

AFV 145

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modeller



Elco Elings' Cliff-hanger Diorama

EVACUATE!

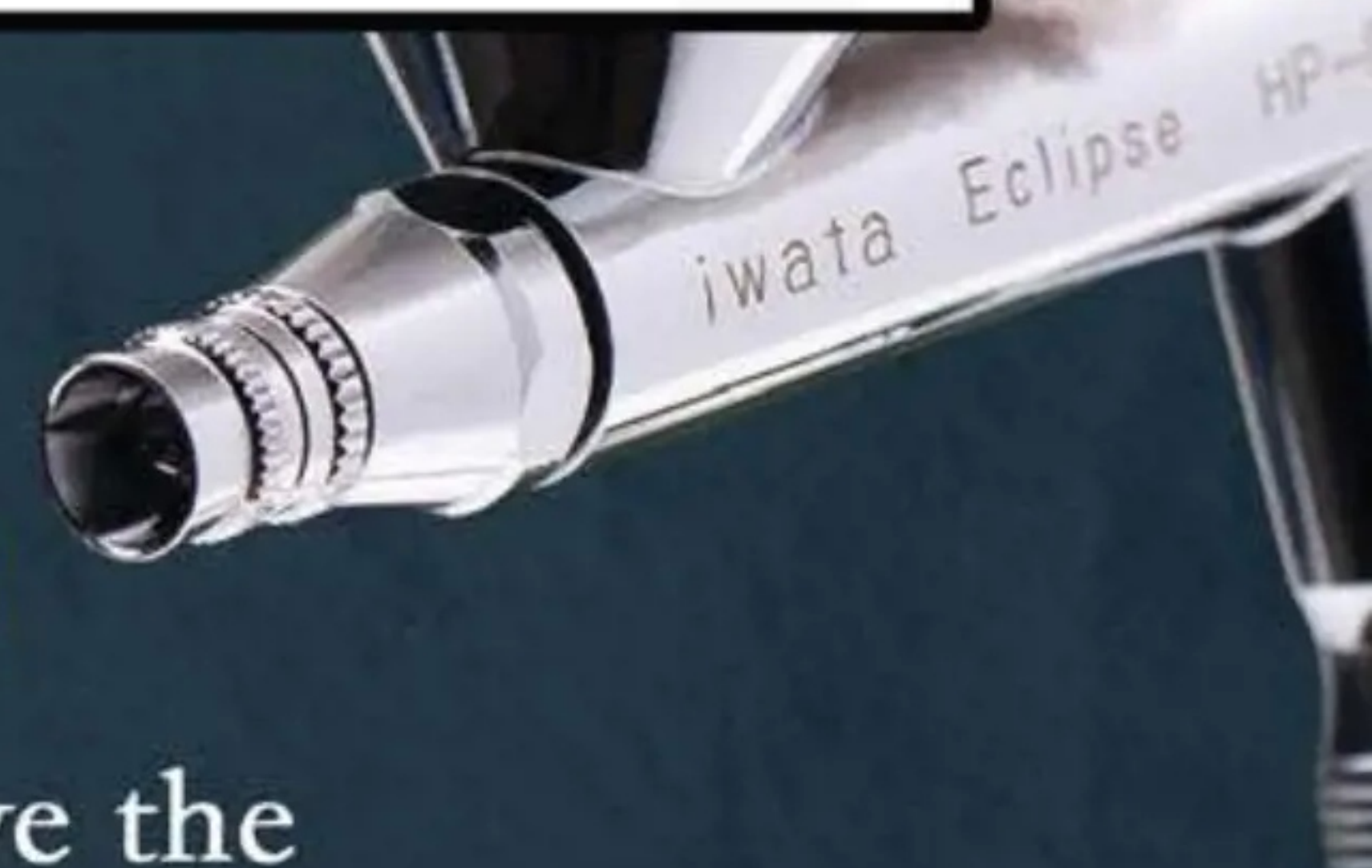
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SEASONS GREETINGS
TO ALL OUR READERS

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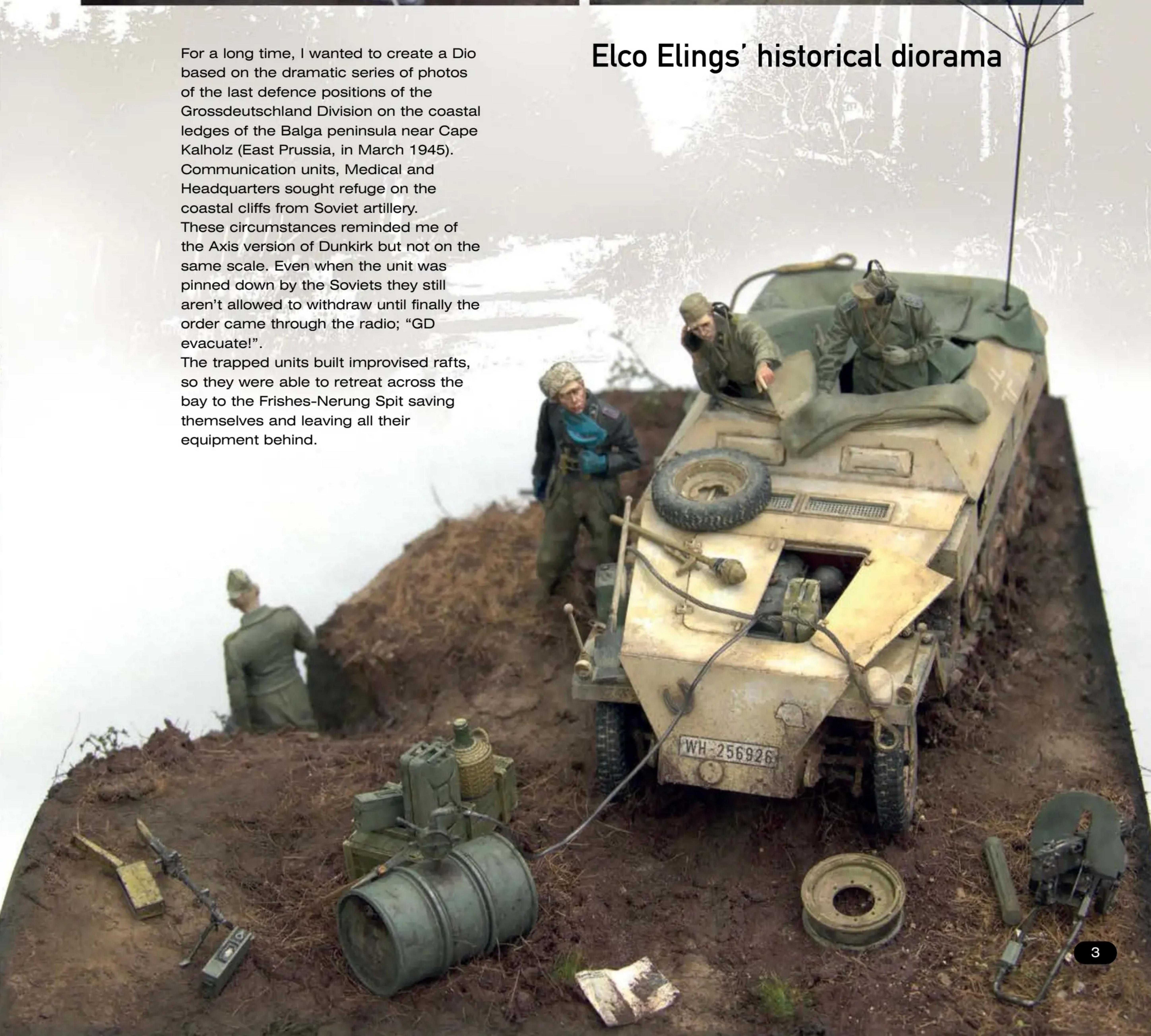


[EVAKUIEREN!]
EVACUATE!



For a long time, I wanted to create a Diorama based on the dramatic series of photos of the last defence positions of the Grossdeutschland Division on the coastal ledges of the Balga peninsula near Cape Kalholz (East Prussia, in March 1945). Communication units, Medical and Headquarters sought refuge on the coastal cliffs from Soviet artillery. These circumstances reminded me of the Axis version of Dunkirk but not on the same scale. Even when the unit was pinned down by the Soviets they still aren't allowed to withdraw until finally the order came through the radio; "GD evacuate!". The trapped units built improvised rafts, so they were able to retreat across the bay to the Frishes-Nerung Spit saving themselves and leaving all their equipment behind.

Elco Elings' historical diorama



The idea was to create a small scene where the cliffs and the equipment on the edges take a central place. Remembering studies of why these men fought to the literally the bitter end kept coming into my head to create such a scene.

Several layouts were tried to recreate a small part of a cliff and on top an observation vehicle to detect upcoming attacks and defend the final meters before the land meets the sea. The entrenched men on the cliff and the equipment laying around must increase feeling of the difficult position these men were in. I started with the figures, so I was able to "draw" the story.

The figures are a mix of stock figures and adjusted figures to fit the scene changing the position of them. The crew of the 250 are from Arto and just perfectly fit in with the 250.

The rest of the figures are adjusted by changing of sculpting of a new arm or leg with Magic Sculp. By doing this you can fit the figures into your story.

After the figures were done, I airbrushed the basecoat with AK Real Colors, camouflage scenes were painted with mixed colors out of the same (Calvin Tan Signature) set and shadows and highlighting is done with oils from Abt 502.

The skin tones are done with acrylics exclusively and the AK real colors are used once again. A few thin coats of VSM ultra matt varnish were sprayed on the figures using the airbrush and the tiny details like the fingernails, nose tips and lips touched with satin varnish.

I built the Dragon kit 6427 Sd.Kfz250/1 NEU and updated it with Rado front wheels and several 3D printed parts like the tool clamps. The surface is treated with Mr Surfacer 500 and sanded with fine sanding paper to give it a more worn metal look. I wanted a Star antenna to make clear it is a command vehicle and scratch build the antenna holder, unfortunately it was covered by a tarp later on the building process, but I know it is there!

The front axle is adjusted to give the vehicle a more interesting look. The open engine hatch is made from thin plastic card to get closer to scale and I thinned down the closed hatch on the edges to look the same and into scale.



The engine bay is updated with additional parts and lead wires, so it looks more convincing looking into the engine bay although one hatch is closed. A jerry can is placed on top of the engine; this was commonly used for hot water.

A gasoline barrel is placed next to the vehicle to simulate the last fuel is used to keep the motor running for the radios. The equipment was set to being abandoned as soon as they were authorized to leave their positions.

A mix of Tamiya paint is used for the Dunkelgelb basecoat and topped with satin varnish from AK Interactive to seal the paint and protect it against the further weathering steps. Oils are used for pin washes and as always, I used several earth colours to avoid a monotone appearance. To give more depth shadows are applied with oils in the corners and more lighter colours on the edges. Chipping is done with a small paintbrush and sponge to create a wide range of scuffs and chipping marks. A lighter colour from the basecoat is used from my own Tamiya paint mix and for dark chipping AK chipping colour.





As always, I used my speckle technique to create more depth into the model. To break the Dunkelgelb more I made a mix of oil paint close to the base colour and thinned it down with Odorless thinner and applied it in several thickness on the model.

Of course, by thinning the mix more, less colour is visible and with this technique you can create a very nice variation on your model looking less uniform. The same exercise is done with several earth tones simulating dried and fresh mud. After that the edges are scrubbed gently with gun metal powder to give it a more used look.

A few coats of hairspray sprayed on the model and once dried I used crème Weiss from AK to airbrush onto the model for the worn winter wash.



I let it dry for a minute and then started scrubbing the paint off with a flat pencil soaked into warm water. By using less water, the paint will come off more difficult creating the effect I was aiming for. After the whitewash is done more weathering is and basically, I repeat the whole weathering process as I did before the whitewash. Additionally pure white is added with oils to the worn whitewash for more variation.

An ultra matte varnish from VSM is used to get rid of excessive shiny parts and after that a few touch up's are made with gun metal pigments and oils to accentuate the details.



The canvas tarp is made from Magic Sculp formed on a plastic card structure I made to prevent the tarp from sagging and formed in a natural way. The tarp is airbrushed and weathered with oils using the speckled method using winter grime from AK and oil paint in light earth colours. The pin washes are done with a dark wash.

The wheels and tracks were handled with a mix of plaster, pigments and acrylic paint. I added a mix of fine tea leaves to the track mix to give it more volume and variation. To not overdo the wheels, I used a fine brush to be applying the mud mix and let them be visible much as possible. Especially the Rado wheels to keep the details intact much as possible. I treated the dried plaster mix with several oil washes to build up the dirt. Now that the vehicle is finished it is time to concentrate on the accessories! As a focus point of the Dior they need to have extra attention.

So, I cleaned my bench to get full attention on all those tiny things! I approach it as a separate project, so I have the full focus on painting and weathering. The parts consist of Rado, Pimp my Miniatures and Miniart accessories. First everything is airbrushed and painted with AK Markers before the fun begins. Weathering and chipping need to be in proportion to keep it in scale and again the key word is variation in things.

The groundwork is made with VSM mud paste mixed with small

debris out of the garden and small tea leaves. When the whole groundwork dried seagrass and more debris is sprinkled on the wet paste and gently mixed into the groundwork. You don't want to overdo this but mix it just enough to blend it in. Pigment powder simulating dried earth is also sprinkled on the wet paste and gently pressed in with an old brush leaving the top layer dry enough to keep the dried earth look.

Finally all the components can be placed into the wet mix and some adjustments can be made after that. You don't want floating items, so I walked through all items several times from all sides. When the mix is almost dry, I use a toothpick to loosen the soil for more variation.

More earth tone colors are airbrushed after it was firmly dry to tie all washes and pigments together.

Overall this tiny project did take some time, but it was nice to work a rather small piece trying to give it that feeling looking at the original photo's of the pinned down units and their desperate positions they were in.





[EVAKUIEREN!]
EVACUATE!



It's a
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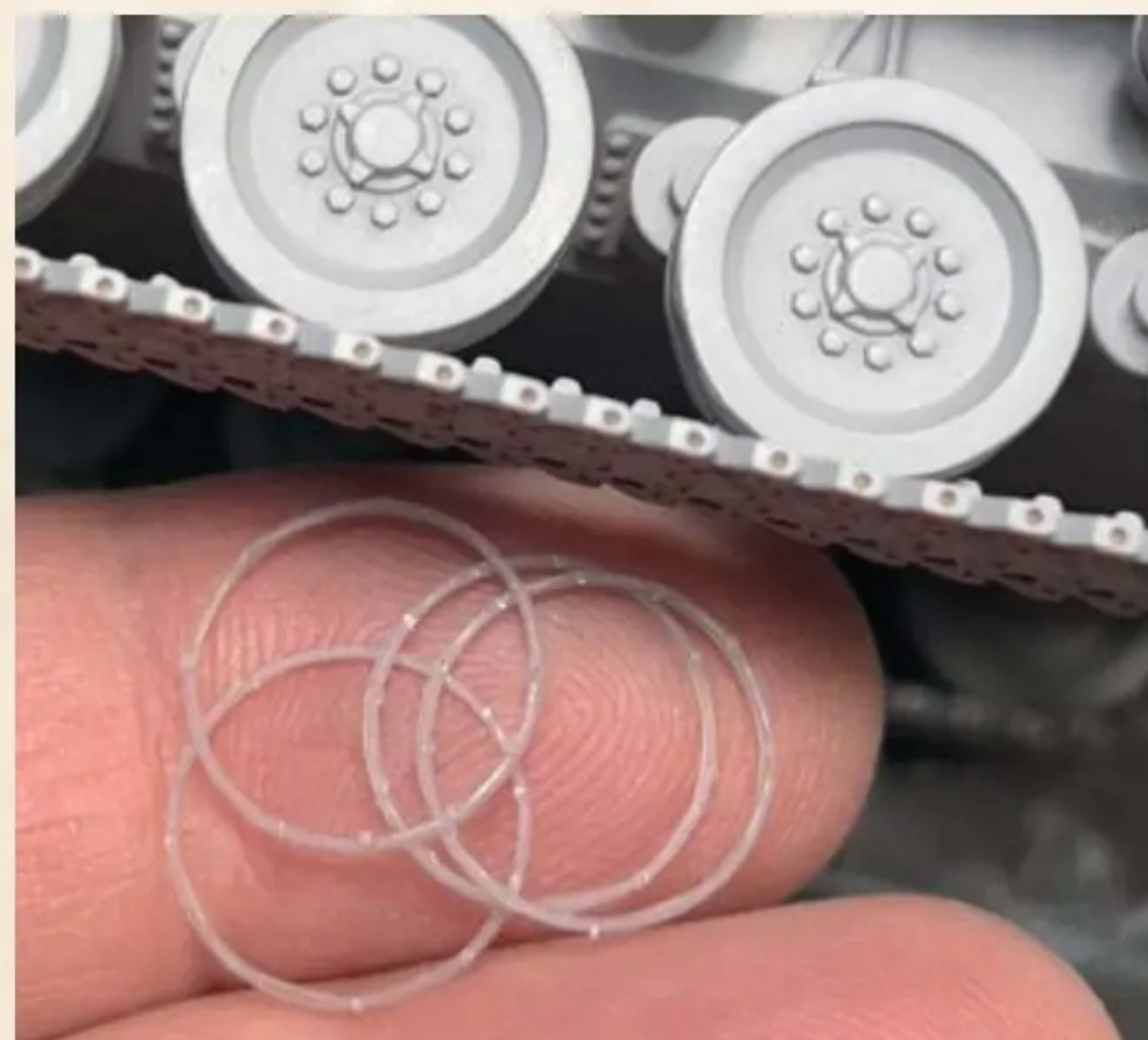
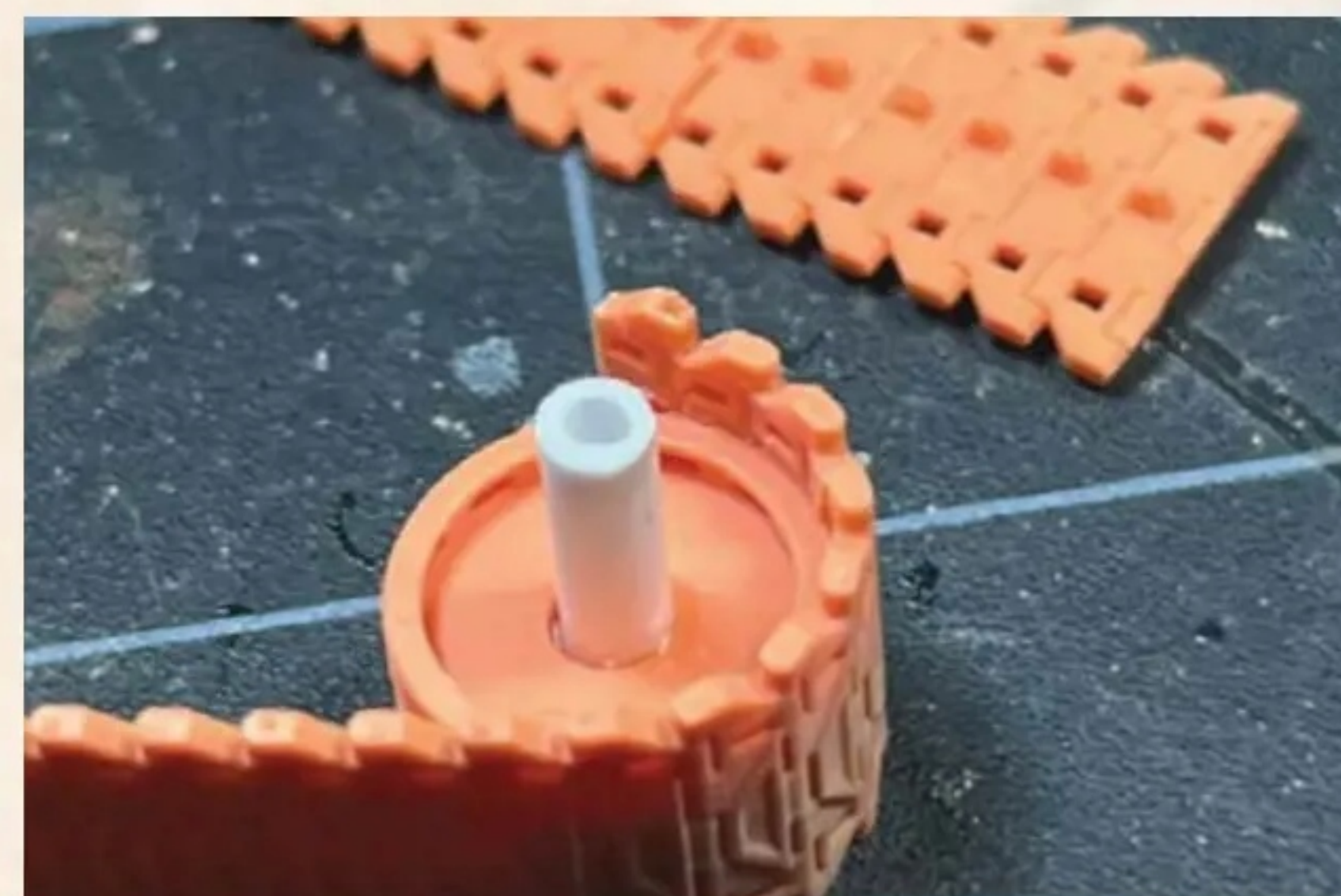


STAN SPOONER'S quarter-scale M-42 DUSTER

Dust'er
off and
fill'er up!

A model of the M42 Duster in quarter scale... who would've ever thought it was possibility! With the advent of 3D digitally printed model kits, it seems almost anything as possible. SS Models from China has created a broad range of model kit subjects that are available in many scales. I ordered a sample of the 1:48 M42 Duster as an experiment, and it ended up being a two-year journey.

When I receive the model in the mail, the first thing that struck me was the bright orange resin. I'd never worked with this type of resin before, but I figured it shouldn't be any different than any other resin... well, that wasn't quite the case. The next thing that I noticed was that certain parts of the model were beautifully rendered and had amazing detail and accuracy, other parts of the kit needed some refinement, but there were other areas of the model had to be completely reworked.



One of the largest problems with the kit were the road wheels and tracks. Kit provides them with giant sags between the return rollers. Modern US Armour has the upper run of tracks taunt. You might get a periodic sag here and there to a small degree, depending upon circumstances and how and where the vehicle was being driven, but for the most part they were fairly straight across the top of the return rollers. The next issue are the missing details on the road wheels. The biggest issue with the wheels were that there was no outer rim bead to indicate where the rubber sets into the metal wheel. A list of the key items that were either modified or fixed on the model are as follows:

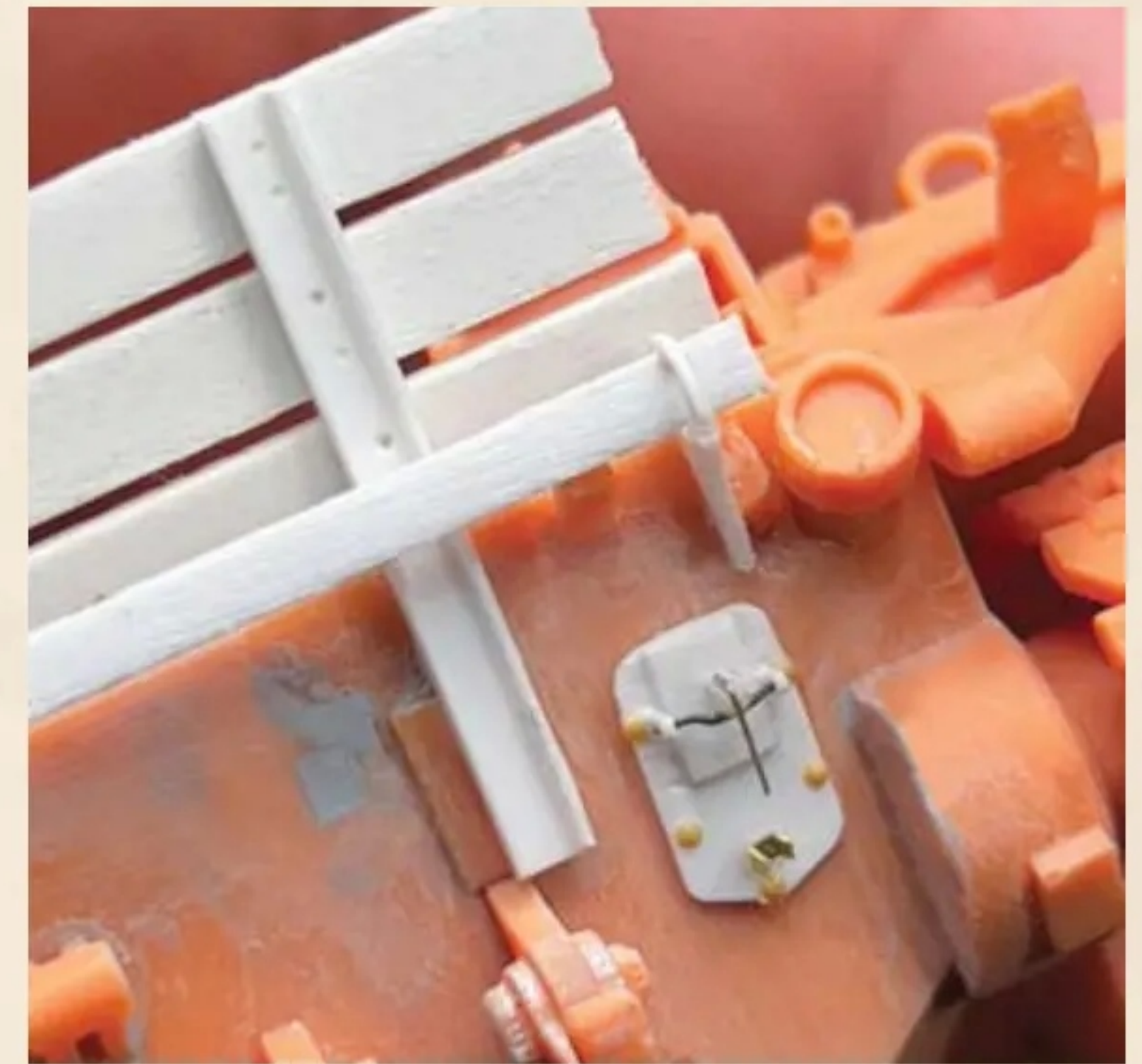
- The upper run of tracks was straightened by cutting sections of the track apart, and re-attaching them using superglue to create a much more acceptable look... not perfect, but better! Two links per side, had to be removed. NOTE: This is where working with this orange resin got interesting! Using the traditional method of heating the resin to straighten the tracks did not work as the orange resin had a huge amount of elasticity and memory and would always return to its original shape. I tried five times using boiling water, a heat gun, and anything else I could think of with no luck.
- Next, with the help from my friend Chris Lenahan, rim bead rings were designed and printed, and then carefully applied to both inside and outside of each road wheel. When this was done, the wheels were already glued in place, so the inside rim beads needed to be cut and carefully spread to go around the suspension arms.
- Unfortunately the left rear drive sprocket arms was badly miss-printed so I need to recreate that with plastic tubing.

- Next, the track faces were designed completely wrong, so Tamiya Simple Putty was added to the face of each track link to represent the black rubber trackpads. The putty was then "dinged up" a bit to represent wear and tear.
- Lastly, the track pin holes were missing so I carefully drilled them into each track link on both the inside and outside of the track runs.

Next up, I turned my attention to the main hull. Details were refined, and others were added such as the fenders by adding the beads on the edges, created the spare gun barrel locking bracket, rebuilt the broken machine gun bracket, one of the antenna mount boxes were re-created as it also was broken, the sides of the exhaust muffler covers were refined and detailed, various missing rivets and other details were added and incorrect details were removed. Next, my attention turned to adding details that would make the model not only more accurate but much more interesting such as adding a wooden and metal storage rack that was often carried off the rear of the tank.

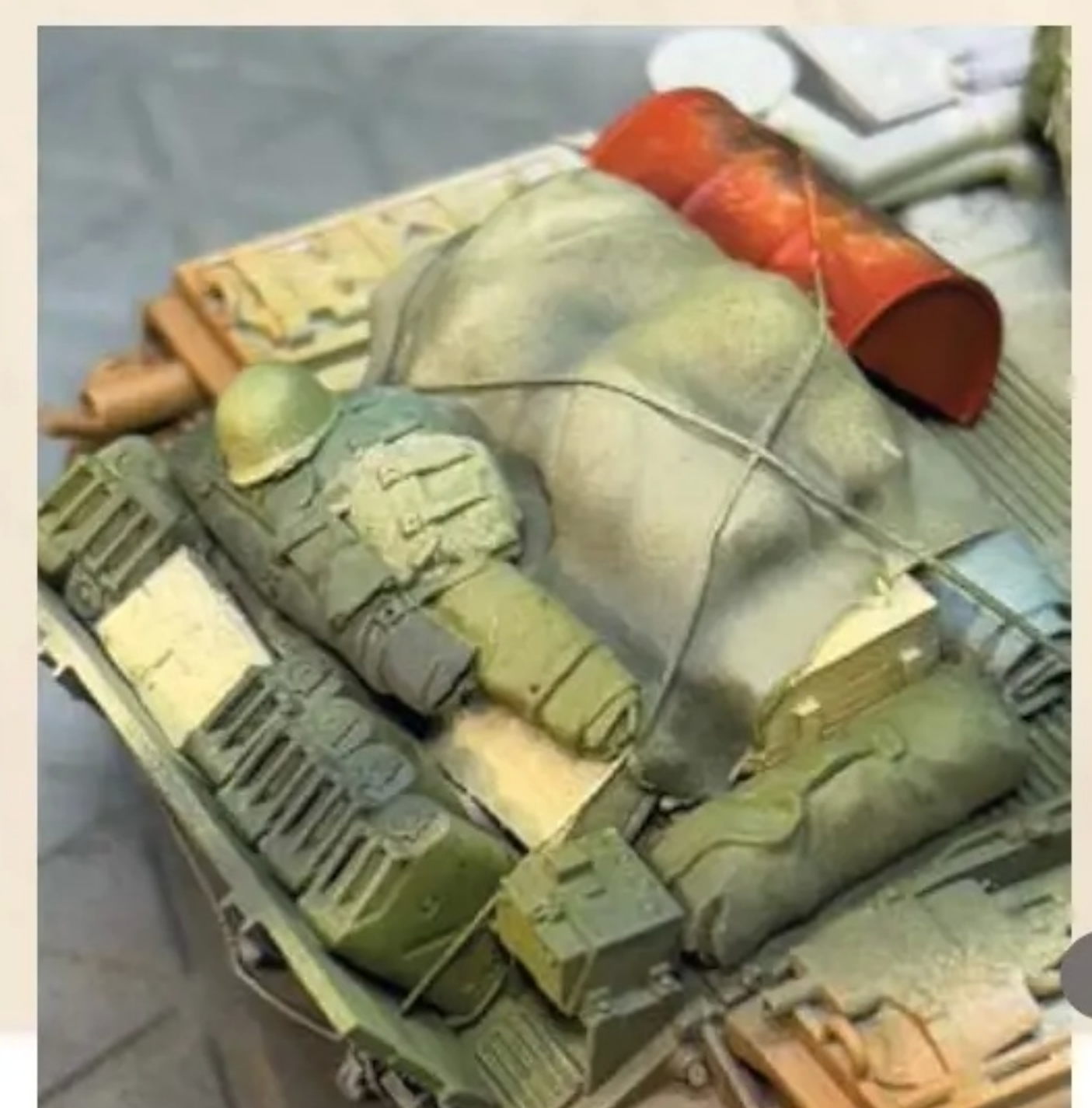
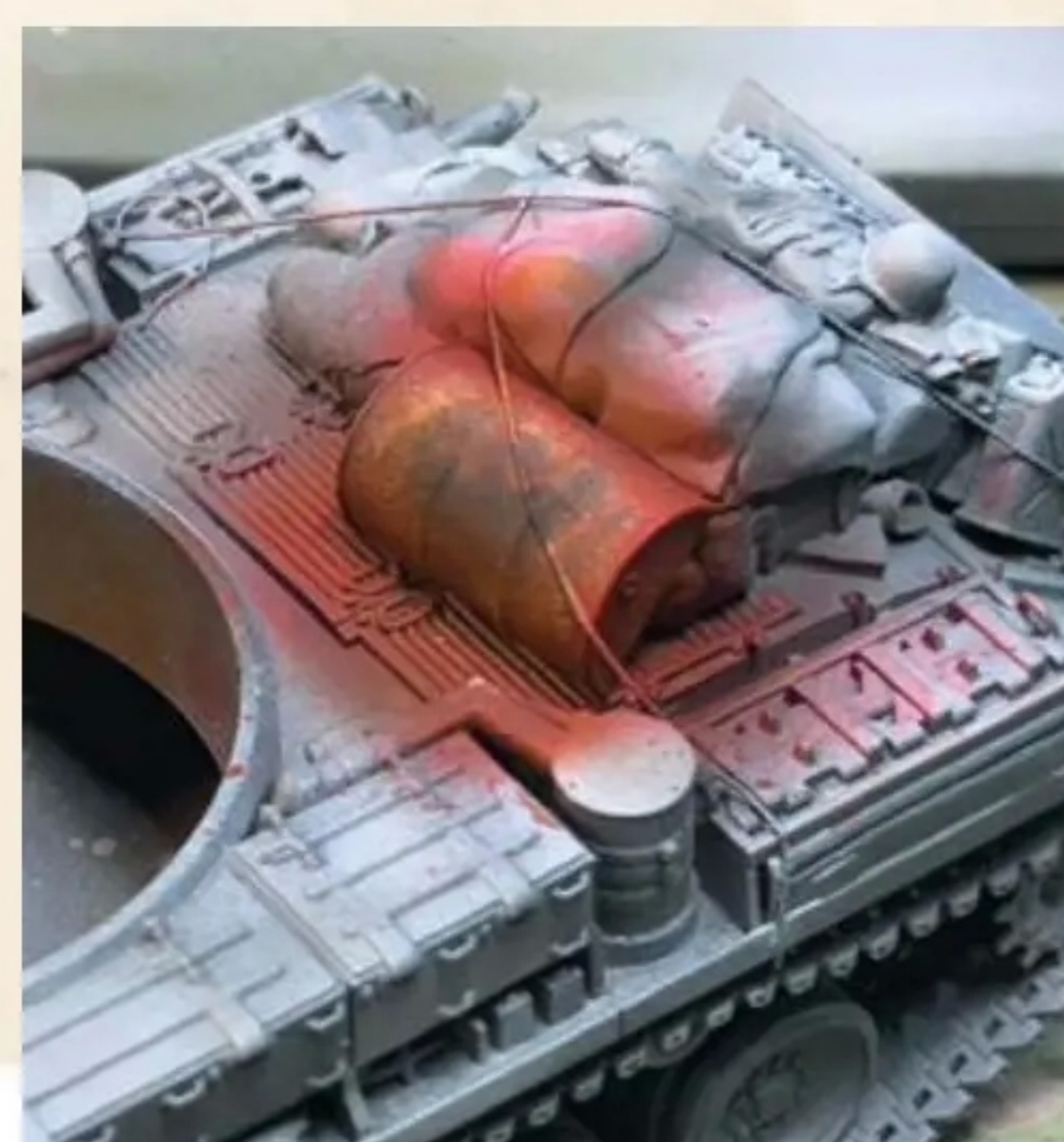
As in most of my quarter scale builds, I used Value Gear and various other 3-D printed items for stowage. Items such as gas cans, hats, and my favourite addition was the skull added to the front of the turret as seen in a famous historical photo as well as half of a 55-gallon drum from Tamiya.

These drums were used by the crew to cook on. A few other items were added, such as a scratch-built beach chair, various tarps made of plumber's tape and some draped towing chain. The turret mounted M60 machine gun was from Tamiya.



Paint in Place

I must admit that my painting process is a little unconventional. I tend to paint everything in place as I feel it unifies the tonality of the model. First, I pre-shaded the model and then I added the first layer of "mud" texture to the bottom of the model. Next, I turned my attention to the stowage. In order to paint the stowage in place, I paint the uppermost items first and then mask them with Silly Putty. I move my way down the stack of storage until I reached the vehicle itself. Now that I'm looking at a giant pile of masking putty, with only the vehicle surface exposed, I can start to paint the Duster itself.

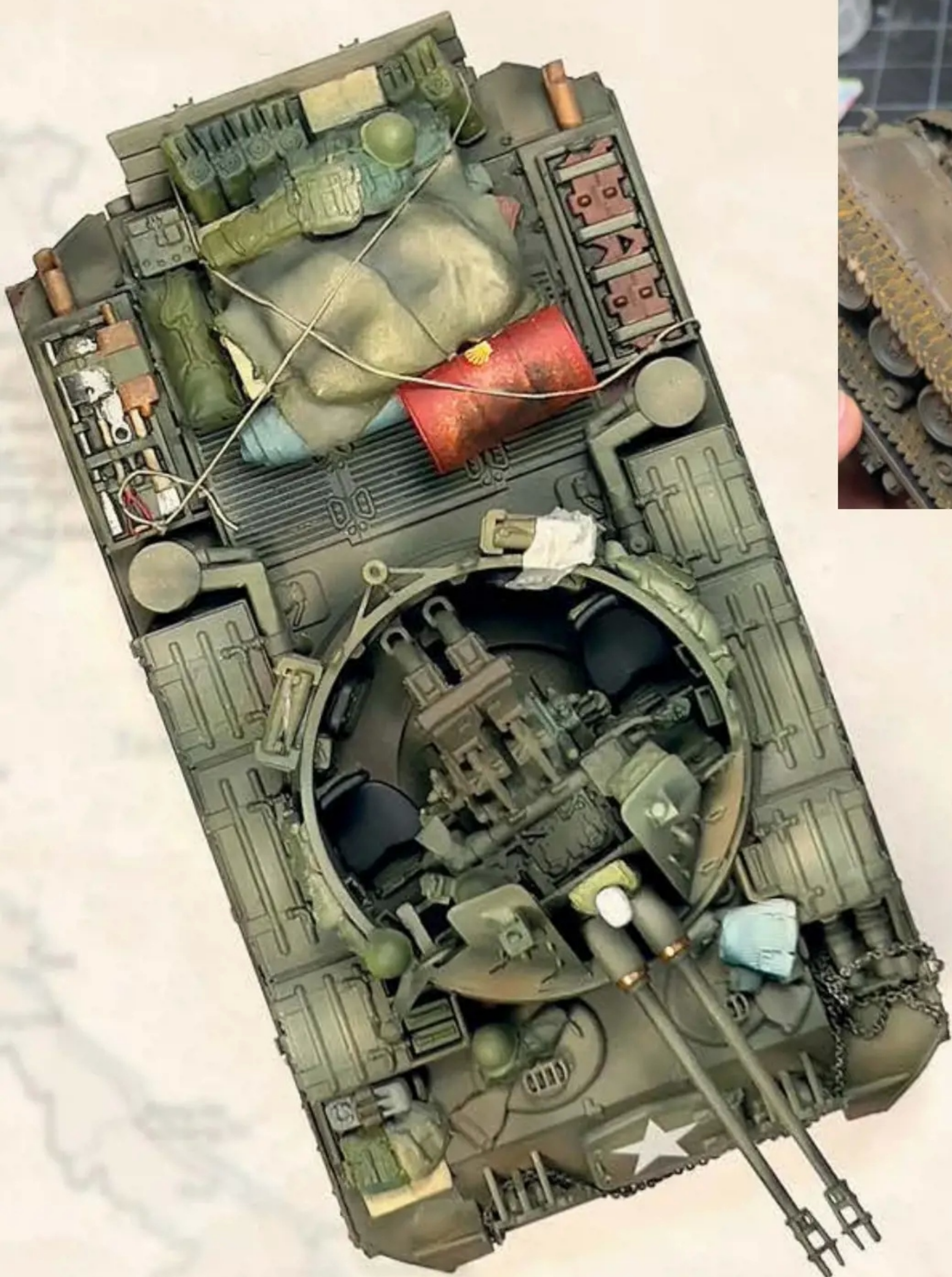




I used many shades of OD Green, browns, tans and rust to re-create what I was seeing in certain colour photographs from the era. Once I'm finished with a general paint job, I peeled all the putty away. Admittedly, it feels a bit like Christmas! The small 3D printed Cushman scooter (thanks Chris!) was painted in the same way. At the rear of the model, there is a load of stowage that has a large tarp over the top of it. Once I peeled all the putty away, it felt that tarp was too dark and homogeneous with the colour of the Duster, so I re-masked around that tarp with Silly Putty and painted it a much lighter tone. When the majority of the airbrushing had been completed, I went back in with various Vallejo paints and highlighted and shadowed

certain parts of the storage to create a little more impact. The reason I do this is because I know that once I start weathering things, it tends to bring the overall brightness down, so I try to paint everything a little brighter at the onset so that I still have the desired impact once I start adding oils and other types of weathering. It was at this point I added tie down straps made of lead foil around the turret to create a little "movement" around the model. Once the detail brush painting had been completed, and the last few paint washes were added to the lower hull and tracks, I gave the overall model a satin coat and applied decals scavenged from various Tamiya 1/48 kits. The model was then dull coated and ready for weathering.





Weathering

When it comes to the weathering of military vehicles, I use pigments and oil paint to achieve the look that I'm going for. There are many other wonderful products out there and I'm sure you can achieve the same look or better using them, but these are the products I know how to use, and I feel comfortable with them. A variety of oil paint colors were used thinned with Turpenoid.

Once the oils were dry, the edges were feathered with Q-tips dipped in Turpenoid as well as small paint brushes to create the effect of dust dirt gathering in corners, and then a small amount of pigment was added into a tiny amount of Turpenoid mix and placed in various corners to have a visual buildup of dust. This type of mixture was applied all over the modelling various depths and densities while constantly referring to reference photographs. I now have my model to a place that I felt comfortable with it and enjoyed the way it looked.



I've come to the conclusion that I am not a "realist" as it applies to painting and weathering of the model. On a larger scale model such as 1:16 scale armour, someone like the amazingly talented John "Spud" Murphy makes incredible models by re-creating exactly what we see in historical photographs with paint and weathering. Moving down a couple scales, with 1:48 armour... I tend to want to create an impactful model rather than an exact replica.

It is nowhere near as large of a model, and I want the piece to have a little more visual impact to stand out on the table. My goal is to give you the "impression" of the story being told in the historical photographs. Just like there are "realist" painters and "impressionistic" painters, I guess there are many varieties of modelers who use different techniques to create the story you are hoping to represent.



Figures and base

As I was finishing up the model, I realized I wanted to put it on some sort of a base to tell a larger story. There's a well-known black-and-white photograph of an M48 Patton sitting in front of a gas pump at an Esso service station in Saigon, and I thought that would be a great idea for the Duster. Seeing as though the M42 Duster was primarily used in a perimeter support: anti-personnel role, I looked up the names of towns that surrounded Saigon and tracked down a photograph of a Shell gas station in a town named Phan Thiet. Thus the title of the build was born... "Dust-er off and fill'er up" (NOTE: credit for the name goes to my good buddy Rob Booth).

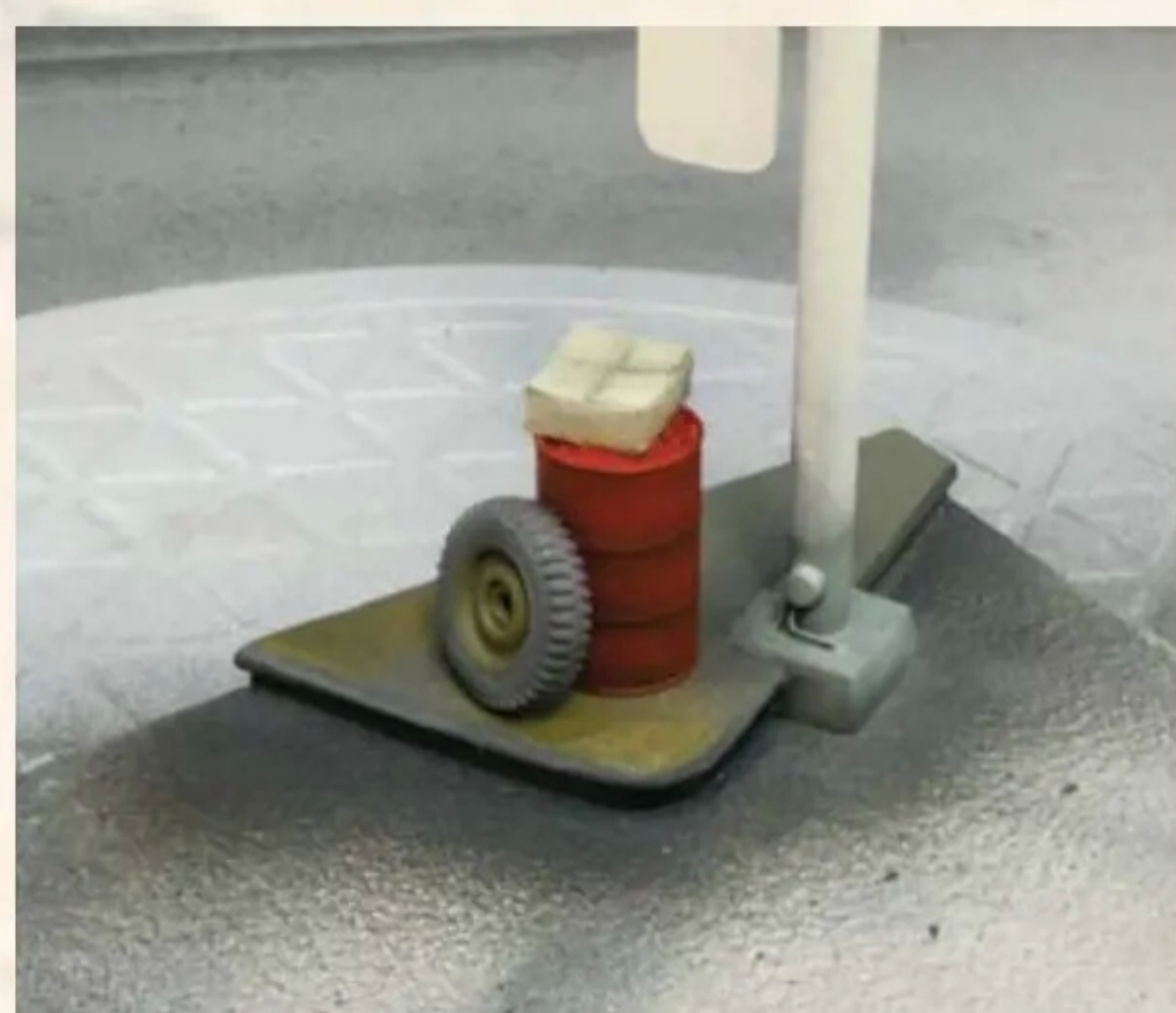
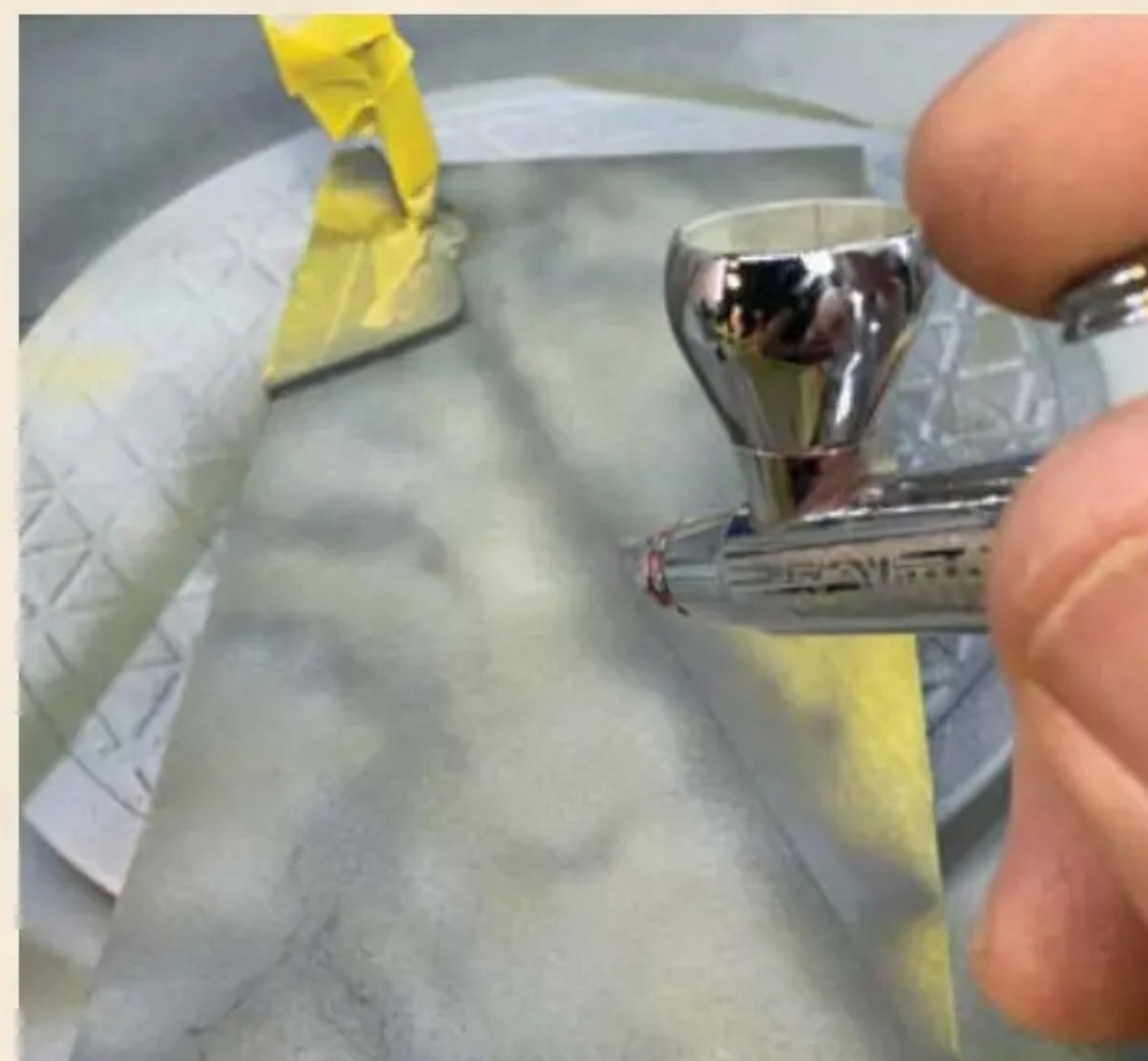
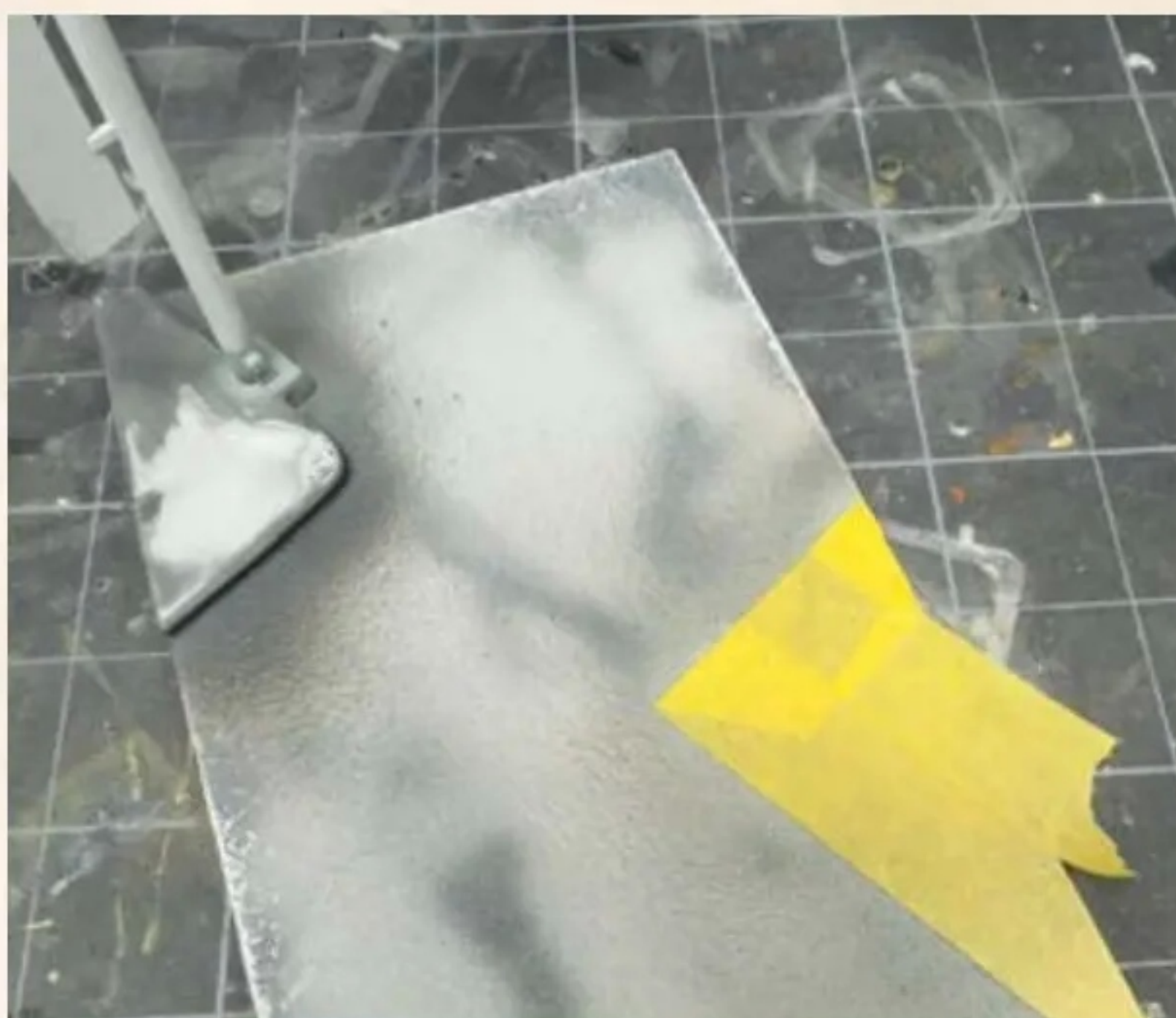


I proceeded to scratch build the shell sign and fluorescent lights that I saw in the photograph. I started with some groundwork representing the patchwork of broken and worn blacktop that I saw in the image by using a plastic sheet of "Stucco" from the Plastruct product line. A patch of smoother concrete was created by masking a small area off and applying Tamiya Basic Putty and then sanding it somewhat smooth. To create the Shell sign, I drew the sign in Adobe Illustrator and printed it out at scale. This became my template for the construction. The print also became a paper mask for the airbrush painting of the Shell sign. I then touched it up with a brush. The graphics for the flag mounted sign off the main pole was also designed in Illustrator and printed out on inkjet decal paper. I then added a few elements that I saw in the photo such as a curb for the sign to mount to, oil drums, boxes and old tires from the spares box all became part of the story. It was all weathered the same way as the model, with oils and pigments and lastly some AK Wet Effects was used for the

street water. The other thing I wanted to include were some figures to help pull the story together. I remembered some of the iconic scenes in the movie Good Morning Vietnam, so between a female figure from Cults3D and US tankers and infantryman from M3 and Paracel, the story was set. NOTE: I'm not great at painting figures yet, but I'm trying!

That's a wrap:

When I started this build over two years ago, I reached out to Mark Neville and David Parker asking if AFV Modeller would be interested in publishing it, little did he know that it would take this long to get the finish product to them! I want to say thanks for their infinite patience and willingness to put my model in their wonderful magazine. I hope y'all enjoy it. If you want to hear more about armour modelling in 1/48, listen to The Quarterscale Madness Podcast as well as follow me on The Model Box on both Facebook and Instagram. Thanks again!





M-42 DUSTER 1:48





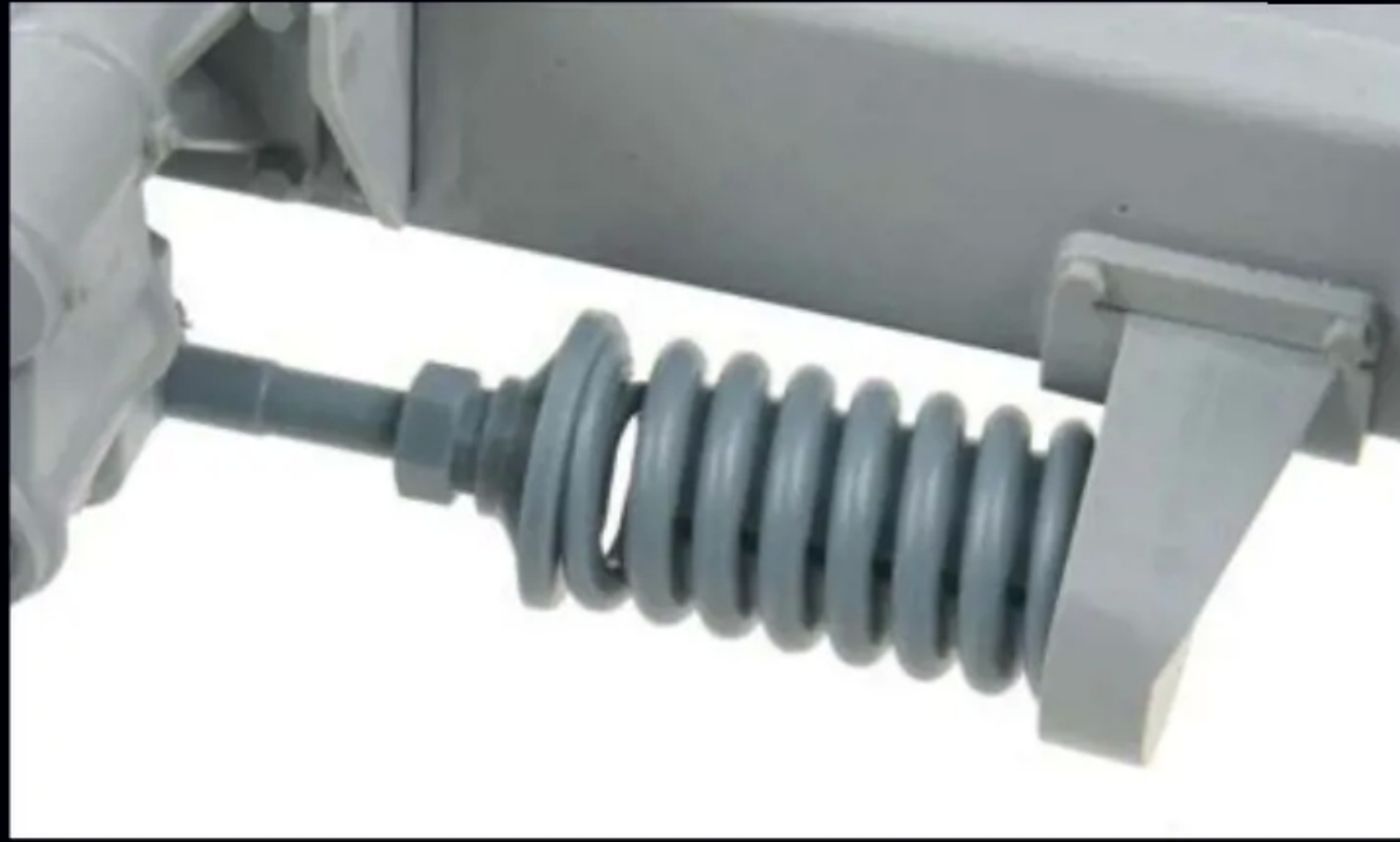
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U.S. M3/M3A1

UPGRADES HALFTRACK

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1:16

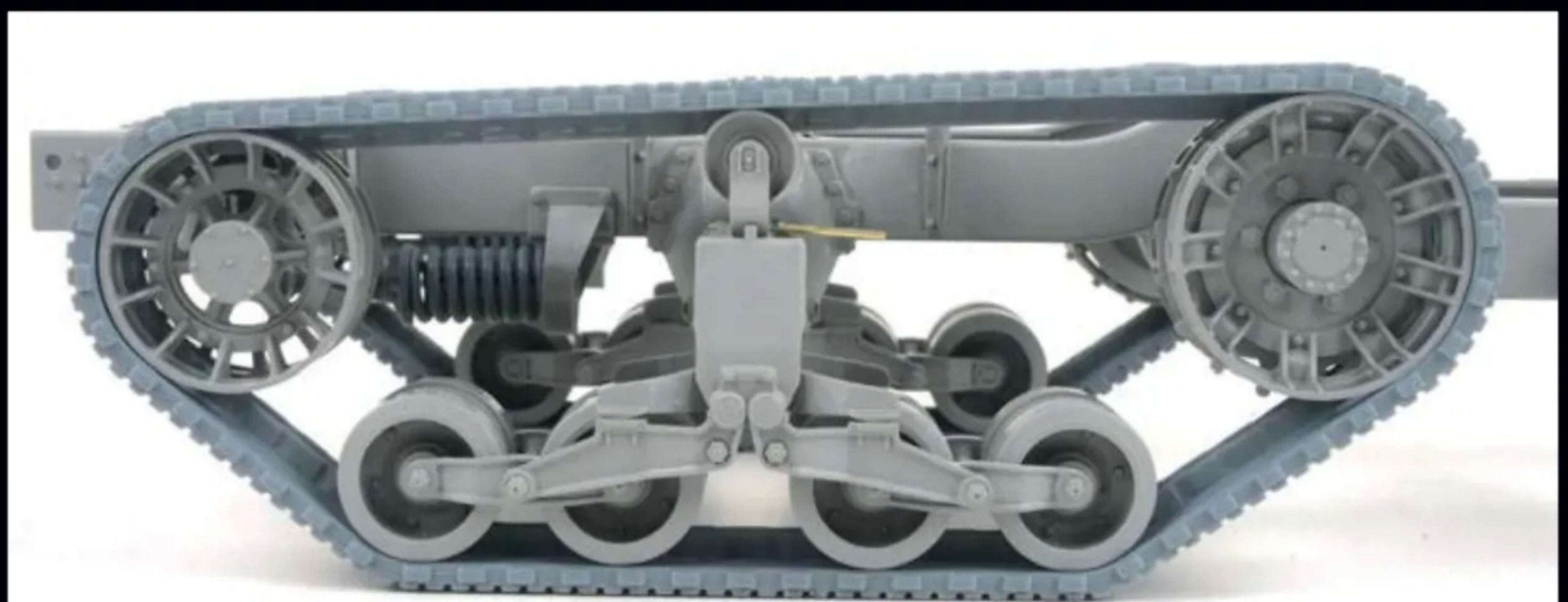
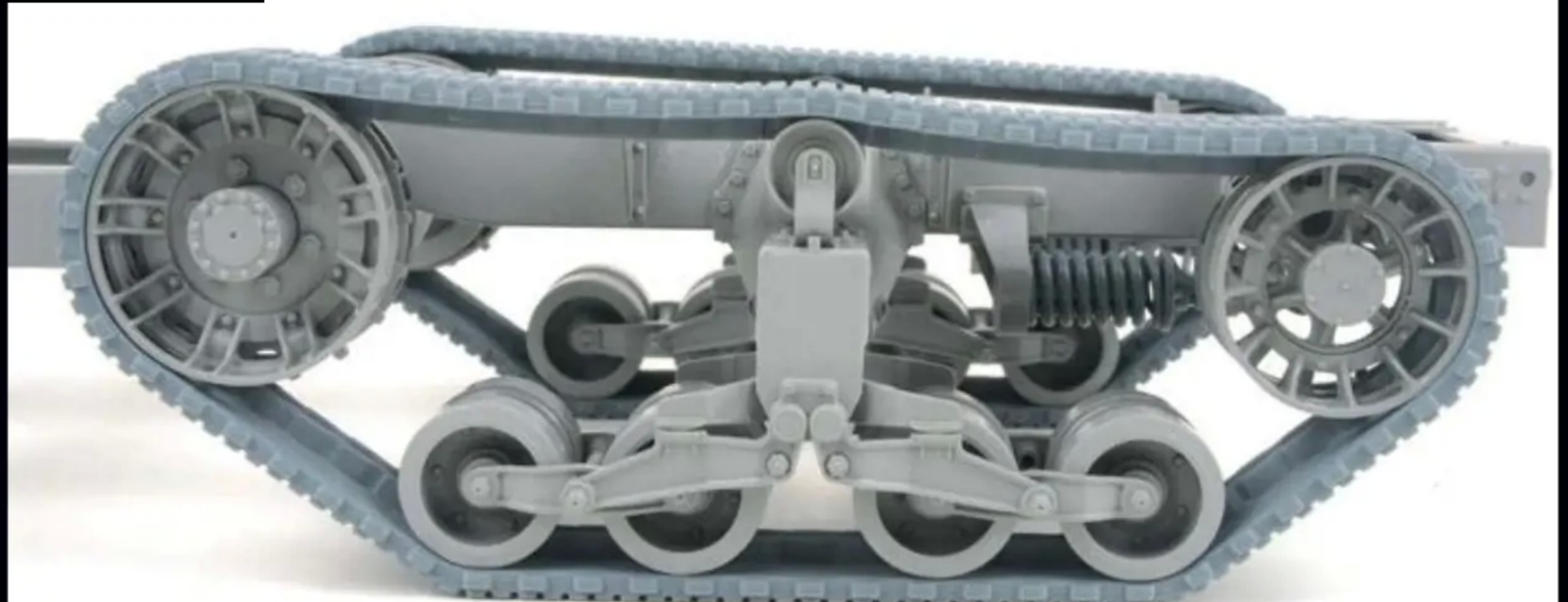


M3/M3A1 Corrected Suspension Spring

This pair of 3D printed springs for the Andy's Hobby Headquarters M3/M3A1 kit not only removes the problem of cleaning up the moulding seam down the length of the kit springs but also adds the correct second internal spring and the split sleeve that separates them.

M3/M3A1 Track Upgrades Taut or Sagged

These replacements for the AHHQ kit rubber tracks give a more realistic appearance offering either the taut appearance of the correctly tensioned tracks or the slightly sagged version. These are 3D printed as a single piece to fit the kit bogies exactly. There is sufficient flex in the track to permit them to be fitted over the centre bogie but you will need your sprocket and idler wheels to be separate from the chassis in order to fit the tracks.



M3/M3A1 Corrected Stowed Water Cans

This set of two stowed US pattern Water cans replaces the kit fuel cans. Our cans come with integral webbing straps and buckles and the correct stamped and pressed lettering for the ultimate detail. We have provided one pristine water can and one that's slightly dented for a more used look.

SET 1



M3/M3A1 Weapon Upgrade Sets

Our two upgrade weapons sets offer the choice of

SET 1: 1x 50 Cal and 3x 30 Cal Machine Guns

SET 2: 1x 50 Cal and 2x 30 Cal Machine Guns with the water cooled barrel sleeves

The set contains our existing guns but the 30 Cals now feature pivotable 1917 pattern cradles for a more realistic appearance. These package sets are priced so that you are getting a free .30 Cal in each set.

SET 2



EARLY (MG34)



EARLY (MG34)



LATE (MG42)



MID (MG42)



LATE (MG42)



Sd.Kfz. 250 & 251

Machine Gun Mounts (Front and Rear) MG34 & MG42

This comprehensive upgrade for the front MG34 & MG42 mounts replicates the real mount exactly and with a moveable lock arm you have to choice of modelling the gun locked into travelling position or hanging loose as you wish. The mounts are designed to work with our own MG34 & MG42 (not included)

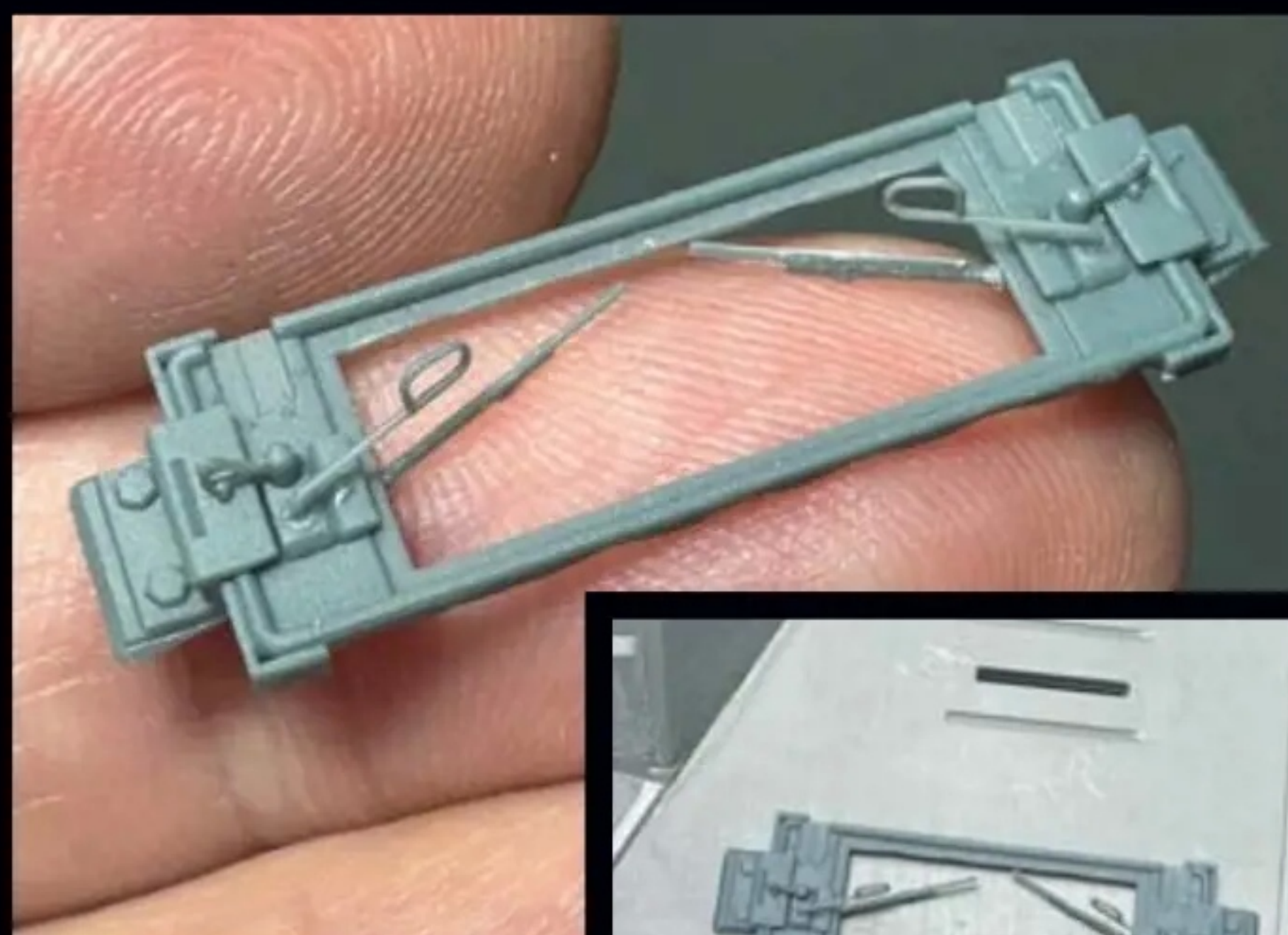
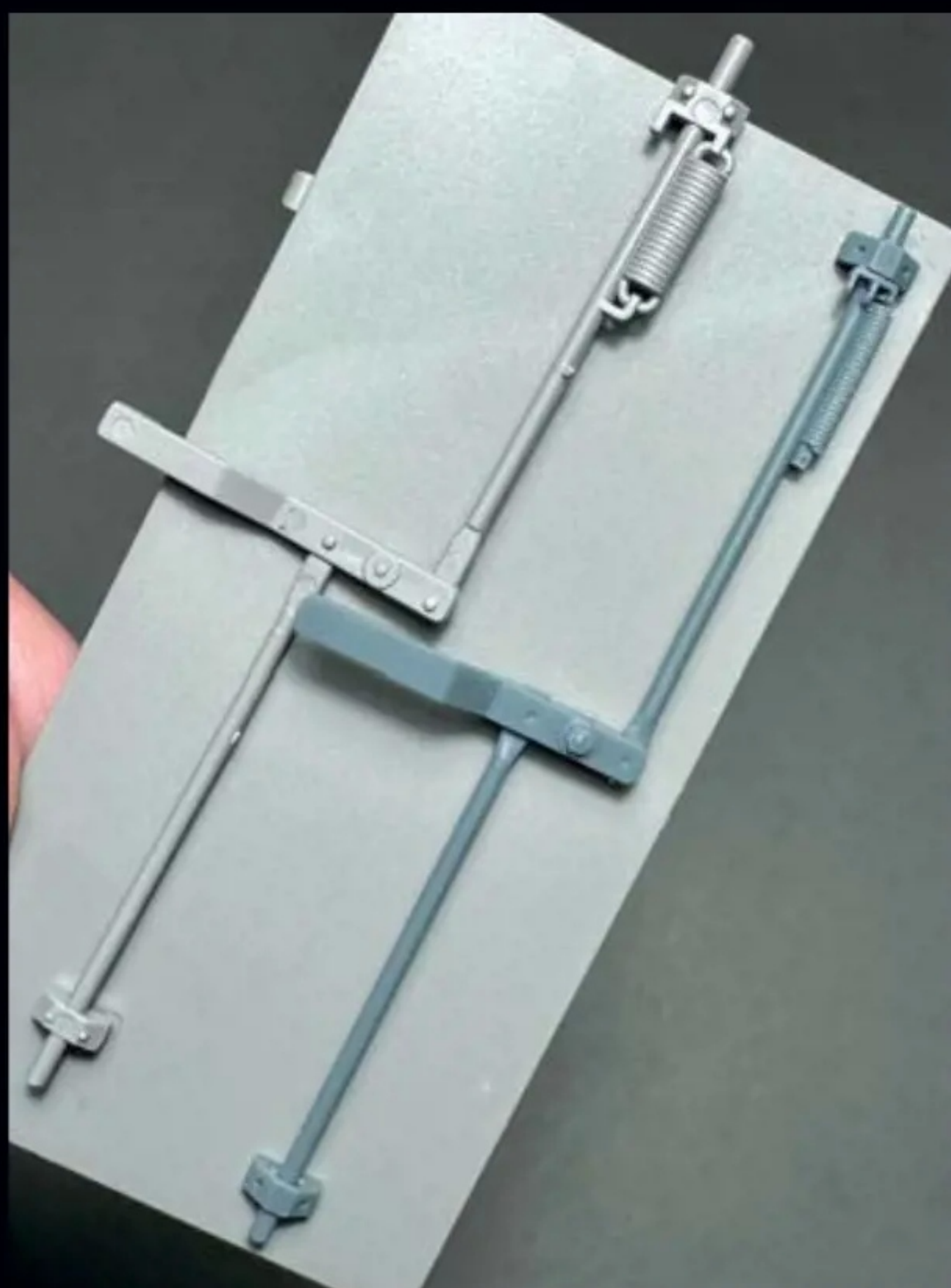
MG34



MG42



Sd.Kfz. 251



Sd.Kfz. 251 Stowed Windscreens

This set of 2 3D printed stowed windscreen inserts replaces the poorly detailed kit parts. The windscreen panels are designed with separate wiper blades and separate control levers. The frames are unglazed so you can add your own glazing with a rectangle of acetate or similar clear material of your choice.

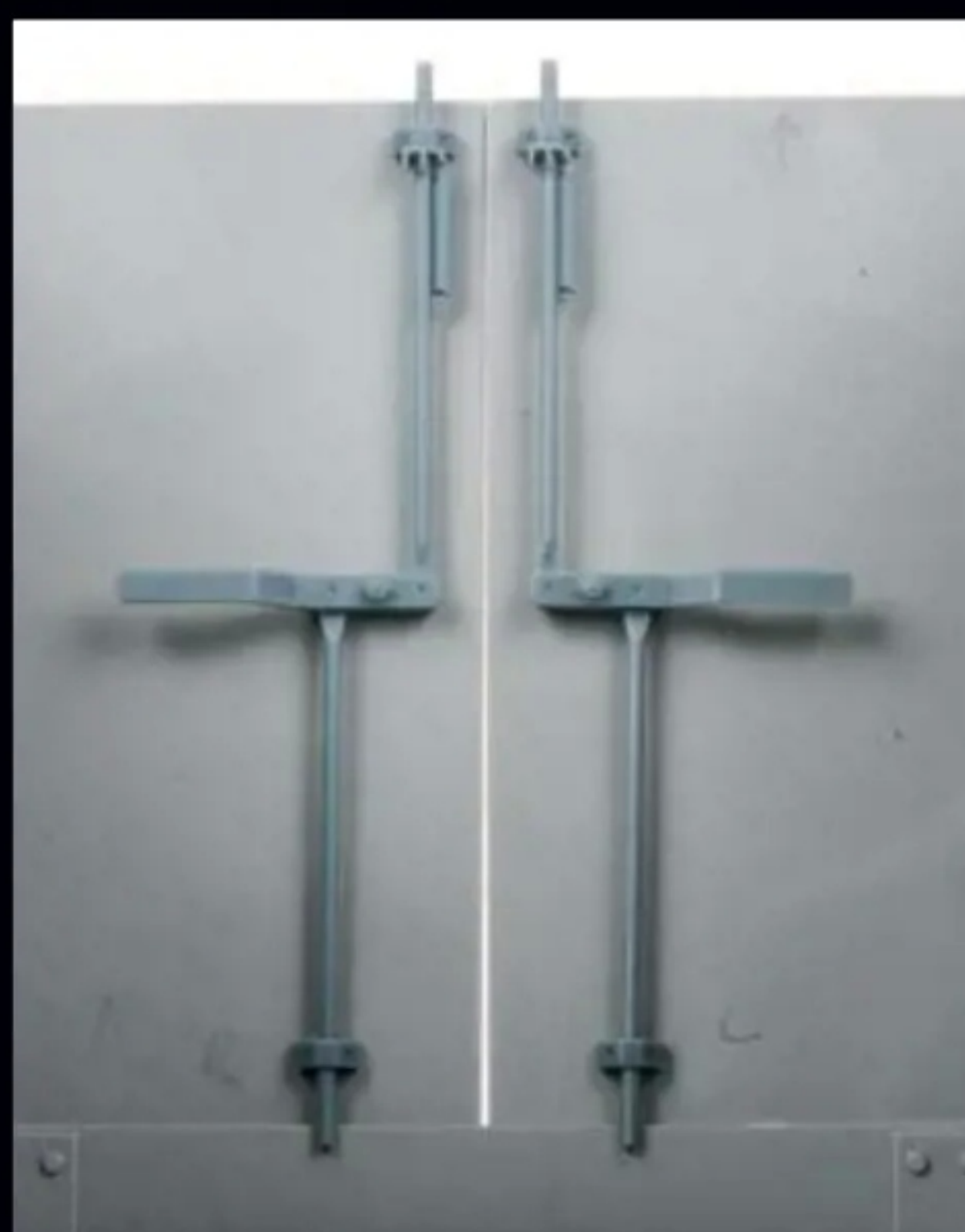
MG34, MG42, MG3 Spent Ammunition Belts

Set of 4 (two types) highly detailed and extremely delicate spent ammunition belts for the German Machine Gun family. The set provides two versions of the belts, with and without the starter tabs and can be trimmed to suit your needs. Careful use of heat (hot air or hot water) will allow the belt to be manipulated to hang from the breech as desired.



Sd.Kfz. 251 Ausf.D Rear Door Locks

3D printed set of locking mechanisms for the rear doors of the Sd.Kfz.251 Ausf.D. Printed as one piece for easy installation these feature correctly scaled spring details and accurate open locking handles. The locking rods are correctly dimensioned to accurately overlap the door frames.



Sd.Kfz. 251 Ausf.D Corrected Side Vision Block Frames

Set of 2 frames for the side vision blocks in the Driver's compartment. These correct the size and shape of the vision block frames on each side of the hull. The frames are unglazed so that you can add your own acetate glazing or reshape the kit clear parts to suit.

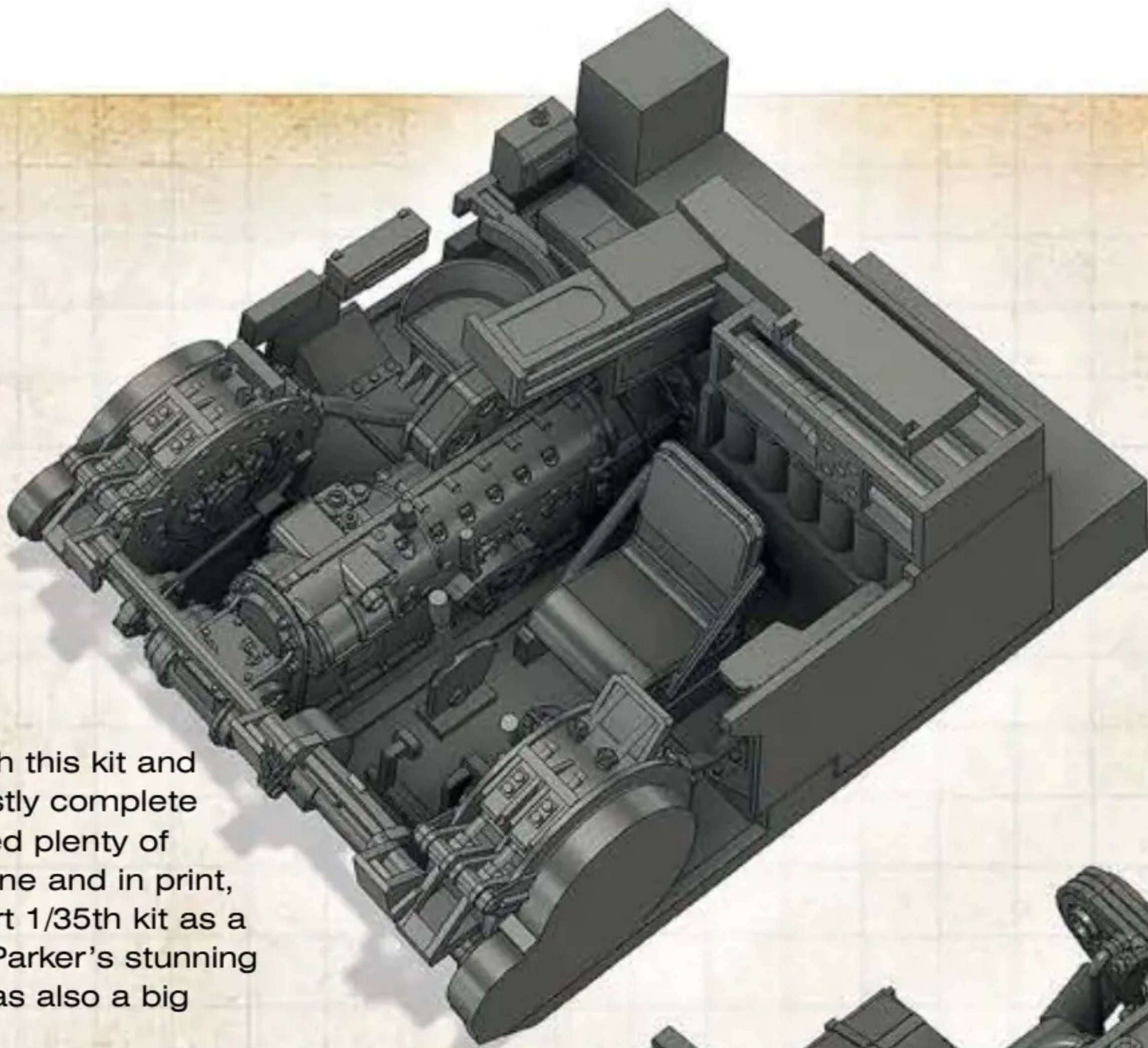
G-WIZZ



**ALEX CLARK'S STUNNING INSIDE JOB
ON THE FLYHAWK 1:72 PANZER IV Ausf.**

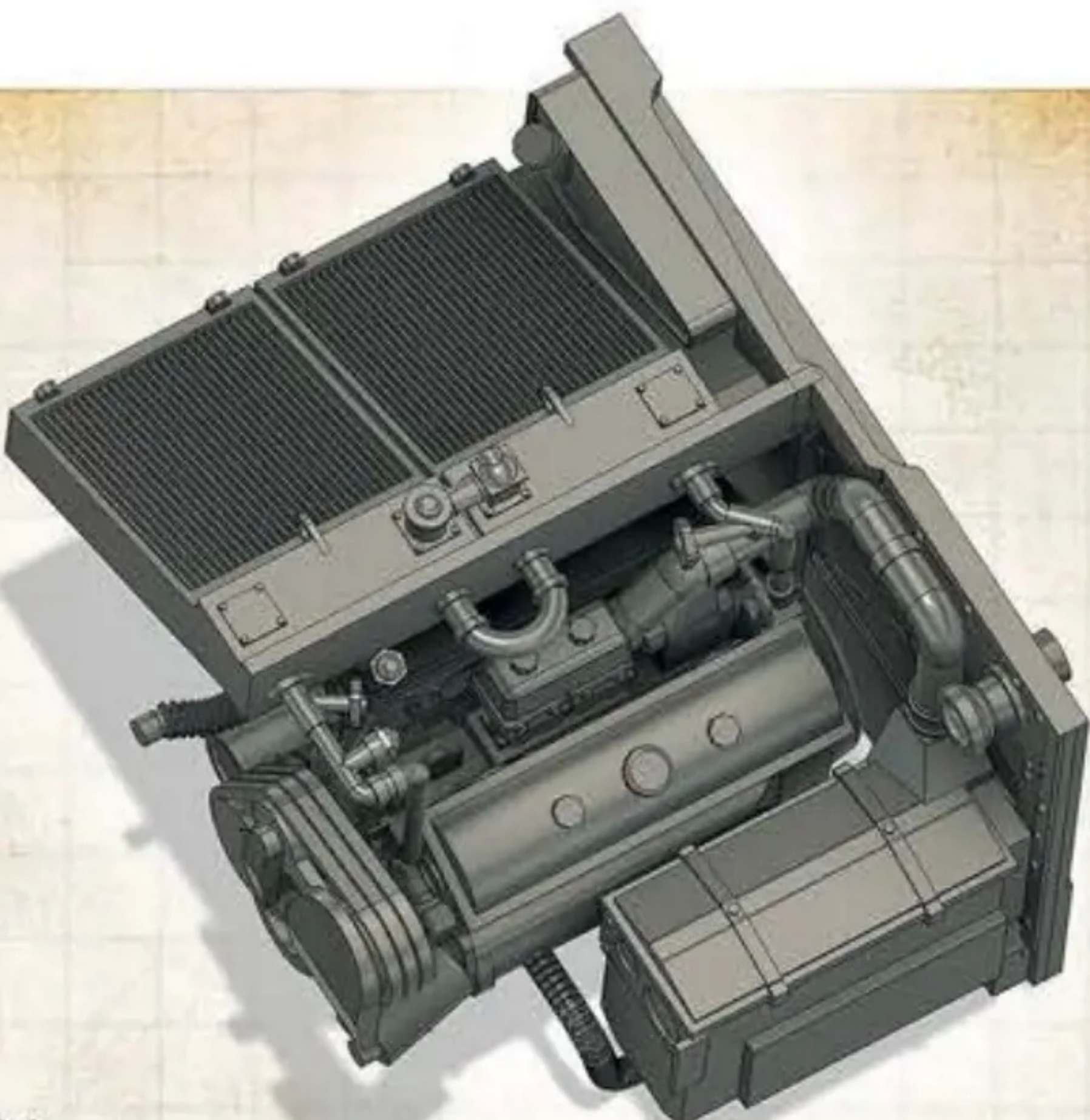


1:72



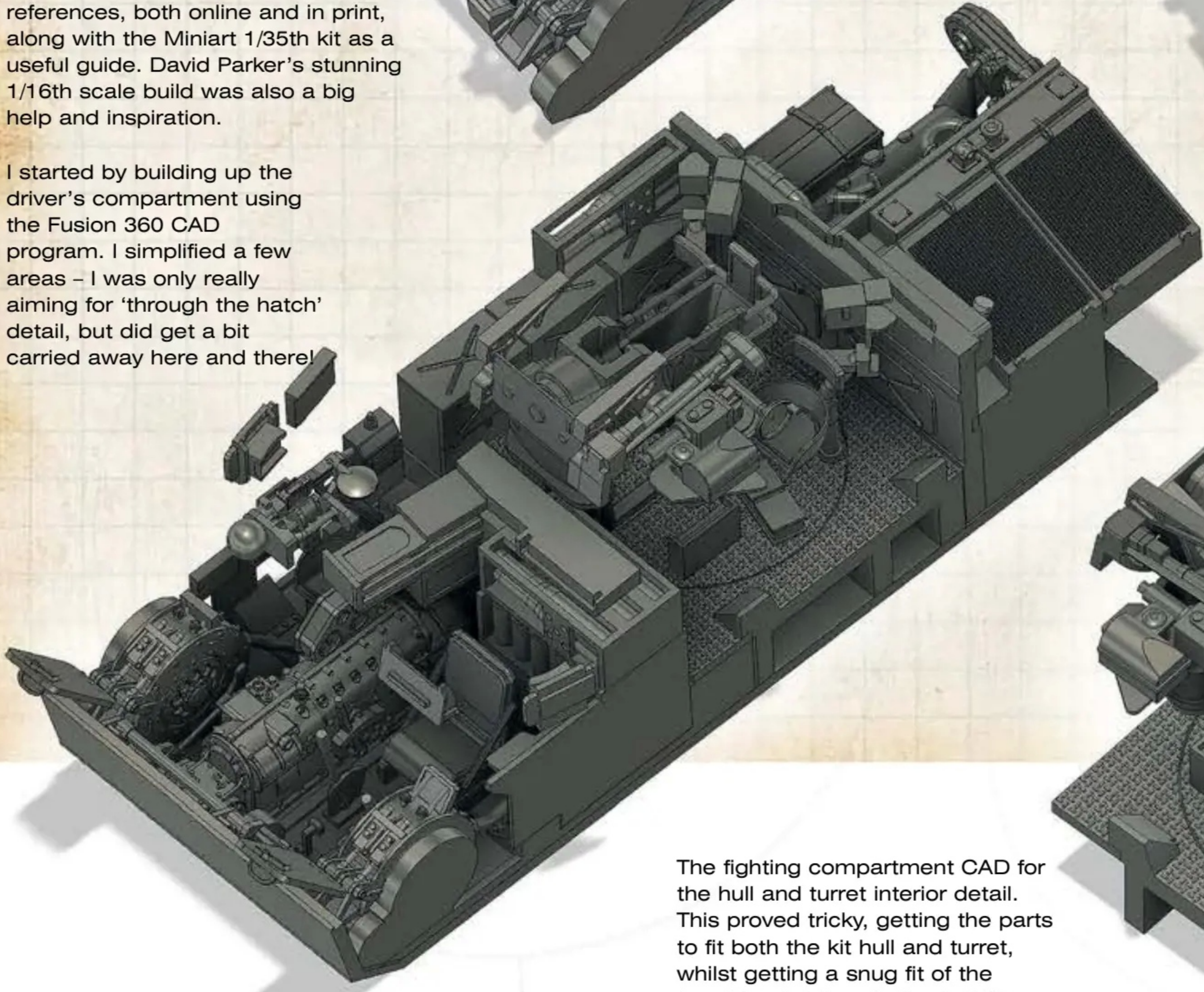
I took the plunge with this kit and decided to do a mostly complete interior. For this I used plenty of references, both online and in print, along with the Miniart 1/35th kit as a useful guide. David Parker's stunning 1/16th scale build was also a big help and inspiration.

I started by building up the driver's compartment using the Fusion 360 CAD program. I simplified a few areas – I was only really aiming for 'through the hatch' detail, but did get a bit carried away here and there!



The engine compartment. As with the driver compartment, I created this with multiple-part printing in mind, essentially designing a small kit. I find this makes it easier to get good prints as each part can be oriented in a way to minimise failures / print artefacts. It also makes painting easier.

I spent more time adding the detail that would be visible through the engine deck hatches, simplifying the hidden areas to some degree.



The fighting compartment CAD for the hull and turret interior detail. This proved tricky, getting the parts to fit both the kit hull and turret, whilst getting a snug fit of the turret basket floor to the hull floor.

The Panzer IV is a popular subject in 1/72nd scale with several manufacturers covering most of the variants produced. Flyhawk recently joined the list with 3 excellent kits, an F1, F2/G and G. The kits are not surprisingly all based around the same core set of sprues, with additional ones provided for the specific version changes. The kits are predominantly light grey plastic, moulded crisply and with some exquisite detail. The third release, essentially a 'mid production G' includes a turned metal barrel with 3D printed muzzle brake, along with a small photo-etched fret. Additional, separate sets from Flyhawk are also available including 3D printed tracks, a gun breech and clear cupola periscopes.

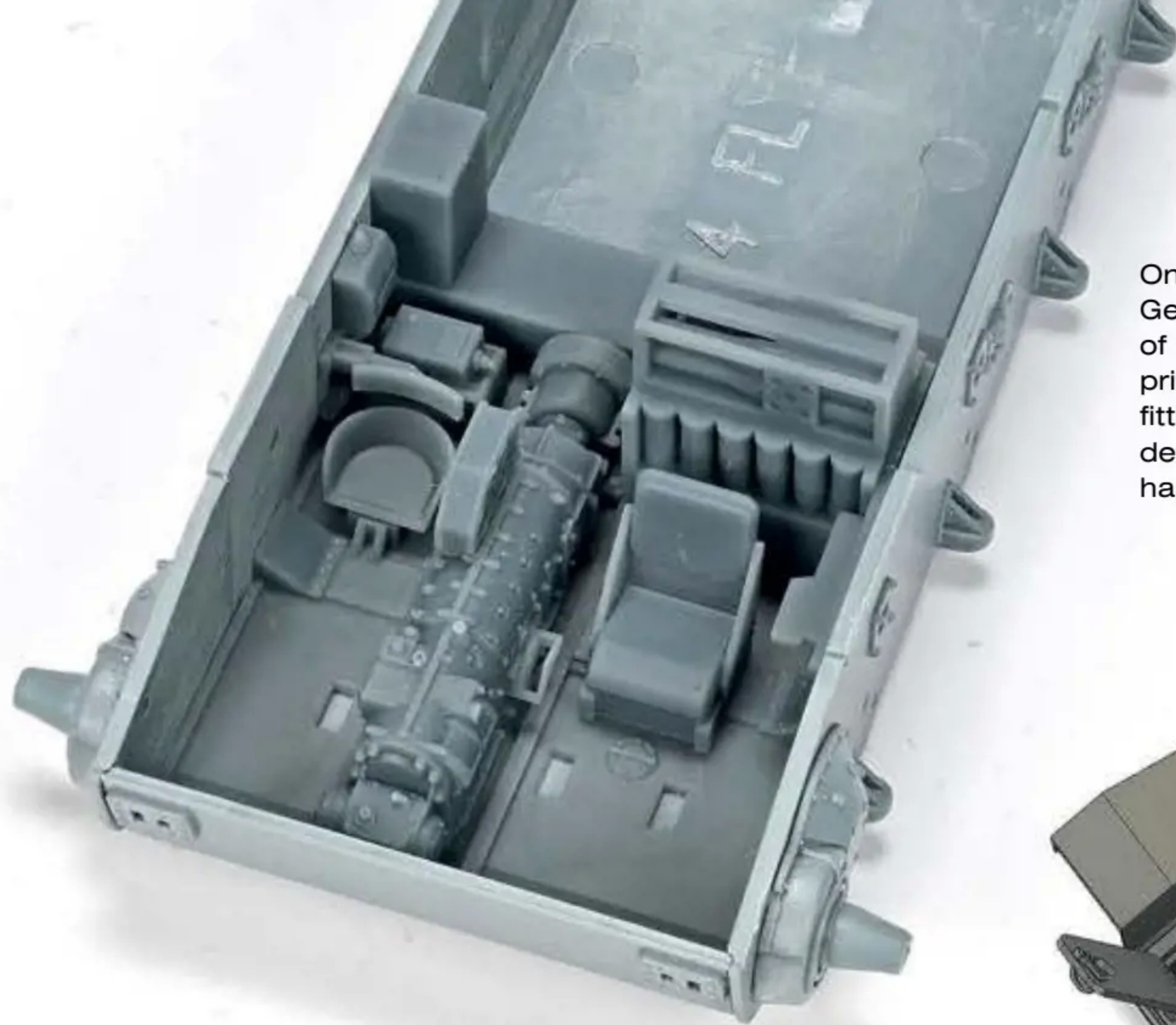
Interior

Initially I planned on building the kit with a small amount of interior visible through the open hatches. I'd previously designed quite a comprehensive CAD interior for the Miniart 1/72nd StuG kits. I used the free personal version of Fusion 360, and this proved quite a mammoth project. So for this project I thought 'keep it simple'. Unfortunately that didn't last long and before I knew it I was on the road to a mostly complete interior! I had one of the Miniart 35th kits that included a full interior, so using this as an initial guide I made a start. I was able to take the Maybach engine I'd done for the StuG kit and tweak that a little, which was a good time saver –

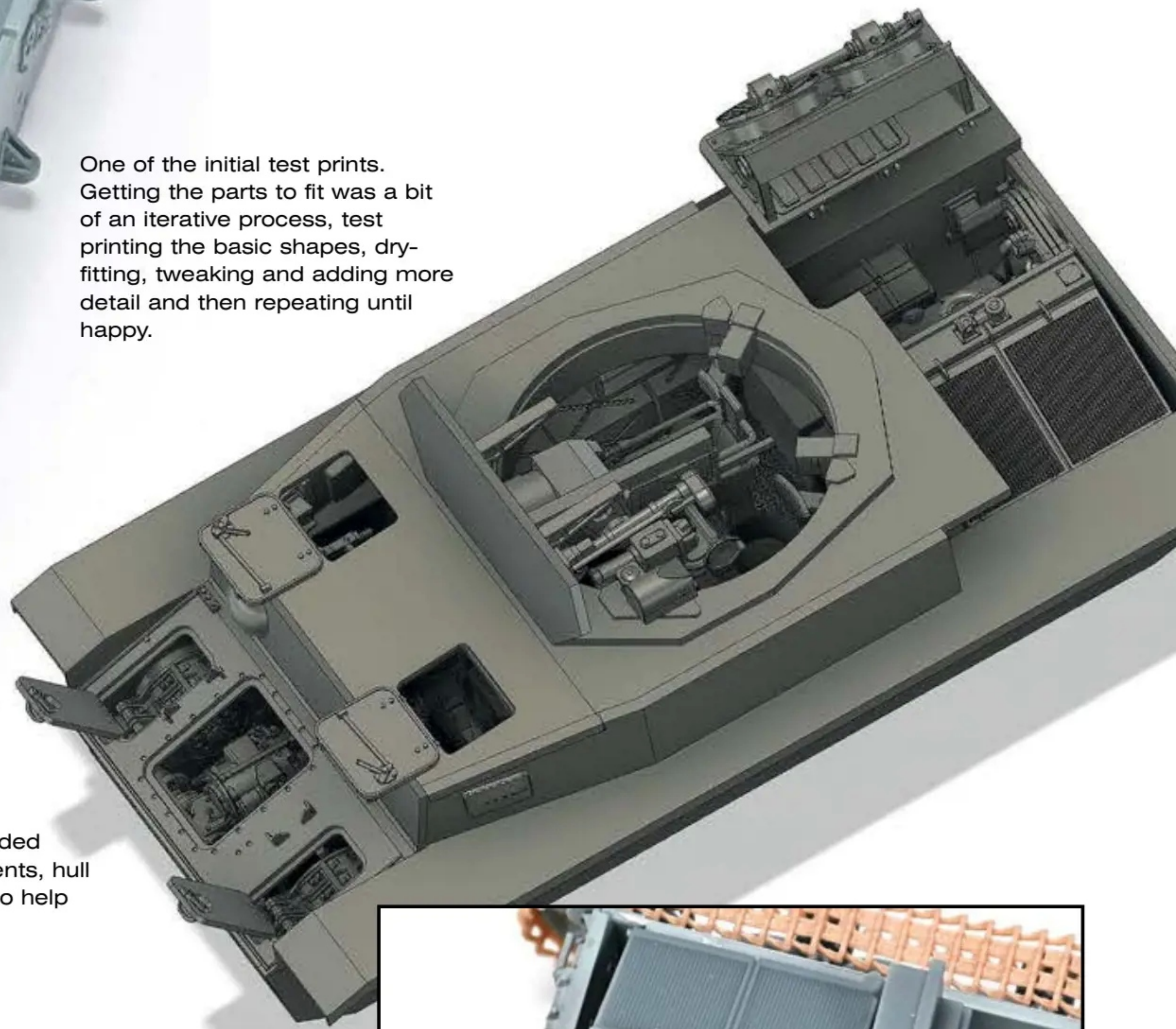
reuse like this is one of the big benefits of CAD design.

My overall process for doing this sort of CAD is very iterative, especially so given that the parts ultimately need to fit an existing (and usually small) kit. So with this in mind I designed the major components with minimal detail, printing them at low resolution for speed and then dry fitting them into the kit. I repeated this a few times with some of the components and once everything fitted well, I built up the detail. I started with the driver's compartment, then the engine bay. This was followed by the fighting compartment and turret. The turret basket was a challenge to get the fit such that it was aligned along all 3 axes with the floor in the hull and the turret opening in the hull roof.

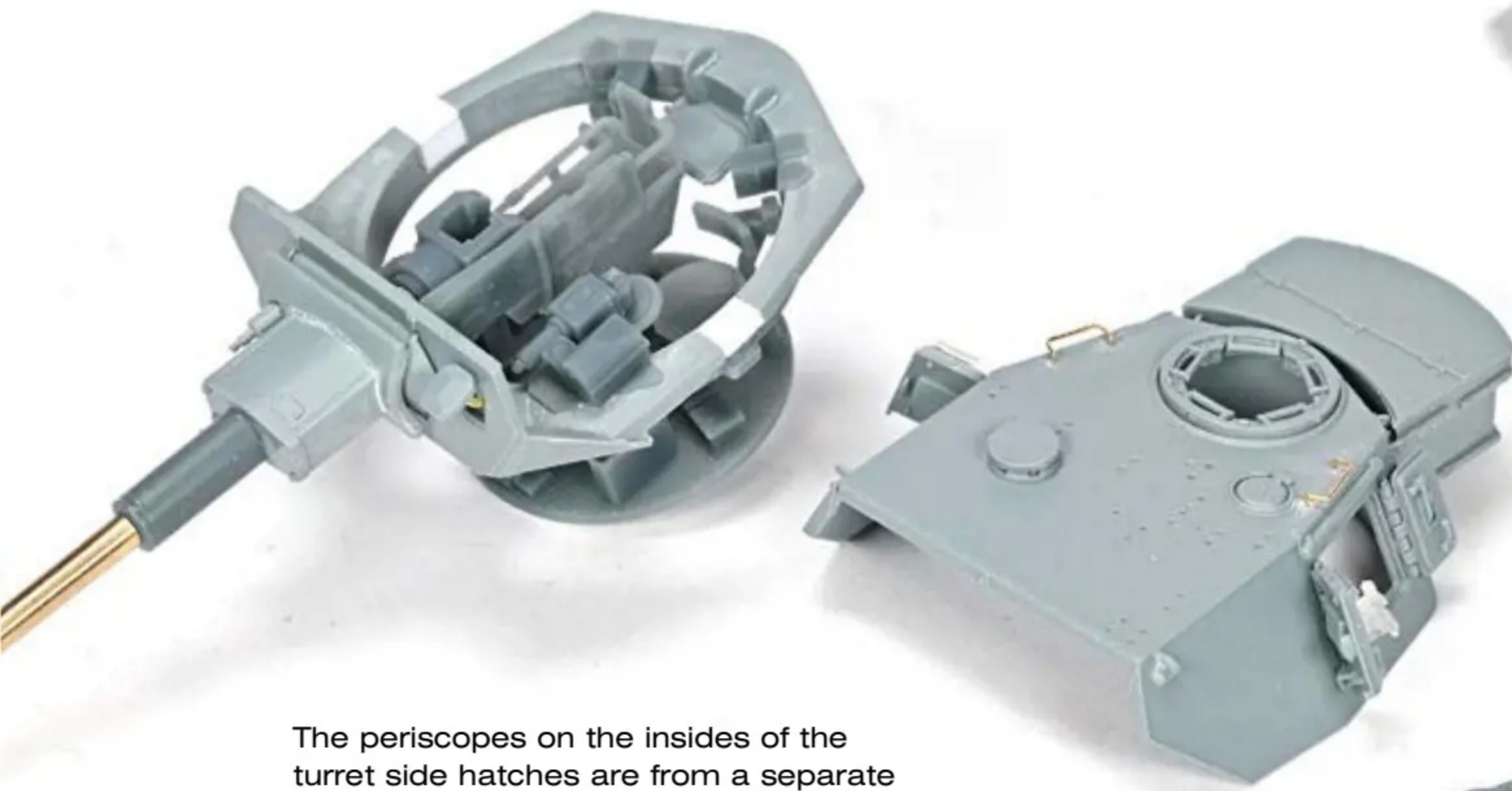
When I finally reached a point where the interior was done, I gave all the components and sub assemblies a coat of light grey primer. For the well-known Elfenbein I used Tamiya White acrylic with a little Buff added. At this point it was undoubtedly lighter than the real colour, but the washes and other subsequent steps tend to change colours so I allowed for this. A mid greenish-grey was common at this point of the war for the lower areas, with red oxide for the engine bay. I applied a few grimy brown washes and dark pin washes to highlight the detail and add some weathering effects. I did apply a small amount of chipping and wear but kept that quite minimal.



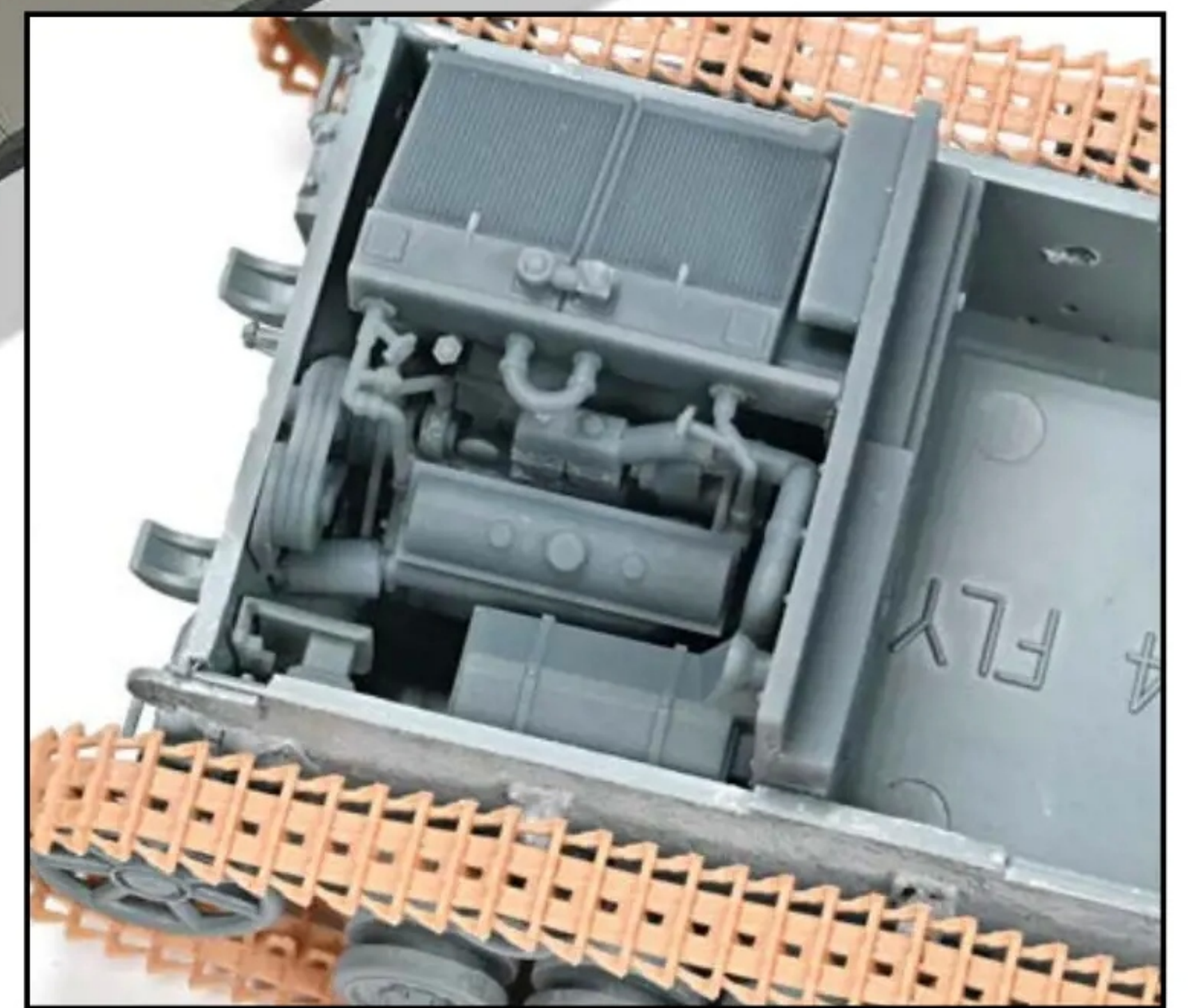
One of the initial test prints. Getting the parts to fit was a bit of an iterative process, test printing the basic shapes, dry-fitting, tweaking and adding more detail and then repeating until happy.



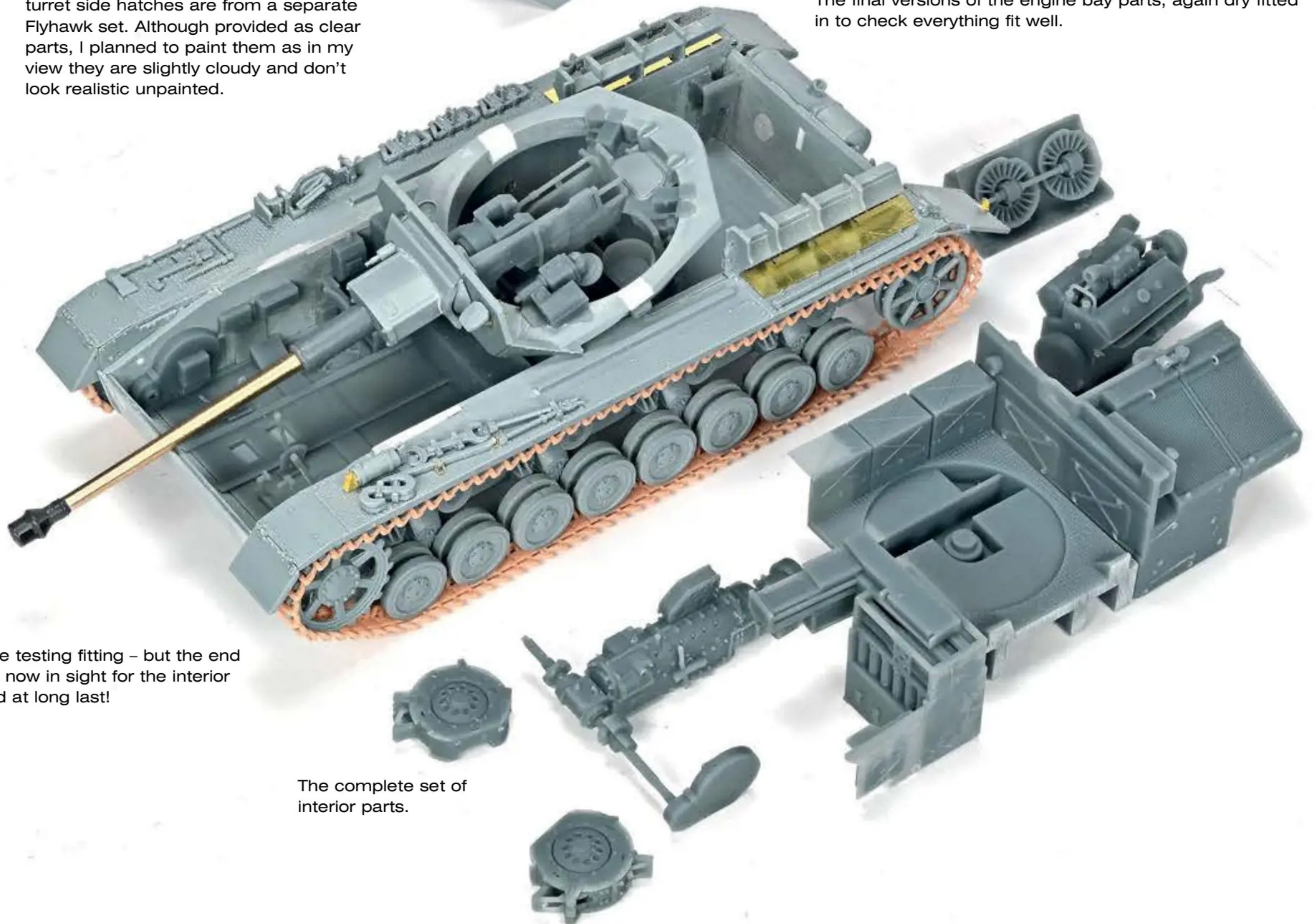
Whilst working on the interior I added some simplified exterior components, hull tub, fenders, superstructure etc. to help guide the designs.



The periscopes on the insides of the turret side hatches are from a separate Flyhawk set. Although provided as clear parts, I planned to paint them as in my view they are slightly cloudy and don't look realistic unpainted.

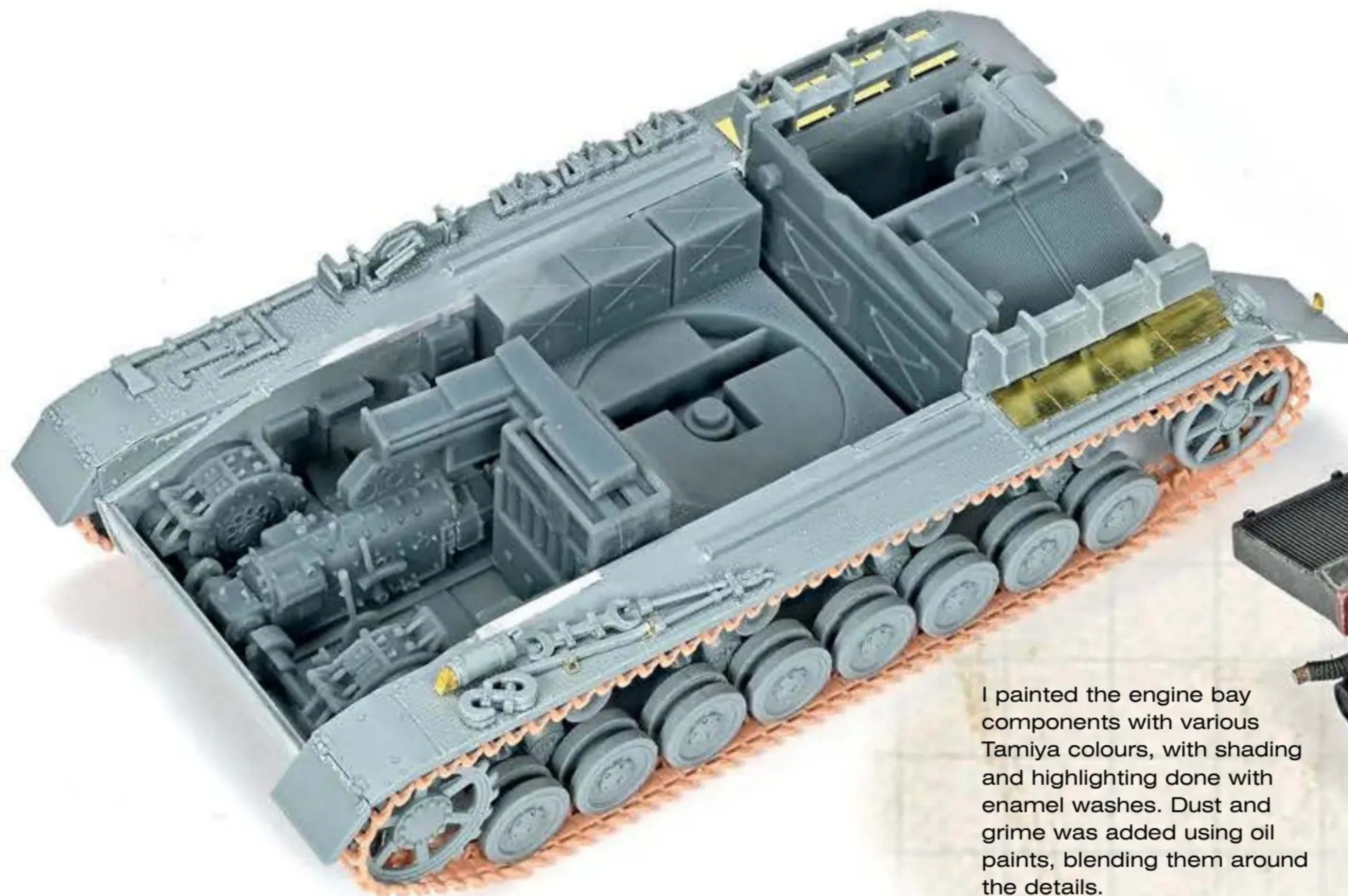


The final versions of the engine bay parts, again dry fitted in to check everything fit well.



More testing fitting – but the end was now in sight for the interior build at long last!

The complete set of interior parts.



I painted the engine bay components with various Tamiya colours, with shading and highlighting done with enamel washes. Dust and grime was added using oil paints, blending them around the details.



The exterior work seemed like a walk in the park after getting the interior done. The kit is excellent so there wasn't much extra I did for this part of the build.

The kit tracks are link and length and for injection moulded parts are well done. The guide horn are even hollow, although the holes aren't quite large enough. But given the scale this is a commendable attempt and not something I've often seen in this scale. However, Flyhawk do also sell a separate 3D printed track set which is very good. The track is provided as a couple of long sections per side, and not surprisingly fits the kit perfectly. One slight disappointment was that the return roller were moulded slightly off centre. 3D design saved the day and I was able to quickly design and print replacement. These are available on my Cults3D page as downloadable STL files:

<https://cults3d.com/en/3d-model/game/panzer-iv-return-rollers-for-1-72-flyhawk-kits>

The on vehicle tools are very finely done. The downside is that they are bit of a challenge to work with, and also a bit on the fragile side. Even more impressive is that the tool clamps are all provided as etched metal parts. A few 3D printed parts are also included for the kit, notably the twin headlights and muzzle brake for the main gun. As I wanted to display the interior as much as possible, I designed a new glacis plate with the 3 hatch openings (the kit part understandable has these moulded shut). I also made some new crew hull hatches. The kit does proved these as separate, but

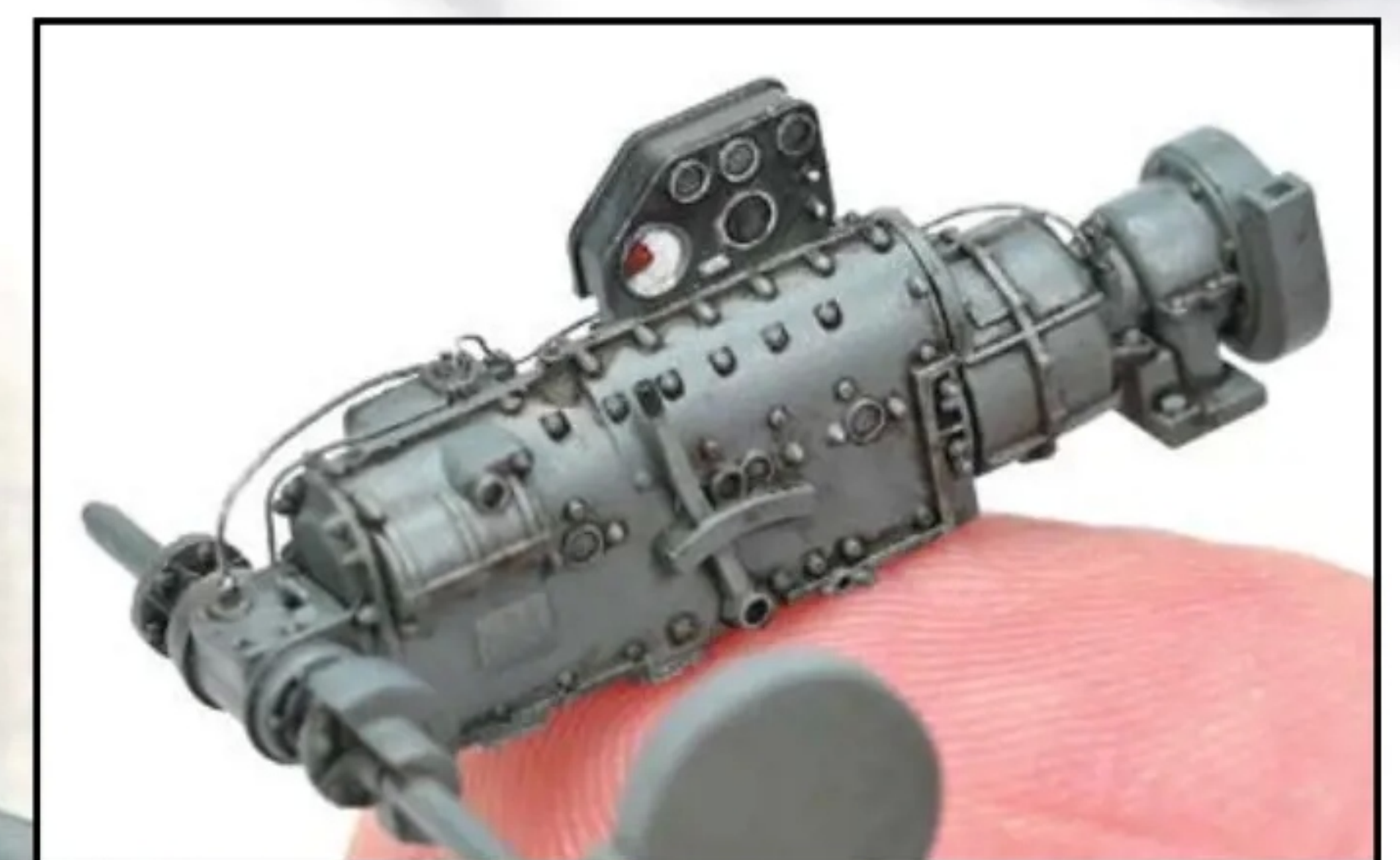
they're on the thick side and I felt I could improved on the interior detail.

The turret again is done well, with the cupola and side hatches separate. As with the tracks, Flyhawk sell a periscope set, with parts for the cupola and the other hatches. The detail for the cupola periscopes seemed a little large, and some detail was missing, so I ended up doing some 3D replacements for this area too. The kit includes a very nice turned metal barrel / 3D muzzle brake that both fit each other and the kit perfectly.

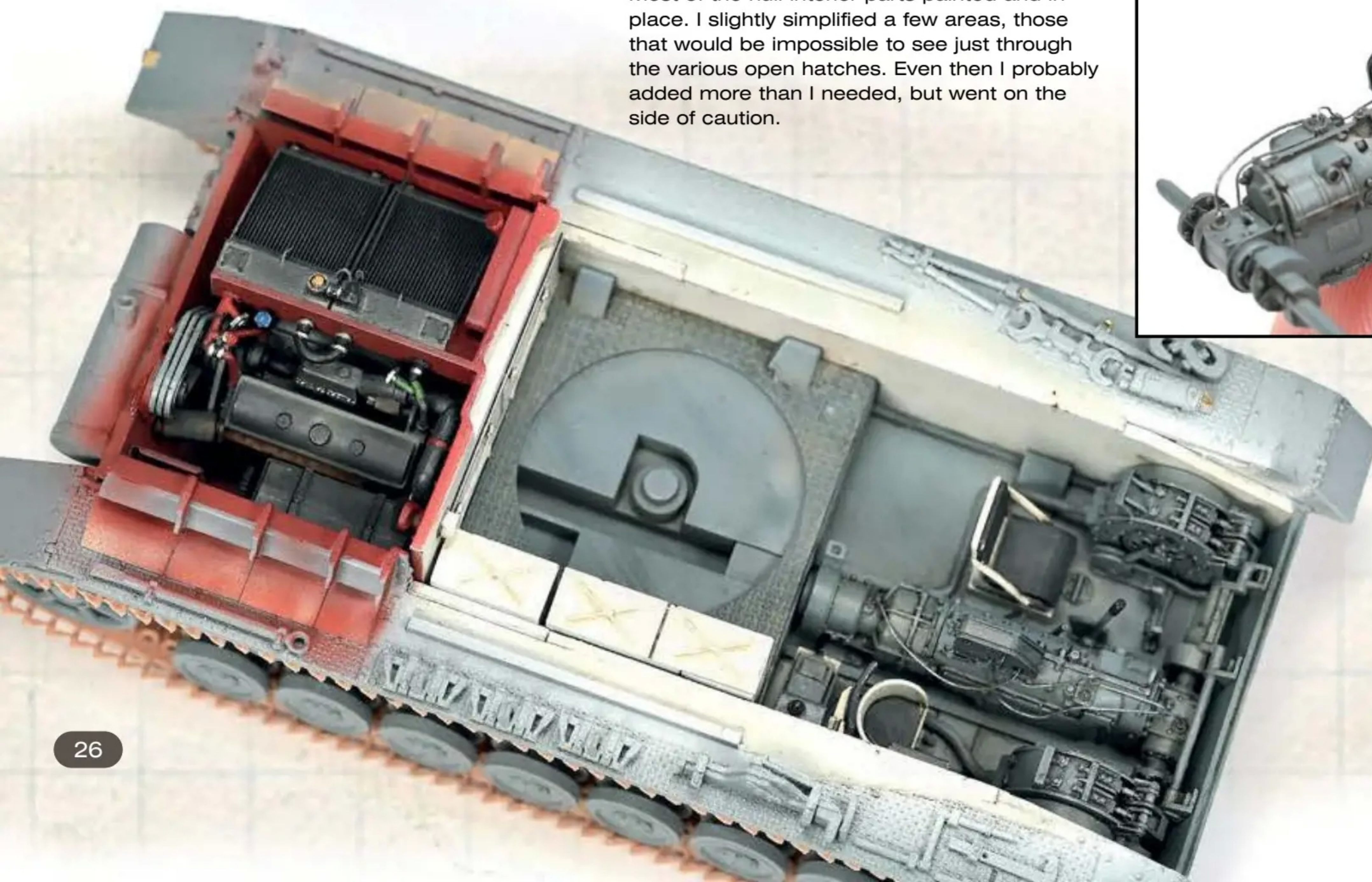
I gave all the interior parts an undercoat of AK Grey Fine Surface Primer and Filler – this gives a nice uniform finish in a neutral colour that makes it easier to spot areas in need of attention.

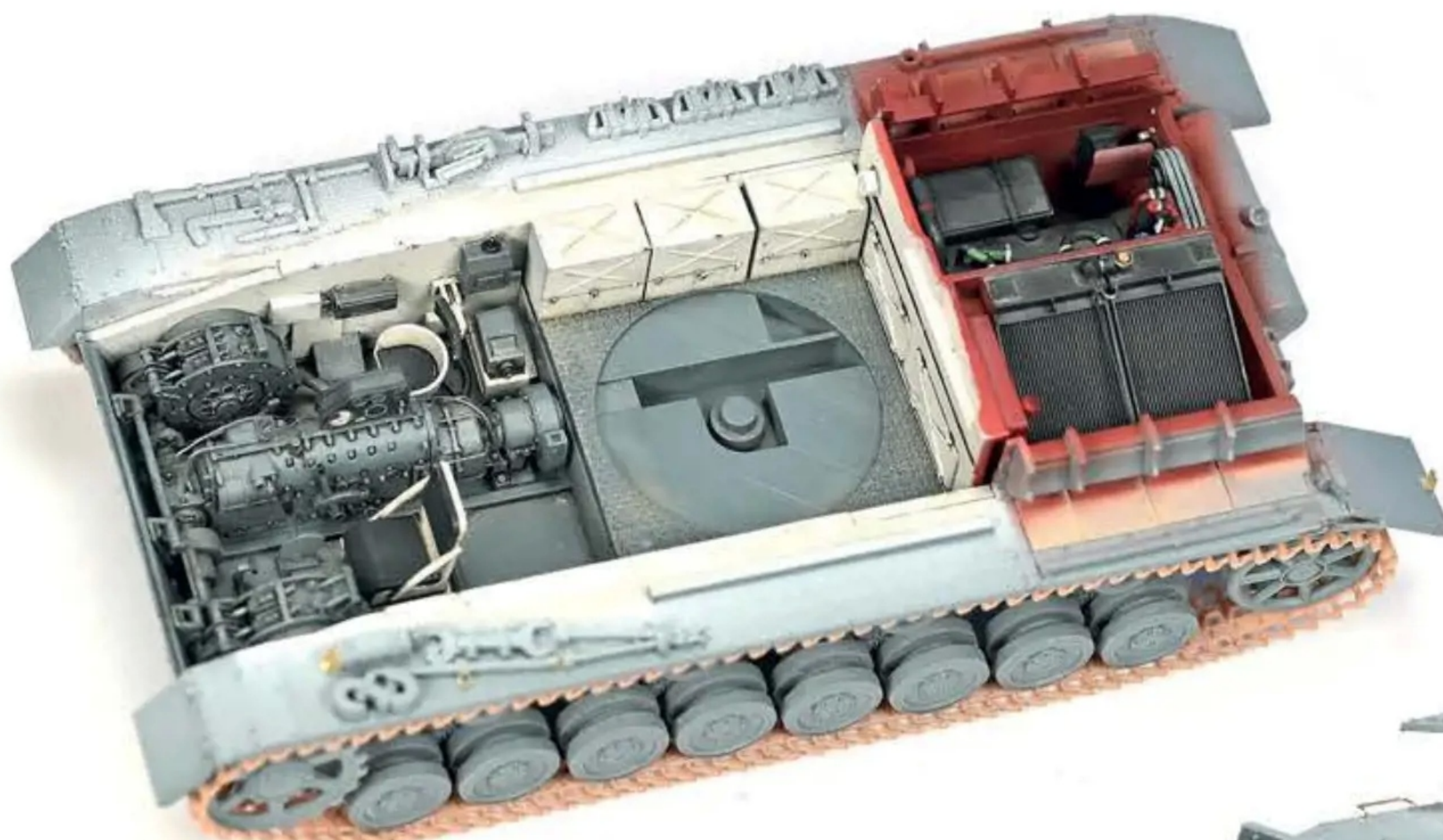


Most of the hull interior parts painted and in place. I slightly simplified a few areas, those that would be impossible to see just through the various open hatches. Even then I probably added more than I needed, but went on the side of caution.



For the time frame of this particular vehicle, it appears that many interior components were painted in a mid bluish grey. For this I used Tamiya Ocean Grey 2 (XF-82). Some of the additional wiring can also be seen here, created with sections of fine copper wire.





I designed a few exterior parts to improve the kit. The return rollers were correctly dimensioned and detailed but I noticed the hubs were offset slightly. For anyone with a 3D printer looking to build these kits, the stls for these are available on my Cults3D page: <https://cults3d.com/en/3d-model/game/panzer-iv-return-rollers-for-1-72-flyhawk-kits>

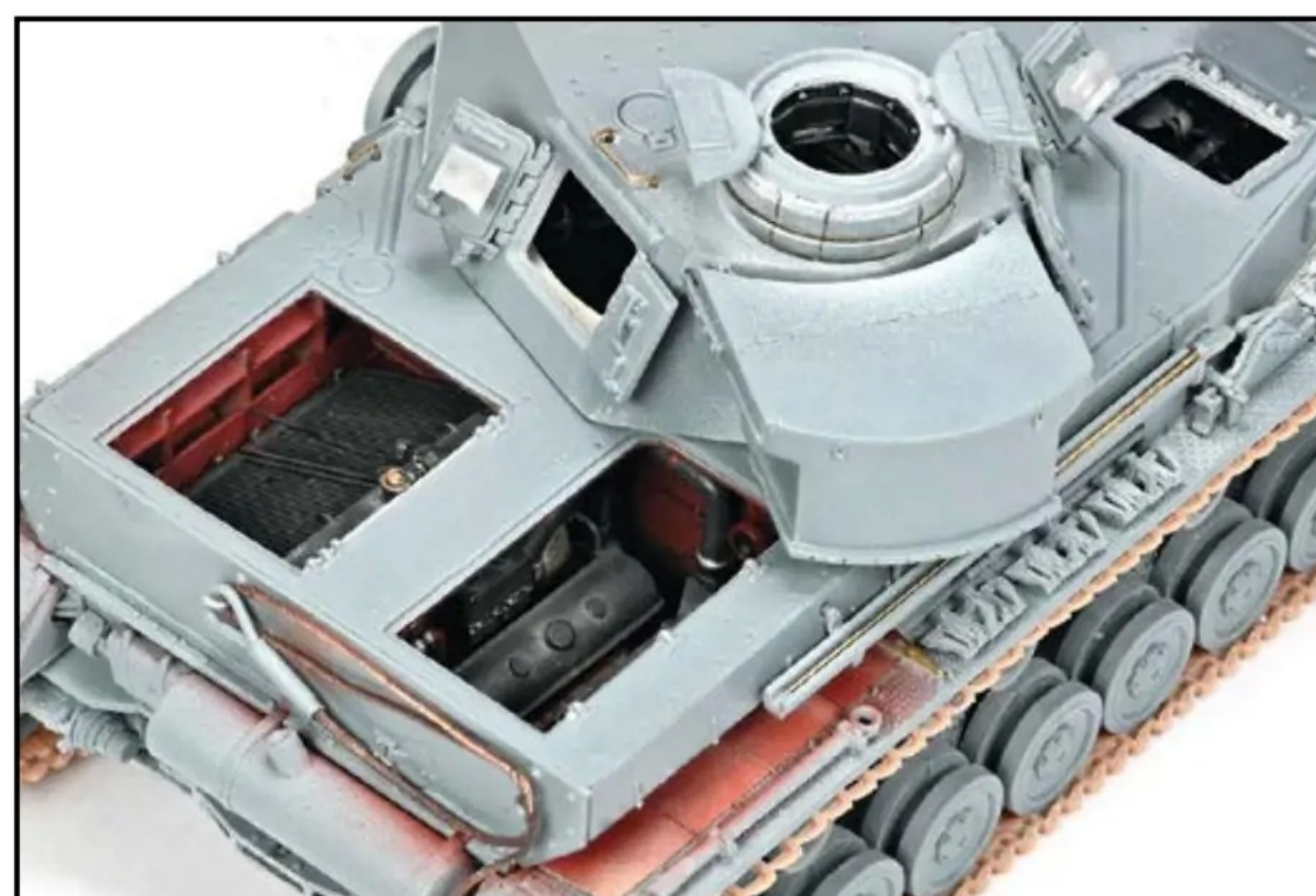
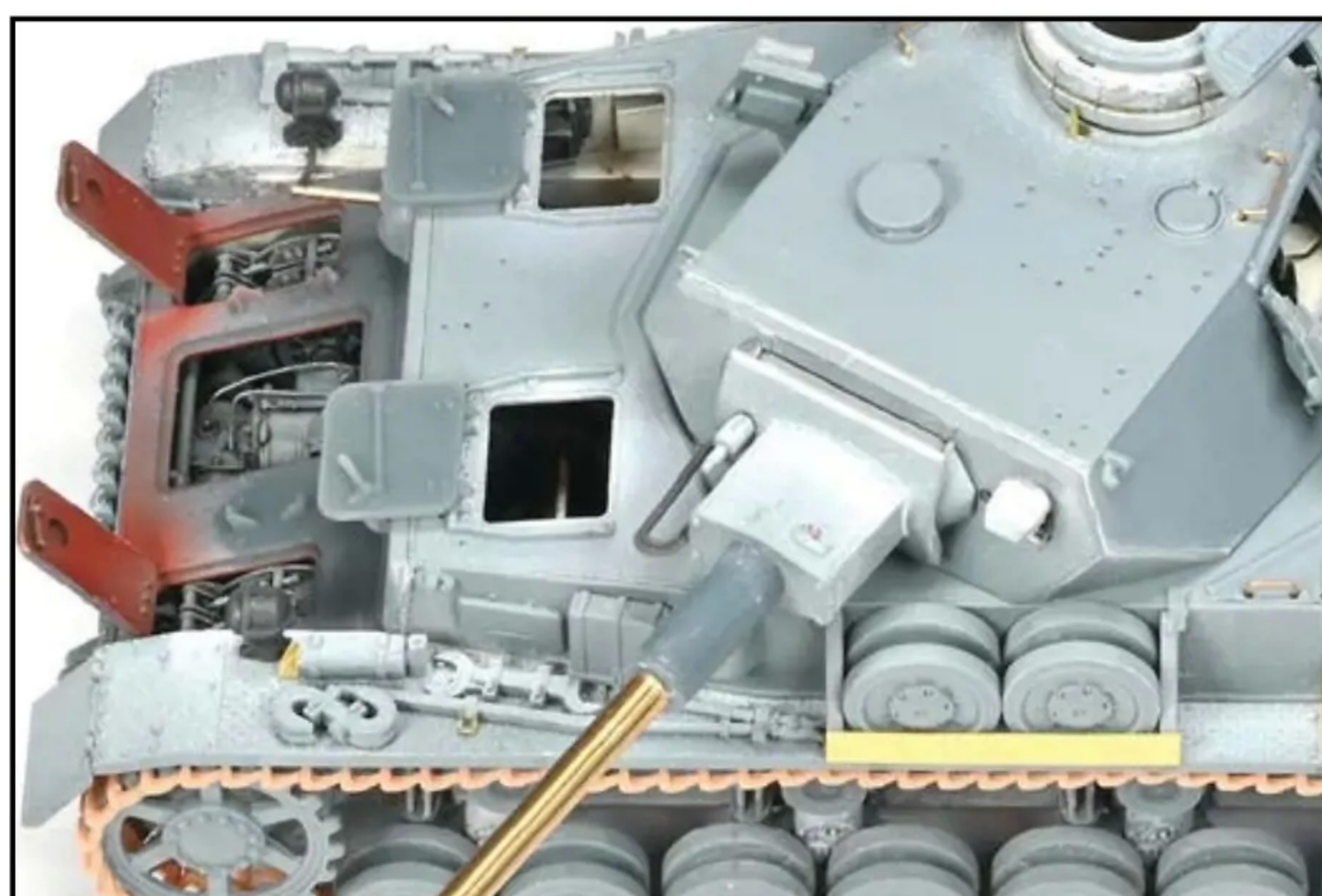
Another view of the interior, the main item still to add being the ammo racks behind the driver.

The exterior done – the is excellent and didn't require too much extra work (a relief given the time consuming interior work!)

The tracks are 3D printed part, also from Flyhawk, but sold as a separate set.



The kit includes photo-etched parts, including tiny tool clamps. The kit includes a turned brass barrel with 3D printed muzzle brake. Also 3D printed headlights. I designed a few 3D parts for the exterior, notably the glacis plate, access hatches and crew hatches.



My usual practice is to prime a model with a couple of thin sprayed coats of AK Grey Primer. This nicely ties all the bare construction colours and materials together with a uniform appearance. It sands well too, so any imperfections can be corrected easily. For the main colours I used Tamiya acrylics, thinned with Mr Color Levelling Thinner. For the vehicle I was modelling, the latter of the 2 'Tropen' schemes was an option and



After an undercoat of AK Grey primer, I painted the Tropen colours using my own mixes of Tamiya paints. I painted a light brown base colour, using mostly White with a small amount of Flat Earth. About 1/3 of this was covered in a light greenish grey, using the previous mix and some Field Grey. This kept the contrast between the 2 colour low.



I applied a dark brown enamel wash to small areas at a time, allowing it to touch dry and then working over the area with a clean brush dampened with enamel thinner. This removes the wash from the highlights, and with various stippling and dragging motions gives a subtle grimy, mottled appearance to the surface.



I lightly sprayed Tamiya Buff over the areas treated with the mud. It's a similar colour, but softens the hard transition between the mud and the vehicle colours.

felt this was a more attractive option than plain dark grey. As is often the case, it was tricky trying to pin down the exact colours, but the base Brown appears to be a light colour with a slightly pinkish shade. The Grey camouflage covers about 1/3 of the surface over this, again it appears fairly pale and so the contrast between the colours usually is quite low in photos. I weathered and shaded the model mostly with enamel washes, but kept the



After applying the kit markings, I sealed them (and gave the whole model) a couple of thin protective coats of Mr Color semi-gloss varnish. I find this gives a nice surface to start shading and weathering, as it's both tough and the slight sheen prevent staining of the base colours.



Vallejo acrylic mud has a thick texture with a slight grittiness that works well at this scale. I dabbed it over much of the lower hull and running gear.



The initial mud application is quite stark and flat. To add depth and the impression of mixed dry and damp areas, I used a couple of mud coloured enamel washes applied by brush. In particular I used the darker one for more recessed areas of shadow, and areas of thicker mud that would remain damp for longer.



I find pin washes are excellent for reproducing shadow and giving contrast to the model. I think this is especially important in smaller scales where detail doesn't tend to pop as much.



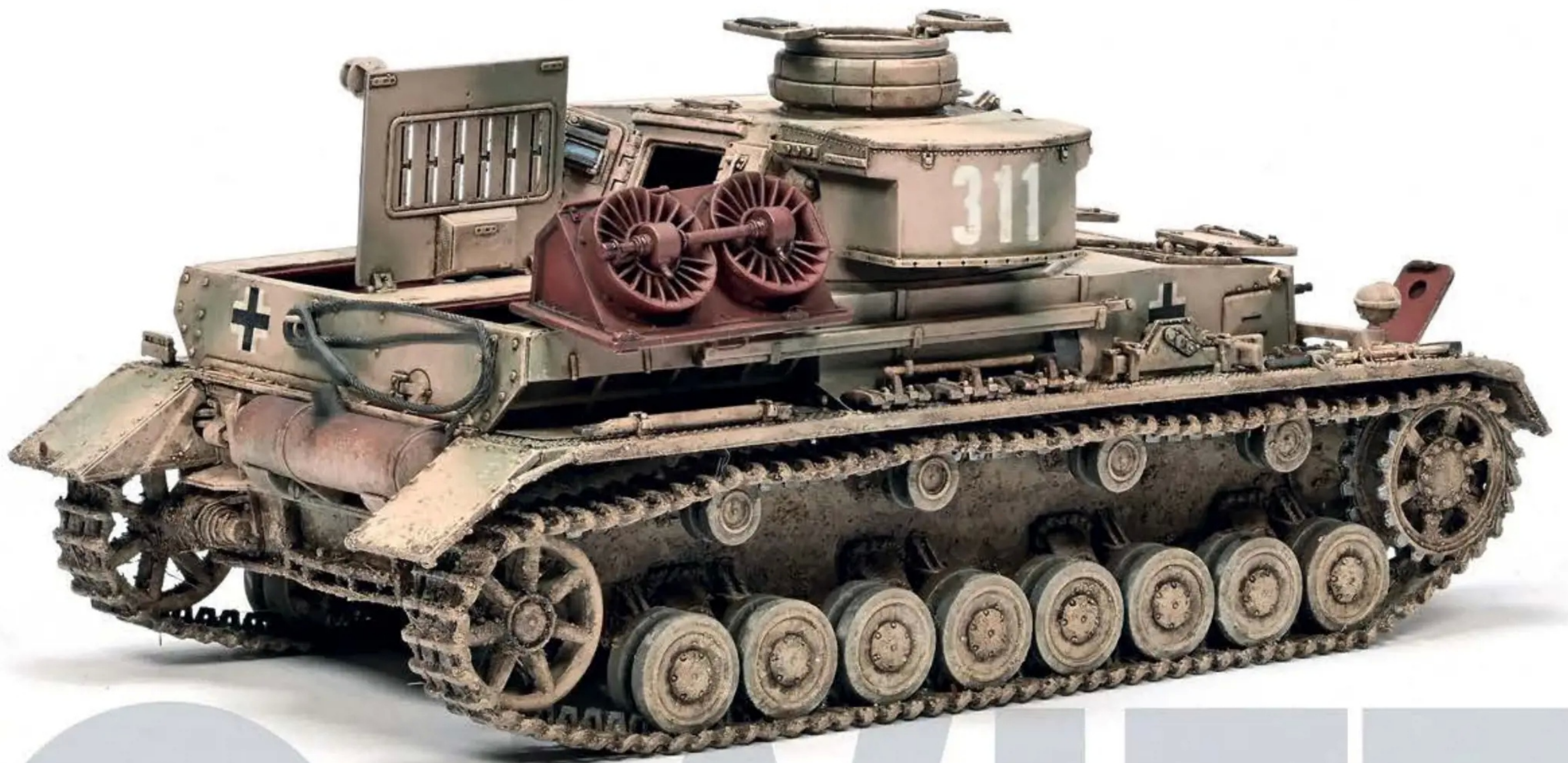
Some carefully applied oil stains can add a lot to the finish. I focussed on just a couple of road wheels, and a little around the suspension, being careful not to overdo it. Having some degree of glossiness results in a deep, rich colour.



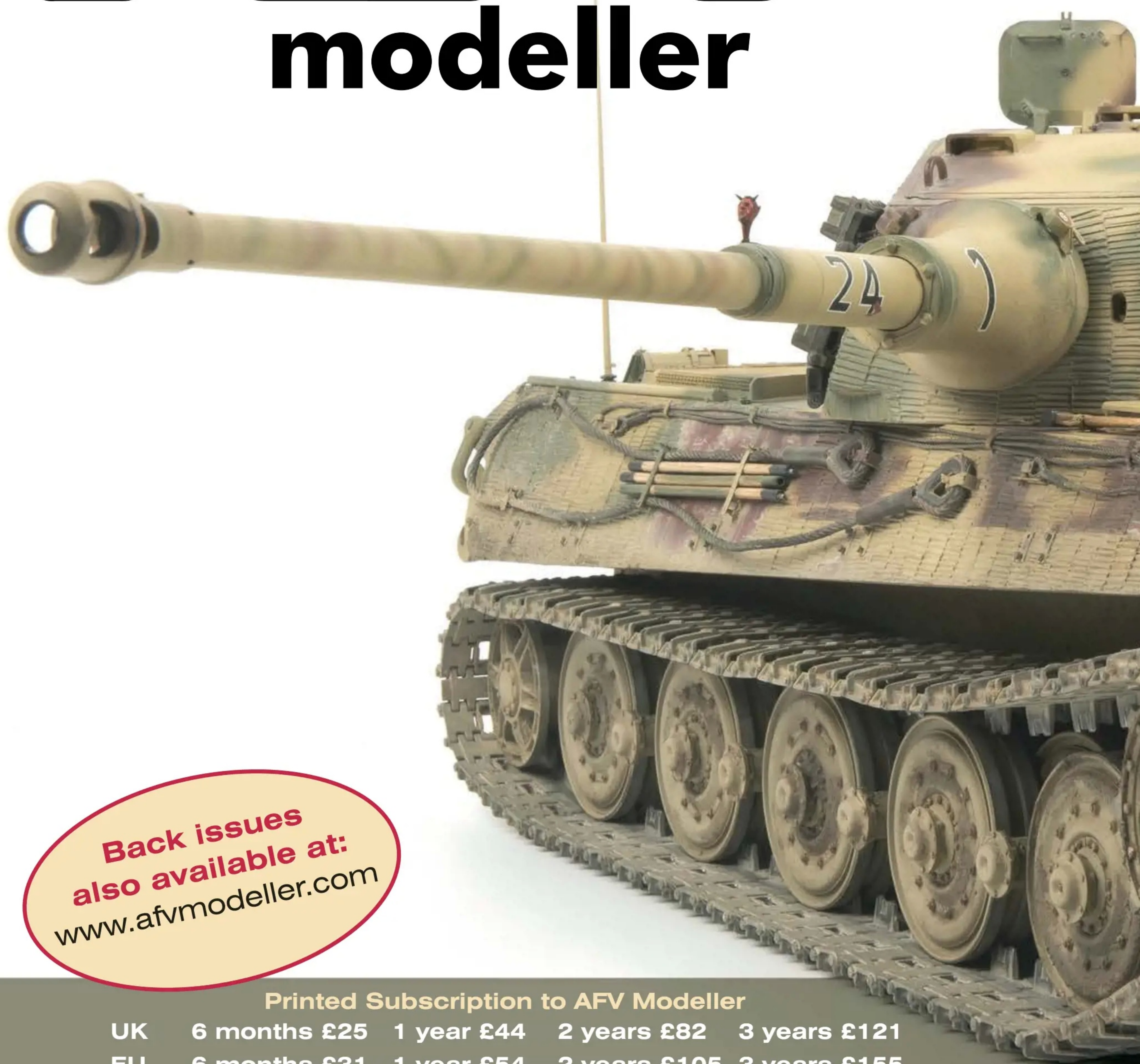
I finished the model by painting the remaining small details and effects. I don't tend to use pigments very much, sometimes for a little dust or dried mud here and there, but they're good for making sooty patches as found on exhausts.







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The experience in the early campaigns of World War II made the German army feel the need for a tracked reconnaissance vehicle with true all-terrain capabilities. The MAN company was commissioned to develop such a vehicle, called the Luchs (Lynx), using its experience from previous light panzer projects. In April 1942 the first prototype of the Luchs was presented and an initial order was placed for 131 vehicles, later expanded to 800. Of these, the first 100 vehicles were to be equipped with the 2cm Kw.K.38 gun, and the rest with the 5cm Kw.K. L/60. Ultimately, only the initial 100 Luchs were built between September 1942 and January 1944, all of them with the 2cm gun, the rest of the production run being cancelled.

1:16



FAMILY LYNX

ANTONIO MARTÍN TELLO
LOVES THE LITTLE 'LUCHS' SO MUCH
HE'S BUILT A WHOLE FAMILY

1:35

The official designation of this vehicle varied throughout the development of the project, with two main designations being used: "PanzerKampfwagen II Ausf. L (Luchs)" or "Panzerspähwagen II (Sd.Kfz 123)". Lightly armoured and armed, the Luchs was a fast vehicle, with a top speed of 60 km/h (average 45 km/h on-road or 30 km/h off-road) and excellent off-road performance. The Luchs was present in both the Eastern and Western fronts. In the former, the main operator was the 4th Panzer-Division, while the 9th Panzer-Division used it in the Normandy campaign, with all its vehicles lost by the end of August 1944.

There are minor differences between the Luchs used on the two fronts. The models presented in this article depict Luchse of the 9th Panzer-Division in France.

The Luchs has always been one of my favourite tanks. Although it was a somewhat early project in the WWII tank development race, the result was a 'tigerish' look that together with its relatively small size made it a charming vehicle to my eyes.

Fortunately for modellers, the Luchs is well represented in the form of plastic models. Leaving aside the not very good previous attempts of some Eastern European companies (Techmod, ICM...), in 2003 Tasca (now Asuka) released two superb 1/35 references representing the "Eastern and Western" variants of this little tank, one of which I built soon afterwards. In 2021, Border Model marketed another Luchs in 1/35, which is one of the models featured in this article. In 2016, Classy Hobby released two more excellent Luchs at 1/16, some of the first plastic kits at this now flourishing scale. Finally, Flyhawk, Maco and Armory have released several models at 1/72 during the 2010s.

1:72

My attraction to this little tank, and the availability of good quality kits, has led me to build it in these three scales over the last few years. It has not been a programmed plan, it has just happened and perhaps it is worthy of some kind of psychological analysis. In any case, taking advantage of the circumstances, it might be a good idea to compile the three experiences. It is obvious that each scale has its own peculiarities when it comes to assembly, if only because of the size of some parts. I must say that the differences in the paint treatment have not been very big. In all three cases I wanted to represent vehicles of the 9th Panzer Division in Normandy, and therefore with similar camouflage schemes. Probably because over the years I have developed a routine in painting and weathering my models that works for me, there has not been much difference in painting procedures, regardless of scale.

Baby Luchs

Let's start with the smallest one, the 1/72 scale. After reading several very positive reviews on the Internet, I decided to try one of Flyhawk's Luchs, the "Normandy version" (ref. FH3002S). It is very satisfying to see how relatively new brands are able to launch high quality products. This is the case of Flyhawk, which with a handful of references has made a name for itself in the 1/72 military vehicle market. Indeed, when you open the box of this Luchs you find a very fine and complete kit. The tracks are of the "link and length" type, i.e. sections are supplied for the upper and lower areas, and single links to make up the portions around the idler and sprocket wheels. Of course, the links are very small, and care must be taken in their assembly, but with patience and skill an excellent result can be obtained. Also included is a small photo-etched sheet containing the engine ventilation grilles, the supports for the turret jerrycans, the rods for the "star antenna" and some smaller details such as the turret lifting hooks. All this certainly adds to the finesse of the kit. The assembly was a very pleasant experience. In general, the fit is good and there are no complications, except of course for the smallness of some parts.

I made some small improvements, such as adding the wiring for the headlights, or replacing the hatch handles with ones made of thin wire. I also added a metal barrel from the RB Models set for the Flakvierling and the antenna mast, also from RB models.

Throughout my years as a modeller I have developed a painting routine with which I feel comfortable and which, in general, leads to acceptable results. Although most of the models I have made have been in 1/35 scale, from time to time I have built in other smaller scales such as 1/48 or 1/72. I haven't really changed my painting procedures too much on these smaller models, I simply have to take into account the scale to apply some effects in a subtler and more restrained way, such as chipping. So in this tiny Luchs I started with a base coat obtained by mixing AK Interactive's "dark yellow" and "white" primers. In this way, the primer itself serves as the initial colour on which to apply the camouflage.



1:72

This is a typical and generic one, seen on many German vehicles in Normandy, which I painted with Tamiya acrylic paints diluted with Gaianotes "lacquer thinner". For the green colour I mixed "olive green XF-68" with "sky XF-21", while for the brown the mixture is "reddish brown XF-64" with "dark yellow XF-60". In all cases the proportions of the colours used in the mixtures are "by eye". I simply tried to obtain colours to suit my tastes, although I always tried to keep them rather light. I

think the latter is important, as especially in a small scale model it is desirable that the overall appearance be light, especially considering that subsequent treatments tend to darken the overall appearance. I then gave an overcoat with Vallejo acrylic gloss varnish. The surface thus obtained is suitable for applying the decals, which were the ones supplied with the model. For their perfect adherence I used Microsol and Microset liquids, to which they responded in a

totally satisfactory way. Once the decals were dry, I gave another coat of acrylic gloss varnish with a double objective. On the one hand, to protect the decals from subsequent treatments and secondly, to prepare the surfaces of the model for these treatments. Most of the weathering and dirtying work will be carried out with oil paints, whose solvents do not react with the pre-existing acrylic layer and flow much better on a non-porous glossy surface.



The first of these treatments is the application of a pair of filters made by diluting a little ochre oil in enamel thinner. The dilution should be around 90%. This solution, that is solvent barely tinted, is applied to the whole model, without flooding, thus subtly varying the previous layer, beginning the process of weathering and integration of the camouflage colours and decals. I continued with a treatment of oil colours sand, ochre, orange, greys, white... The aim was to create wear and tonal variations in the base colour. I worked on very small areas, applying a tiny dot of oil

paint and blending and fading it individually. This procedure is perhaps laborious, but it allows a better control of the application of the oils.

Painting chipping in such a small scale is a difficult job. If at 1/35 the chips must be small and subtle, at 1/72 they must be really tiny. You have to use a very fine and sharp brush and the paint, Vallejo acrylics, in an optimum degree of dilution. Other than that, the theory is the same as for the larger scales. They should be painted in logical areas, prone to wear, rubbing... And they should be

random, avoiding repetitive patterns and rounded shapes. On this model they are done in two phases. First I painted more superficial scratches, which only affect the outermost layer of paint, or camouflage colours, with a slightly lightened German yellow base colour. I then used "German camouflage brown black 70.822" to paint the deeper chips that have scratched through to the metal. Often the chips are "concentric", simulating a progressive removal of the paint.

I returned again to oil colours, using Sepia, dark browns and rust tones. The idea is to simulate dirt or rust painted as streaks on the vertical surfaces or in the form of irregular spots on the horizontal ones, and in both cases faded and not very pronounced. An effective trick is to start the rust streaks in some of the chips painted in the previous step, or to paint extremely subtle rust-coloured spots around the chips in the horizontal areas. You can also shade the nooks and crannies or the lower parts of some volumes by darkening these areas with some dark brown or sepia colours. Now I painted the tools and the exhaust. For the latter I used various paints and pigments in rust, brown and grey colours. It is a matter of stippling all these colours to create, besides a chromatic variety, an effect of a certain rough texture



Pigments are very suitable for this last purpose. Oil splashes of these colours are also made by running the finger through a stiff-bristled brush against the grain, with the areas around the exhaust pipe properly masked off. The jerrycans on the turret were painted differently. One in green, on which chipping was painted with a fine brush and then a light dry brush on the edges with "German camouflage brown black 822". The other, more "battered", was painted in red primer, after which a coat of hairspray was applied. It was then painted with dark yellow which, once dry, was partly removed with a stiff brush dipped in water.

Then a dry brush of Vallejo "German camouflage brown black 822" was applied to the edges. On both jerrycans, a light wash of sepia and brown oil paint finishes off the previous work



I also painted the tracks and the rubber of the wheels with Vallejo's black colour at this time. Painting the tracks when they are already on the model is a delicate task, which requires little haste, patience, and a fine brush. It is important to make sure that no hidden areas are left unpainted, although this can be a difficult task, especially around the idlers and sprockets. Once painted, I treated the tracks with rust and gun metal pigments, taking care not to dirty the rubber on the wheels. With a soft lead pencil, I painted directly on the outermost details of the tracks and on the teeth of the sprockets to simulate the polishing of the metal. Finally, I outlined the engraved lines and details such as screws, hinges or hitches with diluted black oil applied to areas previously moistened with thinner. This is always a very eye-catching effect that highlights

the volumes. The model was then satin varnished and ready to get dirty. Most of the dirtying was done with pigments. I used different colours and applied them with a small brush in the area behind the tracks, on these and, more sparingly, on the wheels. The pigments were impregnated with solvent or fixative, and once dry, grease or humidity effects were added, especially on the hubs of some wheels with sepia, dark brown or black oils diluted in enamel thinner.

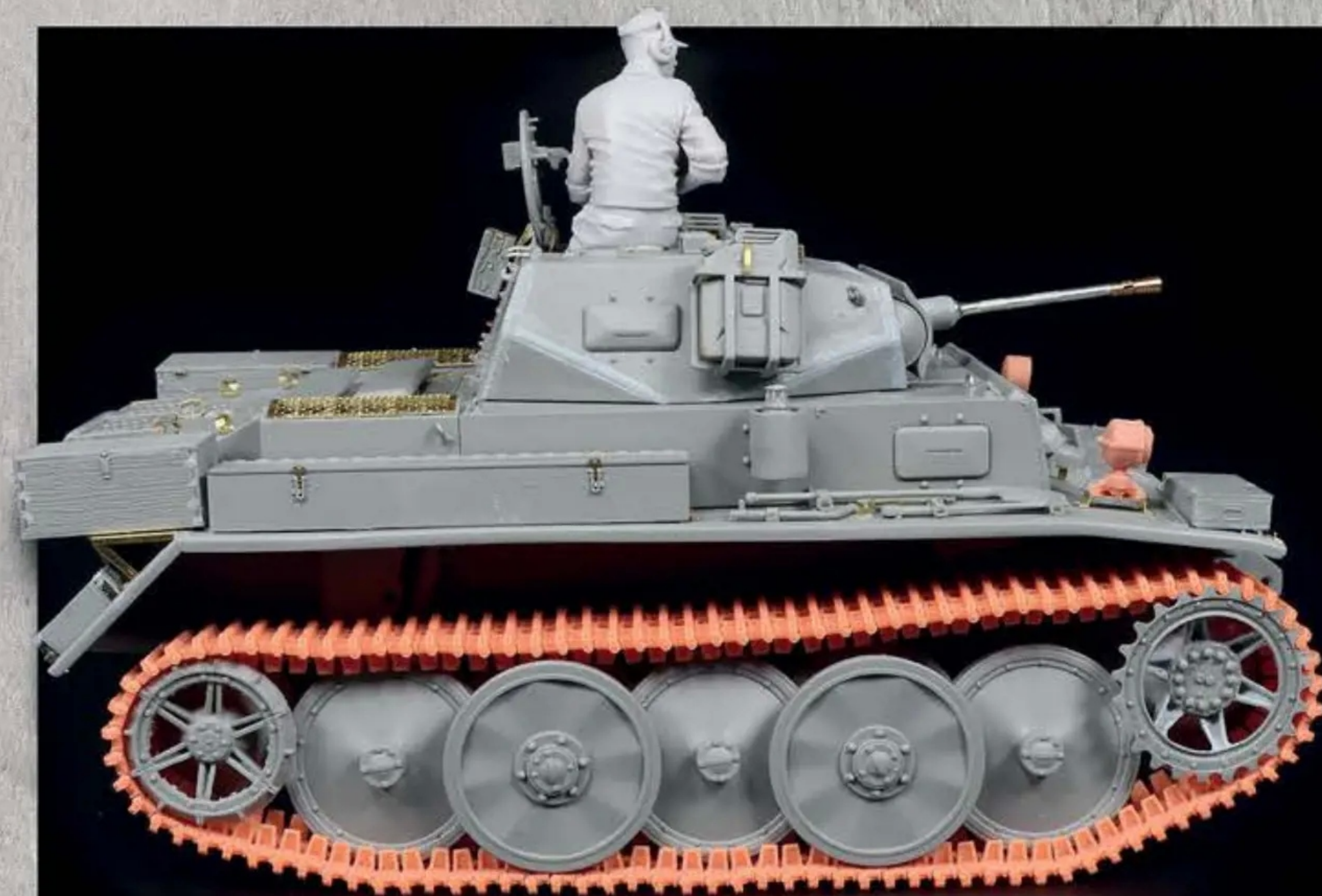
Mud splashes were also simulated by running the finger against the grain with a stiff bristle brush impregnated with a suspension of pigments in solvent. It is advisable to practise both the loading of the brush and the dilution of the suspension beforehand so that the droplets projected are small and the effect achieved is subtle.





The upper part is powdered with dry pigments applied with a small brush, in a subtle and controlled way. Around the nooks and crannies and on some horizontal surfaces, such as the mudguards, the pigments accumulate more.

With this operation the model is finished. As a final touch, I decided to add a figure. It is from Scale 75, specifically one of those contained in the reference SW72-001, which is simply superb. I tackled its painting as I would have done for a 1/35 scale one and I used the airbrush to give the previous lights and shadows on the trousers and the face. The rest of the work consisted of the subsequent glazes of very diluted acrylics, as in larger scale figures.



Mama Luchs

When I found out a few years ago that Border Model was going to release a Luchs in 1/35 scale I was very happy. Until then, as I said before, we had the excellent Tasca/Asuka Luchs but I thought that 20 years later we would have a much more advanced model, comparable to some of the gems that other Asian manufacturers offer us from time to time. Well, yes and no. The model is not bad at all, with generally fine details, but it has some small issues that make it less than perfect. There are a few ejector marks in odd and visible places, such as the driver's and radio operator's hatches. The air vents are rather coarse. The suspension, which is supposed to be workable, makes correct wheel alignment a little difficult.

The instructions are frankly improvable, with omission of parts (which are in the sprues) and mistakes. The tracks, of the link and length type, despite being usable, would also benefit from a replacement... In short, small details which, although they do not prevent you from ending up with an excellent replica of the small Luchs, make you feel as if this was a lost opportunity. And by the way, you realise the excellence of the Tasca/Asuka model. In any case, the Border Model kit is a modern model, with its small photoetched sheet, its transparent plastic parts and its box full of parts. Looking for a track replacement, I chose the T-rex 3D printed set (ref TR8512) which looks very nice, functional and easy to assemble by simply clicking on the links. They are different for each side (120 of each), and, well... they were so fragile and I broke so many links that I ended up without enough of them to complete either side.

Being quite stubborn, and despite the considerable expense, I decided to make a second attempt and try a similar product from another brand, Yan Model (ref. 35080). They are perhaps a little less nice than the T-rex ones, and only marginally less fragile, but this time I managed to assemble the necessary number of links to complete the track. Another issue is to adjust it to the running gear of the Border model. On the idlers it was necessary to sand the inside to get the teeth to fit, and on the drive sprockets it was also difficult to convince them to fit between the teeth. In retrospect I'm not so sure that replacing the tracks was worth all the effort and expense, although they do look a little better than the original ones from the kit.

I also replaced the model metal gun barrel (which is not bad) with a Voyager reference (VBS0140) with more detail. Finally, I used Bosch headlights from T-rex (ref 35100). The original ones from the model are a bit mediocre, and this way I could install one without the blackout cover.



Recapping the painting process of this model I have discovered that it didn't really differ much from the one I have explained above for its little brother in 1:72. Again I started with a primer obtained by mixing 'dark yellow' and 'white' from AK interactive which doubled as a base coat. The camouflage was also applied with the same paints and mixtures, freehand, to represent a fairly generic vehicle on the Normandy front. Again I followed this up with an overall coat of Tamiya gloss acrylic varnish which prepared the surface for applying the decals.

I used some leftover numerals from the Tasca/Asuka model, which I found to be of a more suitable size (I felt that the ones included in the Border model were a bit large) and changed the order of the digits to represent a vehicle for which no period photographs existed. After a couple of ochre and buff filters, I

started to paint the chipping. This order is different from the painting of the 1:72 scale model, where I started the weathering with oils. There is really no strict order of application of the different techniques. If the chipping is applied before the oils, those are more integrated into the overall weathering, and in this case I decided to do it that way.

Another variation in the chipping on the 1/35 scale model is that I introduced an 'intermediate chipping' between the superficial chipping that only slightly damages the base coat and camouflage colours (i.e. the light sand chipping) and the chipping that shows the lightly rusted bare metal made with 'German camouflage brown black 70.822'. These intermediate chips are painted with 'flesh shadows 70.343' and are intended to represent the exposure of the red primer paint that was applied to all German vehicles. Again, ideally the chips should

be concentric, or at least some of them. One of the peculiarities of some Luchsen of the 9th Panzerdivision was the installation of wooden crates on the mudguards. Border Model adequately depicts the wood grain of these elements, although perhaps a little overdone. In any case, the chipping in primer red or bare metal on these boxes obviously shouldn't be applied, but only the ones that represent the wear of the exterior paint and deeper ones that reveal the wood, painted with a generic 'wood' colour.

Now it was time for the oils, which, as in the case of the smaller scale model, were applied in two phases. A first one to create tonal variations and wear in the paint, and a later one with darker oils to simulate rust, streaks of dirt... I also made some splashes of these oils, more or less diluted, with a stiff bristle brush against the grain.

After painting the tools and the exhaust, I outlined the details and crevices with pin washes of sepia oil to highlight the volumes.



These images show the result of all this weathering work on the hull, while the turret has not yet been worked on.





After an overall coat of satin varnish, the dirtying was also done with pigments in the way described for the 1:72 model. The tracks were painted black, and then treated with pigments, mainly dry. On the outer face, dried mud and packed earth were simulated by fixing the pigments with solvent. A touch of bare metal in the highlights, caused by friction, was added with a soft lead pencil and, in a very restrained manner, with a very light dry brush of silver. Given the aforementioned fragility of the tracks, their installation required a lot of care and a certain amount of linden tea. And without knowing why, once they were in place, the ones on the left side were a little loose with the number of links used, but too tight if one was removed. Ah, the joy of the workable tracks!

Finally, I added a couple of figures. From the beginning I had planned to use Alpine reference 35264 (Panzer commander summer #2) which I think fits the Luchs like a glove. In the end, I decided to add a second figure from the recent Tamiya German tank crew set (ref 35345) and I even used a leftover head from this set on the Alpine figure. I like the facial expressions of the latest generation Tamiya figures and by the way it made the Alpine figure look a bit different. The figures were painted with Vallejo and AK interactive acrylics and I think both figures represent well the main task of a Luchs crew: To observe.



1:35



1:16



Papa Luchs

There is no doubt that the 1:16th scale in model military vehicles is becoming more and more popular. Although still light years away from the diversity of other scales, the range of kits is gradually increasing and some of the most iconic vehicles are already on the market. In my opinion, the main advantage of this scale is at the same time its biggest drawback: the dimensions. On the one hand, given the size of the models, a much richer and more exhaustive detailing is possible, albeit at the cost of an increase in work. On the other hand, once finished, it is difficult for many to find room on their shelves for such massive models, and it goes without saying that this is aggravated if we intend to make a scene or diorama. To this must be added the price of these kits, which are not usually cheap.

In any case, for some years now I have been watching with curiosity the moderate blossoming of this large scale. When in 2017 Classy Hobby launched its first model, which was none other than the Luchs in its 'Norman version' (ref MC16001), my interest increased exponentially and after a time of hesitation and scanning of the market for a reasonable price, I decided to buy the model.

At first I thought: 'well, the Luchs wasn't a very big vehicle, so at 1/16 it won't be that big'. Well, it is BIG, certainly not as big as a Tiger or Panther in this scale, but bigger than I expected.

Overall, the kit is good. Everything you would expect from a modern model is included in the box. Along with the plastic parts (which are not overwhelming in number) there is a basic photo-etch sheet, which contains, among other things, the grilles for the air intakes and parts for detailing the numerous Jerrycans supplied. Also a sprue with transparent parts (periscopes and headlight lenses), a piece of stranded wire for the towing cable and a decal sheet for three typical specimens of the reconnaissance unit of the 9th Panzer Division in Normandy



FAMILY LYNX



The hull does not include any interior (except for the fans in the engine grill area), but the turret does come with a basic interior, I suppose in case you decide to leave the hatch open. The tracks are included as individual links, with exquisite detail, which are assembled very simply using metal pins that fit perfectly. The result is a very realistic and sturdy track, perfectly workable, that fits the running gear like a glove. Another detail that I really liked is the nuts and bolts, exquisitely reproduced with an excellent level of detail. The main flaw of the model is the omission of the weld seams on the sides of the turret, which I had to reproduce with putty. Otherwise, the fit is good, the assembly was no problem and

the only thing to watch out for is some confusions in the instructions (few) and the indications about the particular vehicle we want to represent according to the decals option chosen.

Of course, I had to add some aftermarket. At some point I discovered that Aber made the 2 cm KwK 38 L65 barrel (ref 16L14) and of course I couldn't help but buy it. It is a great piece that in my opinion adds finesse to the model. I also used Aber's 1.4 m aerial for German tanks (ref 16159).

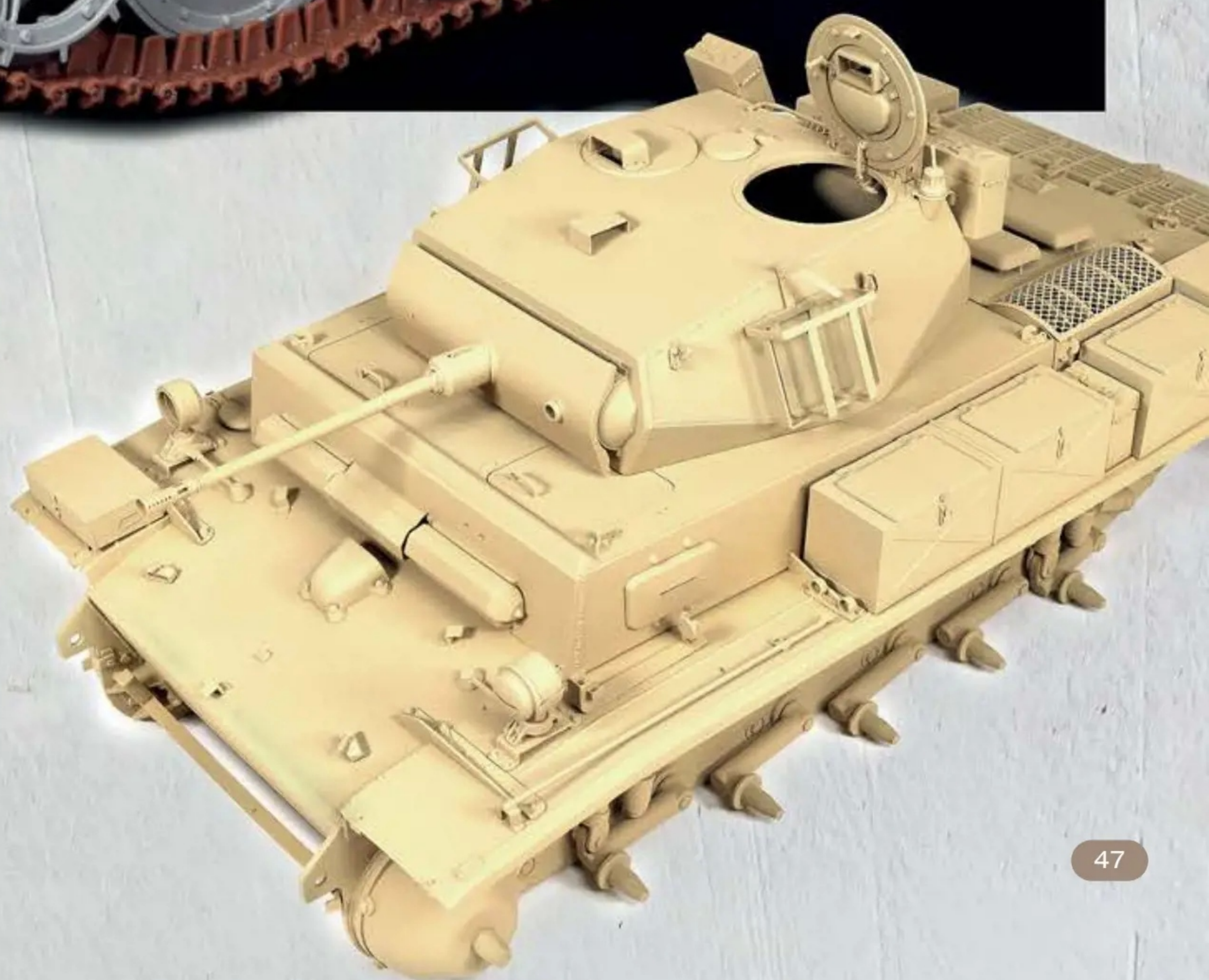
OK, let's paint the Papa Luchs. Wait, am I going to tell you the same thing for the third time? Because, indeed, the steps followed to paint this large scale model do not differ substantially from those I have

already described for his smaller brothers. Well, here we go.

I started with the usual primer/base coat made by mixing AK interactive's 'dark yellow' and 'white' primers, then, the camouflage pattern with the Tamiya mixes described above applied freehand with an airbrush, which in this model were more like wavy lines than patches. In this case, this time I did not continue varnishing the whole model in gloss, but only those surfaces on which the decals had to be placed. These are the ones provided in the box, opportunely changing the order of the numerals to represent a tank for which there was no photographic record.



The decals responded well to the Microsol/Microset routine and once dry, the whole model was varnished with Vallejo Premium satin varnish, which actually gives a fairly matt finish. Finally, with an airbrush a general filter was applied, that is, a very diluted coat of paint of dark yellow XF60 quite lightened with white XF2, both from Tamiya. The intention was to integrate both the camouflage colours and the numerals that contrasted excessively with the base coat. The tracks were painted in a dark grey obtained by mixing black and white primers from Vallejo. I took advantage of this mixture to paint the gun barrel as well.





Next came the chipping. The larger the scale of the model, the easier it should be to make the 'micro-painting' really micro. Indeed, following the same procedure as for the other two smaller scales, painting the chips at 1:16 is easier. The problem I encountered was perhaps another one. Due to the 'ease' of painting really small chips in relation to the size of the model, I think that maybe I got carried away and in some areas I painted too many. I have this feeling especially in the horizontal plates.

Anyway, the excuse I gave myself is that maybe the transit of the crew with their boots with nailed soles could cause this wear and tear and deterioration in the paint. In any case, the patina created by the rest of the subsequent work should integrate the chipping and make it much less conspicuous, and honestly, I think it did. So, I continued with a couple of filters of light ochre and buff oils, which were supposed to contribute to give a more earthy and dusty general appearance to the model. I continued with the application

of oils in small areas, in a similar way to the one described above, again, in this case, the size of the model and its details allowed me to be more subtle, especially in the painting of dark coloured drips. Splashes were also made with oil colours. Then the details such as tools, spare tracks, exhaust... were painted. For the latter, the same technique was used as for the other two scales, that is, using oils and pigments in rust tones at random, stippling the surface with a stiff bristle brush and leaving the base paint visible in some areas. Again, the size of the muffler at this scale provides a perfect canvas for executing these small, colourful tonal variations. Time for profiling with very controlled washes of very diluted sepia oil paint around the details and in the crevices. This technique is very important here as it brings out the abundant detail that the model offers at this scale. On the barrel, gun metal pigment was applied by rubbing it with an ear cotton bud. Previously, I had masked the two

segments that on the real gun were more textured and served to facilitate the grip during the tube replacement operations. The wheels had undergone a similar treatment to the one described so far, with the particularity of painting the rubber tyre in a very dark grey colour. Before being dirtied, the inner wheel rims were painted with silver and polished with gun metal pigment with a cotton swab. The general dirtying was done again with several earthy tones of pigments. On the sides of the hull and in the lower front and rear areas, the application was more intense, simulating accumulations made by depositing pigments and soaking them in oil solvent. This fixes the pigments enough so that they do not fall off, but they remain very weakly attached, so that they can be removed very easily (even unintentionally). In a second phase, these pigments can be retouched with oil washes to add depth or simulate wetter areas. Transitions that are too stark can be softened with dry pigments, applied very carefully with a small brush.





The upper parts were worked with dry pigments, applied with a small brush in a controlled manner, always avoiding a uniform finish. Several earthy tones should be used and the intensity of the application should be constantly varied. In the recesses of some horizontal surfaces, especially on the mudguards, accumulations of dirt were simulated.



To do this, the pigments were deposited again, this time mixed with finely crushed plant debris and fixed with oil thinner. I also added this 'crushed vegetation', actually finely cut 'seaweed', to other areas of the horizontal surfaces. Sometimes, the use of thinner can cause "tide marks" to appear when drying. The best thing to do is to 'erase' them with more dry pigment applied very locally on the marks.



The tracks were also dirtying with pigments. First, using masking tape, the tread of the wheels was reserved in order to simulate the cleaner line caused by the friction of the tyre rubbing. Pigments were then applied dry, generously, allowing them to accumulate in the nooks and crannies. On the inner side, graphite was applied with a smudger to "clean up" and highlight the more polished details caused by rubbing, especially on the teeth and the outer edges of the links.



On the outer side of the tracks, more accumulations of the pigment mixture and finely cut seaweed, fixed with thinner, were added in the nooks and crannies. Pinwashes of dark oils were applied over these accumulations to add further tonal variation and depth. Once dry, the outermost details were rubbed with graphite to simulate the more polished metal, and even a very light dry brush of silver was applied to highlight them further. This is an iterative process; as graphite is added, some of the pigment build-up can be removed, and pigments can also cover up the polished effect, so it is necessary to touch up the work on the tracks, each time more carefully and with smaller brushes. The engine cover area received additional treatment to simulate oil and fuel stains. This was done with sepia and bitumen oils, in varying degrees of dilution and successive applications so that the effect is

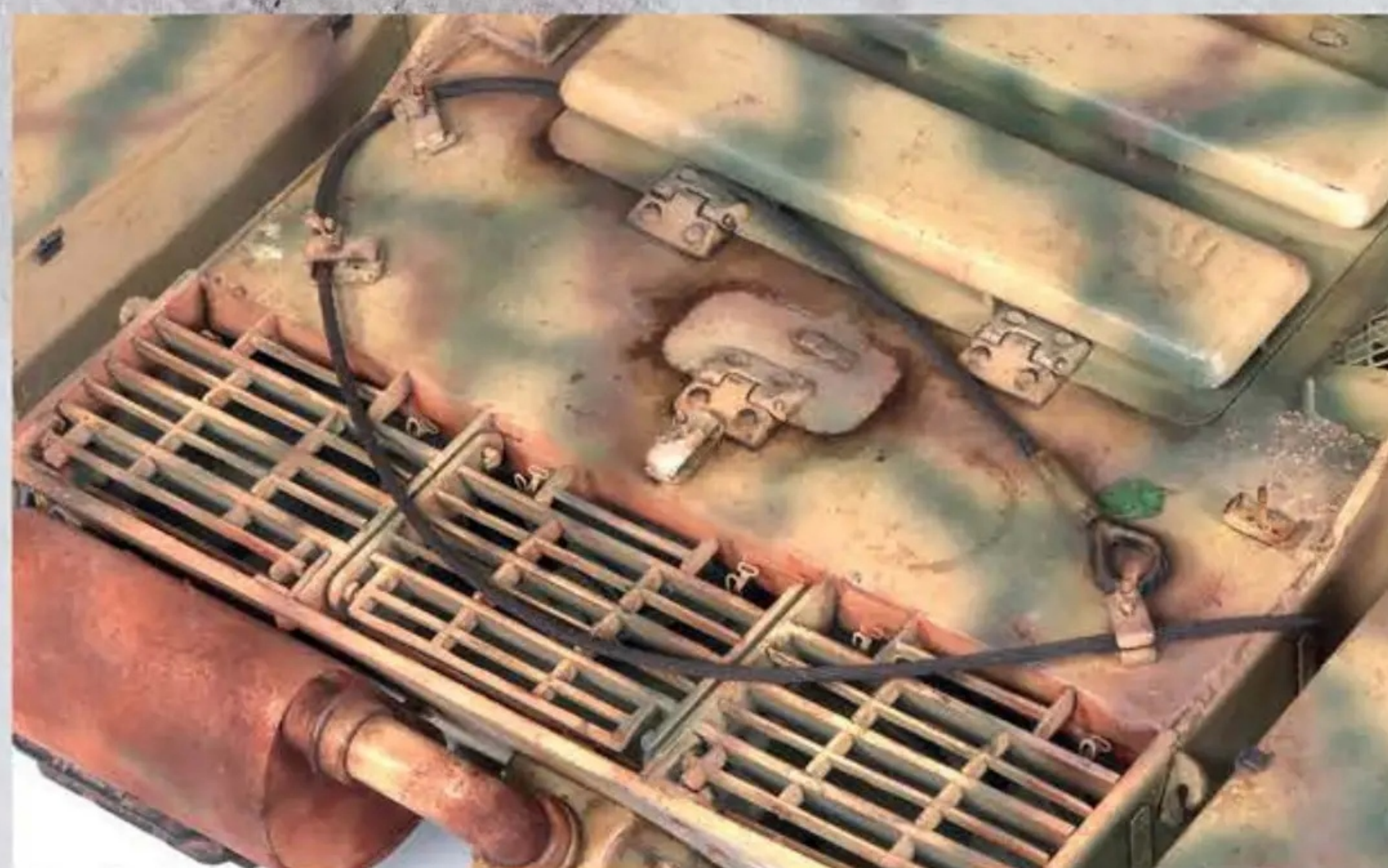
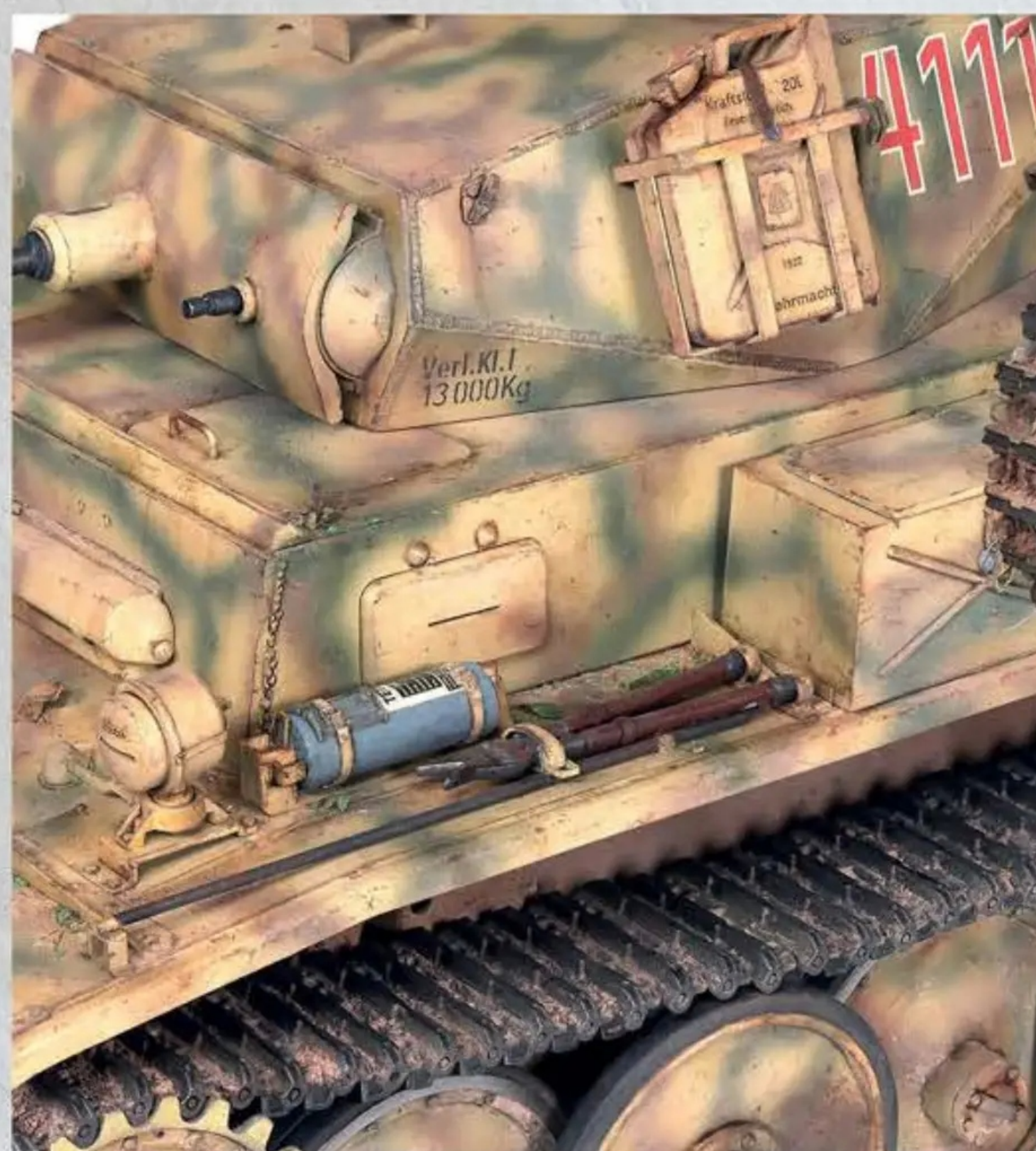
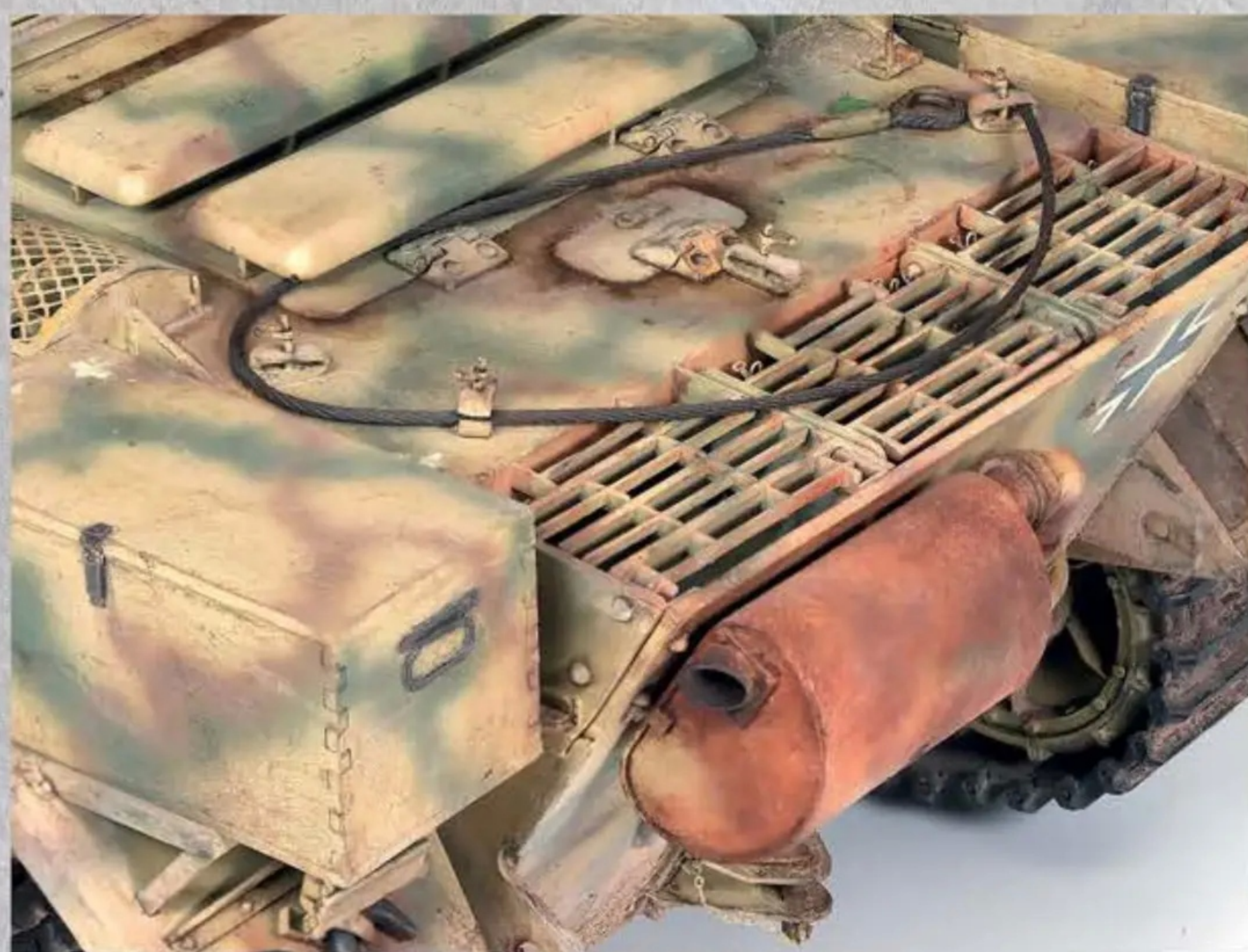
more or less accentuated depending on the area. These two oils are also used to create grease stains on the wheels.

The size of the scale allows for the addition of some extra, somewhat unusual details. For example, I made half a dozen leaves out of aluminium kitchen foil, in different sizes. In this material it is easy to engrave the nerves of the leaf and give it shape. Once painted and 'aged' they are spread over the surface of the tank. I also painted a couple of bird droppings with white and yellow watercolour pencils. Can you find them?

Finally, from the beginning of this project I wanted to add a figure to the model. I was curious to experiment with painting figures in this large scale. There are some excellent 1:16th scale figures on the market, but most of them are made of

resin and their high price was stopping me from buying them 'to try it out'. The few I knew of in plastic (for example from Classy Hobby or Tamiya) did not appeal to me.

Fortunately, the German brand Das Werk announced just in time the release of a very promising plastic figure to go with their 1:16 Puma, 'German tank commander (ref 16007)', which I bought as soon as I could. The figure is of excellent quality, I suspect based on a 3D scan, and at an affordable price. To paint it I used Vallejo acrylics and the same techniques I use for the 1:35 figures. After some shadows and lights applied in a general way with an airbrush, the painting is refined by applying glazes of the acrylic colours very diluted. I am quite happy with the final result.





Conclusion

As you may have noticed, the painting process for all three models is basically the same. Actually, the techniques used are applicable in all cases, with the obvious differences that derive from the size of the pieces. Perhaps, at 1:72 scale, the most important pitfalls are to be found in the 'micro-painting'. It can be really difficult to paint some chips or details at that scale. On the other hand, the 1:16 scale gives you a canvas with a lot of possibilities and therefore more demanding.

The final result also oscillates between the undoubted charm of a small model well executed at 1:72 and the spectacularity of a large model, full of fine features, in the details themselves but also in the painting, at 1:16 scale. Each size has its advantages and disadvantages that will appeal (or not) to some. Perhaps in the middle is the virtue. Did someone say 1:35?

1:16
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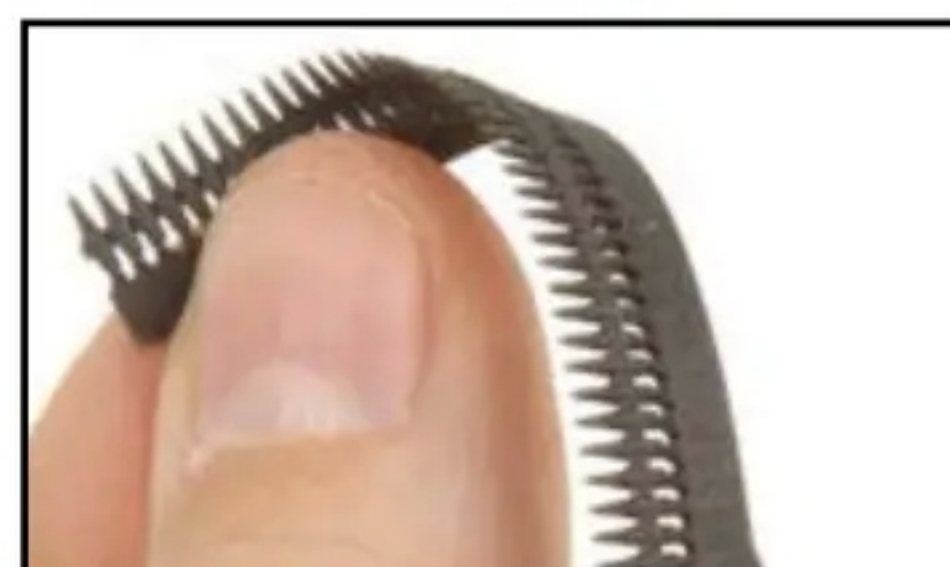
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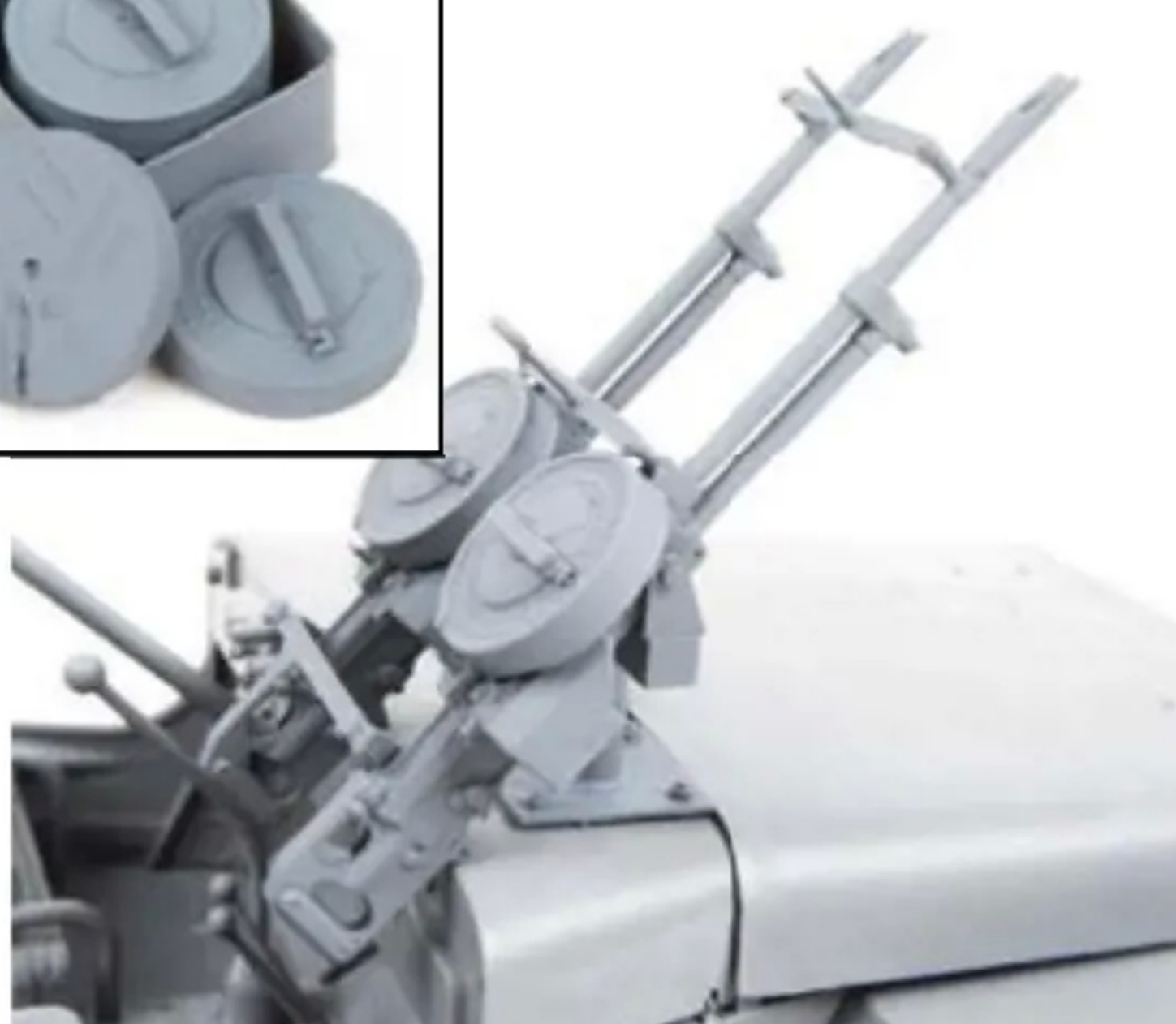
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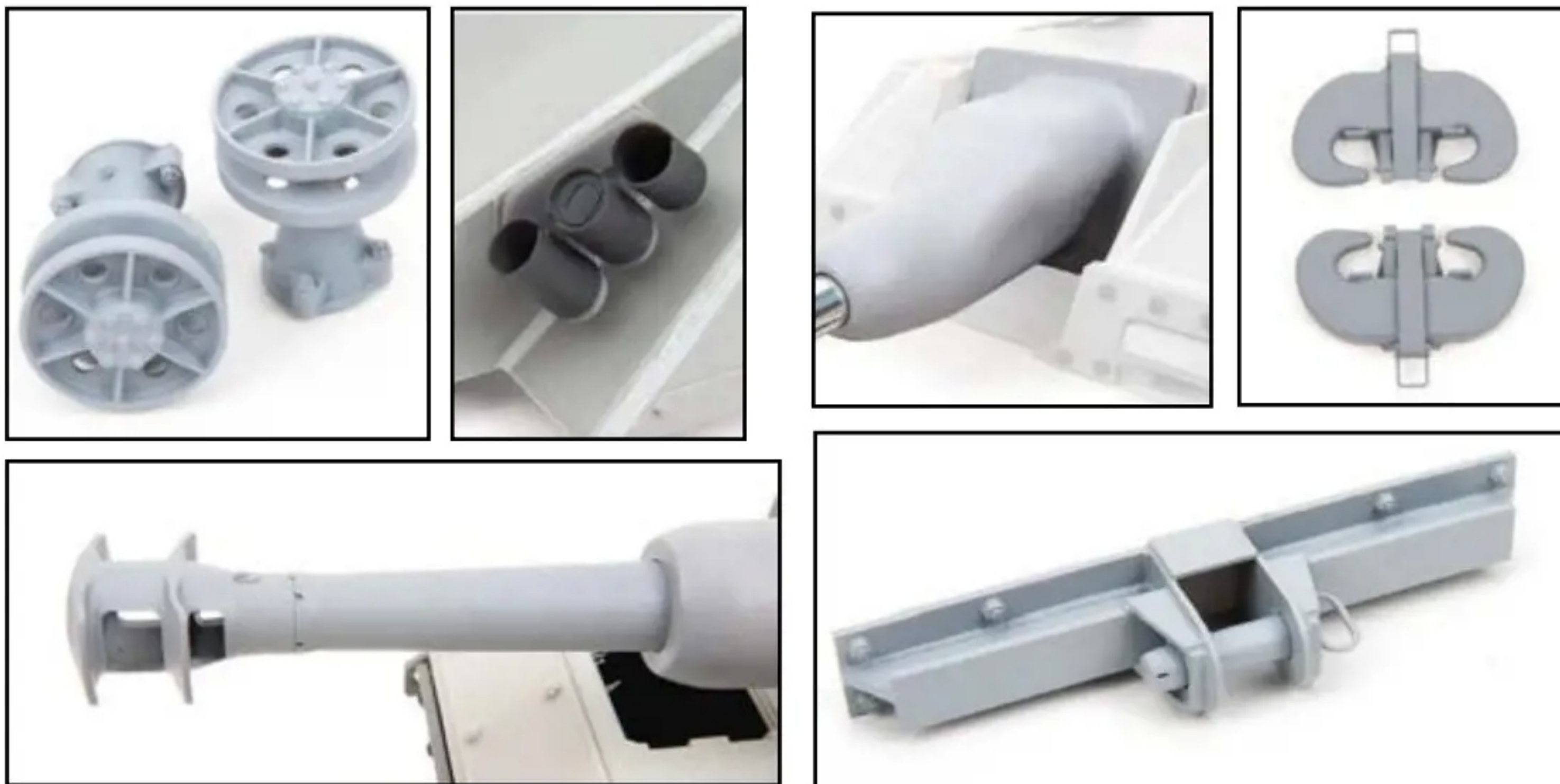
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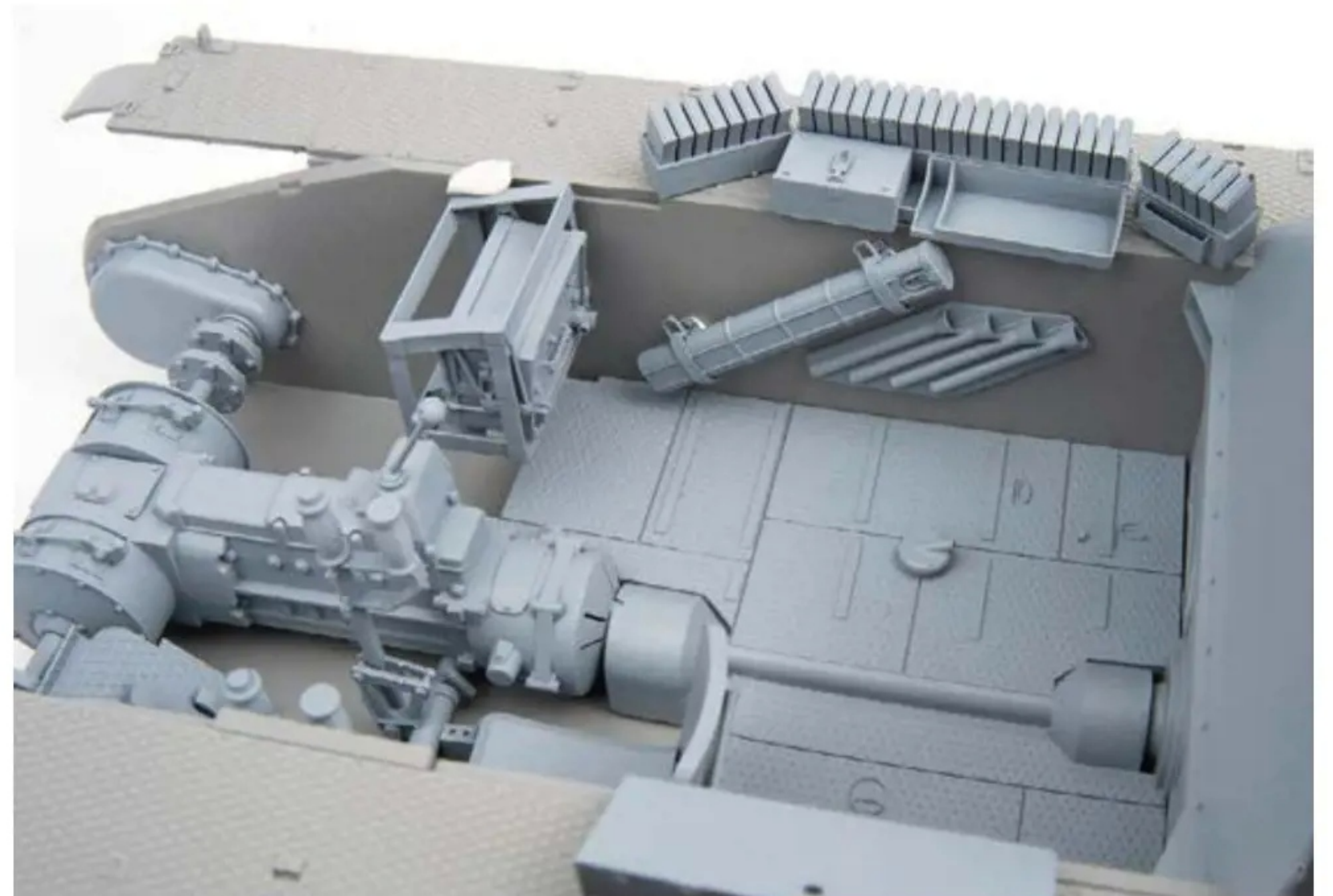
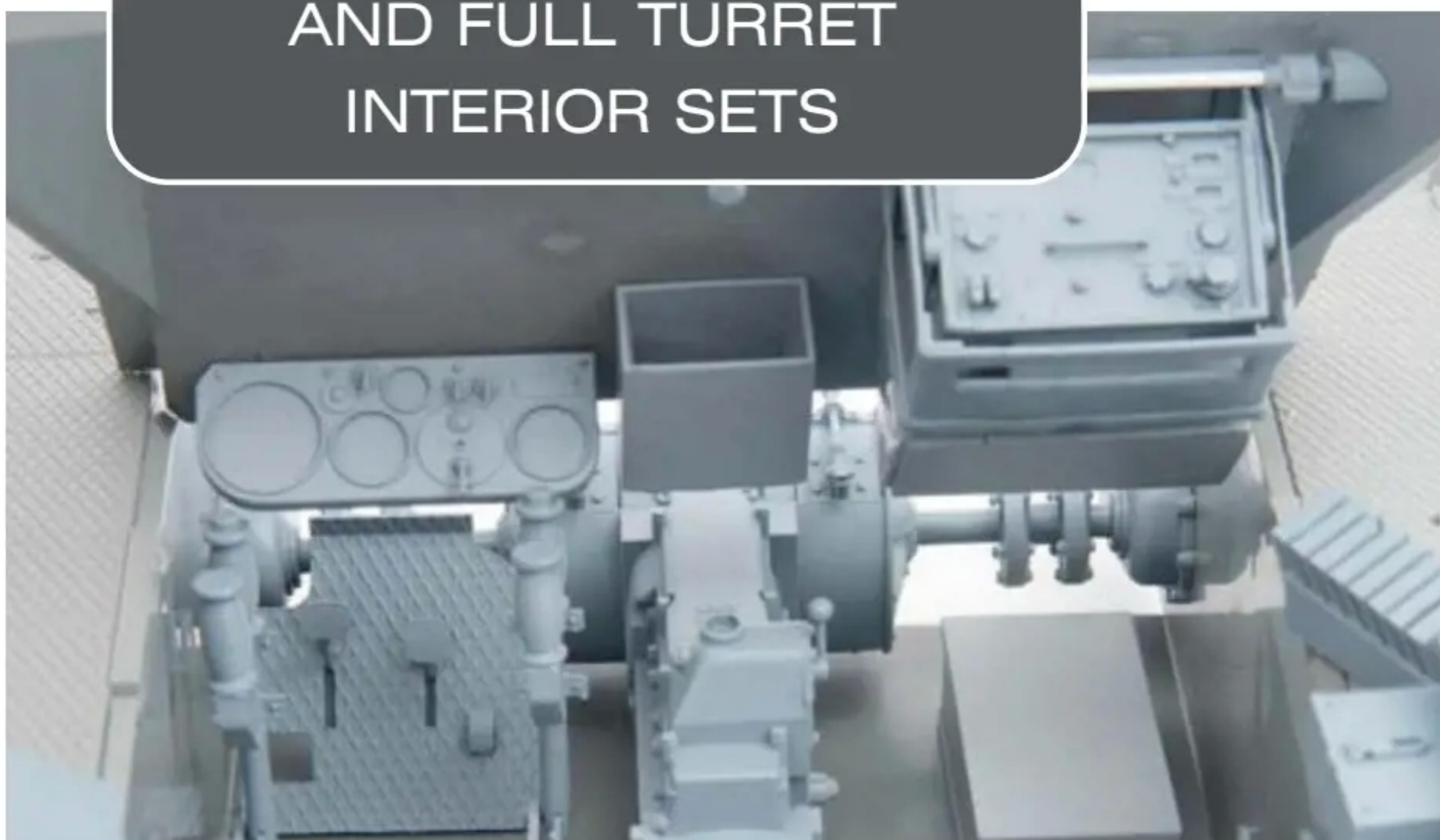


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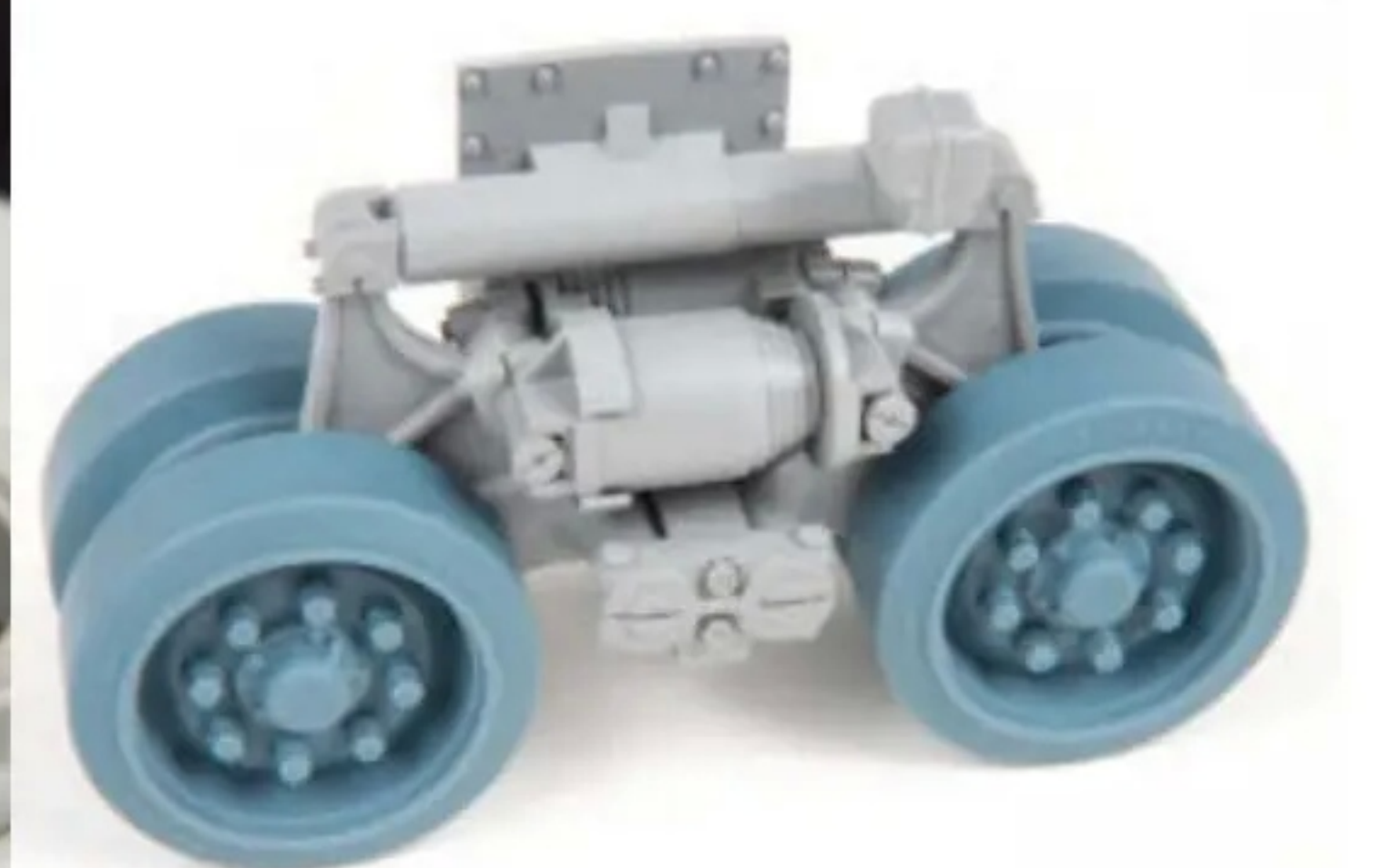
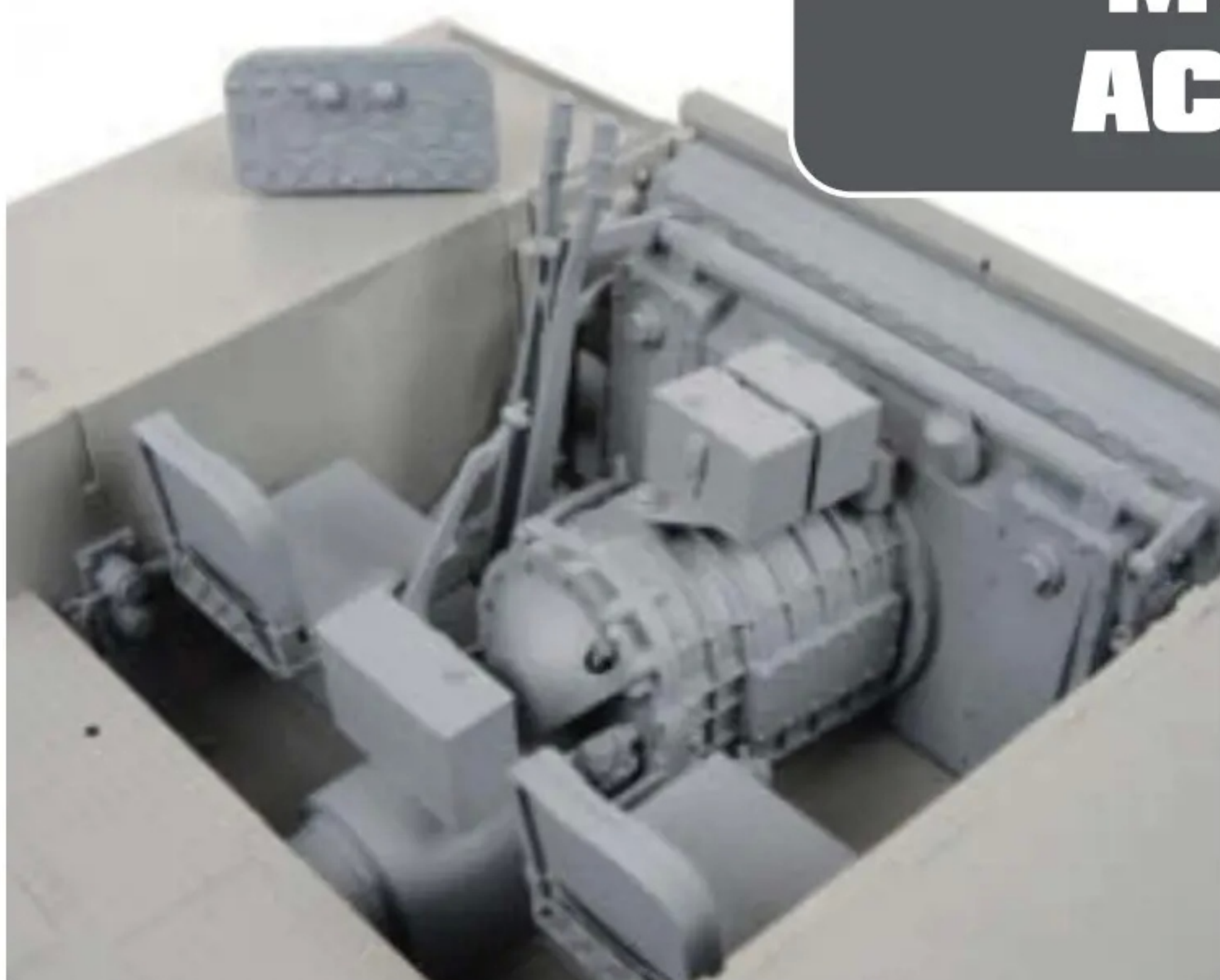
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SCANNING FOR SHAHEDS



SA 8 'GECKO' [9k33 Osa SAM]

ZACK SEX MODELS A PROTECTOR OF UKRAINIAN SKIES

The SA 8 Osa or NATO code named Gecko was a revolutionary design and concept for the early 1970s. Building on recent experience with successful SA 2, SA 3, and SA 6 SAM systems, the Soviets saw the need for a new, highly mobile amphibious platform that carry a short to medium range SAM system and its own radar and tracking system.



To this end, the designers at the NII-20 Research institute began work in the 1960s and picked the vehicle base of the BAZ-5937. The 5937 is a six wheeled transport vehicle that is fully amphibious and easily air portable, being a low profile unit and a sharp angled front. In the mid section of the vehicle, the design team mounted the 9A 33 TELAR (Transport Erector Launcher and Radar) below this unit, the dedicated SAM team operation module is positioned in centre and rear of the vehicle.

Initially, when it was introduced into service in 1972, the Osa had its four 9M33 SAM missiles exposed on launch rails, but operational manoeuvres quickly identified the missiles as vulnerable to the elements and obstructions such as tree branches and foliage. The four exposed 9M33 missiles (2 on each side) were soon replaced by six boxed off 9M33BM 2 units with three on each side. In 1972 the Soviets also developed and deployed a naval version of the Osa in the form of the 9M33 M, which was mounted on Kiev and Kara class cruisers. The Osa and its SAM missiles were updated was modernised regularly to keep it a viable and modern part of the Red Army's air defence for its tank and infantry formations. Western Air Power and NATO ground attack aircraft, in particular, presented a lethal threat to Soviet ground formations, from TOW and HOT missile armed choppers to A10s, F4 Phantoms and Jaguars, the Russians were keenly aware of their vulnerability to such effective aerial opponents. It was not in Europe, however, that the Osa was to see its first major engagements.

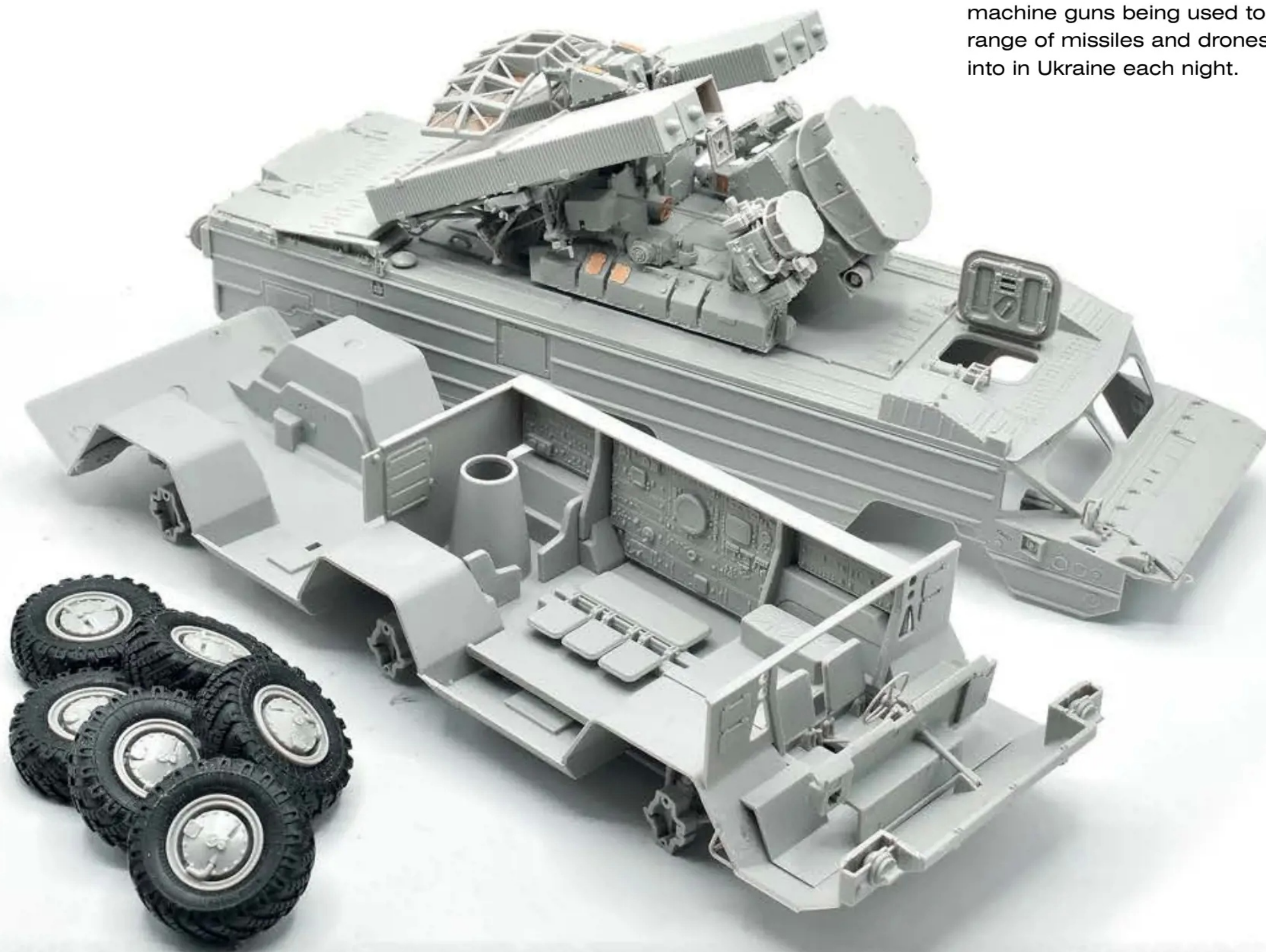
SA 8 goes global...

The Soviets would go on to produce an estimated 1,200 SA 8 launchers between 1970 and 1988. After holding back the 9K33 for Soviet and Warsaw Pact's allies use for the first decade, the Kremlin started exporting the Osa to front line States throughout the third world in early to mid 1980s. Syria deployed the SA 8 to Lebanon after their disastrous 1982 campaign, where all of their SA 6 SAM sites were destroyed by the Israeli Air Force during Operation Mole Cricket. At least one IAF Phantom was shot down by a Syrian SA 8 after Operation Peace for Galilee. The SA 8s first combat debut in Africa took place in Angola, where Soviet and Cuban advisors assisted the MPLA in combating South African forces in a series of offensives. At least one South African Mirage F1 was downed by an SA 8.

South African forces, however, managed to capture a fully intact SA 8 Osa during the battle of Cuito Cuanavale in October 1987, the technological details of which were no doubt were passed on to Western allies. Back in the Middle East, the Iraqis army spent most of the 1980s engaged in a ruinous war with Iran, and during eight years, during this vast meat grinder both sides used vast amounts of East Block and Western European weapons. The Iraqis had access to better equipment, including Roland SAMs alongside Soviet supplied SA 2s, 3s, 6s, 8s, and 13s. These systems were effective in downing many Iranian F5Es, F4 Phantoms, and Bell Huey Cobras. In 1991, Saddam sent his legions into neighbouring Kuwait, where he encountered a vastly more sophisticated

opponent in the form of the Allied Coalition, US and Allied Air power hammered Iraqi forces on the ground with the few exceptions where Iraqi Republican guard units managed to down a number of allied aircraft with SA 8s and SA 13s (more on the SA 13, at a later date). While Iraqi forces were decimated in Kuwait, Soviet/Russian sources claimed that the SA 8 and ZSU 23 Shilka units of the Iraqi military managed to down many US Tomahawk cruise missiles, the facts on this statement remain to be seen. The next major and more use of the SA 8 Osa would be seen in Libya during the downfall of Col Gaddafi, where allied air power would neutralise a number of these units. In the Syrian civil war, a few captured SA 8s were used by Islamist rebels to down Syrian airforce aircraft and helicopters.

The Nagorno Karabakh conflict of 2020 would see the SA 8 used by both sides, but Azerbaijan's use of Israeli and Turkish drones to destroy all manner of Armenian SAM, tanks and APCs was a harbinger of the fundamental changes we were about to see in modern warfare. The massive attempt by Vladimir Putin's Russia to invade and destroy neighbouring Ukraine in a three day Special Military Operation would turn out disastrously for thousands of Russians and Ukrainians involved. This critical fight for Ukraine's very survival has gone from a tale of a failed Russian Blitzkrieg to an all-out battle of wills, incorporating drones, missiles, MBTs, and fighter jets. For Ukrainian forces and civilians, air defence is an absolute priority with everything from Patriot missile batteries to twin World War One Maxim machine guns being used to shoot down a range of missiles and drones being fired into Ukraine each night.



While the missiles, some from North Korea, such as the KN 23, must be intercepted by powerful long range SAMs, the Iranian made Shaheds can be brought down by flak guns and medium to short range SAMs such as the SA 8 and 13. The SA 8s have proved highly effective alongside US supplied Humvee Avengers in downing many Shaheds and other smaller drones, thus allowing ground and armour units below to operate more effectively. More recently, Ukrainian SA 8s whose units were running low on the Soviet produced 9M 33 missiles have been seen deploying adapted Air to Air missiles such as the R-73 missiles mounted on rails instead of the boxed 9M33s, much in the same fashion as the British government supplied ASRAAM air to air missiles mounted on modified Supacat vehicles to bolster Ukraine air defence, (but this is a model project for another day).



Getting to grip with the Gecko...

With all of this in mind, I started this project with the idea of building a standard Ukrainian SA 8 with its now all too familiar digital camouflage. Trumpeters SA 8 is just what you would expect from their more recent releases, a well detailed and attractive kit, which goes together over a number of nights, a little bit of attention must be paid to gluing the widows and super glueing the etched radar dish along with a reasonable amount of etch details around the chassis of the vehicle.



A reasonably detailed driver's area and SAM operating unit are provided, but the missile launching crew area is not visible, so my main focus was the driver's station which is visible through the large front windows. Having assembled the vehicle and tracking radar, I was ready to get painting...





Going digital...

The first thing I did was paint and weather the interior of the vehicle based on Internet references. I then masked off the windows and proceeded to prime the lower and upper sections of the Osa in black car primer.



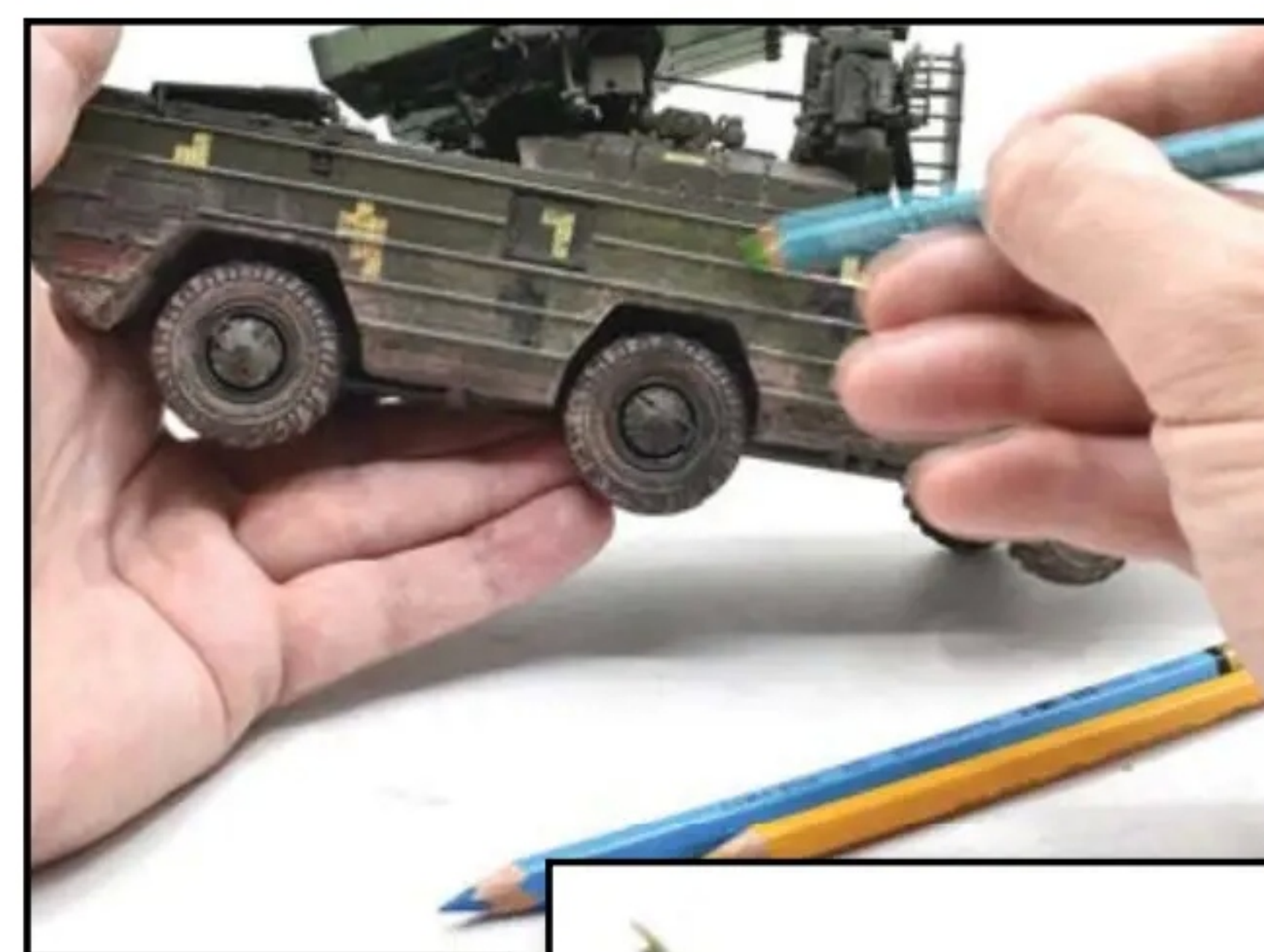
This hard black surface is ideal for the main coat of Tamiya NATO green XF-47, which I thinned about fifty per cent with X-20A Tamiya thinner, I painted the tires a grey / black acrylic mix and was ready for the digital camo.



To this end, I simply applied the new ICM digital camouflage decals, which come in two schemes, with a bunch of 1/35 shoulder patch unit decals (I stuck one on pointing lad's shoulder) ICM also provides the modeller with an actual Ukrainian army patch in the digital camouflage set as well which is a nice touch. I did a little light weathering before I remembered to add the two Ukrainian army crosses on the sides of the vehicle, these from the Ukraine at War decal set from Polish company Kagero publishing house.

Now, for the fun bit, the weathering consisted of a range of wilder pigments and oil paints being flicked and splattered over the suitable lower surfaces. Black oil paint pin washes and multiple 6B pencil burnishing, this process is worked back and forth till you get the finish you like. This time, I also tried something new in the form of scribbling with blue, green, and yellow water soluble colouring pencils over camouflage areas and then rubbing a fair bit of it off this a stiff brush. I liked the distressed patina. This gave the vehicle and will experiment more with this effect in the future.





Next, I set the Osa down on to a suitable base, made of Styrofoam, edged with mounting board and covered in plaster mixed with tea leaves and brown acrylic paint, over this I sprinkled dried earth and crud, along with railway grass on two of the base edges. I then splattered Wilder pigments around the edges to get a dark and pale contrast on the ground surface.

The last act in this little drama was two characters scanning the sky for the dreaded Shaheds, shame on Iran for supplying these ghastly weapons to Putin, but such is war. These two chaps added a little bit of drama to the setting and also a sense of scale.



Final thoughts, I enjoyed this little project, no end, and I think I'll have a go at a more modern Ukrainian SAM system next, they have a lot to choose from so perhaps an S300 or SA-15 TOR might be interesting, till next time happy modelling and stay safe.

[9k33 Osa SAM]

SA



8 'GECKO'





SA 8

'GECKO' IN DETAIL

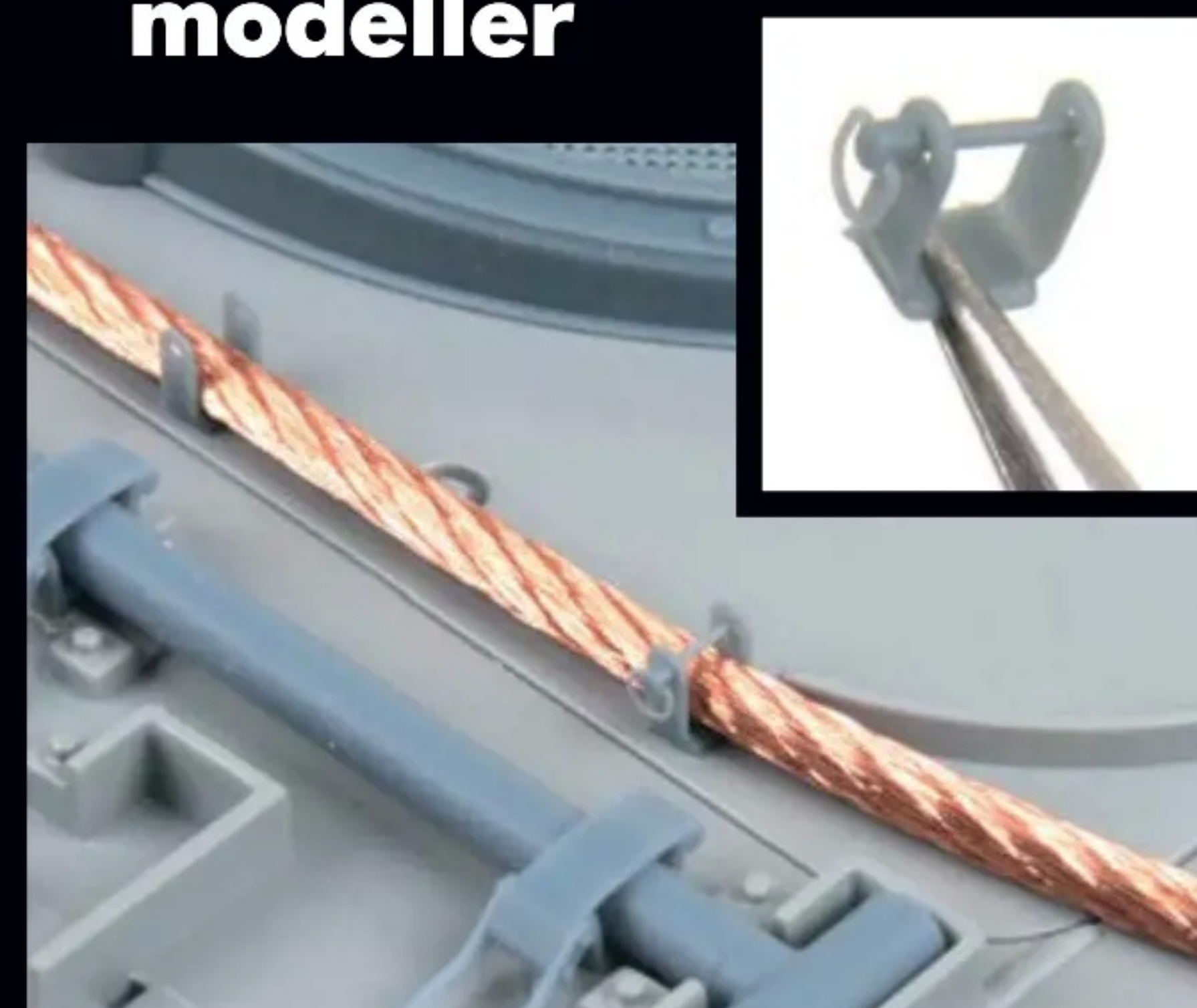
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1:16 LEOPARD 2A7V

AFV modeller

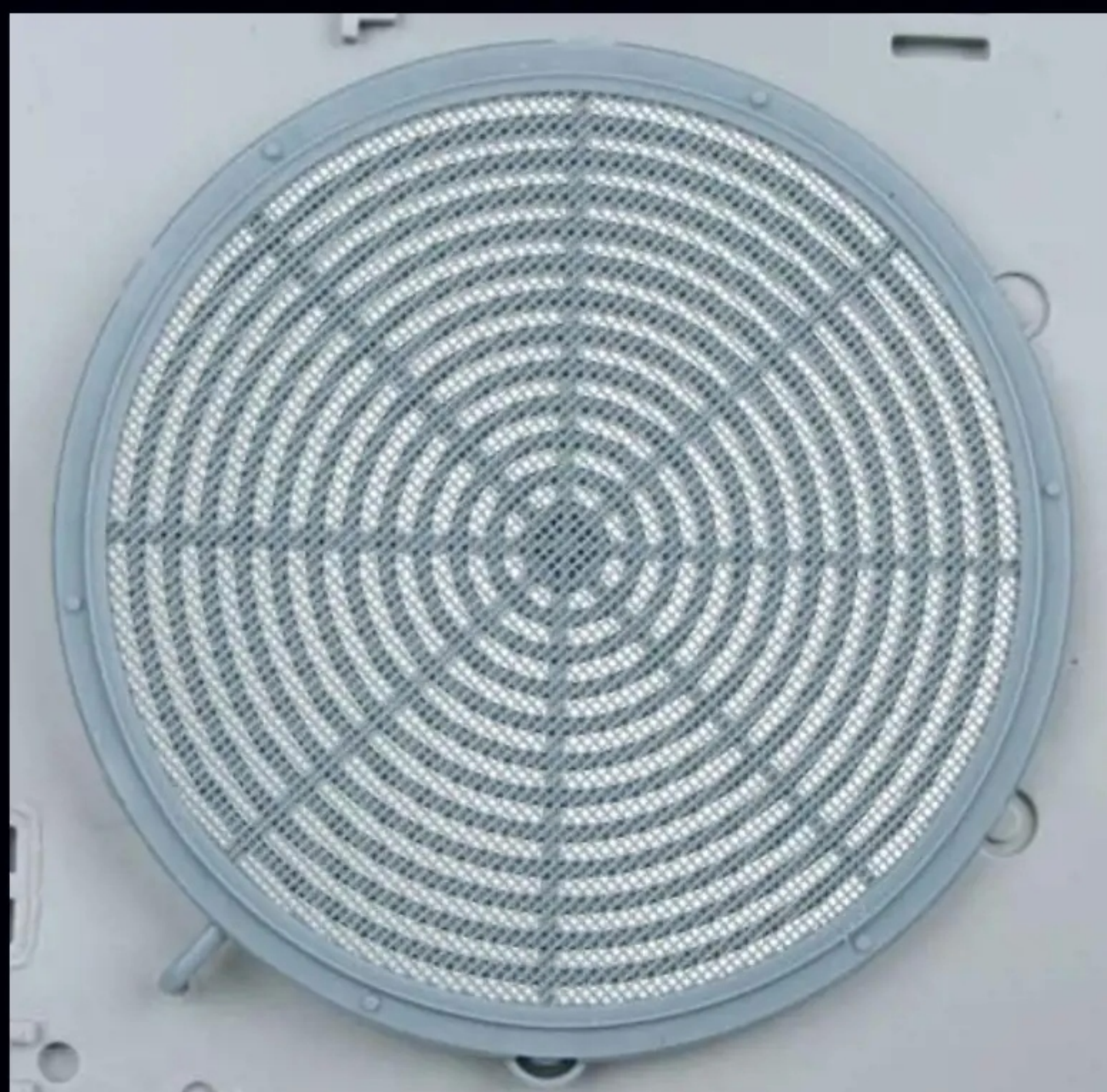


Leopard 2A7V Enhanced Peri R173A Base for Das Werk kit

This one piece 3D printed part simply replaces the kit Parts L28 & L29 and gives the missing casting numbers present on the real vehicle. The remainder of the PERI R173A Commander's Main Sight follows the kit assembly sequence.

Leopard 2 Tow Rope Brackets

15 3D printed brackets to hold the Leopard 2 tow ropes in position. Printed with separate individual pins for absolute realism but requiring maximum care to get the best results.



Leopard 2A7 Corrected Fan Covers

Designed to replace the engine deck fan covers on the Das Werk Leopard 2A7 this set of two single piece fans provides the correct star pattern frame below the mesh. The mesh itself is much finer than the photo etched kit part to replicate the fine mesh on the real vehicle.

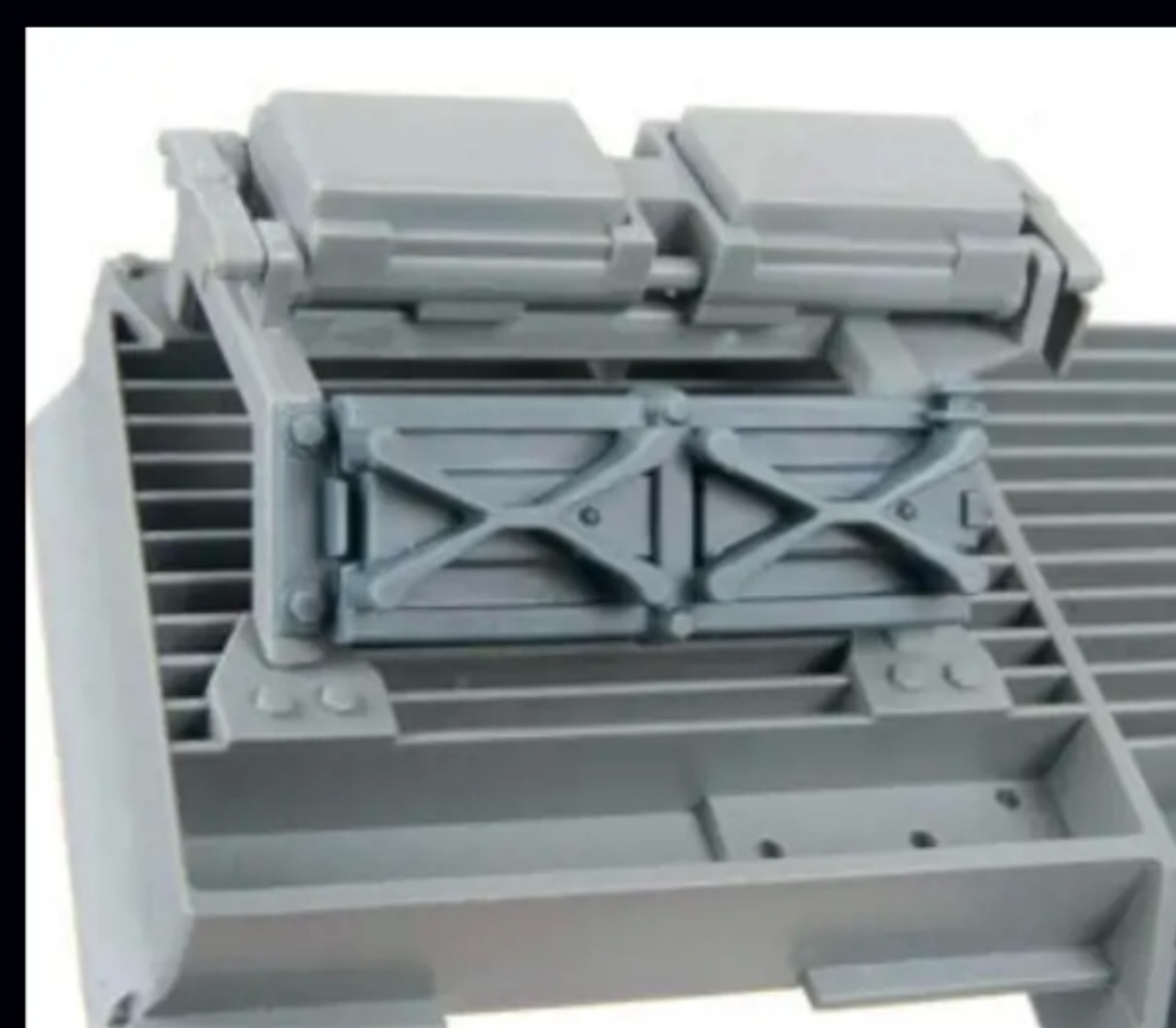
Leopard 2A7V Vehicle Tool Upgrade Set

This 3D printed set both corrects minor errors found in the kit parts, adds the large Axe missing from the kit and provides incredibly realistic and delicate tool clasps. The set also includes the stowed hoisting frame used to lift off the engine deck for maintenance. For those who want the ultimate detail this set is essential to enhance these very visible parts of the kit.



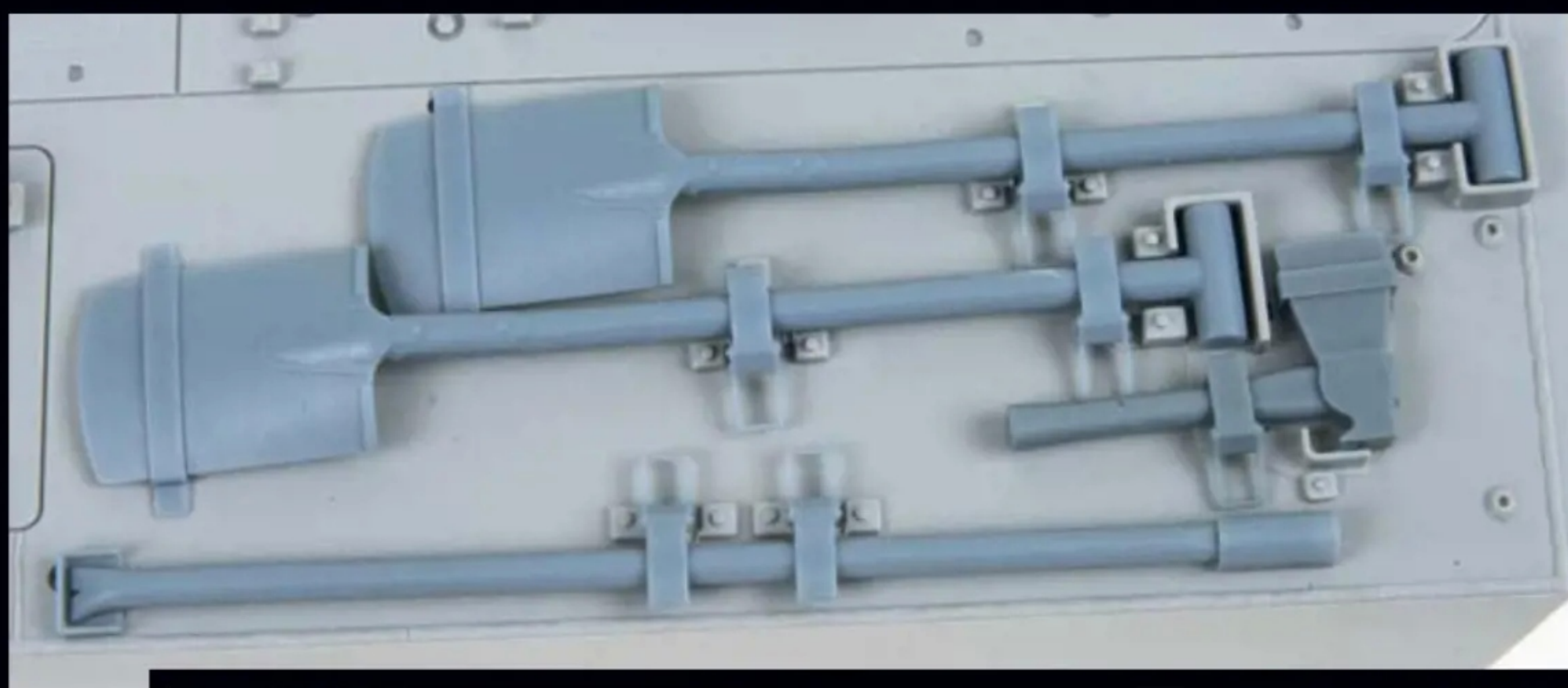
Leopard 2A7V Corrected Tow Hooks

Set of 4 3D printed replacement tow hooks for the Das Werk 1:16 Leopard 2A7V. They come with the casting numbers 'LEO2' and the locking plates.



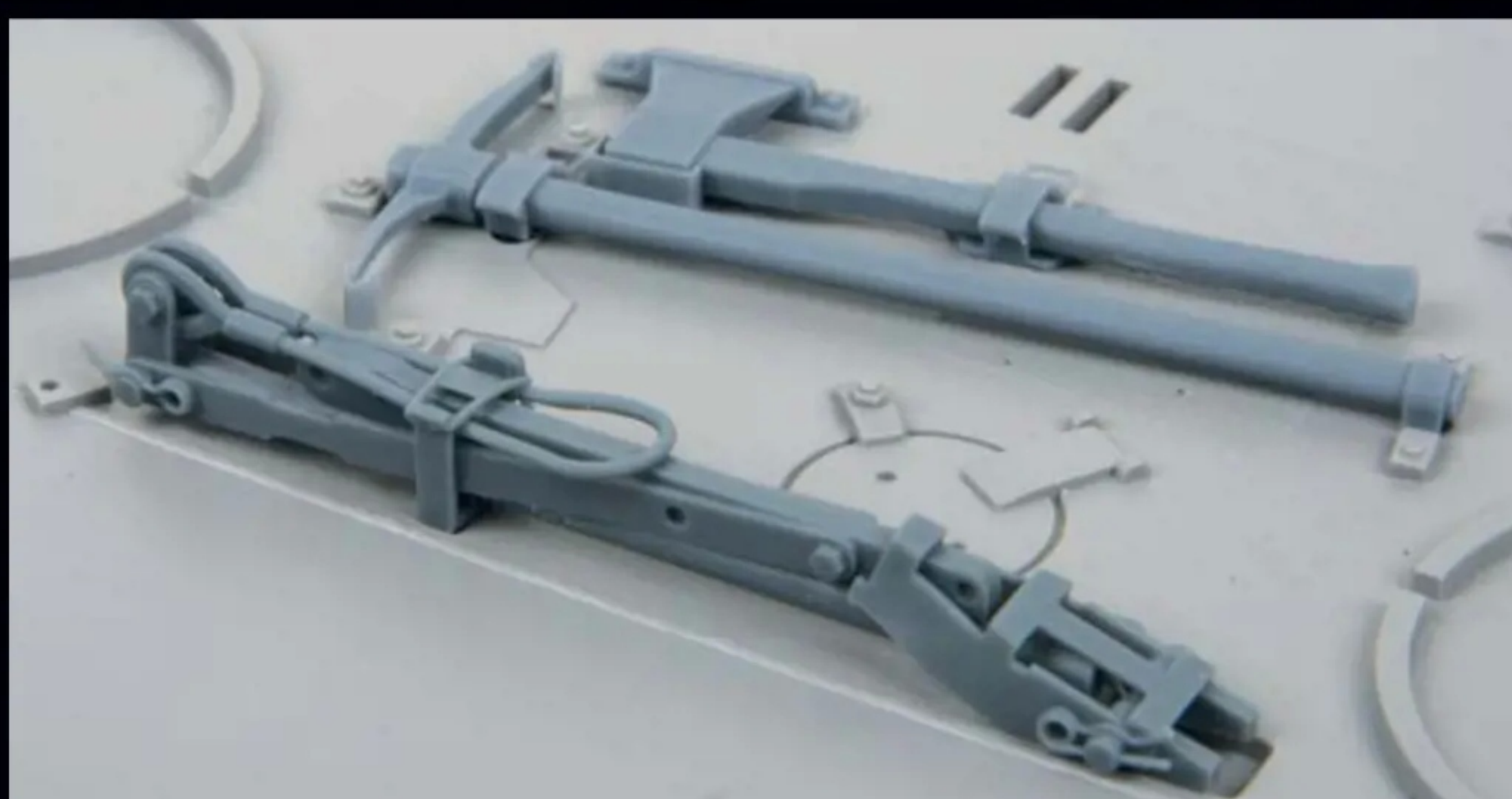
Leopard 27AV Rear Grouser Stowage

Set of 2 3D printed Stowed Grousers for the back of the Das Werk kit. These are mounted below the spare track links on the 27AV and simply add this missing detail from the kit.



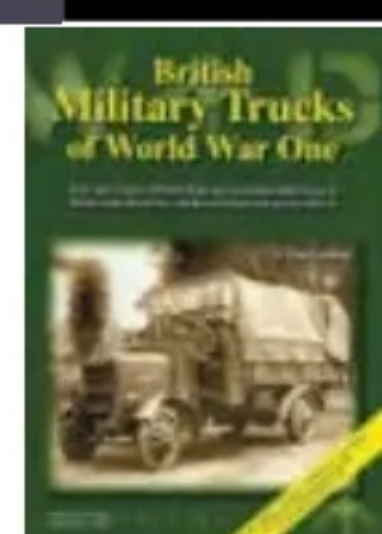
MG3 Hatch Ring Mount

This 3D printed highly detailed upgrade corrects the errors and omissions in the kit version and provides jewel-like detail for this very visible area of the finished model.

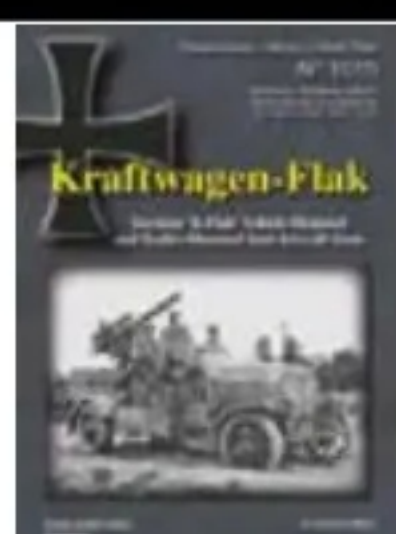


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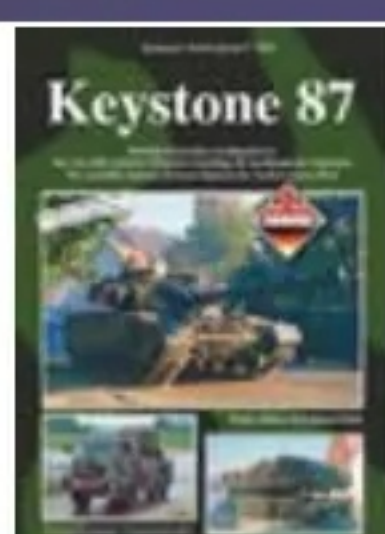
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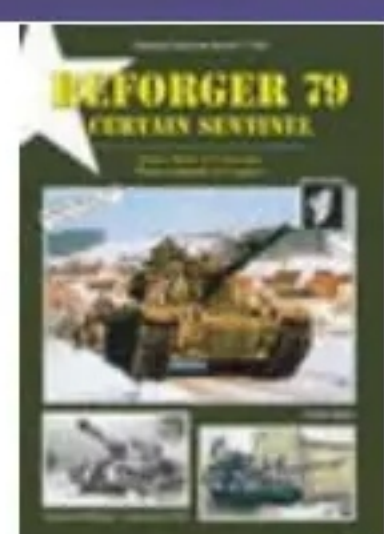
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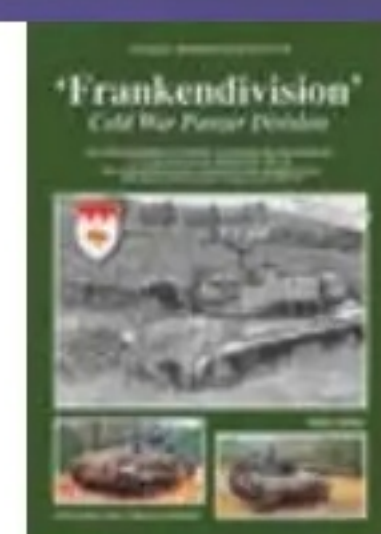
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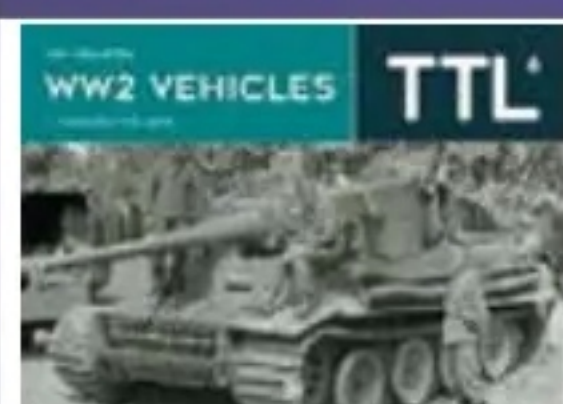
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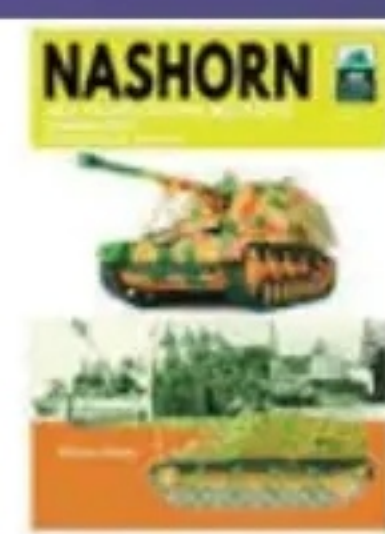
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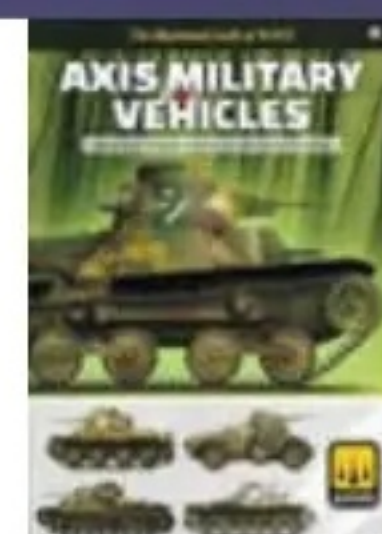
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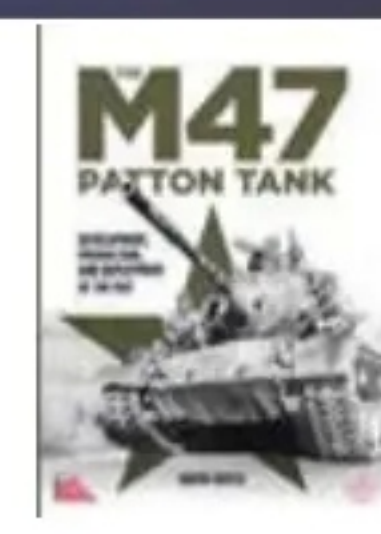
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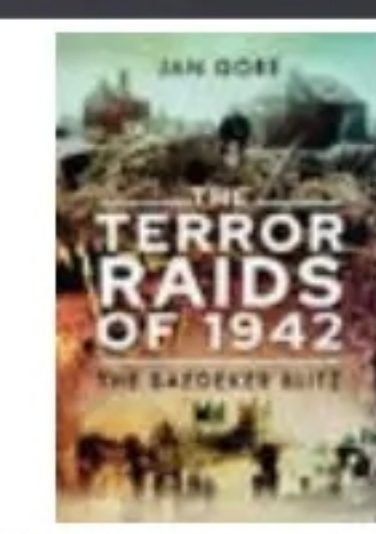
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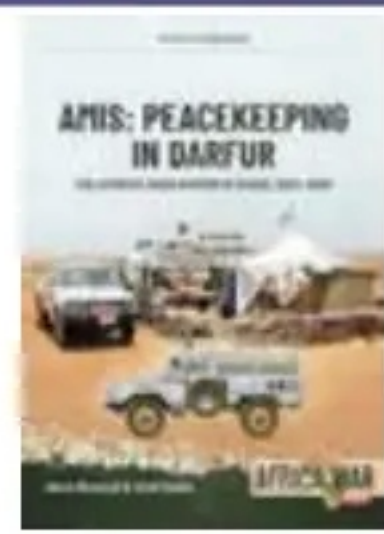
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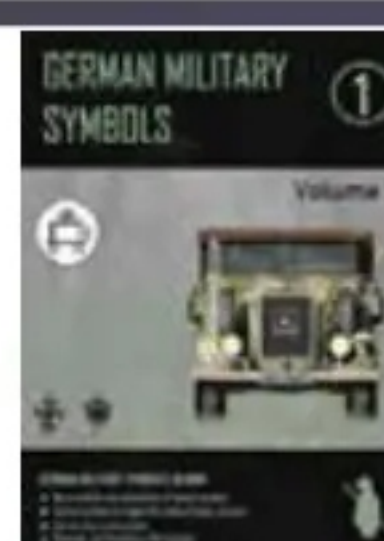
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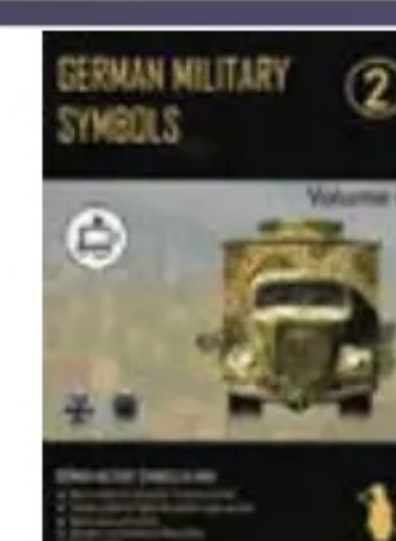
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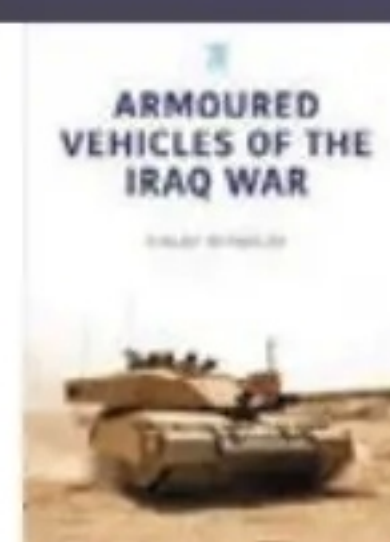
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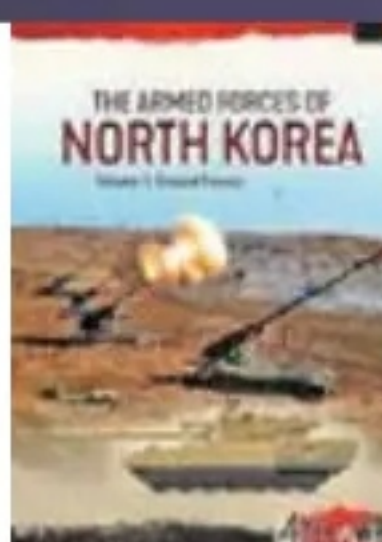
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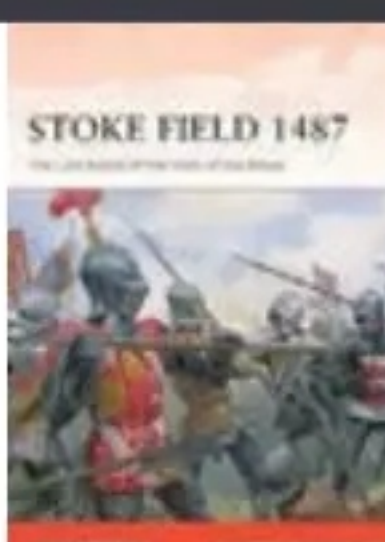
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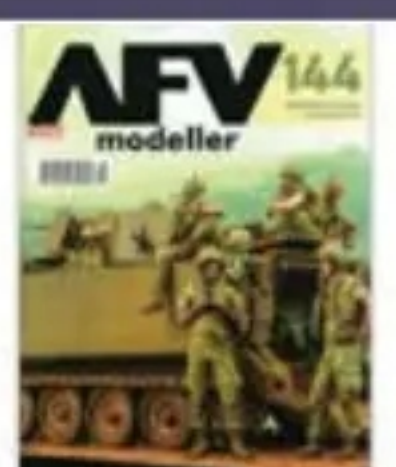
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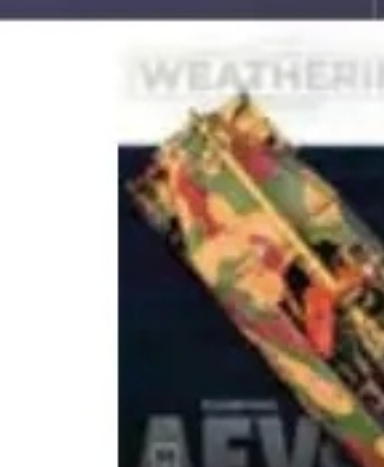
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