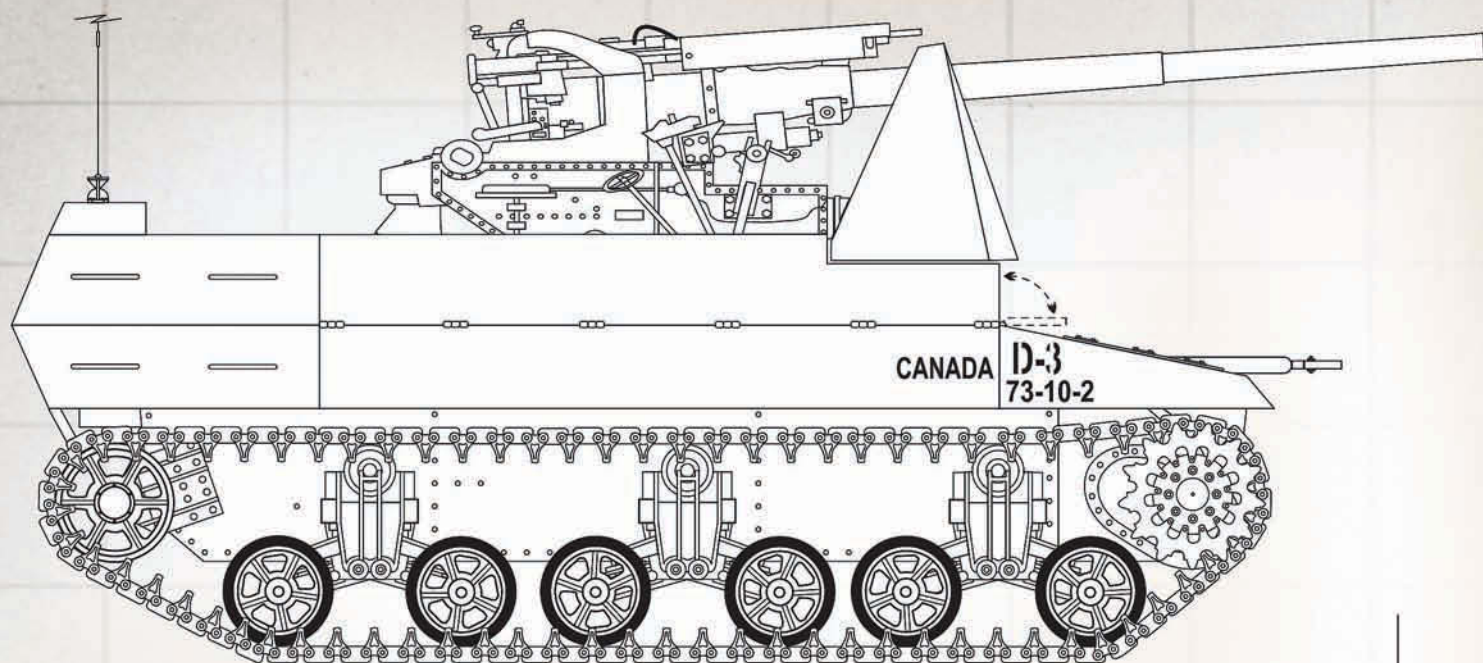
I wanted to show how awkward the location of the wireless set was so Ultracast's squatting Commonwealth figure was perfect for the task. I added headphones, a hand held microphone, cords made from lead wire to make him look like a signaller. Later, I added a helmet slung from one arm.



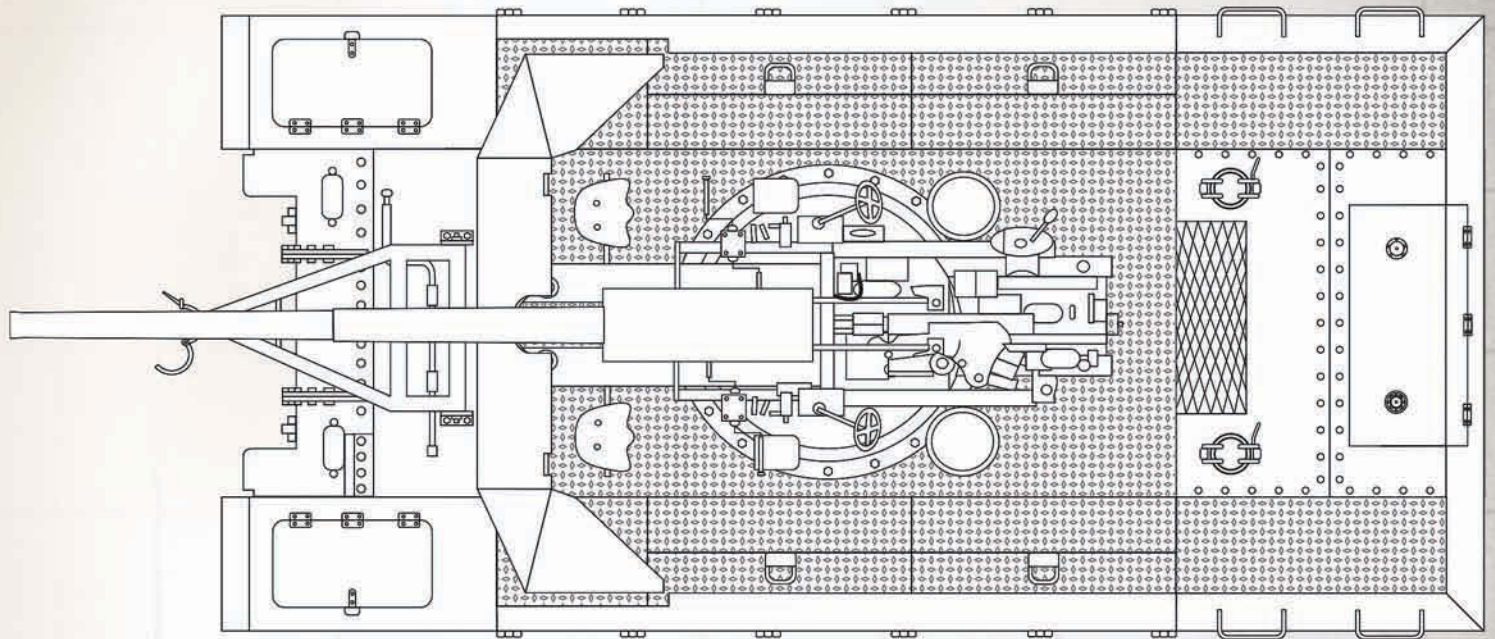
There was an embossed General Electric trademark cast into the rear of the gun. I made a decal to replicate that feature. It would have been better printed out in 3D resin, but sometimes you have to settle with what you have.

The Signaller on radio watch!
The gun cleaning rods spruce up what would otherwise be an overly clean rear end.



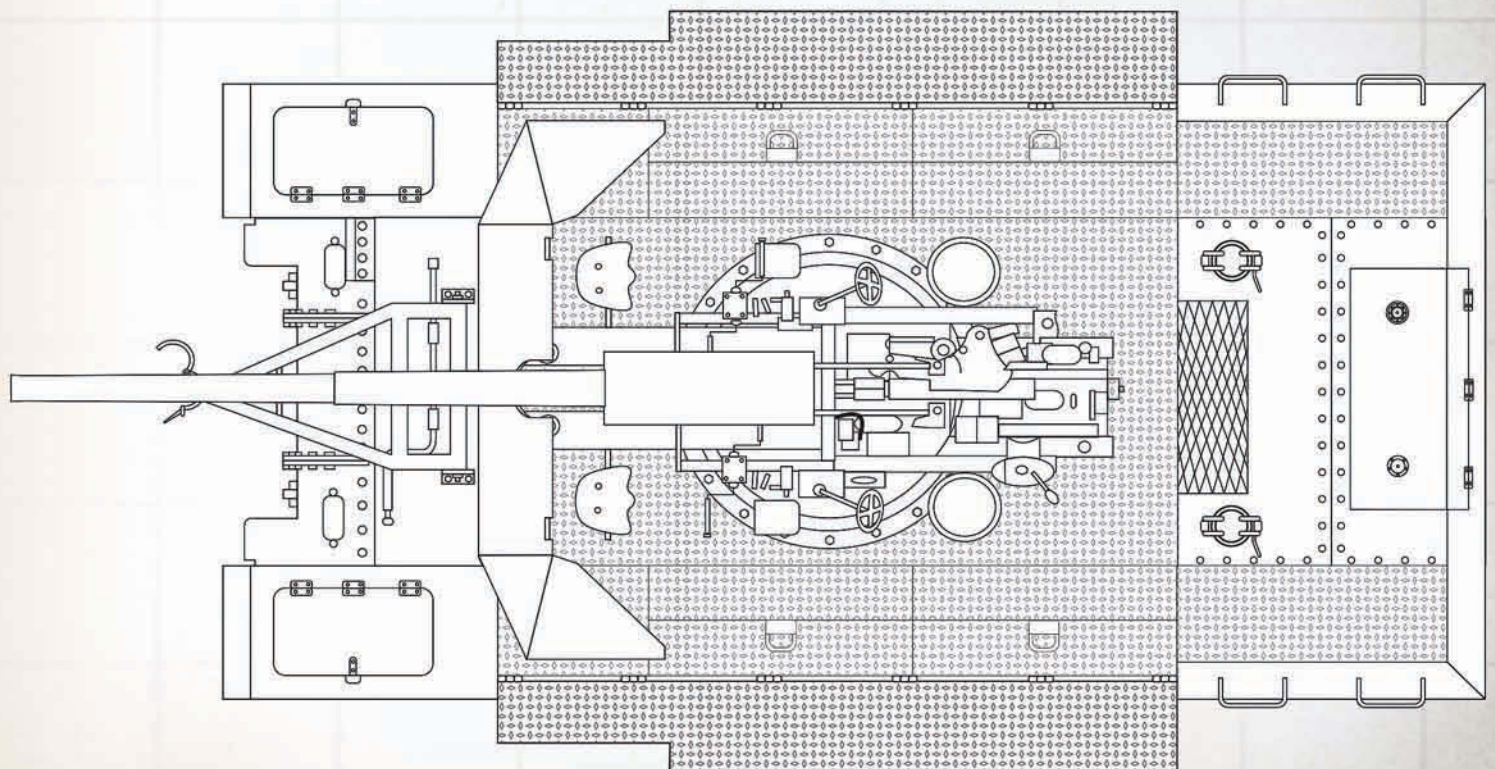


Canadian Ram QF 3.7-inch Anti-Aircraft, Self-Propelled Gun



1:35 Scale

0 1 2 3 4 5 6 7 8 9 10 Feet
0 1 2 3 Metres



FRANKEN HETZER



I have long had a fascination with the Jagdpanzer 38t including its development, evolution, and the slight differences between the vehicles produced at the BMM and Skoda factories. With each of my builds of these vehicles, I strive to find unique subject matter and to render it as accurately as possible. Since I am more than mildly obsessed with this vehicle, my hard drive contains over one thousand photos of Jagdpanzer 38t, including

many interesting and unique vehicles, but none quite so as this, a vehicle I have dubbed “FrankenHetzer”. Much like the creature from Mary Shelly’s imaginative novel, this “Hetzer” was also reconstructed from various parts of its own kind. I’ve been collecting images and information on this vehicle for some time, and believe I can reconstruct most of its lifespan.



In early April, 1944 the first three prototypes of the Jagdpanzer 38t rolled through the gates of the BMM factory in Prague to begin their testing, while the remaining 20 first production vehicles on the assembly line were readied to be presented to Hitler on his birthday on April 20th. Interestingly, also presented at this time was the first variant of the Starr, a standard production Hetzer fitted with the recoilless main weapon. These first twenty production vehicles, along with fifty more vehicles constituting the total of BMM's April and May production, were divided between testing centres and tank hunter battalions for evaluation.

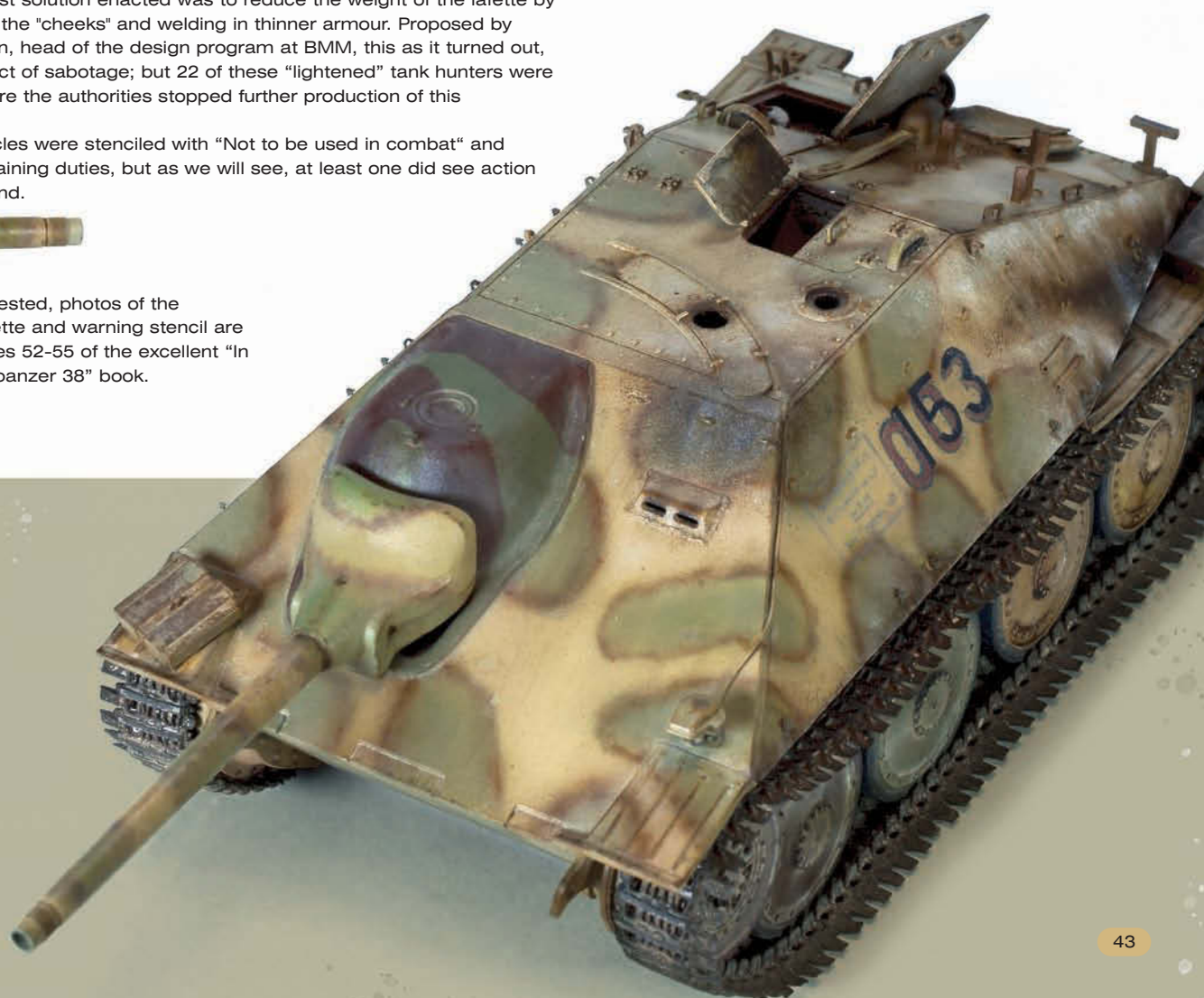
Feedback from these tests and experiences determined that the Jagdpanzer 38t, because of the weight of its main armament and mantlet, was "nose heavy" and put considerable strain on the forward suspension. While more robust leaf spring assemblies for the front suspension became the ultimate solution, the first solution enacted was to reduce the weight of thelafette by machining out the "cheeks" and welding in thinner armour. Proposed by Alexander Surin, head of the design program at BMM, this as it turned out, was a subtle act of sabotage; but 22 of these "lightened" tank hunters were produced before the authorities stopped further production of this modification.

These 22 vehicles were stenciled with "Not to be used in combat" and relegated to training duties, but as we will see, at least one did see action before war's end.

Tracy Hancock creates a unique little monster



For those interested, photos of the sabotagedlafette and warning stencil are shown on pages 52-55 of the excellent "In Focus 1: Jagdpanzer 38" book.



Wherever else it may have been used, we know that this vehicle ended up at the School of Tank Hunters in Milovace; where it was ultimately repaired and joined Kampfgruppe Milowitz in its attempt to suppress the Prague Uprising. Kampfgruppe Milowitz was formed on May 5th, 1945 from the instructors and pupils of the School of Tank Hunters in Milovace, along with members of the Heavy Tank Battalion 507 who had lost their Tiger II and Jagdpanther tanks on the Western Front. The Kampfgruppe received all available vehicles from Milovace which were in running condition or that could be repaired, including Jagdpanzer Starrs, two Grille Ausf. M armed with 30mm aircraft cannons, at least two of the initial 70 Jagdpanzer 38t produced, and two Jagdpanzer 38t "Hetzer" wearing Ostketten, one of which is the subject of this article. Ultimately, the "FrankenHetzer" was knocked out in the Old Town Square in Prague by a Czech policeman wielding a panzerfaust, the impact hitting the left lower hull just above the second roadwheel.

From the final appearance of the "FrankenHetzer" we can determine that during its time as a training vehicle, at the very least, its front suspension most likely became problematic enough that it was parked and began to be cannibalized for parts to return other vehicles to combat readiness.

One of the crucial aspects of building this vehicle is to not only identify the features of the initial and early production run of Hetzers, but to identify the components used to bring this vehicle back into action. No kit of the Hetzer has replicated successfully the numerous small differences between Skoda and BMM produced vehicles, but Tamiya's excellent kit is the most modern tooling with the sharpest details, so was the basis for this build. Along the way some small details were added to replicate the features of this unique vehicle, they are outlined below.



Initial Production Features

- On the rear the eight bolts laid out in a crescent shaped pattern on the right side, securing the internal fan assembly, were mirrored on the left side using Meng bolt heads.
- The location of the spare tracks on the rear panel are unique, including the two small inverted L-shaped protrusions at the bottom of the left spare track location.
- The T-shaped convoy light normally mounted on the left rear fender bracket hull attachment point, was mounted on the left rear hull. The kit part was used with a new mounting plate and bolts.
- These initial production vehicles featured the spare antenna base plate mounted to the extreme end of the left fender, rather than mounted to the last fender bracket, as seen on all of the subsequently produced vehicles.
- The Notek headlight conduit on initial production Hetzers

travelled up the joint of the frontal armour and entered the hull on the top deck; this conduit was replicated with soft solder wire, with the Notek light and mount being replaced with the more detailed Dragon kit part.

- As mentioned earlier, our vehicle was one of those featuring the "sabotaged" lafette; photos show that this was replaced with a later style lafette when the vehicle was reconditioned to be put into action, the earlier mantlet with its welded lower extensions and the earlier barrel with the threaded end were retained. The Tamiya kit provides the lafette, while the mantlet and barrel were aftermarket items by DEF Model.

- MR Modelbau make an early Jagdpanzer 38 conversion set, including the weaker early leaf spring assemblies, these were used on the first position on each side and produce a realistic nose heavy look.

Early Production Features

- Originally this vehicle would have been equipped with the horizontal exhaust with the perforated heat shield; this was clearly replaced at some point, so bolts were added to its mounting locations.
- Tamiya provide the later simplified 3-bolt idler adjustment assemblies, here the correct earlier 4-bolt parts have been robbed from the Dragon kit.
- The shroud covering the opening where the exhaust exits the engine deck on earlier vehicles such as this were cast and rounded, this one, again, was replaced with the part from the Dragon kit. Later vehicles featured a simplified, welded squared steel cover, provided in the Tamiya kit.
- Tamiya provide the correct rear deck to build this vehicle, the later production vehicles having small hatches to fill the radiator in the lower right corner and to fill the fuel in the lower left.
- Prior to August 1944 the two spare antenna retaining tubes on the left hand side of the vehicles were longer and kinked to follow the contour of the hull structure; these were fabricated from Albion Alloys tubing.

Vehicle Specific Features

- Not uncommon in Hetzers seen in Czechoslovakia in the last months of the war, three angle iron stubs were welded to the left engine door to hold a spare ammunition crate. These were added with Evergreen angle stock.
- Our particular vehicle has had it's original horizontally mounted muffler replaced with the later (and quite noisy) flamm-vernichter exhaust. This item and its mounting bracket were stolen from the Eduard kit and detailed with the appropriate weld beads and bolt heads.
- Curiously, this vehicle had an added handle on the rear deck adjacent to the muffler's open end presumably to aid in mounting the rear of the vehicle, which must have been like grabbing a hot iron. Perhaps this was a remanent from having had the more typical horizontal muffler. Regardless, it was sourced from the Eduard kit and added.

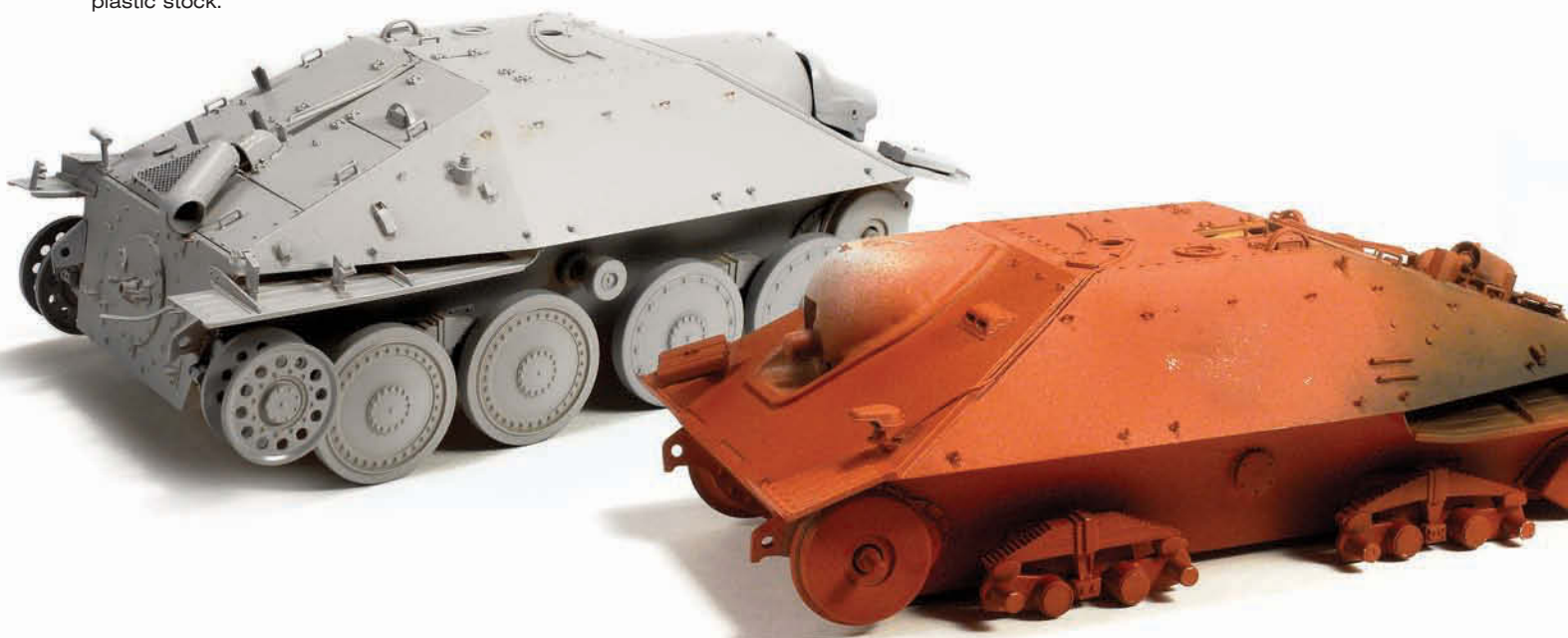
- Unique to BMM machines produced in the last month of the war, was a simplified flat tool box; scratchbuilt from card stock and half round rod.
- A handful of vehicles seen at the end of the war in Czechoslovakia featured hooks used to mount spare track on the flat hull on the left and right side before the rear transition of the armour's angle. These were scratchbuilt (and knocked off several times during the finishing process).
- This particular vehicle had the earlier 32 bolt roadwheels on the front two positions on each side of the hull replaced with the later 16 bolt versions seen on later vehicles in order to bring it back into service. These were sourced from the Dragon kit.
- The Jagdpanzer 38 had notoriously weak towing points; these being seen in many photos as broken, repaired, or reenforced. Careful study of my reference photos show that a flat reenforcement plate was added to the inside of the left rear tow eye, easily replicated with plastic card.
- The panzerfaust impact hole was drilled into the lower left hull, resulting in the return roller being all but knocked from it's mount. The kit part was sawed from its mount and the four mounting holes were drilled accordingly and the return roller was attached by a single bolt, replicating what was seen in my reference photos.
- Fruiamodel ATL-93 "Winterketten" set were pinned together with brass rod, and the included white metal drive wheels used to replace the kit parts.
- In order to accommodate the wider Ostketten, the shurtzen of the vehicle were removed, while the hanging bolts remained. Titchy Train bolts were mounted in the appropriate locations on both hull sides. These were knocked off during the course of handling and weathering the vehicle and were subsequently replaced at the end of the build.
- The rear spare track holders on this vehicle were quite mangled, but easy to replicate with brass strip.
- The tow cables on the rear hull were loosely stowed on this Hetzer, with the ends of one set joined with a steel ring.



General Improvements

- Tamiya's spare track holder mounting points are a bit toy-like, so more accurate ones were fabricated from plastic strip and wire; important here because this vehicle's were quite mangled. The rear spare track holder brackets were made from brass strip and bent to replicate the reference photos.
- Tamiya provide the cover for the crank starter port, but in this vehicle's case, the cover was missing, so the six bolts and four support fillets were added to the exposed assembly.
- The kits representation of the mounted tow cable is moulded as one piece, but in order to replicate the slap-dash manner in which it was stowed on this vehicle, it was necessary to rebuild the mounting brackets with some slightly bent strip and aftermarket bolt heads. The towing cable was replaced with Eureka's excellent item.
- Engine doors were secured with square headed bolts which threaded into tabs protruding from the inner rim of the engine compartment. The kit is missing these details, all of which were added.
- In the reference photos the larger spare track holder on the rear deck was empty and slightly bent. The kit part was modified; Tamiya's toy-like bolt attachment point on the upper placement was filled and the kit bracket was bent to match the photos, with the bolt stub replaced with a bit of stretched sprue.
- The kit's rear fenders were thinned from below and bent to replicate the condition of the fenders in the reference photos, with the thin, curved forward attachment bracket replaced with thin plastic stock.

- At their mid point, the antenna were secured with a clamp, this being made from thin plastic strip and a photo-etch clasp.
- Jagdpanzer 38 Command vehicles had an armoured long range antenna assembly mounted just past the mid point of the left hull, on all other vehicles, there was a trio of plugs on the hull side blocking the wiring ports. These were made from slices of plastic rod.
- The weld around the cast drivers visor was reworked.
- The jack block mounted on the right front fender was canted to match the reference photos.
- The kit antenna base was used, but mounting flanges were added from plastic card and detailed with bolts.
- The crowbar mount and clamp on the right hull side was scratchbuilt from plastic card and PE to represent the crowbar missing
- The majority of the empty jack mount was scratchbuilt, paying careful attention to the correct opposing facing of the securing clamps.
- Tarp tie down loops were added around the entirety of upper hull sides, front, and engine deck using PE parts. Foliage loops were not added to early production vehicles.
- Because some of the hatches would be open, I used the old Verlinden engine compartment and spruced it up a bit as well as some small details for what bits of the interior you could see through the commanders hatch.



Warpaint

With the modifications and assembly complete, I primed the model with Tamiya Oxide Red Fine Surface Primer from the spray can and set aside to dry. Of the roughly one dozen images I had found of this vehicle, the large majority where photographed from the right side and showed extensive fire damage to the right rear hull, with smoke having come from the engine ventilation openings under the right rear hull overhang. This area was pre-shaded with Tamiya Nato Black, and the muffler was painted using the Lifecolor Rust Set, and the entire model was given a coat of hairspray prior to the application of the base color. A quick note regarding the camouflage: beginning in October 1944, all vehicles leaving the BMM and Skoda assembly lines had factory specific camouflage schemes; prior to October, vehicles were shipped only in overall dunkelgelb. While a few seem to have been fielded this way, many feature camouflage, applied at a unit level. Some

photos show soft overspray of green and brown, or vertical banding of green and brown, but the most common scheme seen on these pre-October produced vehicles is a "Leopard Spot" pattern of sprayed green patches outlined in brown. Squinting at photos of this vehicle, and considering evidence that the other older vehicles put back into service with Kampfgruppe Milowitz also carried this scheme, I felt that this vehicle was also painted this way. Without wading into the early/late dunkelgelb argument, I do feel like these earlier machines carried a richer tone of dunkelgelb, but find that many "out of the jar" dunkelgelb can veer into too much of a greenish cast, so I tend to mix/modify the "late" dunkelgelb to suit my tastes. In this case, I used MMP-019 Dunkelgelb Late, adding misted coats of heavily thinned Tamiya Clear Yellow to build up the richness of the tone gradually (hat tip to Lester Plaskitt for that trick), not forgetting the early pattern road wheels and idler that would have been original to the vehicle.

Another quick blast of hairspray and a thin layer of the more faded Dunkelgelb was applied to replicate the sun bleaching this older vehicle would have endured. While it may seem premature, I began to work the paint at this stage to reveal the hairspray chipping, and I was very pleased with the results, both with the general chipping and with the effects of the fire damage on the hull side, the wear to the older road wheels and idler, and the heat abrasion on the muffler. Even though some of this will be covered by the subsequent camouflage colours, seeing where the project is going keeps me motivated and provides a roadmap to the next round of chipping and weathering, while adding to the layers which will ultimately provide a more complex finish.

At this point, the dunkelgelb was still a bit lemony to my eye, but an airbrushing of a tan filter brought it back around, with more concentrated tones being used on the fire damaged areas, followed by another light hairspray layer. MMP-018 Resedagrün lightened slightly with MMP-019 Dunkelgelb Late was used for the green spots, while MMP-015 Rotbraun, again lightened with MMP-019 Dunkelgelb Late, was used for the outlining of the spots., while the late pattern road wheels were given a coat of these colors, followed by a hairspray layer, then more lightened mixtures.

The replacement gun laffette, mantlet, and barrel were painted with Tamiya XF-67 Nato Green with a drop of XF-55 Deck Tan, while the brown camouflage on these was brush painted using thin layers of Lifecolor UA-701 Dark Rust.

Grime Time

While I had worked the hairspray slightly before on the fire damaged hull side, the jack block, and the muffler; it was at this stage that the hairspray layered paint was worked with precision to produce fine wear and chipping on the raised ribs of the fenders, the edges of the fenders, the Notek light that would have been used as a handle to climb on board, the handles, the nose of the vehicle, the towing eyes, the vision block protectors where hatches would have impacted them, the hatch edges, the top of the drivers vision block, the gunners sight cover, the tool box lid edges, and other areas of high use and wear. Careful attention was also paid to the replacement road wheels, creating chipping which showed the darker colour underneath, creating an excellent patina.



After the initial camouflage is laid down, oil paints are used to begin adding the rust, soot, and dust to the model; all of these effects will be built upon until the final finish is achieved.

Building effects up slowly with oils allows the finish to develop naturally and can help achieve a balanced finish. Pushing tones, even in areas like the hidden hull sides, are a great way to get a feel for the direction that you want the finish to take. Bringing some rich tones into your base coat can pay dividends later, especially if subsequent steps allow those tones to peek through at all.



Some of your initial chipping and weathering steps can be a great road map to your final finish.



Pigments still have a place and can be a quick way to build up dirt and dust in areas like the hull sides, even if they are not used anywhere else.

Even at this early stage oils are used to begin to show wear, rust tones, and the beginnings of the fire damage to the paint.



While progress may seem marginal at this point, the finish is progressing in a balanced way.

A model really begins to come to life with markings, even the few that this vehicle carries.

Satisfied with the chipping, I shifted gears and switched to oil paints for the remainder of the weathering. For dust shades, I use Old Holland Warm Grey and Holbein Monochrome Tint, for exposed metal, grease and dark washes, I use Windsor & Newton Raw Umber; I also use vehicle specific colors like Sap Green and Yellow Ochre, and to enhance the areas of fire damage, I use Gamblin Transparent Earth Yellow and Orange, and Liquitex Neutral Grey.

With these colours laid out, I began to push the contrast on the fire damaged hull side and engine deck, by adding the pattern of burnt paint and soot crawling up the hull side seen in my reference photos, and using the Neutral Grey to create the heat bleached areas. This was continued onto the engine deck where smoke would have seeped around hatch openings, and the intense heat would have beached out the flat surfaces from below. In between these tones are a myriad of more transparent effects and transitional tones, which were worked into place a micro-decision at a time over the course of weathering the entire model.

The markings on this vehicle consisted of an older set of numbers, 003 in red outlined in black, overpainted with the fresher 153 in black; painted using Eduard number masks. The stencil painted forward of these markings on the left hull side are illegible in the few photos showing them, so a representation was hand painted on the hull side using a dark grey.



At this point the fire damage, rust, dust, and oil seepages have been added with oils, including the inner faces of the hatches.



Any time I put down a panel wash of a single colour that travels across a multi-coloured camouflage, it seems to look too intentional, so I tend to use a combination of a mucky colour (Raw Umber and Monochrome Tint) across light coloured areas, and dust accumulation (Monochrome Tint and Warm Grey) across darker coloured areas. I also push the mucky colour into fender corners and other areas where grime would accumulate, followed by a tight pinwash of the lighter dust accumulation mixture to create real depth in these crevices.

These same mixtures are used to weather the lower hull, with the mucky colour pushed into areas around running gear assemblies, followed by darker washes of Raw Umber. Dust mixtures using the Monochrome Tint, Warm Grey, and Neutral Grey were worked into the lower hull sides and under the fenders, with liberal amounts of speckling using thin transparent versions of these colours. The road wheels, drive sprockets, and idler wheels were handled using the same colours, in a very tightly controlled fashion and in many layers. While somewhat out of fashion, I still find pigments a very

quick and effective method of representing built up heavy dust and dirt on the lower hull; which I did here, using dark, mid, and light tones, setting them with isopropyl alcohol. Some speckling and grease deposits using oils finished the lower hull.

Straight, unthinned Raw Umber is used for very fine areas of exposed metal, such as fender edges, hatch corners, and the edges of the angle iron welded to the engine deck; once dry I come back and carefully drybrush Transparent Earth Yellow or Orange to create rust seepage from the exposed metal areas. While these are the general procedures for the weathering of this model, these steps were repeated over and over again over the course of many weeks; building layers, and making small adjustments to adjacent areas of the model as each applied effect necessitated. Creating the wear, grime, soot, paint fading, dirt, rust, chipping, and patina on this model was the product of a few simple techniques and materials, and lots of time, but I find that the results bring a real depth of finish.

While only used briefly in combat, this Hetzer was battered as a training vehicle, allowing a good deal of wear to be imparted.

While many models with replacement parts are fictitious fun, the replacement laffette shown here is backed up by photos.

The wide Ostketten bring an immediate menace to this unique vehicle, one of only three Hetzer photographed with them.



The mangled spare track holders and sloppily stowed tow cables are testament to the desperate situation in the last days of battle in Prague.





Stumbling Across the Finish Line

It was only as I was returning to my reference photos and the photos of my model to make sure I got all the details of my build listed that a good quality photo of the right side of the vehicle appeared, showing the crowbar still in place, the return roller on the right side missing, and the road wheels in the first two positions on the right side not mirroring the later 16 bolt wheels on left side, but in fact were the earlier 32 bolt pattern wheels.

I also noticed that the older gun barrel with the threaded end and the original mantlet were still in place, even though I had painted them as being replaced at the same time as the lafette, a fact that every photo I have shows.

At this point, I had a choice to make: leave it and know forever that I did not build this model to the level of accuracy that I intended from the start; or pull the model out of the cabinet and make the corrections. With the efforts towards accuracy that I had already made, the choice was clear, albeit annoying. The corrections proved to be painless, and once they were painted and weathered to match the rest of the vehicle, then I truly did stumble across the finish line.





FRANKEN
HETZER



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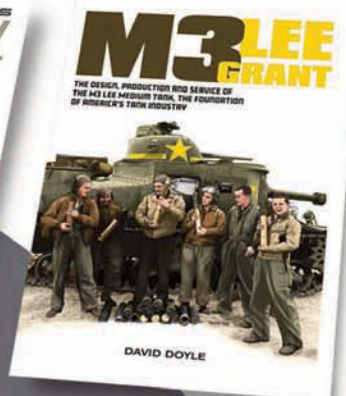
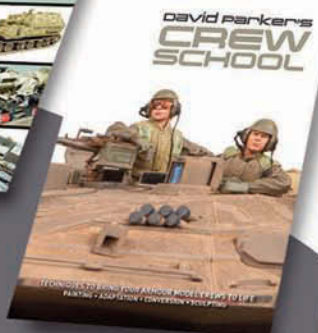


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MENG 1:35

I built a Meng pickup with ZU-23-2 in 2020

and really enjoyed this simple kit that provides a lot of room for artistic expression. With numerous photos of 'technical' from all over the world (mainly Africa and Middle East) there's a lot of modelling inspiration and creative versatility.

This time I decided to finish the same kit as a recoilless gun carrier and address the issue of unweighted kit wheels by replacing them with nice resin ones by DEF model.

Fortunately they arrived before the kit was finished! M40A1 recoilless rifle was taken from AFV club's Anti-tank weapons set, saving the ZU-23-2 gun for a future project. I decided not to glue the top and removed the cargo compartment frame. Then I scratch built a simple ammo rack using plastic H-beams and copper sheet for the ammo holders (I'd seen similar stuff in one of the photos). Before painting I disassembled the model into several sub-assemblies to make the process easier.





The chassis was simply painted black while the front bumper in rust tones for hairspray treatment.



The body received a rusty finish, again for further hairspray chipping. I started with a solid coat of dark brown and then randomly sprayed brighter orange rust tones.



Initially I wanted to challenge myself with weathering an entirely black truck, but then came across a photo of a technical (though not the same vehicle) painted partly black and partly sand with black spots; this leopard finish looks much better than a uniform black finish so middle and rear portions of the model received a layer of Ammo chipping fluid and then a coat of light yellow mix (Tamiya XF-60 dark Yellow + XF-2 Flat White). My method of applying hairspray/branded chipping products is relatively quick. I apply one layer of hairspray, let it dry a little then spread it further with a big soft brush and blow air from an airbrush. This trick significantly shortens the drying time. While the base colour is drying, I clean the airbrush and after around 5 minutes begin chipping the top layer with tap water, brushes, toothpicks and anything to vary the style of scratch and scuff.



The black areas were painted and chipped similarly. Rusty scuffs turned out to look very nice contrasting with the black finish. Black spots over the sandy areas were airbrushed over additional layer of AMMO scratches effect and following chipping.

The underside was pre-shaded with a thin layer of Tamiya XF-57 Buff. I prefer Tamiya Acrylics for airbrushing because their quality is high and consistent and they don't smell!





The front bumper received more rust with good old Mig Productions Ochre Rust pigment. More rusty chips and scratches were added with acrylics using a sponge and fine brush. Though the hairspray method provides a nice overall chipped surface, it is not precise and some fine corrections are required to fix errors and emphasize details.



And continued with the sand & black parts. Here I painted rust chips using dark brown and orange shades, again with a sponge and a fine paintbrush. After finishing with acrylics I sprayed a layer of diluted Tamiya X-22 clear to get a satin finish, useful for working with oils, pigments and enamels. This step was also applied on the recoilless gun and other parts.



I kept the dusting limited over the black areas. Some pigment and oils were applied very delicately to emphasize the shape of the bonnet, fenders and panels. I applied them as wash, dry pigments and oil blending. Now how the dark finish really pops out!



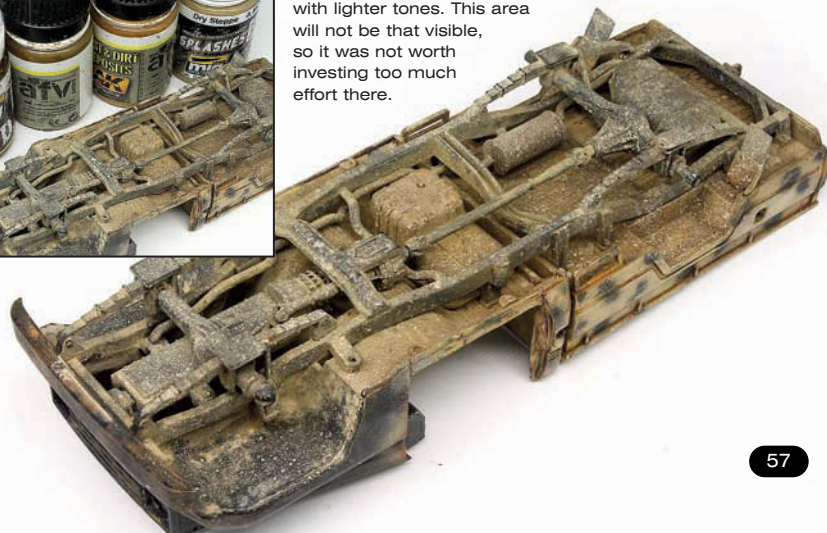
For the sand areas, a more typical wash with oils was used. I mix my washes by simply diluting the oil paints with odorless enamel thinner applied with a brush. Nothing tricky here. I utilized a variety of rust tones and more conventional dark-brown and black oil paints. Oils dry slower than enamels, but on the positive side, the tubes don't become unusable after a year or two on the shelf, as many dedicated enamel washes by some well-known brands can do.

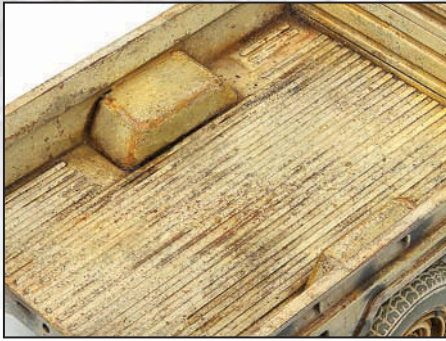


A rusty patch was added with Abt. 502 Faded Dark Yellow oil paint. I really like its vibrant orange fresh rust tone.



More weathering was applied on the underside with enamels by depositing them all over, and then speckling with lighter tones. This area will not be that visible, so it was not worth investing too much effort there.





Some grime and grease stains were added to the cargo bay.



After gluing the wheels, I speckled some dry mud and added more dust washes on the front area.



Interior parts were airbrushed with dark grey. I rarely use dry-brushing, but this time I decided that this technique will be perfectly adequate. For the highlights I used Vallejo acrylics



Next step – decals and black wash. Ain't it old-school?



Adding some dust was the final touch here.



The wheels were also painted separately. DEF provides masks for the tires and rims and they were rather useful. Initially I painted the rims more vividly, but then reduced the number of

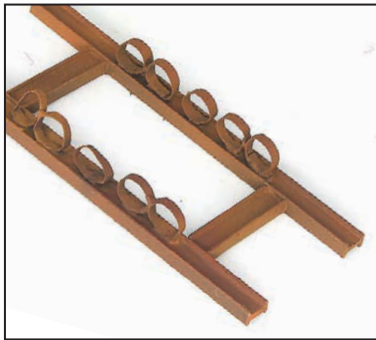


washes emphasize the detail of the wheels.



Now the most satisfying step; dust. It contrasts perfectly with dark gray tyres and all the details immediately become visible! Here I used AK Sand & Light dust deposits wash.

These enamel products provide an effect of a somewhat heavy pigment wash when they dry, I wiped the excess with a soft brush and the wheels now look almost perfect. Note, that I also applied some orange rust wash to contrast with the black.



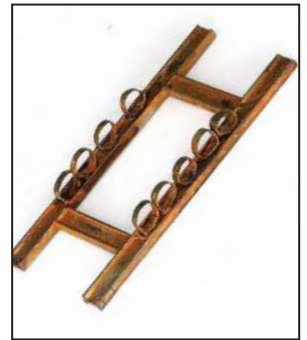
The scratch built ammo rack was airbrushed with dark brown as a rusty



Then a layer of light grey over the hairspray to add more contrast.



To enhance the rust texture I used oils and acrylics.



And finally some dust with AK Sand Yellow deposits wash.

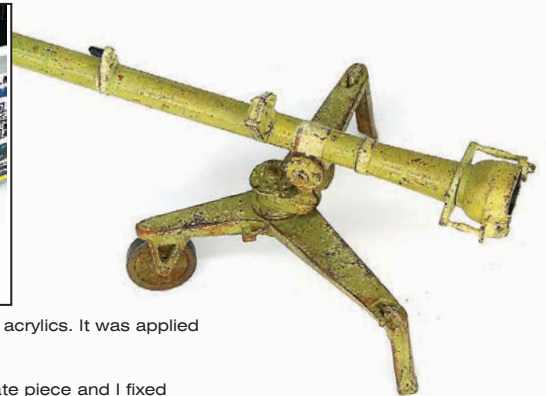


Painting the M40A1 recoilless rifle also began with a layer of rust. Note that at this stage I didn't glue smaller parts like the ranging 12.7 mm gun, breach handle etc. I really hate breaking and fixing small details time and time again! The procedure was similar to the other elements; overall dark brown coat and then random light rust spraying.



Faded green was mixed from Mr. Hobby & Tamiya acrylics. It was applied over the layer of hairspray and then chipped.

The chipping appeared to be too big for this delicate piece and I fixed them with a fine brush. I also added more tiny chips with a sponge and a fine paintbrush and liked how they turned out on the gun mount.



Oil wash and fake shadows were applied with Wilder Black brown oil paint. The fake shadows were blended with an almost dry brush. I applied a small amount of oils paint, let it dry for some time and then blended it with stippling and lateral motions. This effect adds much to the otherwise boring gun barrel.



Some rust was also added with oils. Maybe I applied too much, but I couldn't help enjoying the contrast between the rust and bright green base colour!



At this step I added smaller parts to the recoilless rifle. The ranging 12.7 mm gun was painted in four steps:
• Dark grey base
• Light gray added with sponge
• Rust wash
• Metallic pigment polish

I decided to add some stowage to fill the empty cargo space. It took me some time to choose, paint and position all the items.





Recently I bought a new shelf for finished models and thus decided to make a small vignette base instead of a simple plain wooden rectangle. An IKEA photo frame was covered with cork sheets. Then it was painted grey and weathered with grey and dusty pigments.

I'm not a diorama guru, so I decided to simply add an AMMO gas station and Miniart trash bin to populate the base. Some grease and wet drops were speckled using diluted oils and enamels. Trash bins, being essentially plastic items, required less effort. Until the very end I couldn't choose the most suitable colour painting two bins instead of one...



Base colours were airbrushed with Tamiya acrylics followed by a black oil paint wash.



Grime streaks, dark oil blending and finally some dust applied with blended oils and speckled enamel dirt. Now they were properly weathered, but not totally beaten and broken.



AMMO's Gas station kit is very simple, but has numerous decal options that fit many countries. I opted for one with Arabic script. One of my Arabic-speaking Facebook friends confirmed that there are no errors. I was glad to know that, because model companies often make errors in Russian and, possibly other languages that are non-native to the manufacturers. The painting and weathering was somewhat similar to the technical pick-up: rust - hairspray - base - decals - washes



Rust on the horizontal area and several rusty streaks were done to further the aged look.



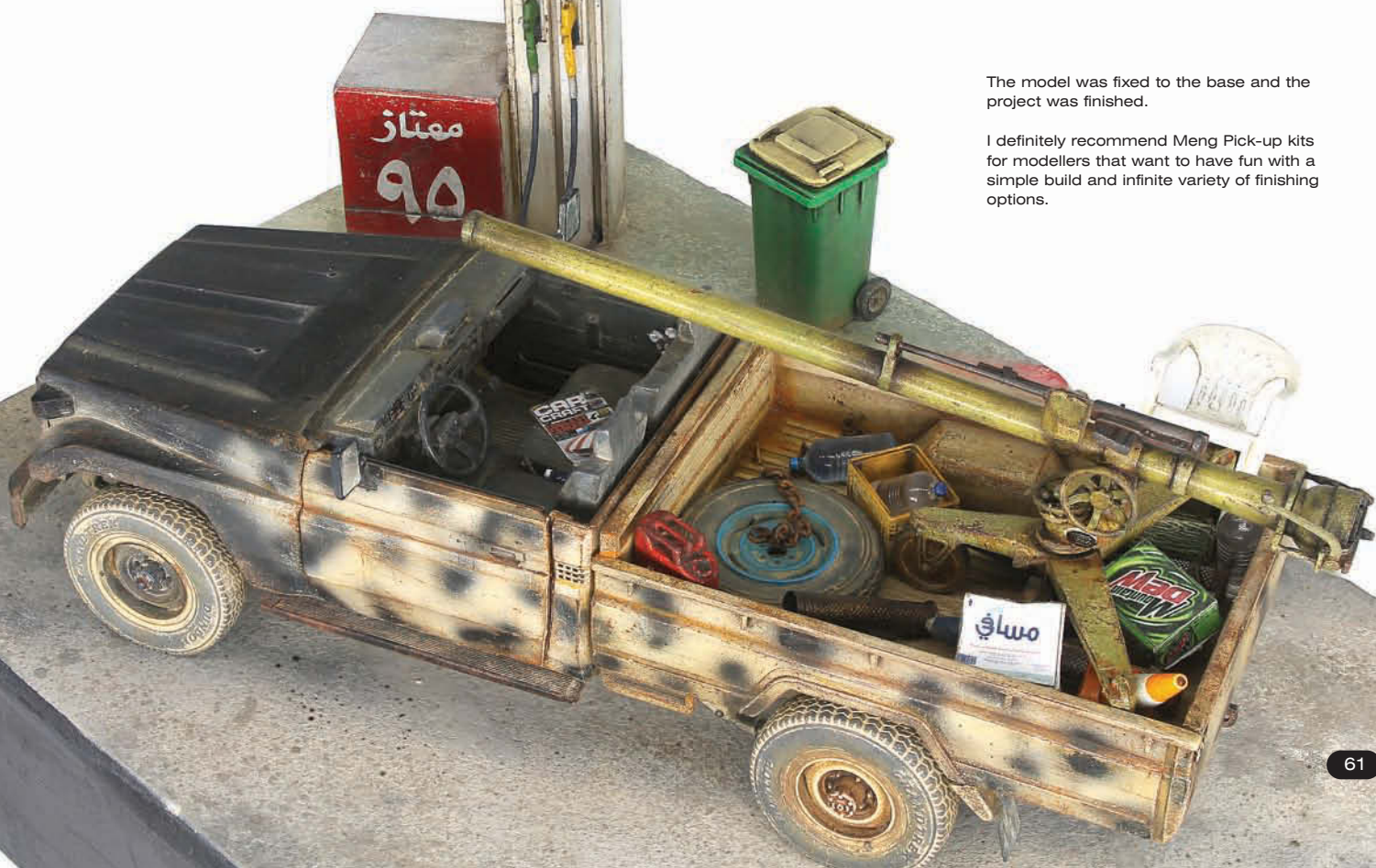


More stuff was placed in the cargo bed. The exact items may not be 100% logical for this subject, but at least they look nice together... and were the best I came up with. Now the technical itself is ready to roll!



The model was fixed to the base and the project was finished.

I definitely recommend Meng Pick-up kits for modellers that want to have fun with a simple build and infinite variety of finishing options.



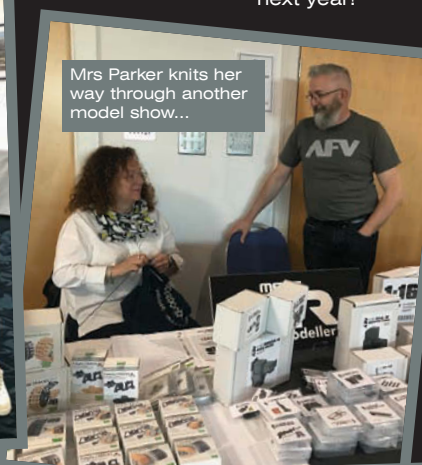
Scale SCOTLAND 2022

Some time ago we were approached by a group of guys not so far from us North of the border for our input on ideas they had for a fresh new model show in Scotland's beautiful capital, Edinburgh. After outgrowing their first venue a move was made to the BT Murrayfield stadium but still retaining the 'quality not quantity' ethic and the World renowned Scottish welcome and hospitality.

As with all shows the pandemic took its toll on Scale Scotland but on September the 24th they were back at Murrayfield managing the same laid-back and friendly atmosphere, low entry cost and very well cared for traders demonstrate the team's dedication to making the day enjoyable for everyone. If you like to participate in competitions there was close to 400 entries on display in the spacious well lit room with raised display plinths and some inspiring work on display with great trophies and prizes to be had. Plenty of free car parking and public transport make this one-day show a great base for a weekend exploring the city. Keep an eye on www.scalescotland.co.uk or their Facebook page for 2023 details. I'm sure everyone who attended would like to extend their thanks to the team for their time and tremendous effort- see you there next year!



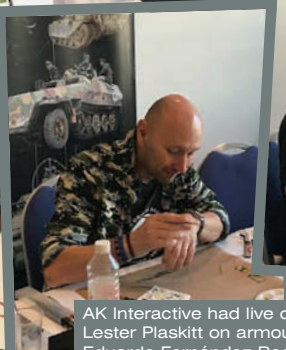
Two of the team; MC Dave 'The Voice' and Andy 'Can-do' Canning.



Mrs Parker knits her way through another model show...



You want it there's a chance they've got it... Glasgow's own AMS are top boys.



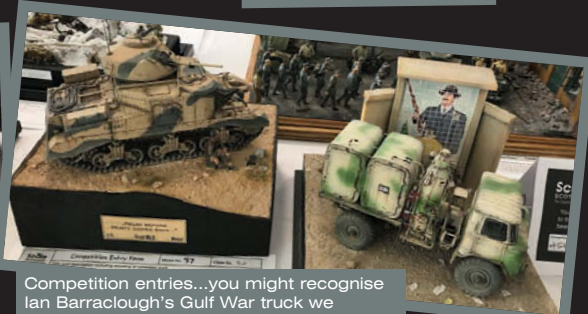
AK Interactive had live demos on hand with Lester Plaskitt on armour weathering and Eduardo Fernández Rodríguez giving expert figure painting advice.



Ace of Bases, Pete Watson always has wood.



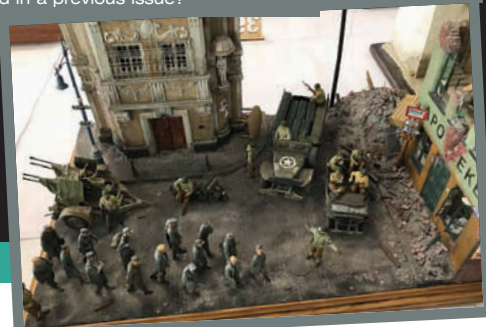
Red Zebra had their excellent range of resin on display.



Competition entries...you might recognise Ian Barraclough's Gulf War truck we featured in a previous issue?



Serving Edinburgh's modellers for over 50 years, Wonderland are a supporter of the show and the UK's leading online model shop.





Phil Stutcinkas has always used modelling to express his passion for history; his latest piece 'The Water Carrier' is no exception based on period images and first hand accounts... superb work Sir!

Get your fill of Phils at Scale Scotland; Hyslop and Stutcinkas, masters of the old-school of modelling.



Kits for kids! Giveaways to encourage the next generation, Wonderland Models supplied over 100!



From science-fiction to fairgrounds, some very diverse displays on the day.

Our AFV Modeller award chosen from the competition entries was Phil Hyslop's Grille Ausf.H vignette.



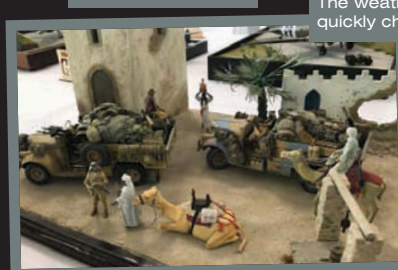
Regular AFV contributor Alex Clark hopped over the border to display some of his 1:72 stunners!



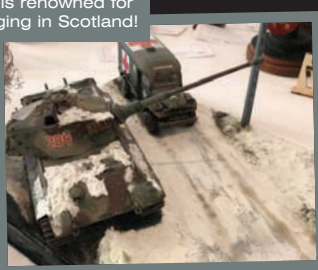
Nice Aden camo Saladin in the competition.



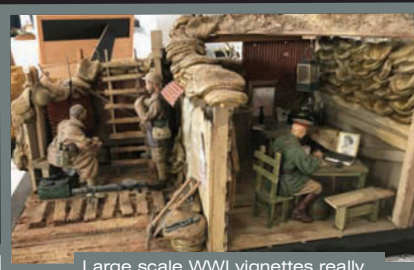
Some serious conversion work going on the Edinburgh IPMS display.



Fantastic figures and busts for sale from Mitches Military



The weather is renowned for quickly changing in Scotland!



Large scale WWI vignettes really captured the period perfectly.



It wouldn't be a trip to Scotland without a 'Can 'o juice'...our latest 1:16 figure goes for a dip in the Irn-Bru.





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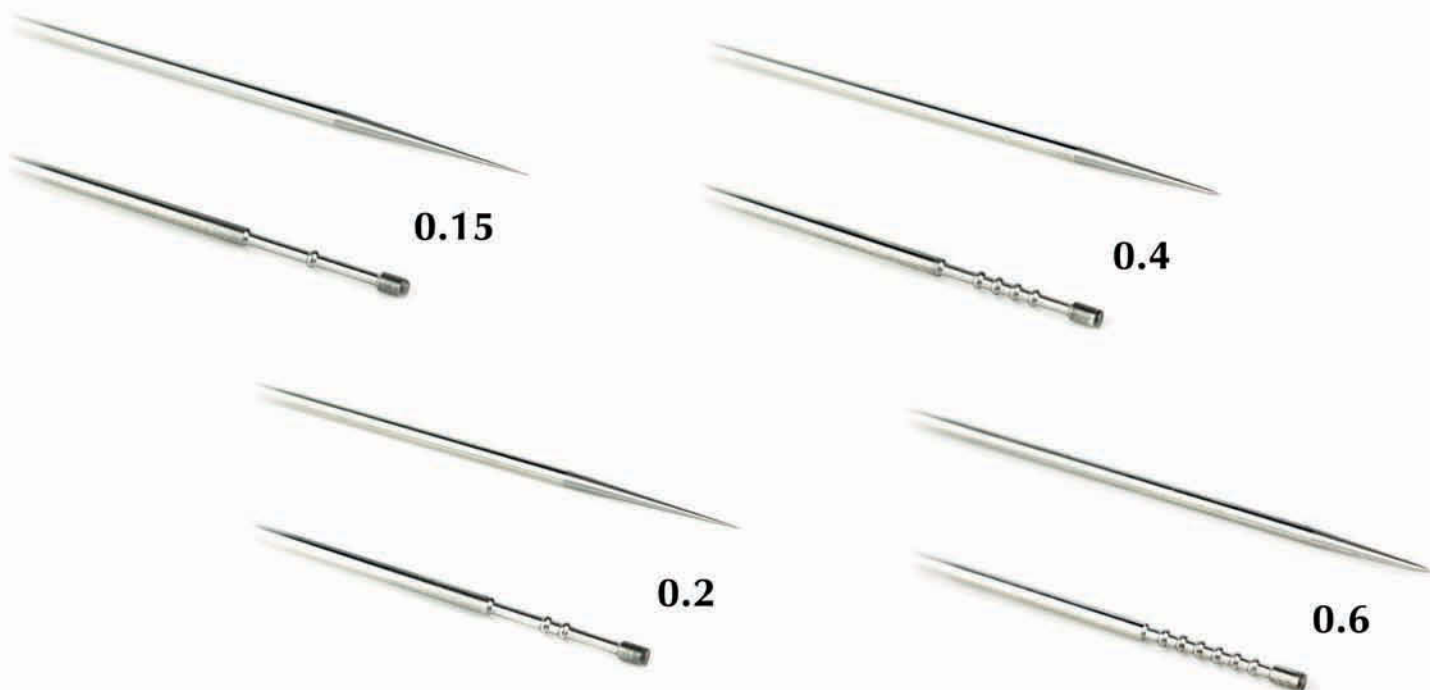
HARDER & STEENBECK

flexible system architecture
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threadless nozzle
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with our new needle design



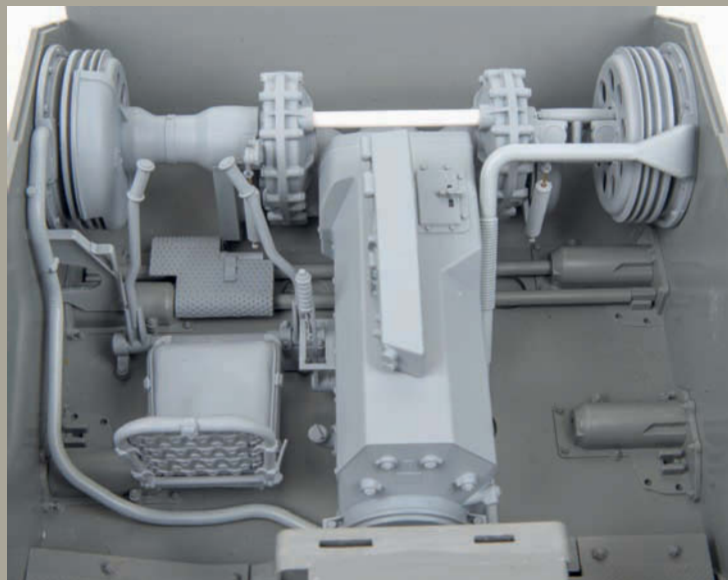
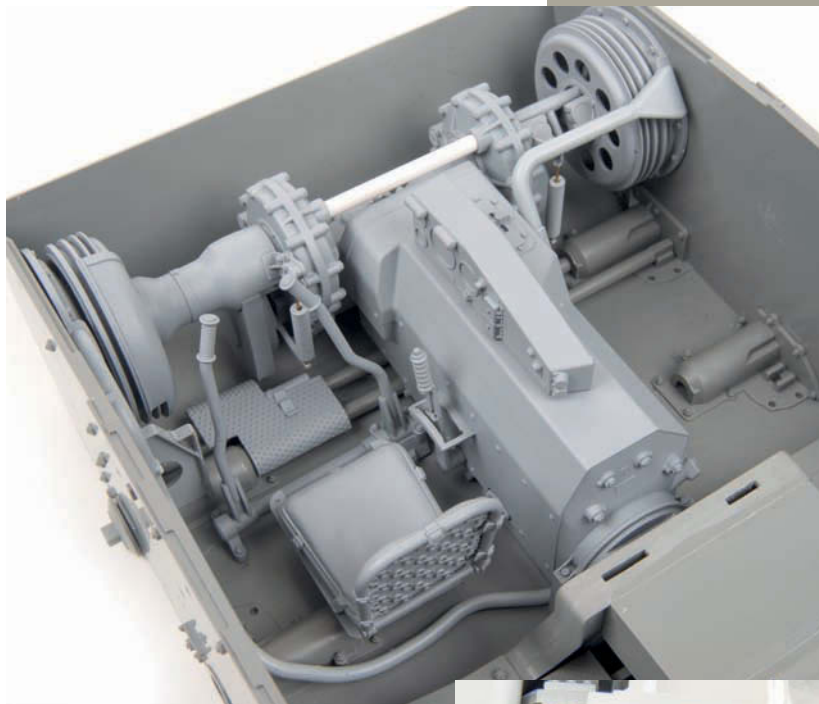
more detail more control less tip dry harder material

PAINT EASY THE HARDER WAY

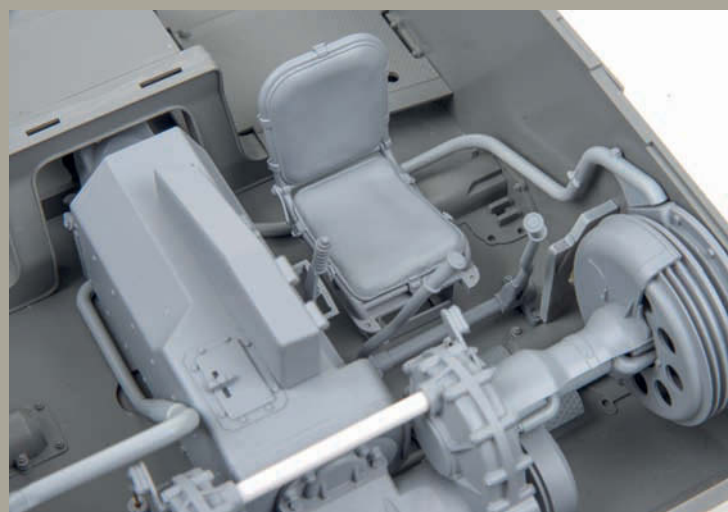
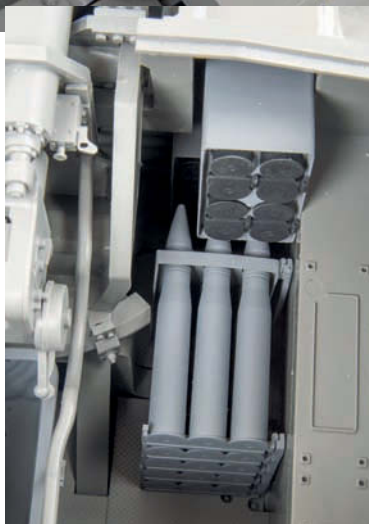
www.harder-airbrush.eu

Upgrade from AFV Modeller for your

1:16 STUG III

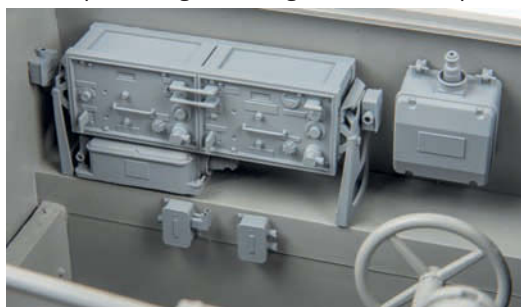


NEW Driver's Compartment set
This upgrade provides the bow elements missing from the interior of the DAS WERK kit.



Ammunition Stowage Set Complete your STuG. interior with the missing ammunition racks and twin lockers.

NEW StuG Commander
Three quarter figure designed for the cupola.



COMING SOON STuG.III F8 CONVERSION

Designed for the DAS WERK STuG. III Ausf.G to backgrade it to an Ausf.F8
(Pictures show a pre-production test which has subsequently been modified)

Radio Upgrade Set This set provides the correctly sized radio sets, comms boxes and power transformers complete with the power supply plugs and cable plugs for ease of installation.

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