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Sd.Kfz.251/3

'FUNKWAGEN'

MODELLED IN 1:16

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'Like' us to follow what's new and follow our build projects.

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Sd.Kfz.251/3 **'FUNKWAGEN'** **HALF PRINT**

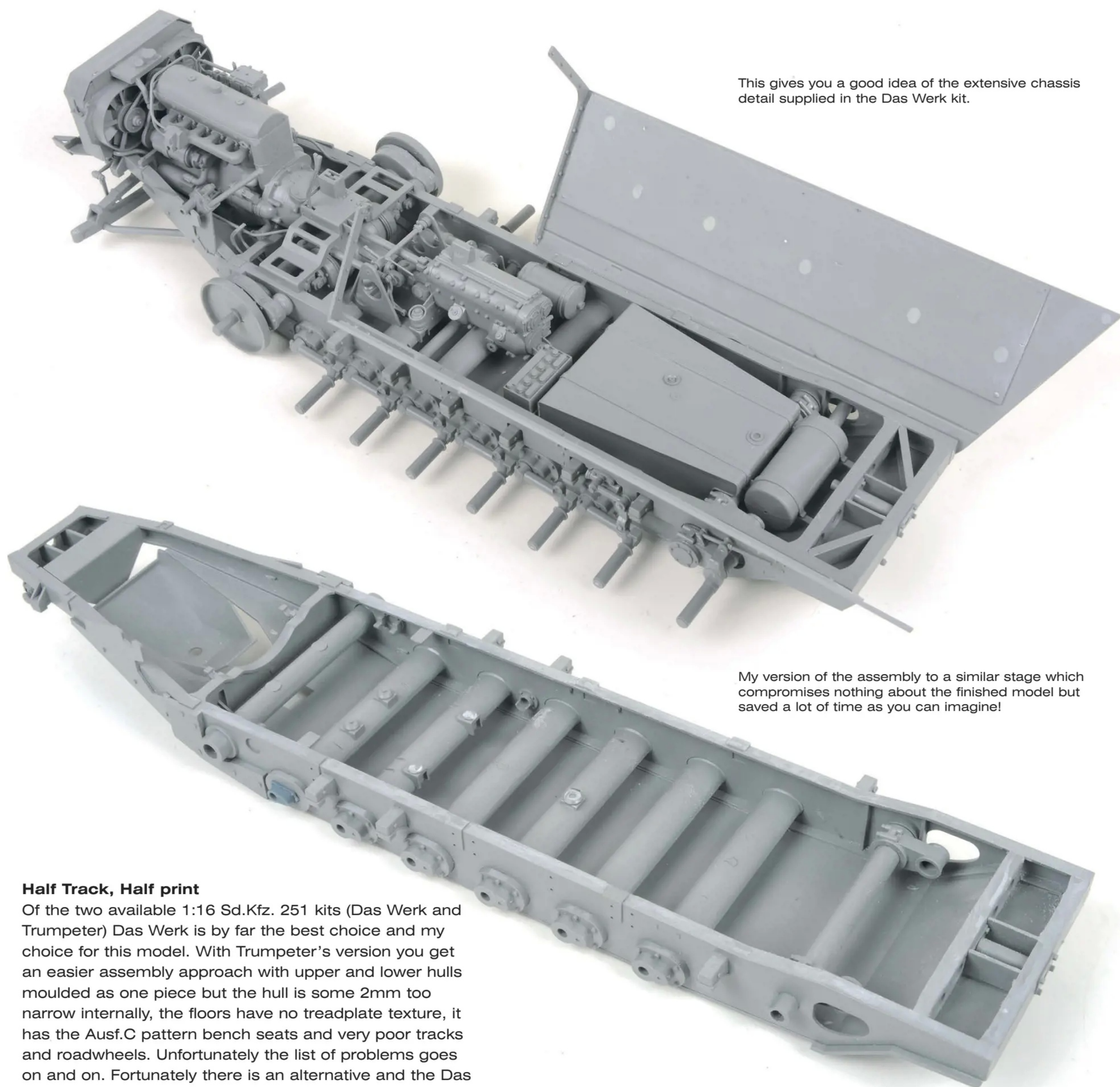


David Parker builds a Panzer Lehr Command Halftrack using the Das Werk 1:16 kit and AFV Modeller conversion parts

PART ONE

HALF TRACK





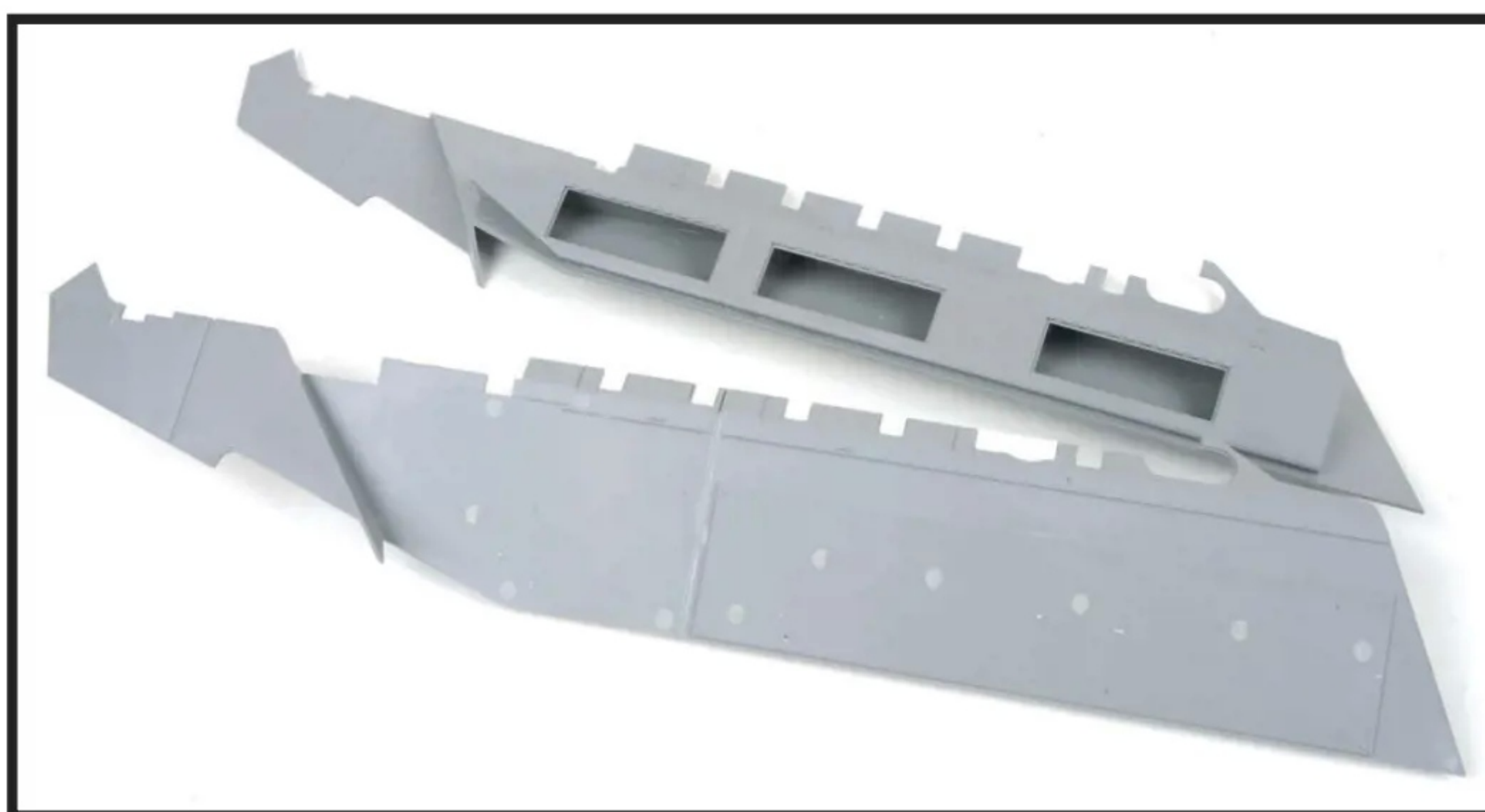
This gives you a good idea of the extensive chassis detail supplied in the Das Werk kit.

My version of the assembly to a similar stage which compromises nothing about the finished model but saved a lot of time as you can imagine!

Half Track, Half print

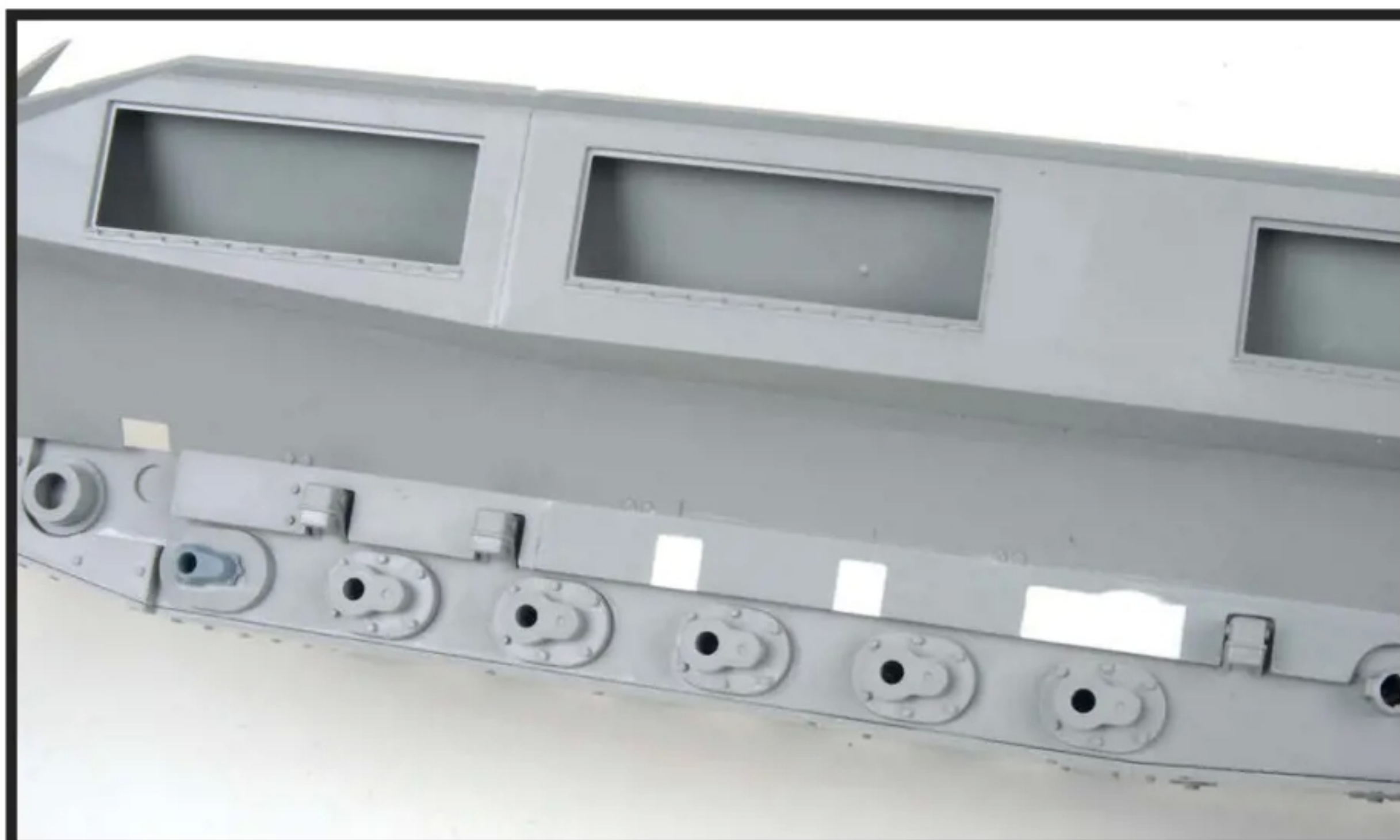
Of the two available 1:16 Sd.Kfz. 251 kits (Das Werk and Trumpeter) Das Werk is by far the best choice and my choice for this model. With Trumpeter's version you get an easier assembly approach with upper and lower hulls moulded as one piece but the hull is some 2mm too narrow internally, the floors have no treadplate texture, it has the Ausf.C pattern bench seats and very poor tracks and roadwheels. Unfortunately the list of problems goes on and on. Fortunately there is an alternative and the Das Werk kit whilst not without its own shortcomings offers a much more solid basis for my intended project. The Das Werk (DW) kit provides a very detailed engine, radiator and gearbox and all the underfloor components like fuel tanks, battery and compressed air cylinder. I can see the benefit of the detailed engine if you want to open the engine hatches but the remainder of the detail below the hull floor is somewhat pointless in terms of assembly. You can save a huge amount assembly time by just assembling the basic chassis and the basic engine block because the bell housing of the engine extends into the crew compartment so is visible.

Having assembled two of the DW kits (one being used to test my conversion part designs) I had learnt from experience to depart from the kit assembly sequence and I cant emphasize enough the importance of not fixing the hull sides parts C1 and C2 to the chassis at stages 3 and 4. Far better to assemble the entire lower hull sides along with the external stowage bins. With fourteen separate panels to make up the hull, accurate alignment of these is key to avoiding gaps or misalignment and fitting C1 and C2 as the instructions suggest simply restricts access to the interior.

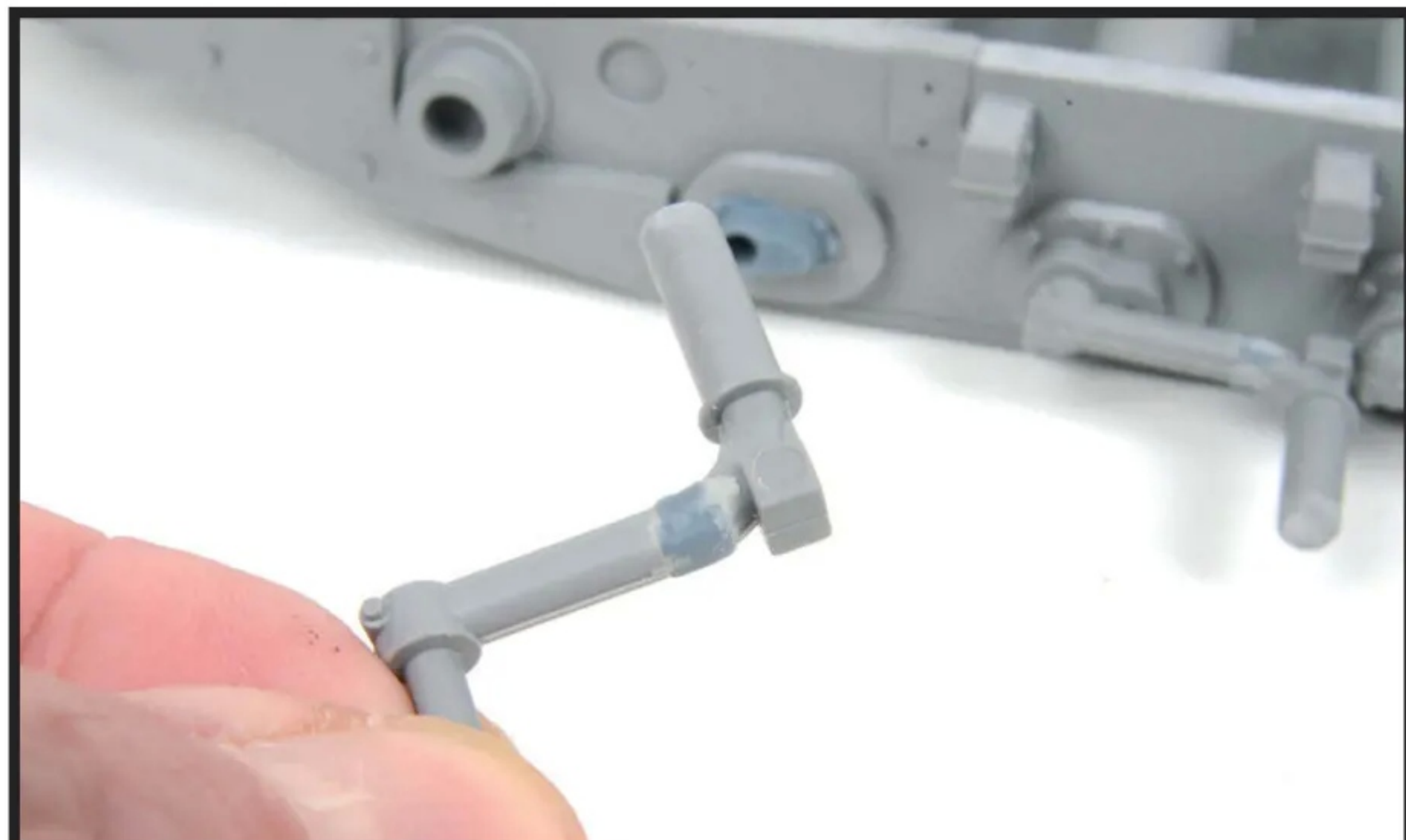


My advice is to ignore the kit instructions and to glue together the lower hull side plates and the stowage bins like this to help eliminate problems in aligning all the separate hull plates.

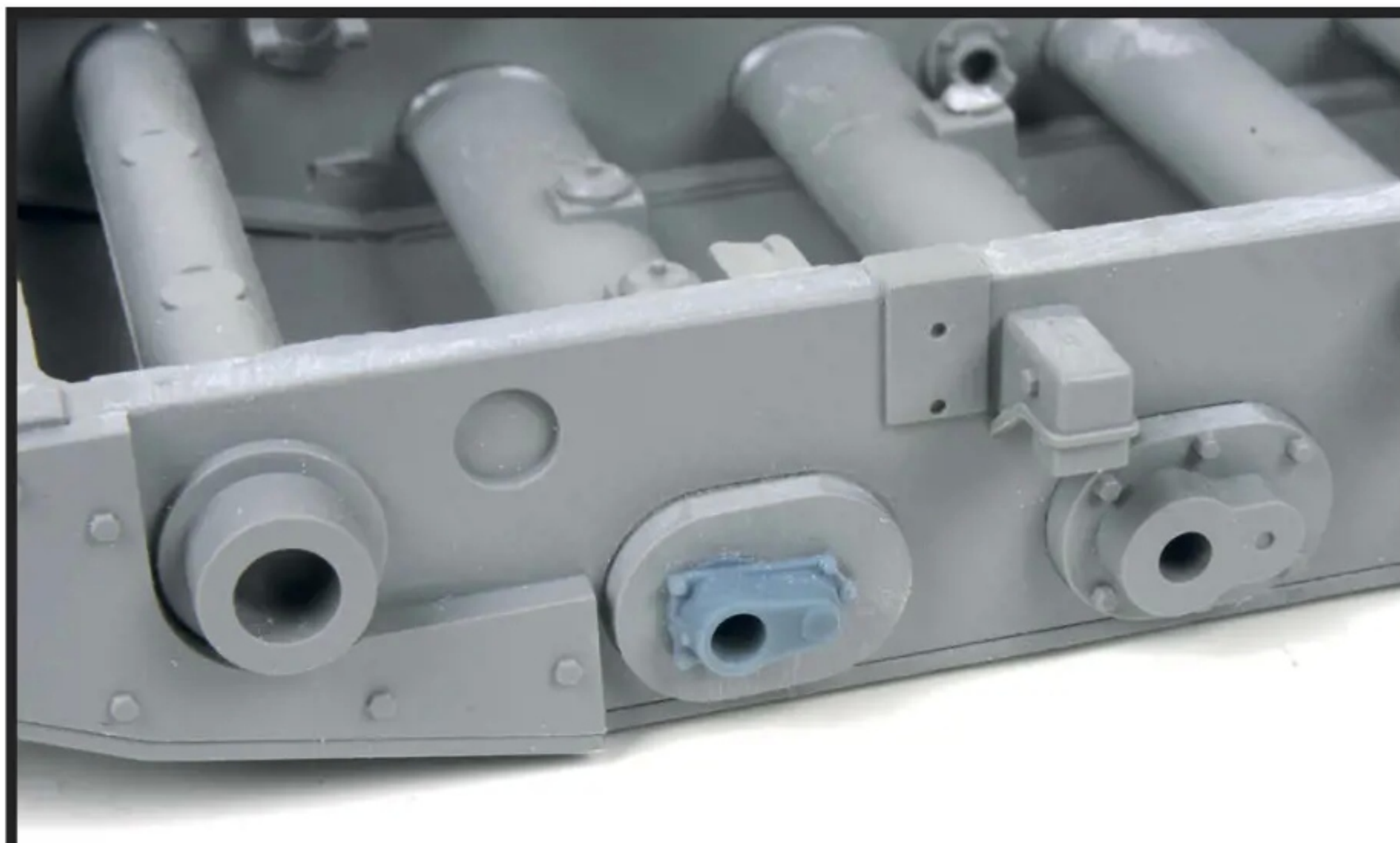
The DW chassis has the bump stop and swing arm arrangement for the Ausf.C so although these are not highly visible I chose to correct them nevertheless. The bump stops above the first two and last roadwheel stations were fitted but the remaining ones were left off the chassis and the openings in the hull plates parts C1 and C2 were blanked off with plastic card. Note that this feature has been corrected on the DW Sd.Kfz.251/22 Pakwagen. On the swing arms the inserts part G44 are not applicable so I designed myself a small plug to fill the gap in the arm but they can also be filled with your choice of putty. I also printed a new corrected housing for the first swing arm station which was the most likely to be visible and this replaced the kit part which I deleted.



Bump stops deleted and the holes in the hull side filled with plastic card.

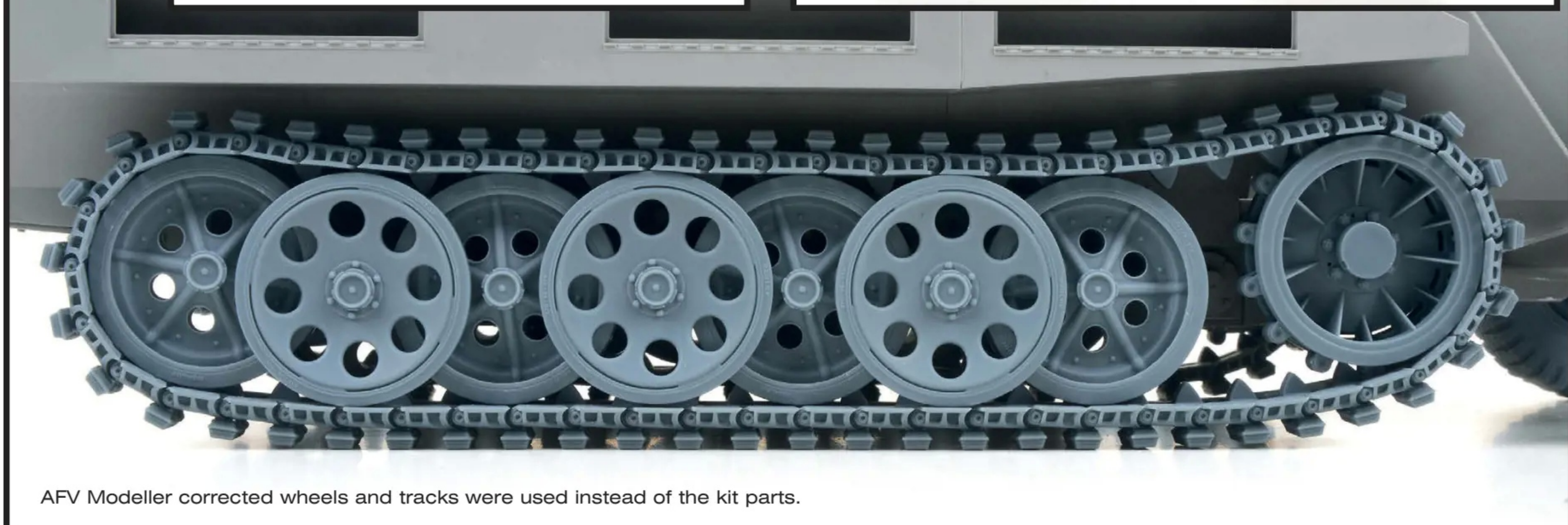
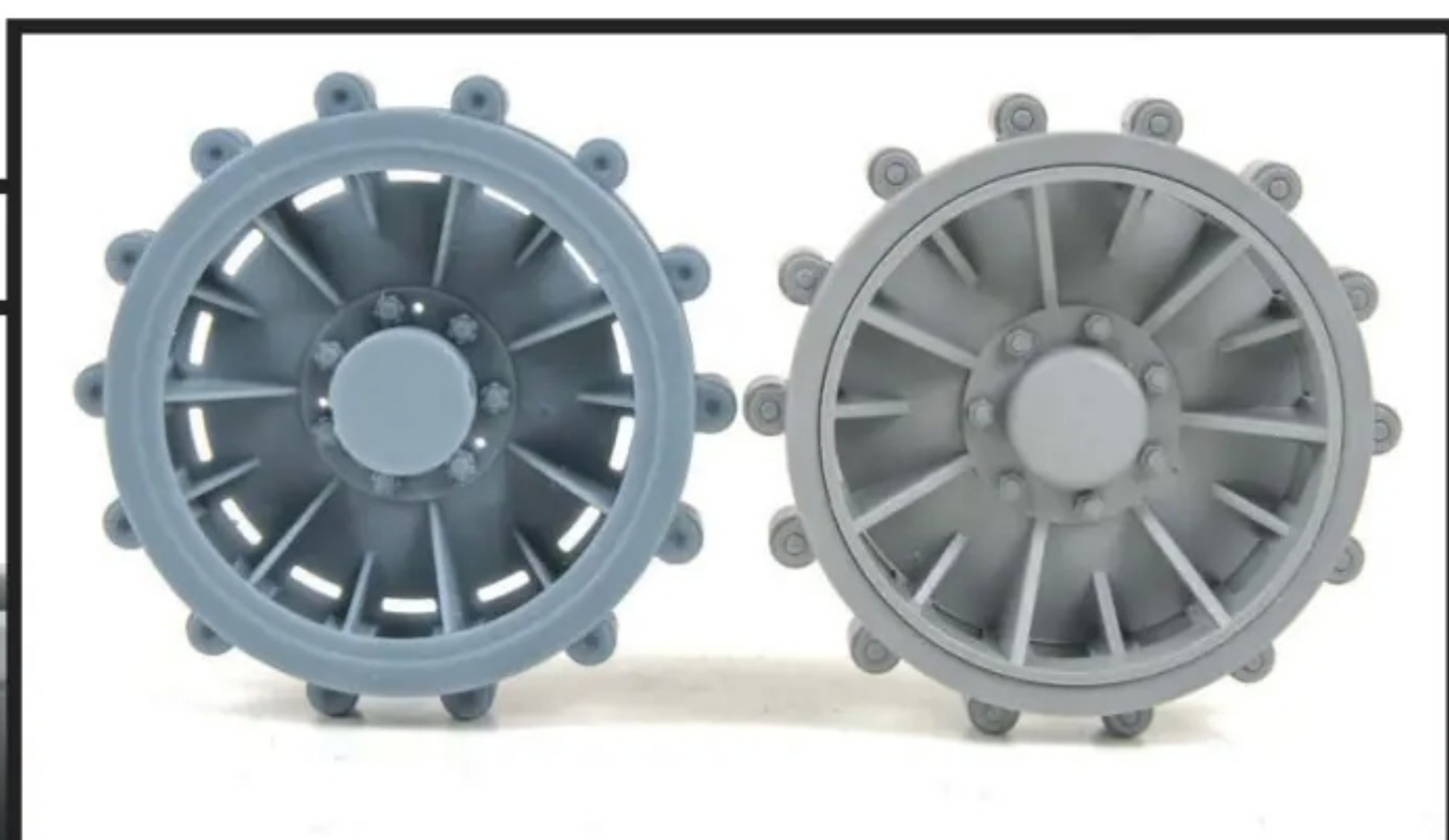
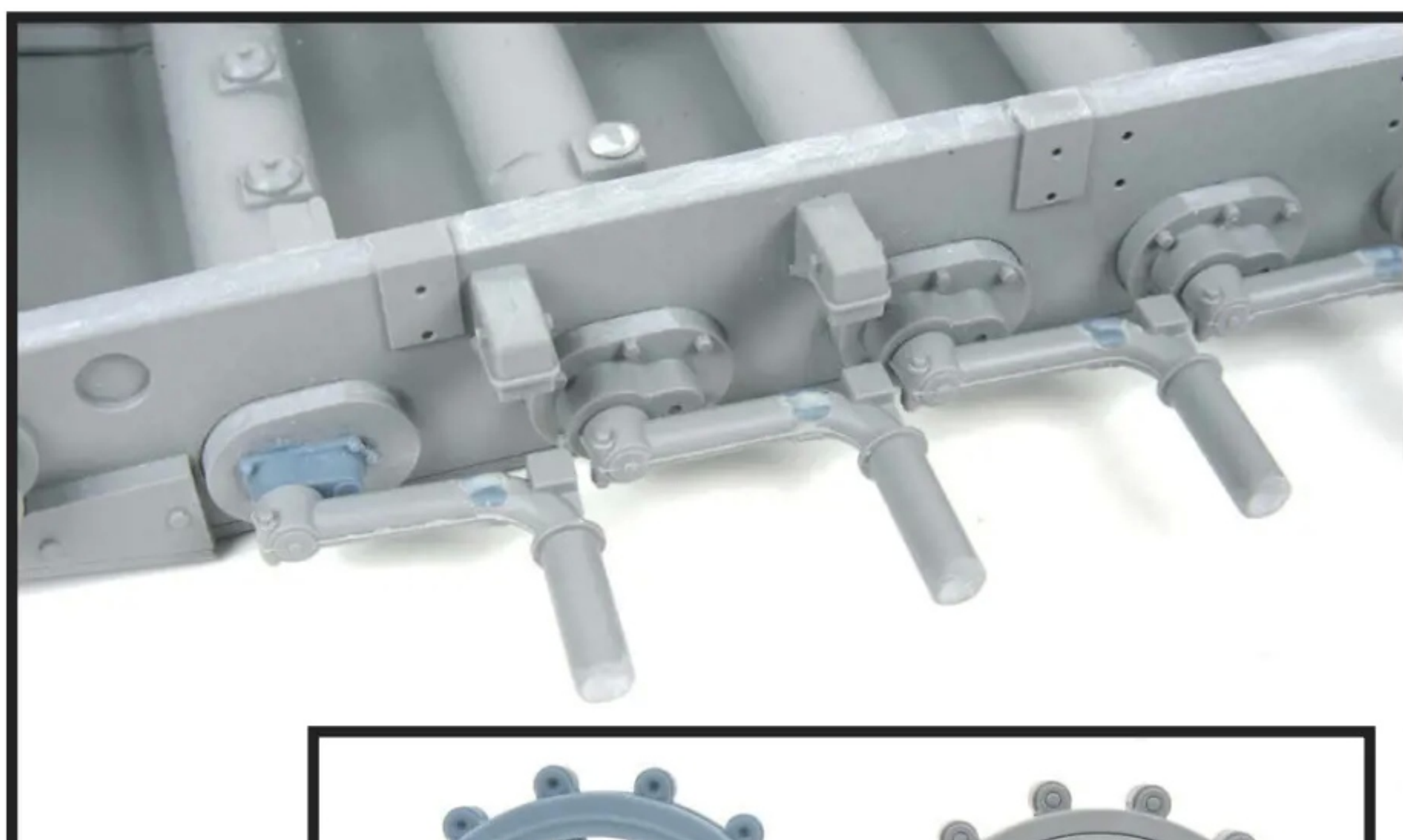


Modified swing arms with the hole in the arm plugged and blended with putty.

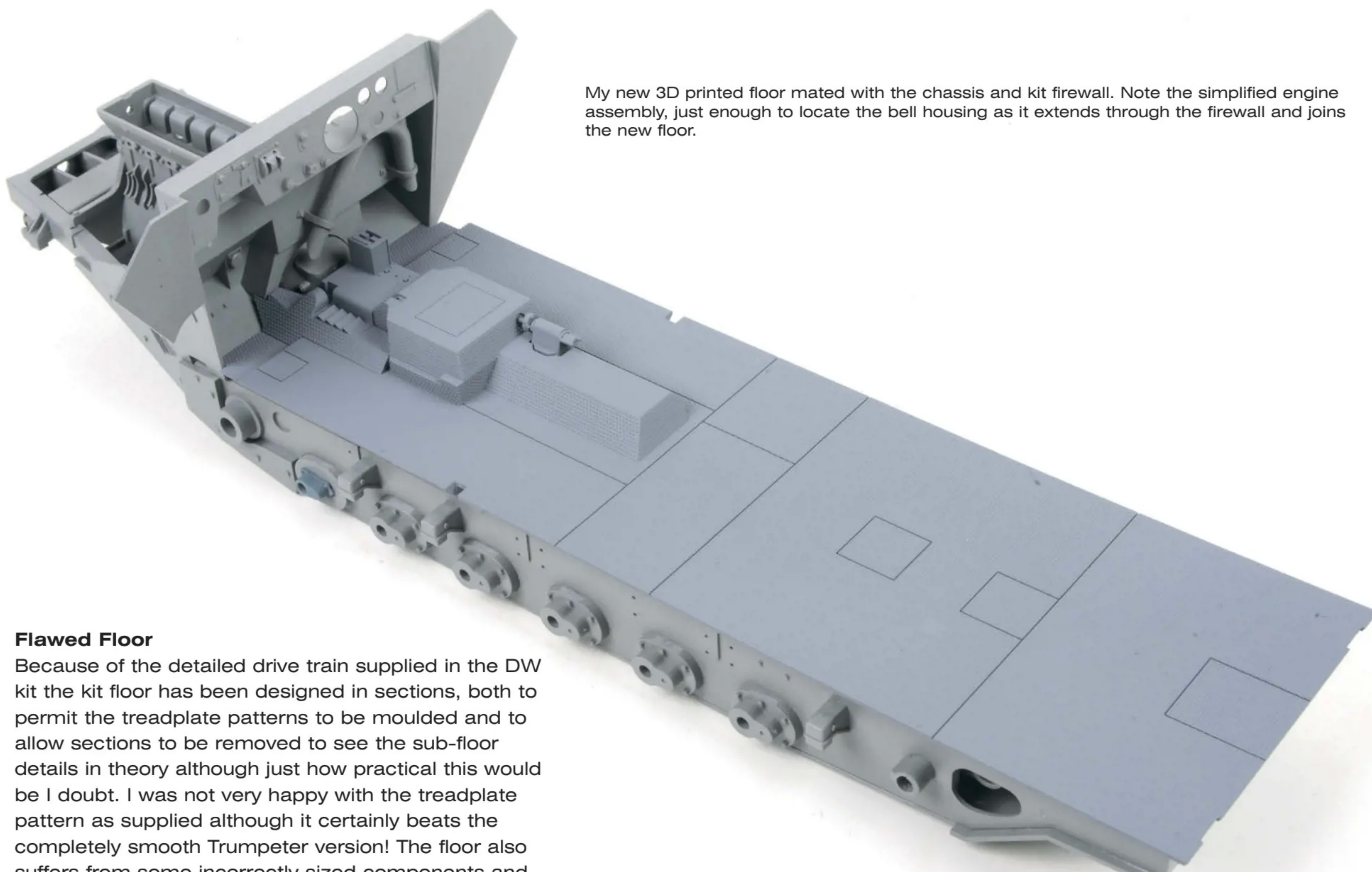


Corrected swing arm mount on the first roadwheel station.

I assembled the front axle without modifying the kit parts but did not fit the wheel hub parts Y10 /Y22 to the axle as they are integral to the corrected replacement front wheels that I had designed. These correct the size of the kit front wheels as well as offering a far more realistic and detailed set of tires with weighted effect and correct side wall lettering. The rest of the running gear was also substituted with my corrected sprocket, roadwheels and tracks. The running gear was all not fitted at this stage of the project as were the swing arms both to aid the painting and to make handling the model easier.



AFV Modeller corrected wheels and tracks were used instead of the kit parts.



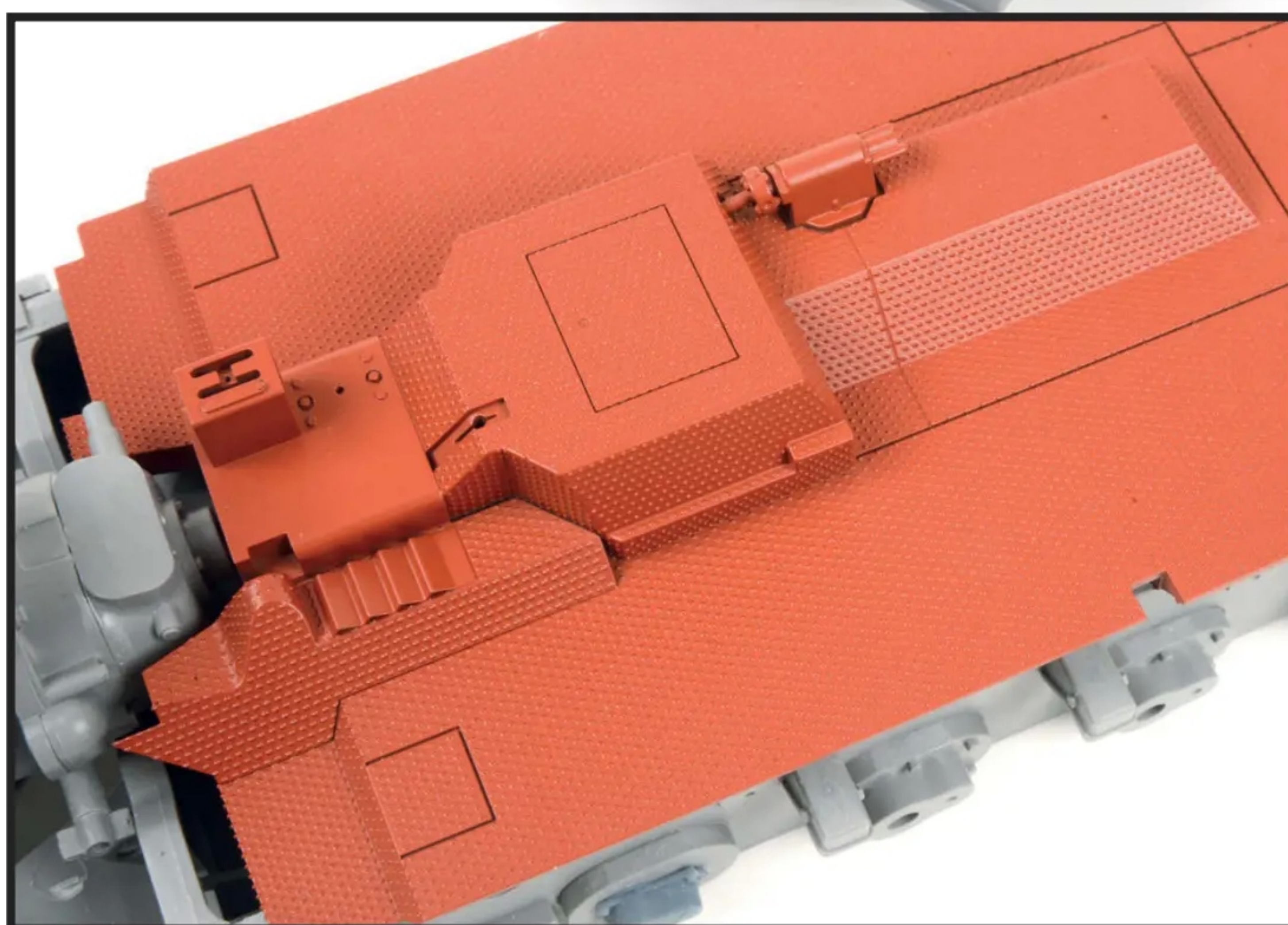
My new 3D printed floor mated with the chassis and kit firewall. Note the simplified engine assembly, just enough to locate the bell housing as it extends through the firewall and joins the new floor.

Flawed Floor

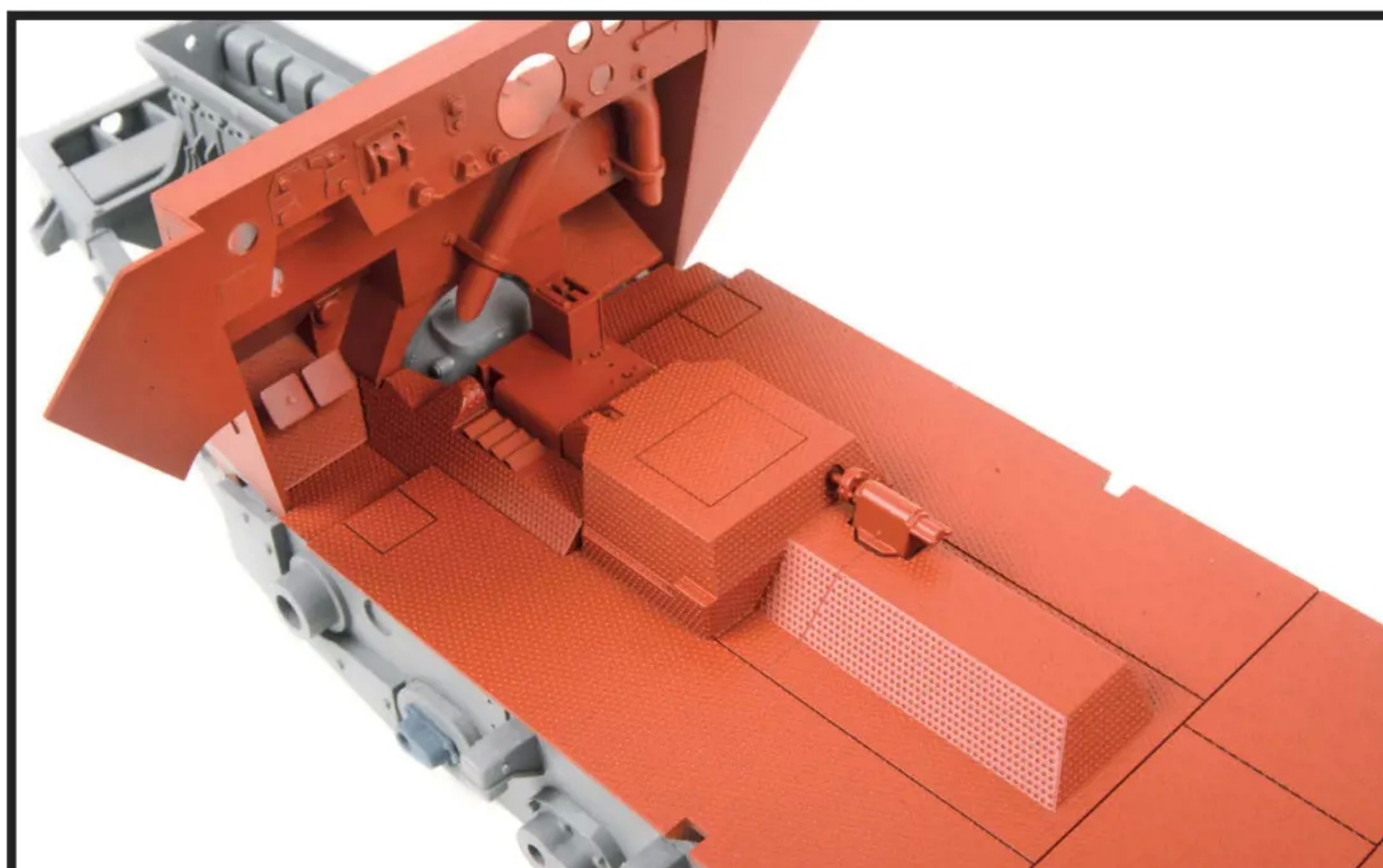
Because of the detailed drive train supplied in the DW kit the kit floor has been designed in sections, both to permit the treadplate patterns to be moulded and to allow sections to be removed to see the sub-floor details in theory although just how practical this would be I doubt. I was not very happy with the treadplate pattern as supplied although it certainly beats the completely smooth Trumpeter version! The floor also suffers from some incorrectly sized components and others missing altogether. The smaller rearmost transmission cover is both too wide and too long, the front transmission cover is too wide and the inspection cover too wide, The Driver's position foot rest is the wrong shape and missing the zig-zag foot plate and the dip at the front footwell is missing.

I set about creating my own floor to fix these errors which would allow me to have a better replication of the raised diamond pattern treadplate and remove the requirement to install any of the sub-floor details. In so doing I gained a much better appreciation of how much computing power a repeated pattern like the treadplate requires and even though I did not apply the pattern until the very end of the design process it slowed the software to a frustrating crawl! Finally I had a new floor with separate front seat bases, Driver's footrest and the drive shaft that pokes out of the gearbox cover.

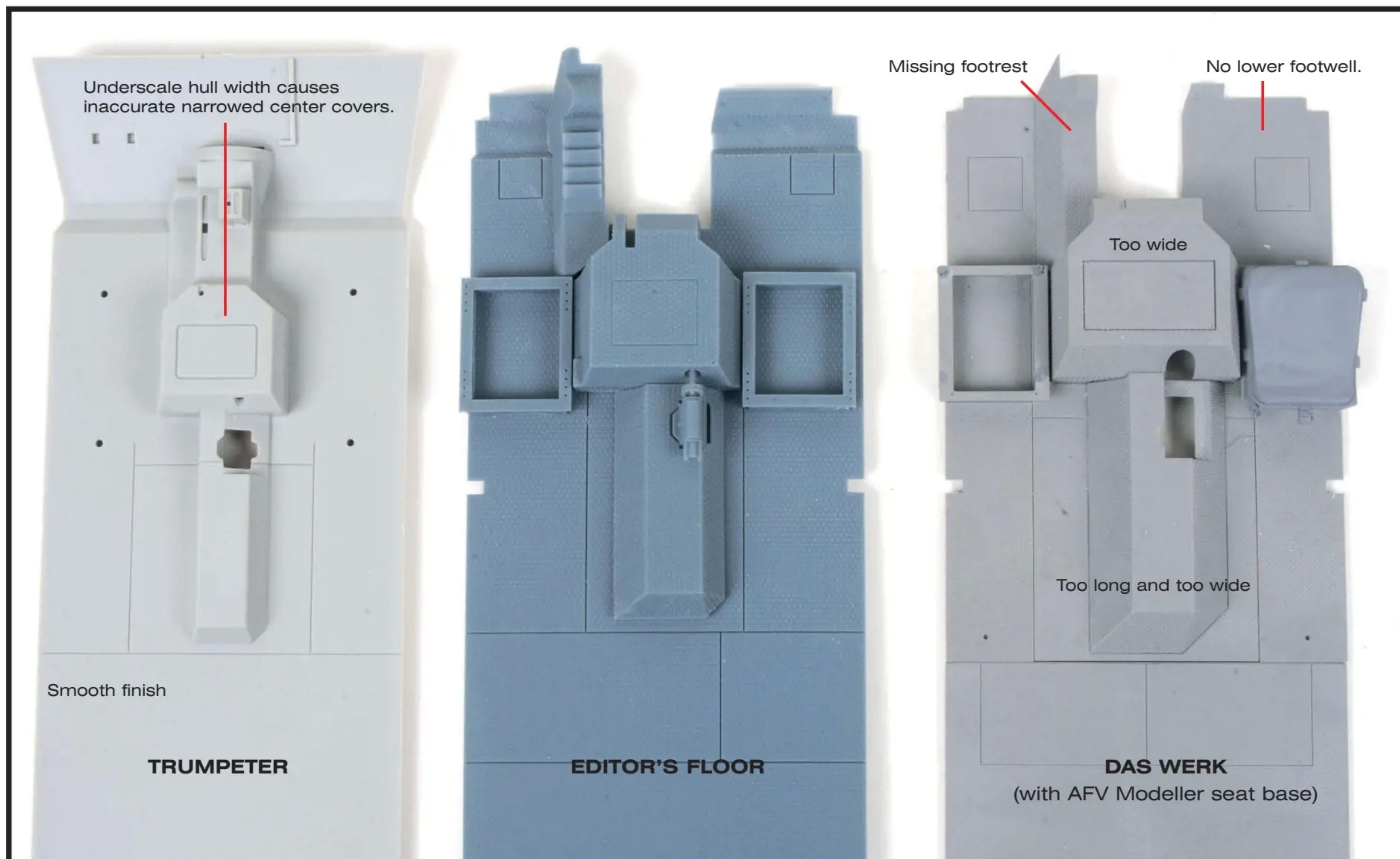
The kit Firewall was retained although I added the missing spherical tops to the pair of lever controls and I replaced the tiny power output socket with a correctly



Including the gear shifter and the drive shaft from the top of the transmission means the floor can simply be dropped onto the chassis. Note the improved Driver's footrest with its zig-zag rail to support the heel of his boot when operating the throttle.



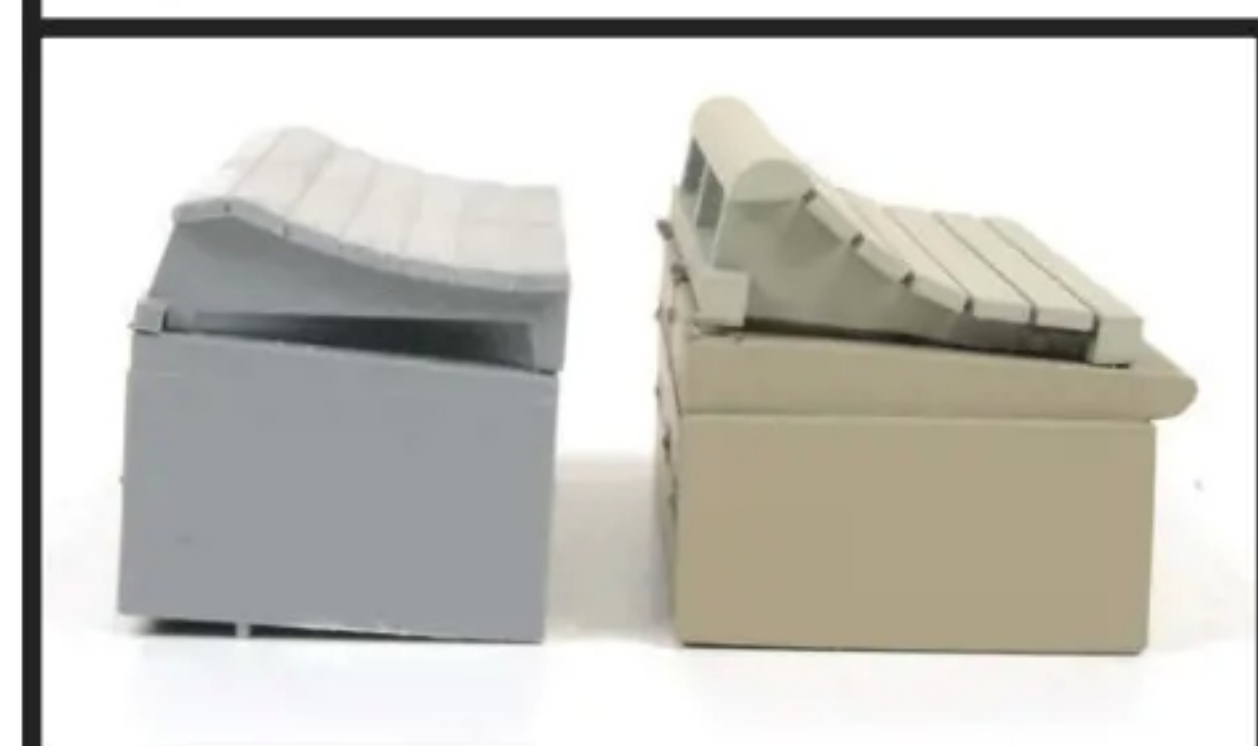
A coat of Mr Surfacer Red Oxide shows up the much improved treadplate pattern of my new floor mated with the kit firewall.



sized one from our AFV Modeller range. For the instrument dials I made a new backing panel to which I applied the kit instrument decals with the exception of the large rev counter which I substituted for one of our own decals for the Panzer IV. I then overlaid them with a piece of clear acetate sheet and mounted them behind the firewall.

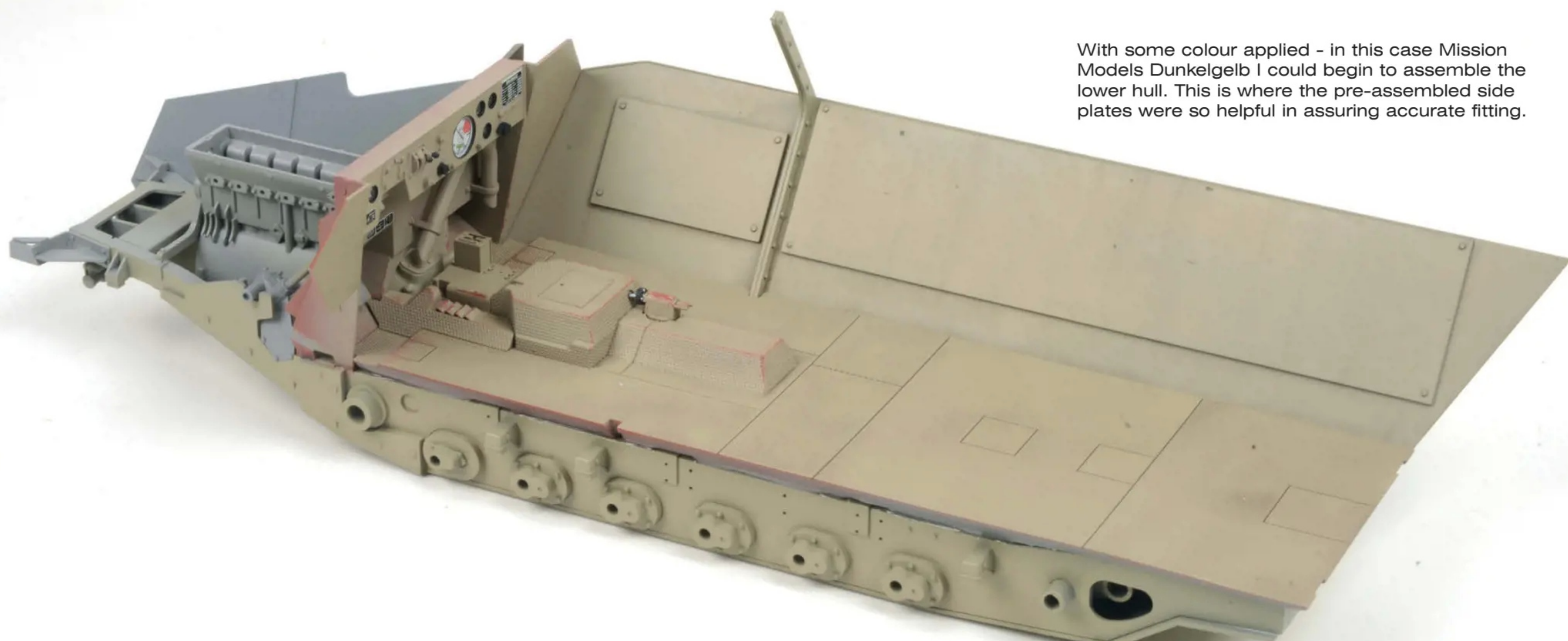
Benchmark

Like the crew seats the rear bench seats supplied with the kit failed to replicate the real parts, the locker/base being too narrow and lacking the open slot in the front face. The slatted bench has the wrong profile and there is no gap between the slats so I designed some corrected 3D printed versions. These were printed in two parts with the base storage lockers painted Dunkelgelb and the slatted seats finished in a pale wood effect. The wood grain patterns were brush painted with acrylics taking care to vary the tones and using washes of thinned acrylics to stain individual slats and break up the uniformity and dark screw heads were picked out.



Side by side comparisons between the kit bench in grey and my new version in base colours.





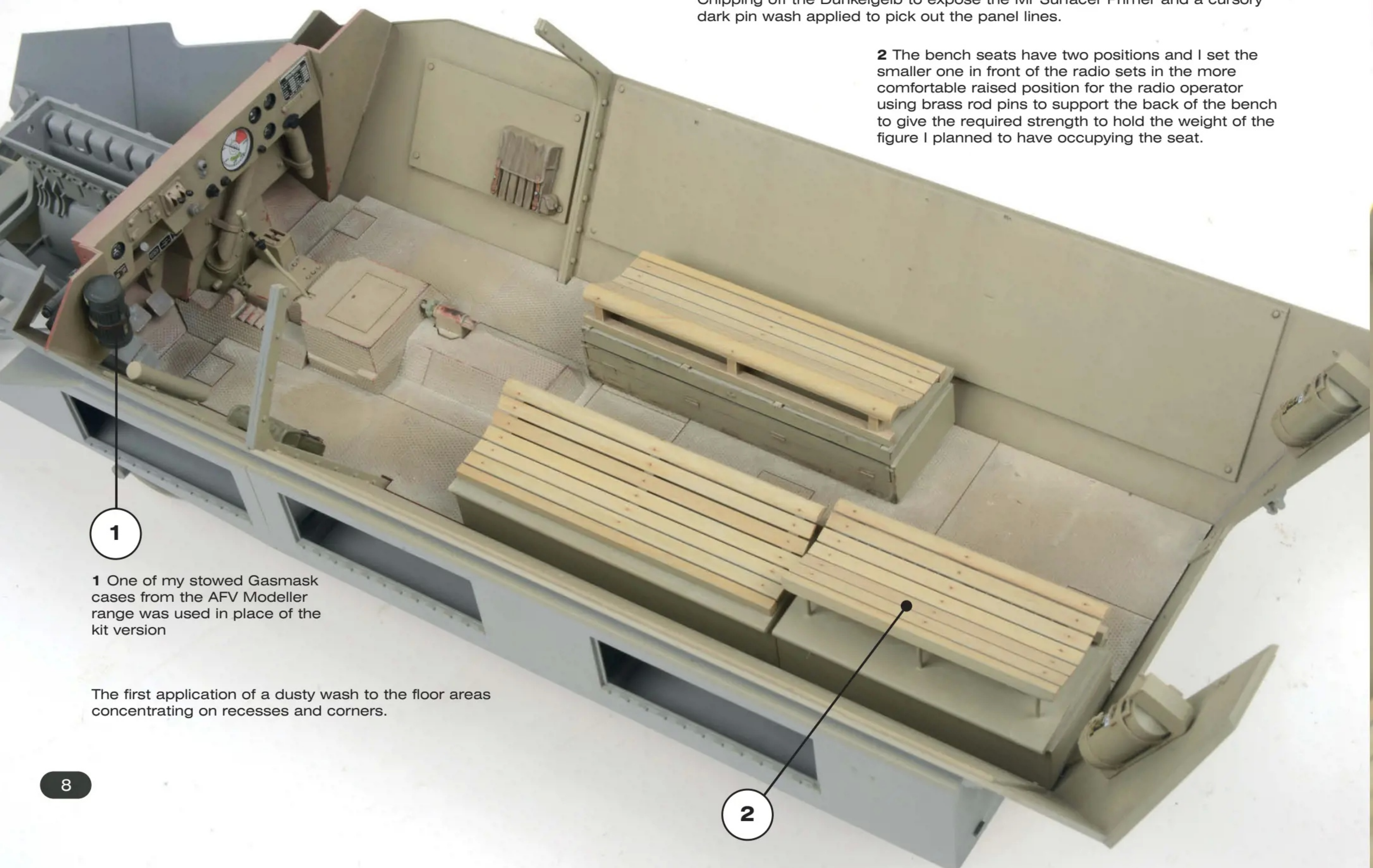
With some colour applied - in this case Mission Models Dunkelgelb I could begin to assemble the lower hull. This is where the pre-assembled side plates were so helpful in assuring accurate fitting.

A word about my build sequence approach which can appear to jump around but in general I try to resist the urge to glue things in position until I am absolutely certain the moment is right. Essentially you are assembling an open-topped box which you have to work inside so maintaining access to work is critical. At this point I was happy that I could safely fix the Left side of the hull, my new floor and the firewall. The floor was fixed using 5 minute 2 part epoxy to provide a strong permanent bond while allowing me time to adjust its position before it sets. I applied some considered chipping to the floor and firewall to expose the red oxide primer coat under the Dunkelgelb concentrated on those areas of high wear around the front crew positions and over the raised transmission covers which make an obvious trip hazard. The other hull side was then fitted along with the rear plate taking care to make sure that everything was correctly aligned as any problems now would only be magnified in the fit of the upper hull.



Chipping off the Dunkelgelb to expose the Mr Surfacer Primer and a cursory dark pin wash applied to pick out the panel lines.

2 The bench seats have two positions and I set the smaller one in front of the radio sets in the more comfortable raised position for the radio operator using brass rod pins to support the back of the bench to give the required strength to hold the weight of the figure I planned to have occupying the seat.

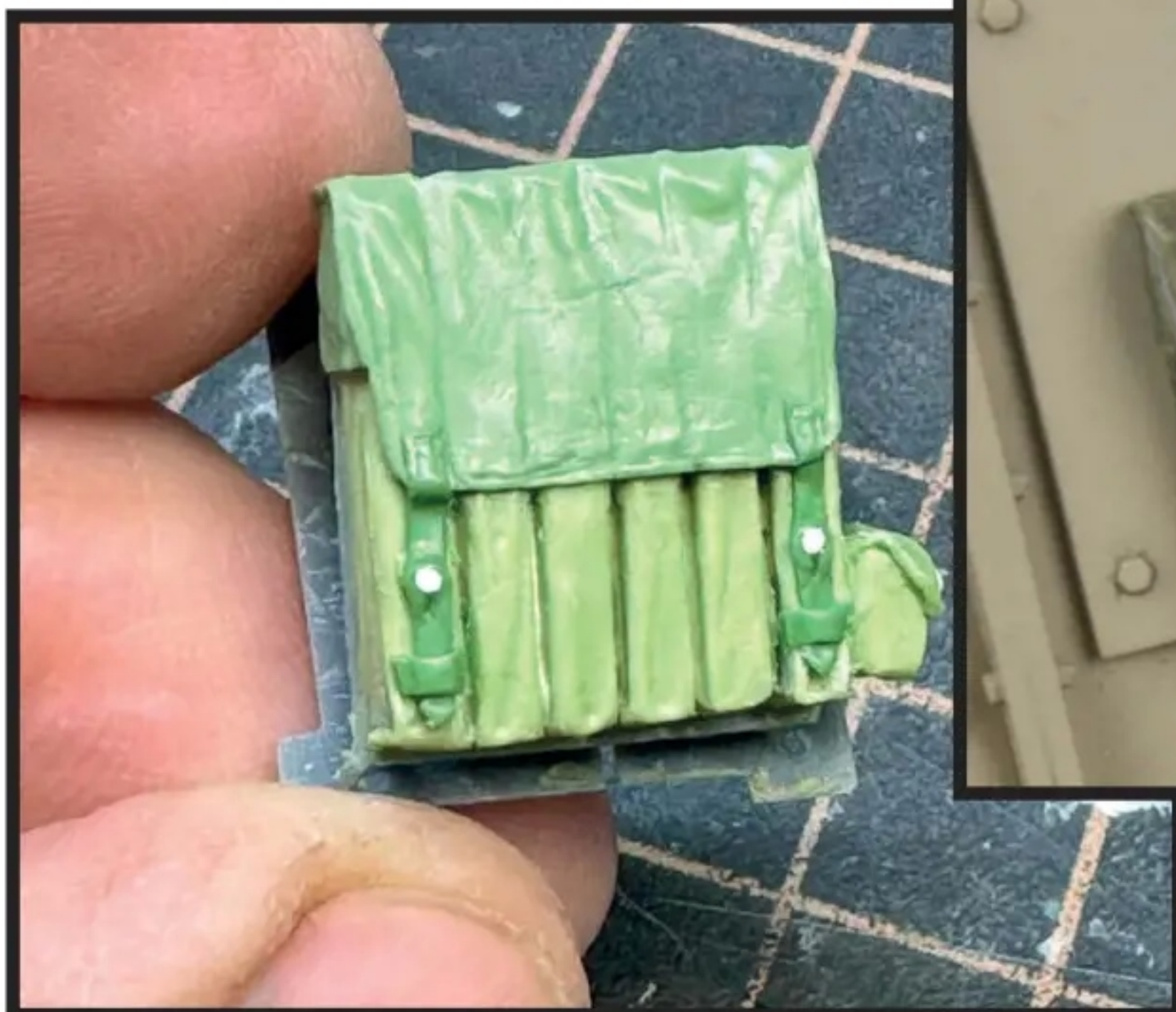


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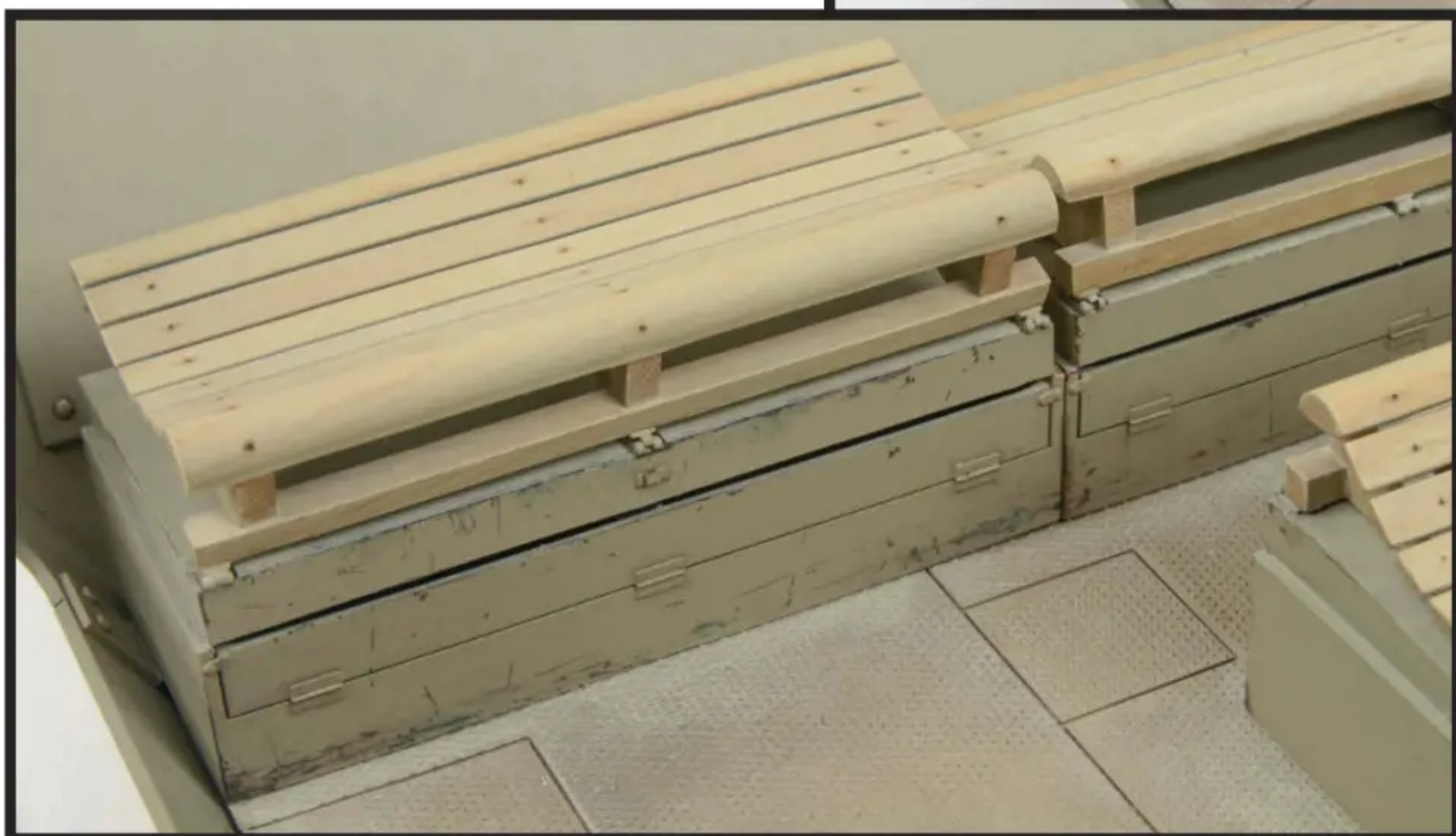
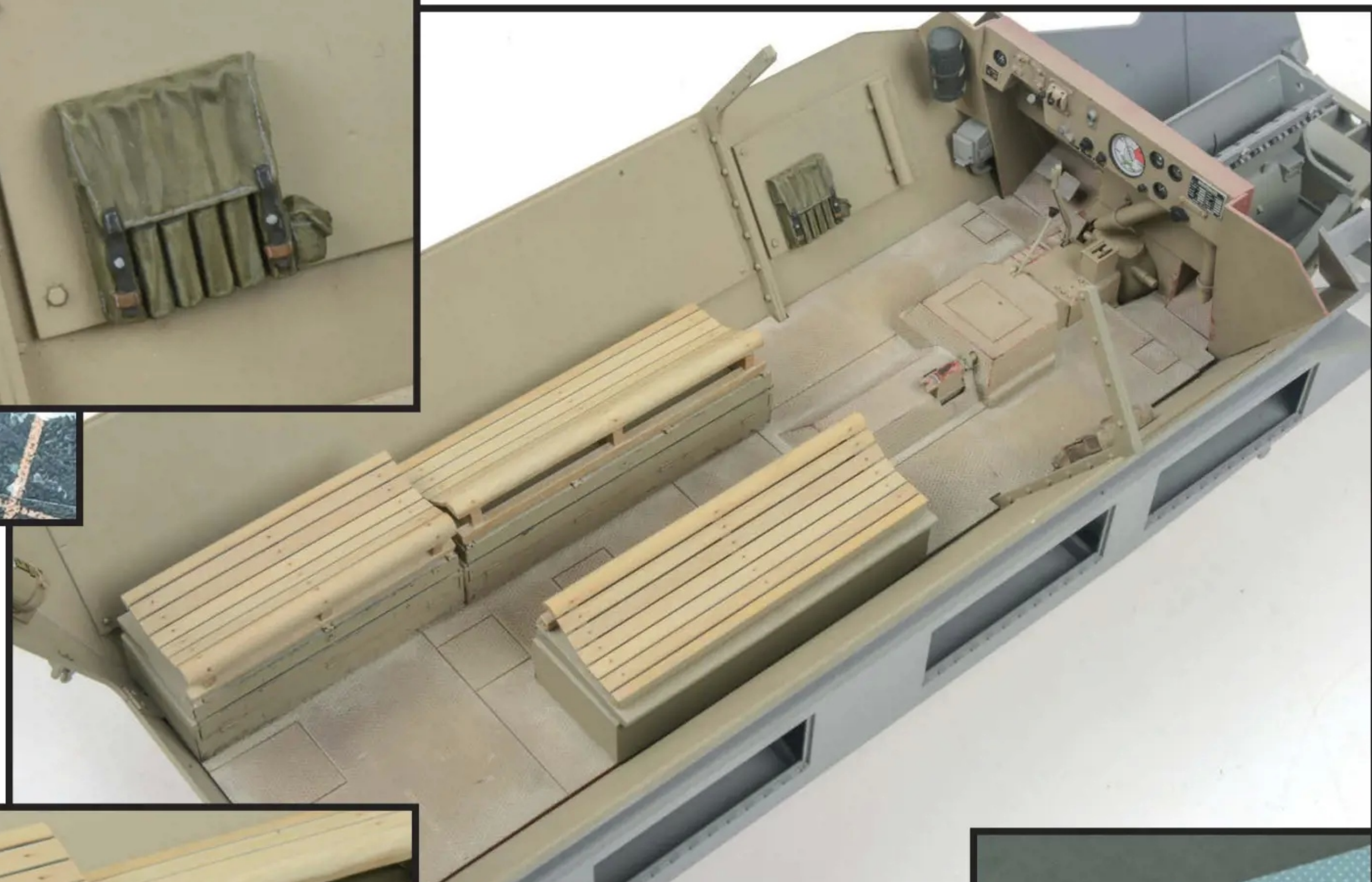
1 One of my stowed Gasmask cases from the AFV Modeller range was used in place of the kit version

The first application of a dusty wash to the floor areas concentrating on recesses and corners.

2



5 MP 40 fabric Ammunition Pouches were sculpted by me for the AFV range and then painted in different fabric colours matching original examples before being fitted each side of the crew compartment.

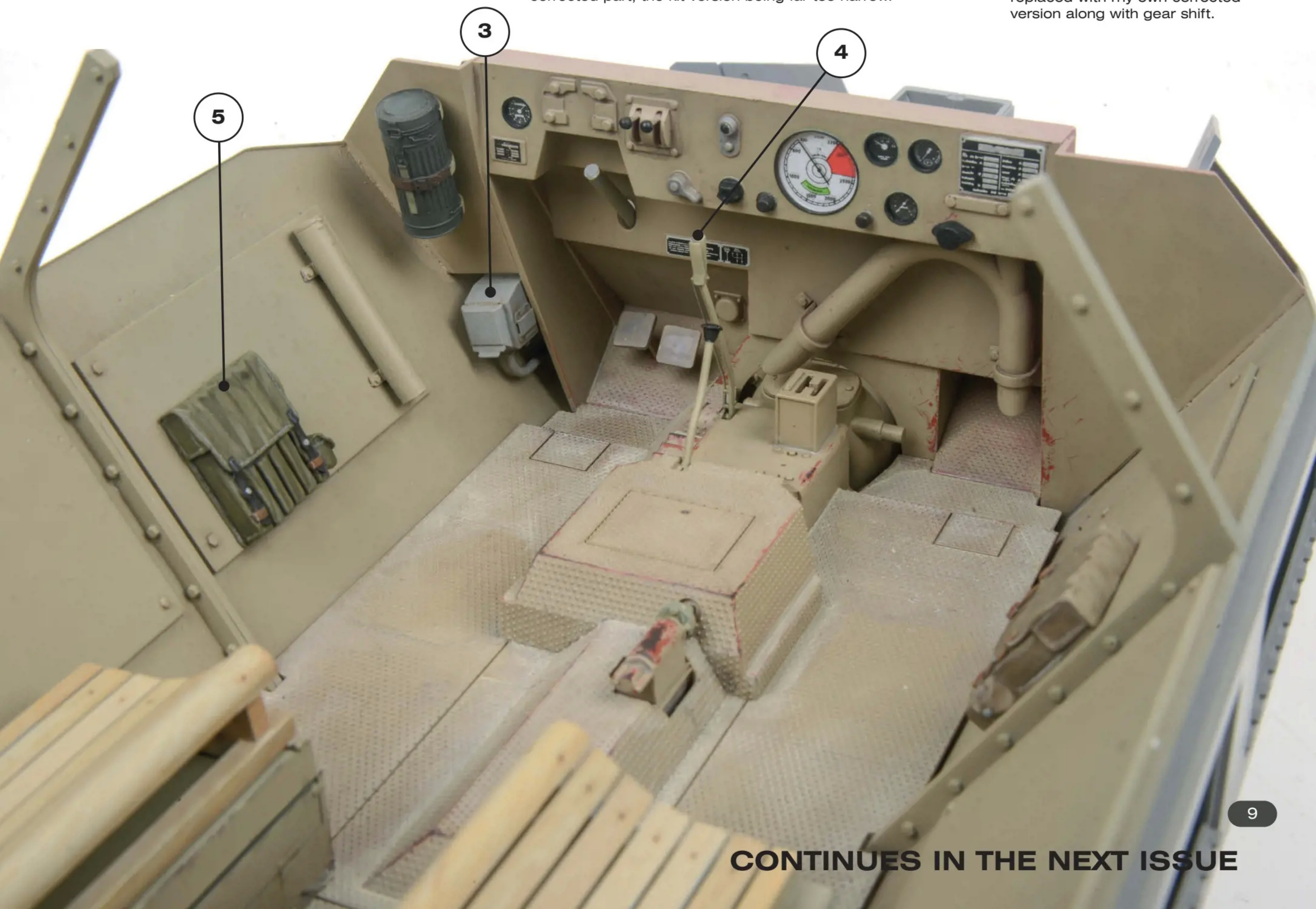


Space between the two rows of bench seats is very limited so it seemed reasonable that they would suffer quite a few scuffs and scrapes from crew boots squeezing past each other in the confined space. I also applied more wear and tear to the radio operators seat as it would be occupied most frequently.



3 The engine pre-heater was substituted with my own corrected part, the kit version being far too narrow.

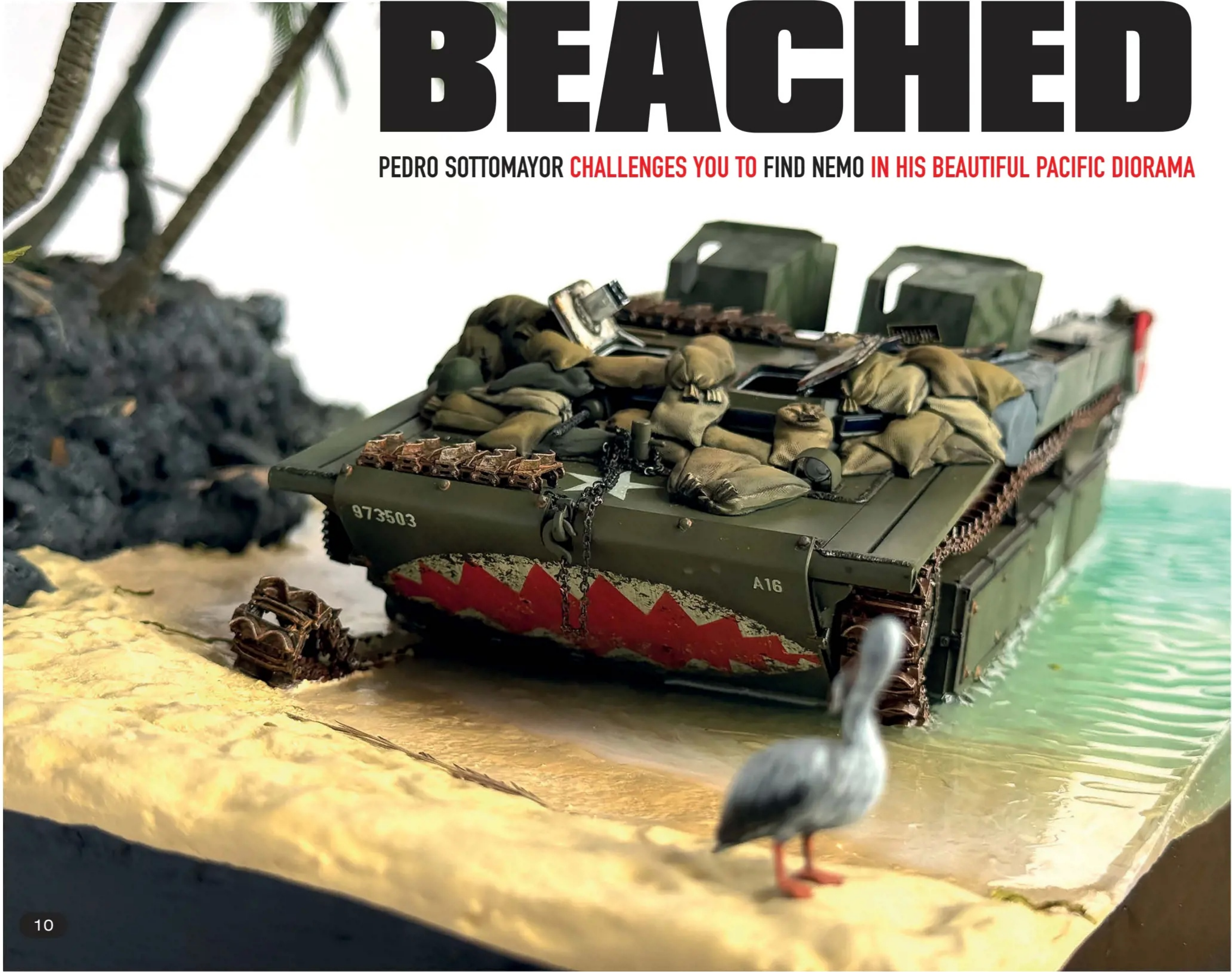
4 The simplified hand brake lever was replaced with my own corrected version along with gear shift.





BEACHED

PEDRO SOTTOMAYOR CHALLENGES YOU TO FIND NEMO IN HIS BEAUTIFUL PACIFIC DIORAMA



1:35



Inspiration

Everyone needs vacation right? But apparently not from our hobby. Spending a couple of weeks on a small remote island in West Africa, could not disconnect my mind from the: "I can make a model out of this". That's what happened on that tiny pristine beach, barely touched by human hands.

The turquoise blue and crystal clear water. The luxurious light green leaves of the coconut trees that bunched against each other, from every possible place where their roots could cling to. The basalt grey, porous and sharp volcanic stone that was a nightmare for the distracted bare feet. And as if it was not enough, the yellow sand, uncommon in volcanic islands, where one would expect it to be black. All this composed a breathtaking view that immediately convinced my mind, "You've got to make a model out of this".

The scenery left little to the imagination, now I was only missing a vehicle. Loads of options on the market, too many to be honest, made the job harder. Maybe another Sherman? No.... So why not "get rid" of, one of the many, unfinished models that at some point got my attention, but then, even quicker was surpassed by

another, and left to rot in an old dusty box?

Digging into my stash, I found an old Italeri model. A Water Buffalo. How appropriate!

Loads of missing pieces, some broken, old vinyl tracks, even an old interior and cumbersomely thick Verlinden photo etch. My thoughts were, "If I can pull this scenario off, no one will care about the vehicle"!

As anywhere in the tropics, life explodes! Both in flora and fauna, and that would also contrast with what's usually expected from an arid desolated war torn place. Wherever a seed falls, a tree grows. Wherever there is food, living beings show up.

Having all these ingredients at hand, one only has to relocate tem into an historical and geographically accurate context of one of the many thousands of islands across the Pacific in the late stage of the war, for accuracy.



The Diorama

The biggest prerequisite was its dimensions! It had to fit in a display shelf from a well known Swedish brand and had to be as large as possible so I could represent the three different areas in an appealing and balanced manner. The turquoise water with the model, the beach, and the coconut trees. For realism, and visual impact, one or two were not enough, it had to be packed with them...

With the dimensions figured out, the base was built with insulation foam covered in modelling clay, and cut to the shape of the shelf, with only a few millimeters of margin on every dimension. A slope was necessary for the beach and depth of the water and an elevated position for the coconut trees, that would stand out overlooking the two other areas...

Talking about coconut trees. Having lived in the tropics for a while, I have some admiration for these trees. They represent adventure, nature, freedom, sunshine and happiness in general. Had aimed for 15! Including other tree types. But the size constraints were merciless, and bending PE leaves in a convincing way is no easy task. Nine would have to suffice!

The leaves are (expensive) photo etch, but the number of them the manufacturer suggested for a single tree, is clearly insufficient for any realistic purposes. Anyone who has decently observed coconut trees notices the leafs kinda explode from the top of the trunk, they take volume and assume a very peculiar natural shape bent by gravity and wind. I've used, on average, around 50% more leaves for each tree than the manufacturer suggested.





The palm fronds were assembled in place and painted with an airbrush. A bright vivid colour was necessary, as well as variation, some dried leaf ends were individually painted dark yellow and some tips even chocolate brown. But what made the palm tree canopy come to life were the midribs painted in lime and yellow green.

The trunks were done with two component putty shaped around an internal bent "S" shaped frame, with texture being added as they cured. Painted in slightly different tones and weathered for visual texture and to break monotony, also replicating microorganisms that grow around them. All done with acrylics, and some enamel washes on the base for moss.

The volcanic rock was when I first regretted having started this project. I could not find anything online that would be close to the specific texture I wanted to achieve. Cast moulding was the first attempt, but I had none available at hand, plus the mess of working with it discouraged me immediately, and on top of that, would take a lot of time to completely cure so I could input any texture. And time is the most valuable, and scarce, resource. A few attempts were done with insulation foam and random scalpel strokes, removing some random chunks at hand. Close but not quite right. But as the saying goes, "necessity sharpens ingenuity - "what if I now covered it with drywall filling paste that I had just happened to come across after using it in some home renovation projects? It would seal the foam, dry fast, and create a rough texture."

Achievement unlocked. Painting it would be the easiest part. A solid matt black primer, followed by german grey, seemed appropriate to simulate basaltic rock colour, highlights on the highest and most protruded parts, and dark washes, moss, and clinging sea life between the high and low tide marks....just like in the pictures. Good old dry brush, and a combination of a filter and pin washes would break the monotony and enhance the texture and detail, making it visually more attractive.

The beach sand.

Harder than I had initially thought. These sandy ready made products, are good enough for the texture, albeit a bit too coarse for the scale in my opinion, but definitely not suitable for wet, compacted sand, that has almost no texture. Making things worse, to imitate realistic dry loose sand you need to apply loads of it, in order to create depth and a soft irregular pattern. The problem is that it keeps cracking as it cures. Over and over.

Solving this was done by mixing it with loads of white glue, to delay the curing time and add elasticity. Simultaneously shaping it with the back of a thick brush. Still cracks, but a lot less. Next step is to individually cover each. A process that went often back and forth.

Painting was straightforward. The hard part was to get the correct tone for each type of sand. I'll explain later. A mix of Tamiya white, yellow and desert yellow, was used. A trial and error process gave me the main dry/ loose sand colour. On the dry sand, after applying the base colour, before it could dry, white was added to the mixture and brushed on the highest points only. Some sort of a dry (but wet) brush technique, to allow the different tones to mix while drying.

And yes. Even on the same beach sand has not a single colour. Something that I've observed in the few beach dioramas I came across. Dry loose sand is the lightest. As you move closer to the water, that sand has been recently compacted and even though it's mostly dry, there is still moisture in it, the one that you can leave a perfect footprint on. That one is darker and has some texture in it. The one where the tide has just run by is even darker and is almost perfectly compacted, saturated by water, still holds some shine. And finally, the one at the bottom of the sea has a lighter colour again, due to the light being refracted and scattered by the water the light has to travel through to reach it, as opposed to wet sand out of the water where the light travels through the air.

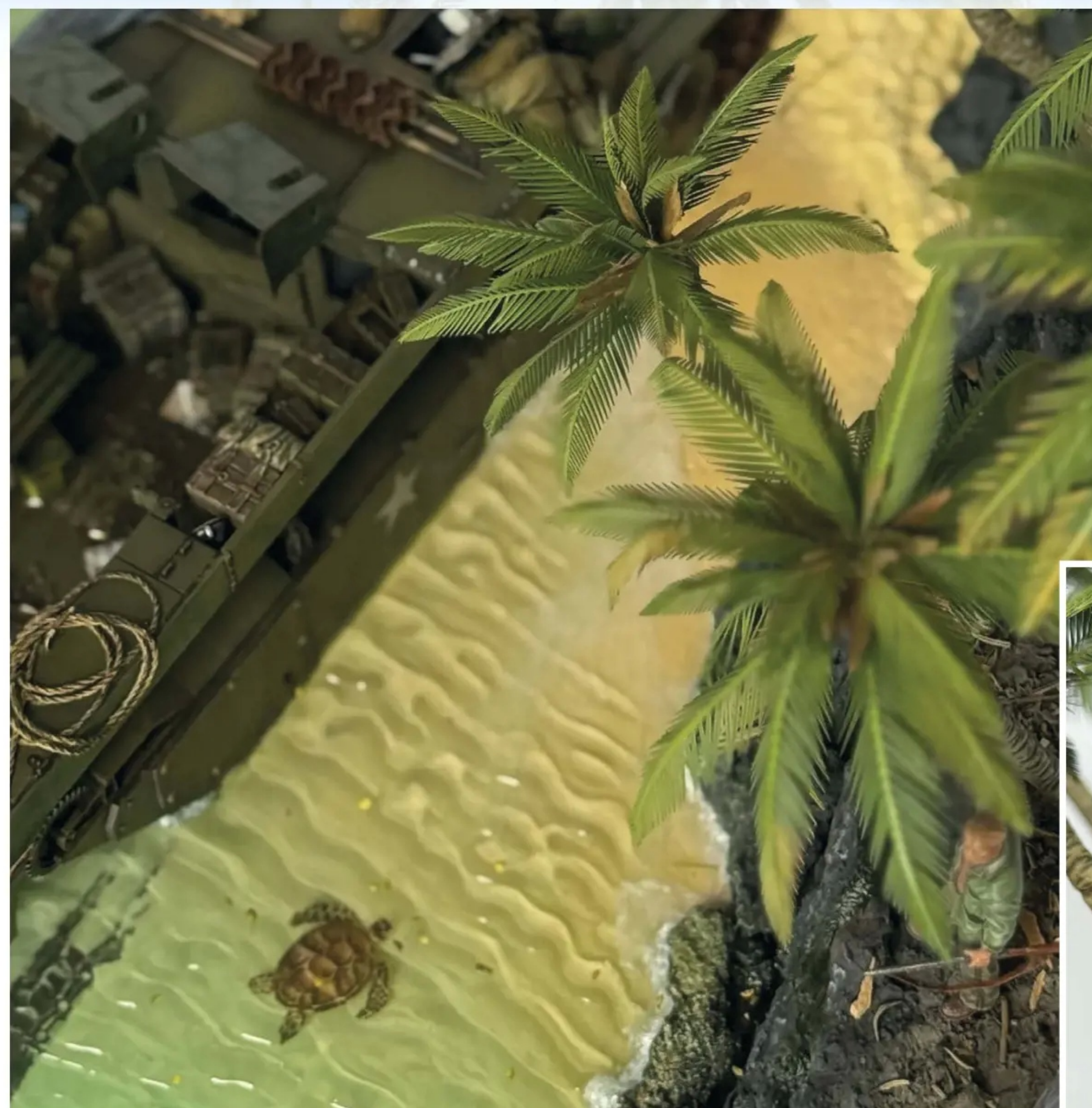


Jungle.

To compensate for the previous hard work, the jungle soil is a no brainer and smooth process. VMS smart mud as a base over the foam, diluted white glue on top sprayed with a mixture of different infusion bags contents, small branches, photo etched palm tree leaves, static grass applied here and there, and some other commercial vegetation for variety. All painted on the spot with airbrush and washes. Jungle soil holds a lot of moisture since the thick canopy does not allow the sun to shine directly, hence mushrooms being a common sight, and here they were represented with some 3D printed ones, painted red.

A couple of fallen coconuts have sprouted as well, with smaller leaves and painted in an even lighter tone than the grown up ones.





The sea water, is by far the most appealing part. The most exciting to create and simultaneously the element that will make or break the diorama. Lots of things could go wrong here. Leaks, the colour, the correct water level and area to be flooded, in at least three layers, and then there is still the surface ripples texture, something that had to be improvised, since my previous experiences were failed attempts with ready-made products, either by lack or luck, skill, or a combination of both, I've never achieved the results I've intended.





With one or two minor setbacks, it went smoothly. Started by applying a thin sandy ready made product, which later revealed to be useless for the bottom of the sea, and then drew ripple marks on its surface where water would be shallower. Before painting, all but the dry sand area were sanded flat with very abrasive sanding paper to get rid of the unnecessary texture. After that, to fill all the tiny pores left and minimize the future possibility of air bubbles forming, all the wet sandy area was brushed with a thin layer of still water. And it still cracked...

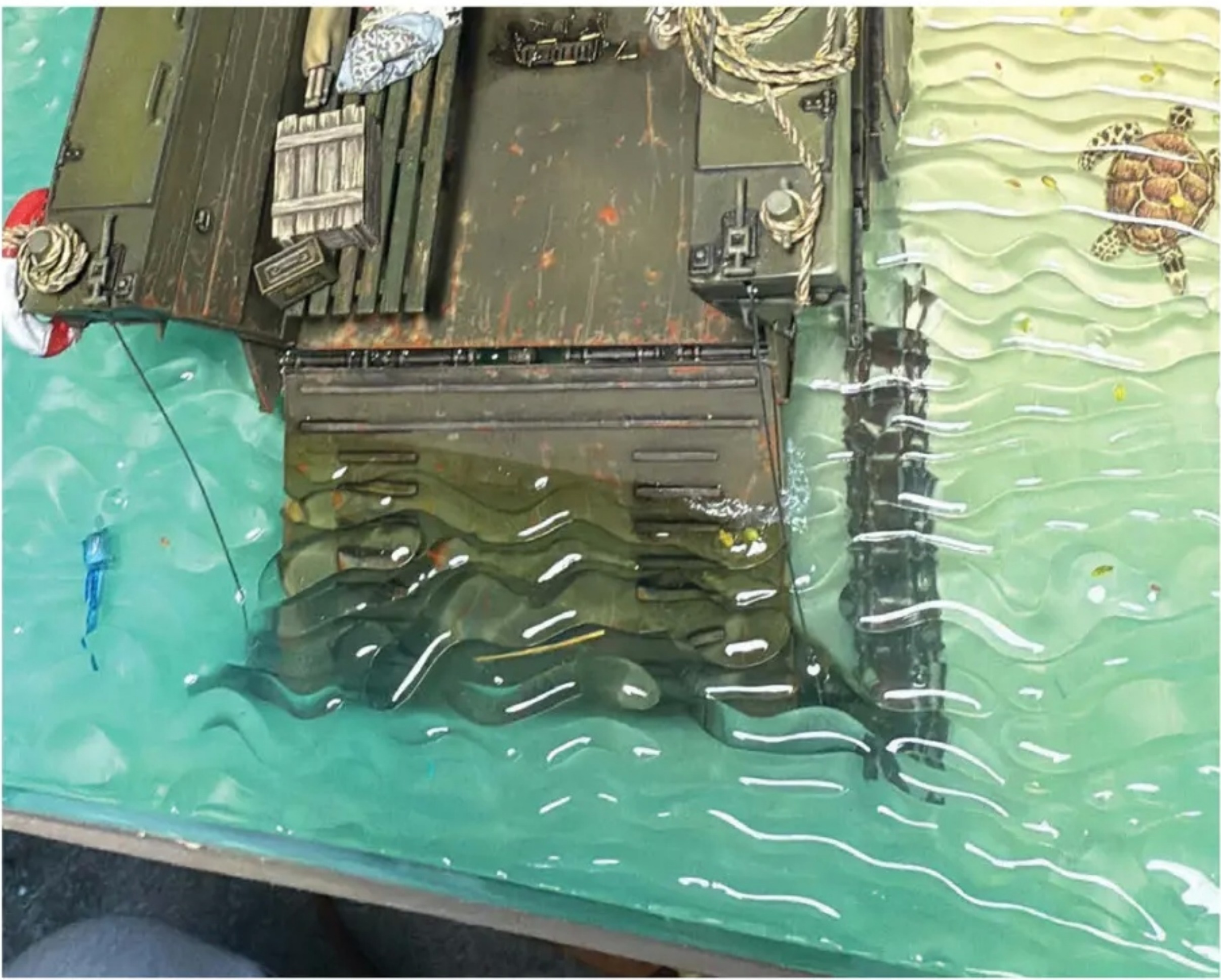
After building the “dam” around the edges of my base, the tension grew for the application of the first and darkest layer of turquoise blue water. I Made a few trials before, and ended up with a mix of light and dark turquoise blue acrylic paint, but making sure it would still be somewhat translucent. Around half a centimetre in depth, once cured and turned into glass, drilled a few holes where I’ve placed some tropical fish swimming around supported by a transparent stretched plastic sprue fixed with white glue. Nemo was set in place here.

Second and largest layer this time. Only dyed it with light turquoise green this time, and even more transparent than the previous layer. Once cured the hawksbill turtle was set directly on top of it, it will seem to be floating once ready, and I want to leave it as visible as possible for the detail painting on the shell to be visible.

The final layer was completely transparent, and the one covering the largest surface area. To avoid air bubbles, in each step, after the two components were thoroughly mixed, the resin settled for at least 45 minutes, so that the air bubbles could rise to the surface. They were then annihilated with pleasure, using a blow torch.

Each layer was carefully poured, and the appearance of bubbles was residual. Some were even dragged above the fish and left there with a toothpick deliberately.

Simultaneously, with the last layer, a separate batch was dyed with pure white and applied on the area contacting the sand and blown backwards with an airbrush to simulate the turbulent area where the waves break, with drops of clear resin dropped in the middle for variety and a more realistic look. Also a first time technique for me.



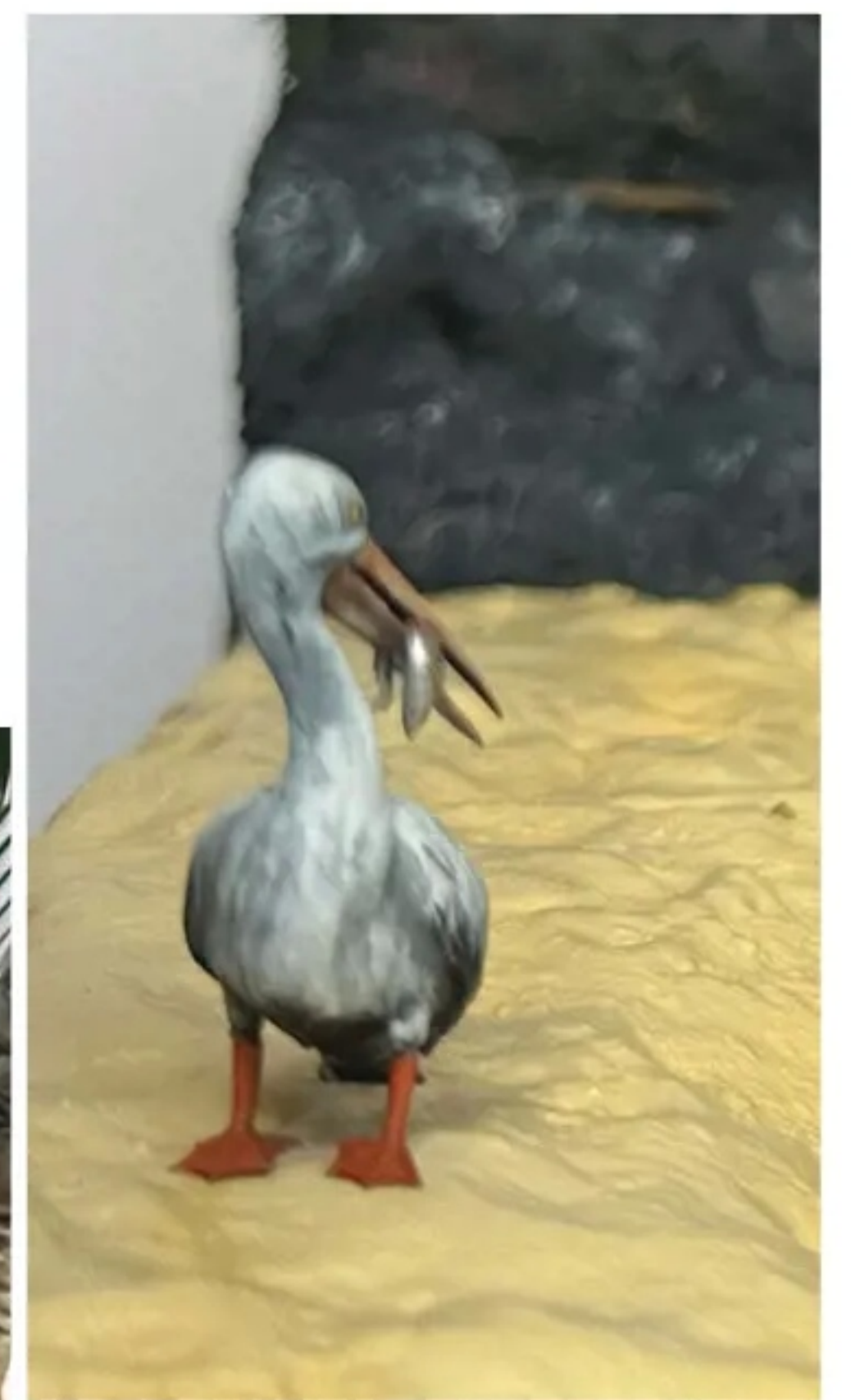
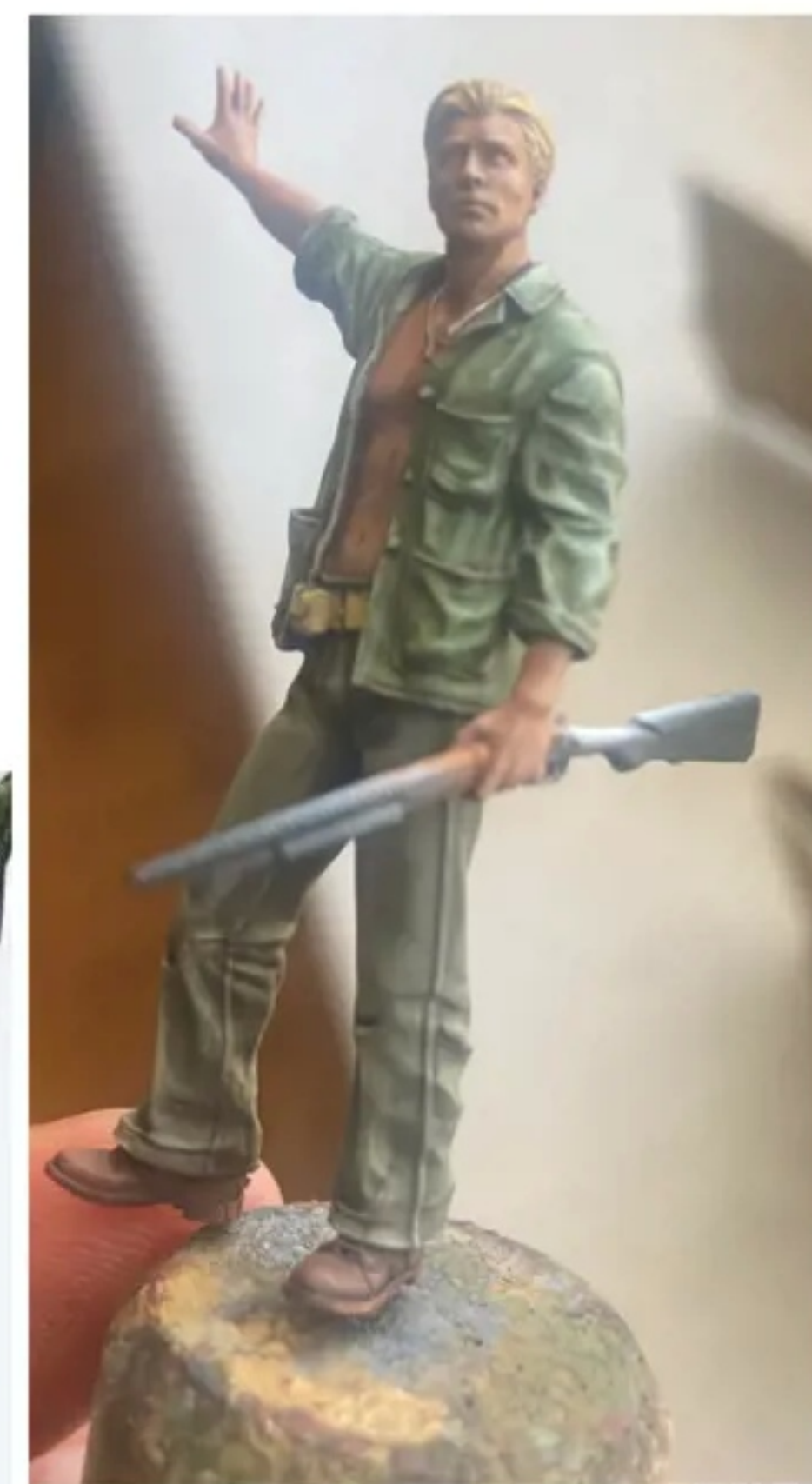


Figures and wildlife. The only two human figures come from Alpine, and make the job of someone who doesn't enjoy, or has talent for figure painting, a lot easier. Their natural and contemplative posture fit the mood of the diorama perfectly, requiring no modifications whatsoever. Painted with glazes over a black primer, and airbrushed white from the top, to shape the highlights and shades automatically. The lazy way.

Most of the tropical wildlife comes from a Mantis set and they were a joy to bring to life, the only difficulty was picking the ones to use, in order not to overdo or saturate the diorama. A bluefin trevalley chasing a school of smaller fish, some sort of a batfish, and of course, a real, not the fake one, clownfish, Nemo, can all be found.

The sea turtle is from Maim, from a set of two. I've kept one in reserve in case I needed to cover up some, expected, clear resin handling mistake. Only one was necessary.

In the jungle, a curious monkey from a Mantis jungle set. And on the beach, a hungry pelican strolling in the sand with lunch in his beak balances the scene out. Everything painted with acrylics with lots of retardant.



The Water Buffalo.

The old Italeri model came with a few surprises. Some good, others not so much. Back then, I had bought an interior for it with the aim of leaving the crew compartment open. This was the good surprise. The bad was that I had cut the roof open in half along a seam line, that would have to be disguised since the cut was more like the result of a blunt stroke. But as an armour modeller, we can disguise almost everything. A tarp would do for the parts that were impossible to put back together.

The engine, even though barely visible, just like pretty much all the interior now, would add realism, if somewhat overkill. Two other accessories, would in fact be way more important, and break the OD monotony. The sand bag armour and the metal tracks. Both designed for another, more recent kit, would require some adaptation.

The tracks, after some tedious assembly work, absolutely paid off. The sag is ultra realistic. Dark grey primer, followed by several layers of diluted Lifecolor rust tones applied using a stippling method to create an uneven and random pattern, by hitting a paint loaded brush with a toothpick.

This technique was alternated with washes of the same colours,

another back and forth process, until it looked cool.

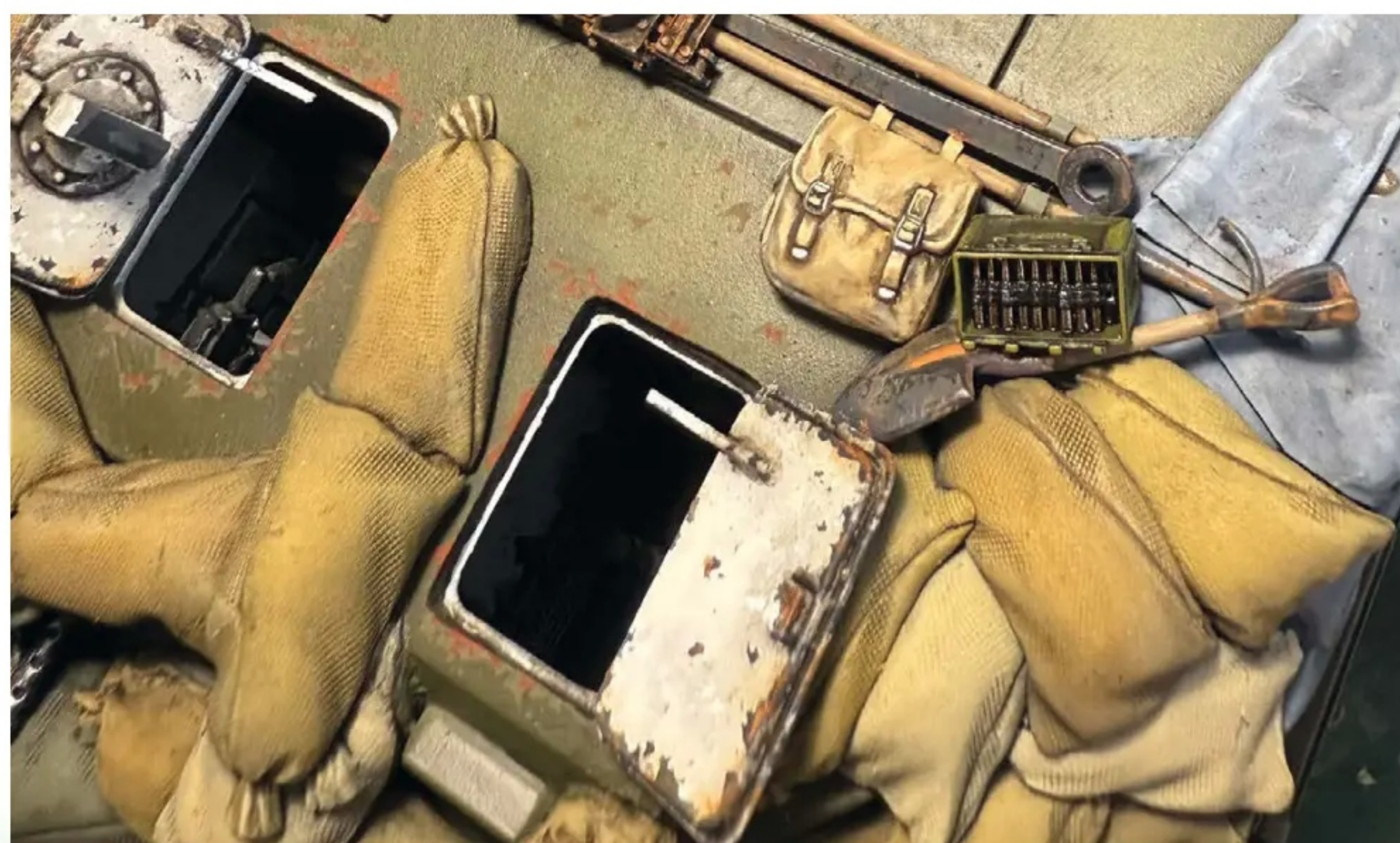
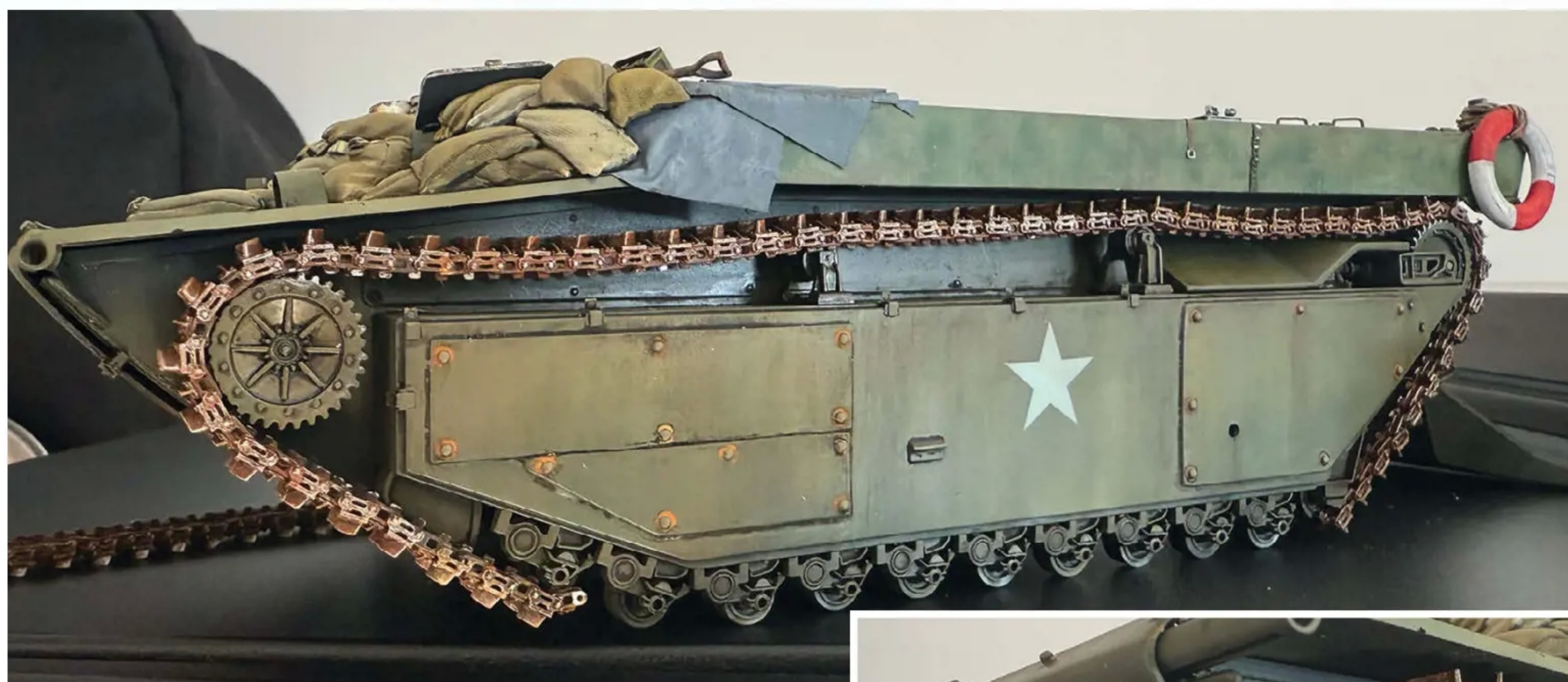
After everything was well dry, an enamel track wash was added to create depth. Surprisingly, the tracks turned out so well that I had to change plans and add the second, even if only partially visible, and/or submerged.

The sand bags, were, as the entire vehicle, primed with flat black and then airbrushed from the top with white, creating shadows and lights, and then painted with glazes in the different tones of tan to avoid monotony. The other important area would be the one open by default, the cargo compartment.

I was looking for a messy, but not overly packed style. Like it'd had seen action and would tell a story on its own. Digging again through the spare part box, old Tamiya crates, fuel and oil cans, shovels, backpacks, ammo boxes and leftovers from other sets. A literally, shiny detail, would contrast against the dull military colours. Spent ammo casings spread around the compartment as well as open cans with unused rounds.

Talking about contrast, a life buoy, which back then probably would have different colours, would light up that corner. For visual interest welding beads were also added made with two components resin.





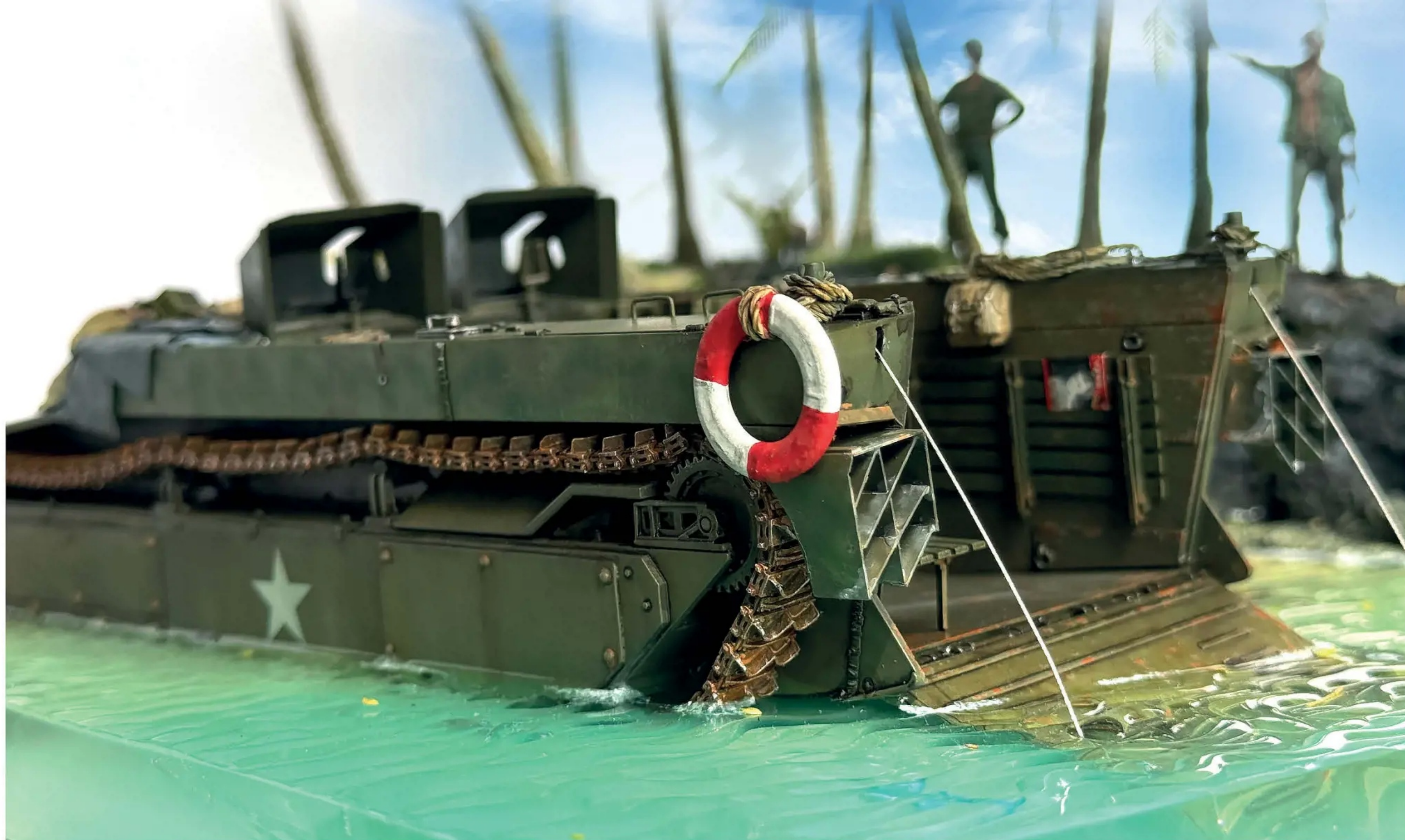
As mentioned before, the entire model was primed black, followed by white to create some sort of modulation. Then, a lacquer OD shade was used. A faded camouflage was added to the upper parts with a pale and a dark green, as per actual pictures, and since I'm not depicting a precise unique vehicle a shark mouth was added to the bow with an improvised mask. The only decals were the serials. The stars were masked and painted with a faded white.

Weathering followed a standard procedure. Gloss coat, colourful oils for paint fading, followed by pin washes. The interior would be chipped and scratched since it would suffer the most wear and tear, and then everything was locked in place with matt varnish.

The shark mouth, even though barely visible, which was actually convenient not to draw too much attention considering the bright colours, suffered also a lot of chipping assuming it would have been hand made applied by the crew. And since this is some sort of a "boat", ropes had also to be present.

Integrating the vehicle in a realistic manner was the last challenge. When checking pictures from landing beaches in the Pacific, one thing I've noted was that everything sinks in the sand very fast. The weight and the water would draw everything under the sand, or maybe it was done on purpose. Chat GPT was unclear, I'll never know. I planned to use that to my advantage in order to cover up any mistakes.

The merging of vehicle and sand had to be seamless, and realistic. The weight effect, the loose track and the one in place. And since all of this had to be balanced with the slope of the beach and the amount of area to be covered by resin...I was walking on a very thin line. With a lot of luck, it turned out alright. The resin ended up covering most of the integration line defects. The water ripples even more. Had I known, I would have not spent so much time and effort there.

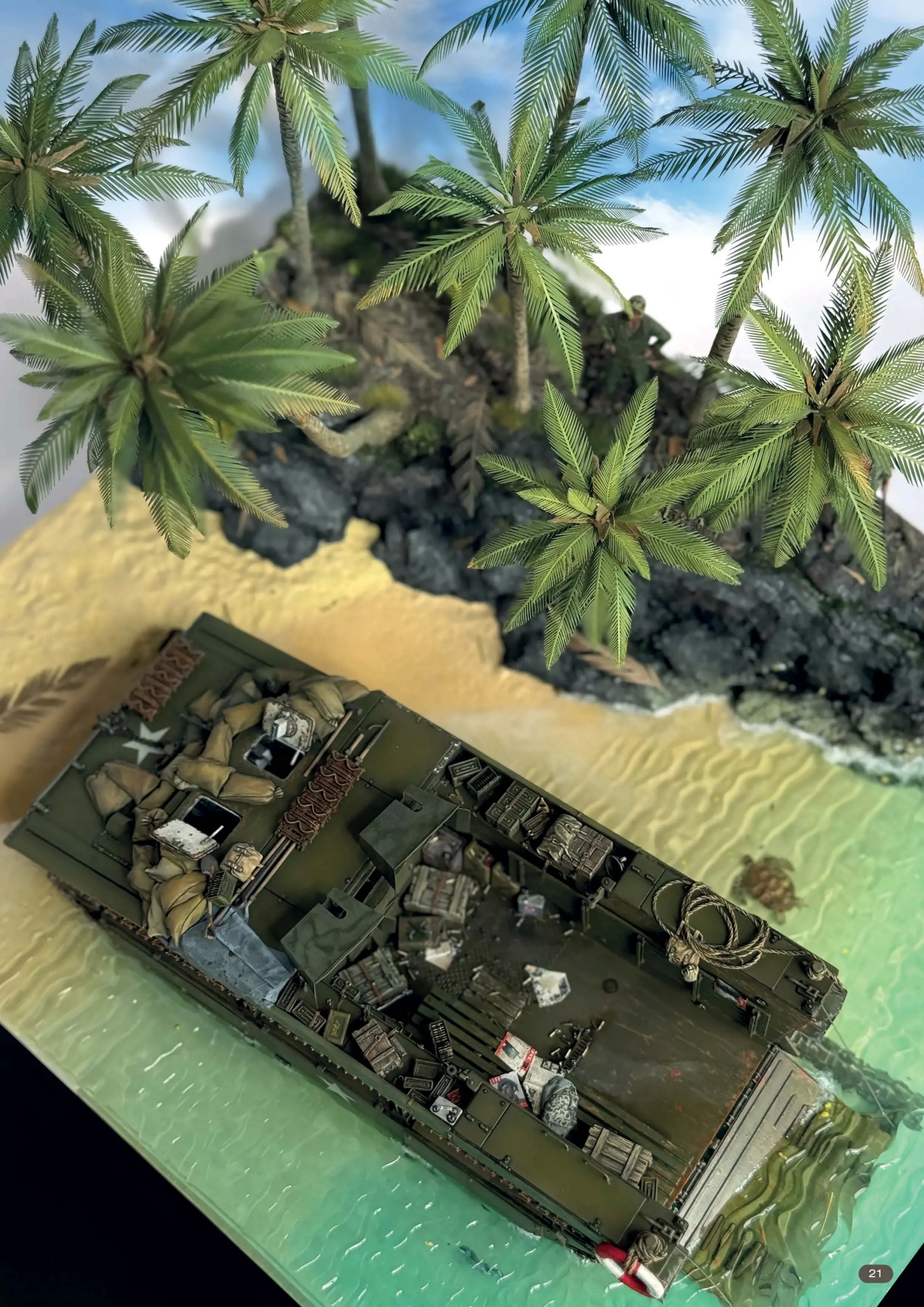


Like any diorama, even though I had a clear vision, there are always loose ends, and each step depended on how the previous turned out.

I knew I wanted a semi sunk model, but didn't know which. To save time, I wanted just one track, but I liked them so much I used two. The water level, colour, the basalt stone, the sand, the palm trees, the integration of the vehicle, were all challenges on their own. And of course, at any time, I expected the styrofoam to melt spectacularly due to a tiny hole missed and not properly sealed. Thankfully, it all turned out alright, and the diorama was one of my first to look almost exactly as I intended to.

Now it's your job to find Nemo.







I've wanted to build a BUK-M1 for some time now and, in particular, a Ukrainian variant.

Panda Hobbies BUK-M1 kit was originally released in 2018 but hard to obtain until recently, so when the lads in Marks models Dublin branch let me know about a new batch of Panda kits at the fairly reasonable price of 47 euros I jumped at and picked up a BUK-M1 and M2 .

“BUK M DANNO”

ZACK SEX TAKES PANDA HOBBIES 9A310M1 BUK-M1 AND BUILDS " KUYANSK DEFENDER.



For many the Panda Hobbies Tunguska SPAAG, with its tiny parts and small instructions, might have turned off their kits, but the BUK-M1 model was in a different category and I for one was happy to give Panda hobbies another go. Starting development in 1972 BUK medium range series started life during life during Soviet times as a response to US cruise missiles, rockets, and drones.

BUK

It first saw action during the war in Abkhazia in 1992-93, when an Abkhazian L39 was shot by Russian forces in a friendly fire incident. In the 2008 Ossetia war, Georgian forces used BUK-M1s purchased from Ukraine to down a number of Russian aircraft, including three SU-25 Frogfoots ground attack aircraft and a larger TU-22M strategic bomber.

It was during the earlier phase of the Russian Ukrainian conflict during border conflicts in 2014 that the BUK-M1 became notorious. It was during this episode that Russian forces used a BUK-M1 on deployment from the 53rd Anticraft brigade, which was operating within Russian backed separatists fighting in Eastern Ukraine. They had apparently mistaken the civilian aircraft for a Ukrainian airforce and Antonov 26 and proceeded to shoot down Malaysian airline Flight 17 as it flew over eastern Ukraine on the 14th of July 2014 killing all 298 passengers and crew.



1:35

The BUK-M2 would see action of a sort during the Syrian civil war, when Syrian air force units used these SAMs and others supplied by Russia to attempt to intercept Israeli aircraft attacking their positions and US Cruise missiles fired at Syrian airbases. The first whole scale use of BUK-M1 and M2s, however, did not take place until the current war in Ukraine. Ukrainian forces have used their BUK-M1s to try and hold off Russia's mass missile attacks on their cities and critical infrastructure while Russia has used more modern BUK variants to try and intercept a wide range of Ukrainian drones and missiles.

From the start of 2022 conflict Ukrainian BUK-M1 were in thick of it, one of the first images some would have spotted coming out of the conflict in the early days was of a destroyed Ukrainian BUK-M1 on the back of a Maz tank transporter having been attacked from the air as it moved through Southern Ukraine. Ukraine quickly found itself a victim of nightly missile and drone attacks. Ukrainian BUK-M1s, S 300s, and Thor air defence systems were supplemented by a wide range of NATO air defence systems from

Patriot to Hawks. New and old, East and West, the Ukrainians had to husband their air defences as Putin's Russia unleashed wave after wave at civilian targets throughout Ukraine. Some BUK-M1 were provided from former Eastern bloc nations , while other BUKs were taken out of long-term storage. Some BUK-M1s ended up with parts of older units that remained in their original camouflage schemes in contrast to newer digital camouflage schemes.

In conjunction with this patchwork, camouflage schemes Ukrainian units (and for that matter Russian units of the other side of the fence) applied extra armour plates to the vulnerable sides of their vehicles, vulnerabilities discovered during the hectic kinetic combat over the last four years. More recently, some of the Ukrainian BUK-M1s have been seen with their original Soviet 9K37 missiles replaced with US Sea Sparrow missiles mounted in a new rectangular launch frame but more on that at a later date.



Building the BUK...

Having examined a rather excellent Meng BUK-M1, belonging to my pal Paul Kunkels, I was interested in how the two Chinese companies have tackled this modern tracked SAM system with their own unique approaches. As one might expect with Panda's kits, the BUK-M1 comes with a ton of parts and a load of spares. Two types of road wheels are provided, the simple pressed dish type, representing the standard issues variant, and the T55 look alike type, which is actually from the 2S3 Self Propelled Gun. This mix of wheels suited my ends perfectly as the Ukrainian BUK-M1 I wanted to build was depicted in reference shots with a mix of both types of wheels, this is common enough on Ukrainian BUKs and probably indicates the use of common 2S3 SPF road wheels.

Panda also supplies the modeller with two types of SAM missiles in the kit those found on the BUK-M1 and those found on the BUK-M2. The model is fairly straightforward, and I found the kit going together very well overall.

However, there are a number of issues with the Panda Hobbies BUK-M1 first the individual plastic tracks which look the part are designed to be movable, but I found the pins to be too short and decided it was safer to glue them together and fit the pins at a later stage. This said on a number of online reviews of Panda Hobbies BUK-M1 and Buk-M2 I watched the addition of metal tracks was mentioned and displayed, these must have been a limited edition run as there were no metal tracks in either of the kits I purchased and the number of tracks provided in the kit along with the two spare tracks mounted out rear of the engine deck seem to have been measured out very precisely, so don't lose any.



Also of note the electrical cables that at the rear of the missile launchers and are provided in Meng's BUK-M1 are not completely overlooked looked in the Panda Hobbies kit, these I replaced with thin plastic coated wiring which did the job nicely. Assembly completed, I added sections of armour plating to the side of the BUK-M1 hull as spotted in a couple of shots from Ukraine. These were made from coffee lids with small bolt heads added.

Having completed the construction of the lower hull, launcher turret and four missiles I set about adding the small grab handles and etch details over a number of evenings, these are in some cases fiddly but there are a number of spares of many of the fittings available in the box. Slowly but surely, one works their way through the box sprues, and then one evening, you hear yourself say, "Right, that's enough, I'm going to spray that brute tomorrow."

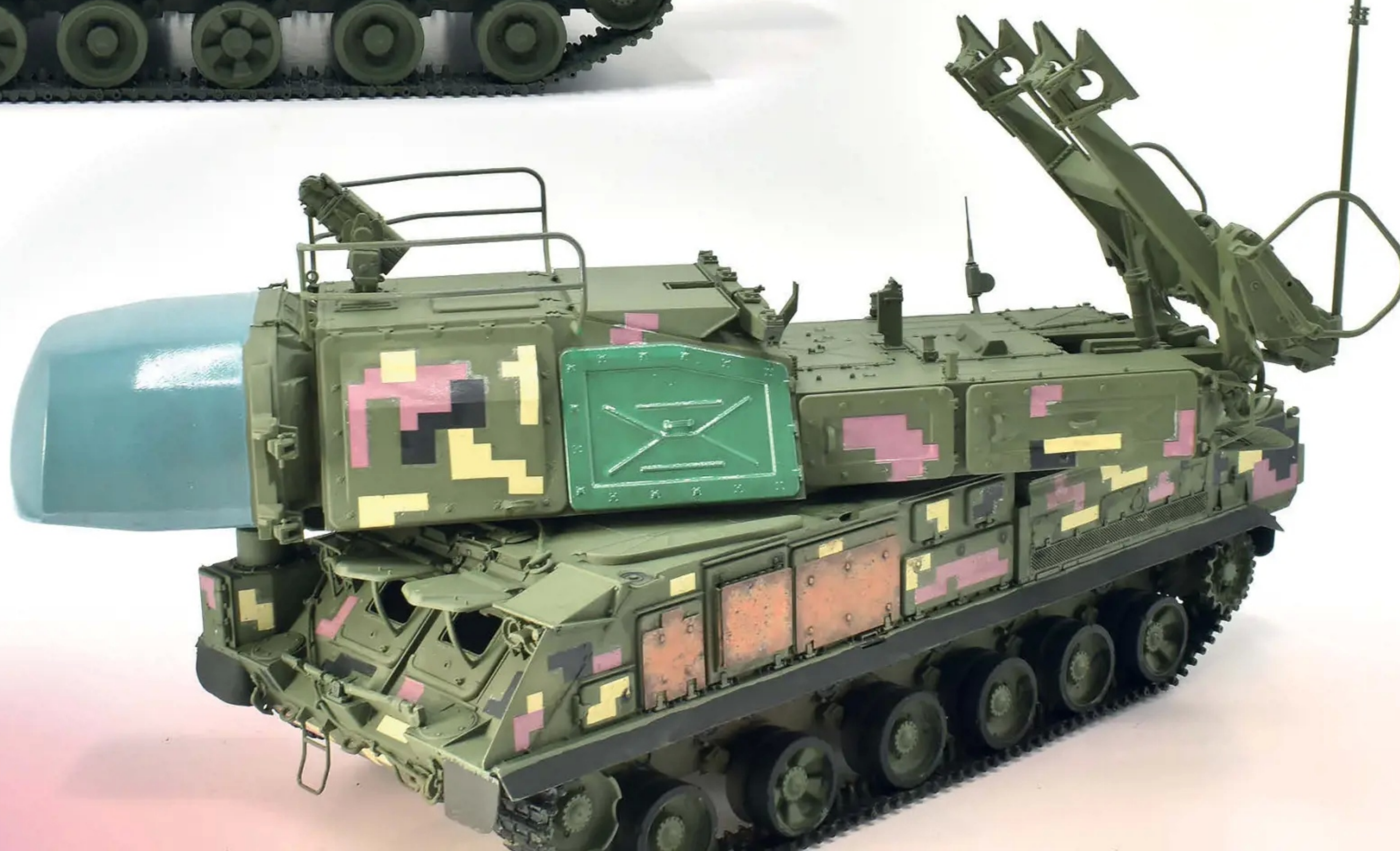
Bedecking the BUK...

My first port of call was priming the subcomponents of the kit with dark grey car primer, cheap and cheerful, sadly the Polish pound shop where I got the spray cans is now closed, but I bought a bunch so I should be good for a while. Over the grey primer, I sprayed diluted coats of Tamiya acrylic NATO green and let the lot set for a few hours. Then, I returned to another old favourite in the form of ICM digital camouflage decals. These work like a dream, but do try and cut right at the edge of the coloured shapes to avoid decal flashing. I applied a few coats of decal sol and some AK extra flat varnish to the horizontal surfaces on which the decals were applied and then re-examined my reference shots.

The main areas of scrutiny were the extra armoured plates with rust, the side hatches in older green camouflage and the various mud and crud over much of the lower hull. Having painted the vehicle and experimented with various paint and pigments which were flicked on, washed on, and worked back and forth. This process for me is the most enjoyable but also tricky in terms of over doing the whole thing, but that's the nature of the game.



The model was finished with Wilder pigments, AK panel liners, and 6B pencils and a fair bit of brush flicking and washes, by the end of two or three evenings I was happy with the painting and weathering part of the project.





Basing the BUK...

The final act in producing this Ukrainian BUK-M1 was a simple base, or so I thought. The more I thought of it, I wanted to position the SAM system outside a town or settlement where the Ukrainians were resisting. THE Ukrainian forces have managed to wrestle back the initiative on several fronts recently. I Google searched various town signs or totem Poles, these are usually in Ukrainian colours and many have damaged in recent fighting. As such, they seem to me deeply symbolic of the fighting and die-hard nature of the defence of Ukraine. I settled on one from Kuyansk as there were a bunch of photos of chunky ones on the Web as President Zelensky had visited the town during recent fighting there.

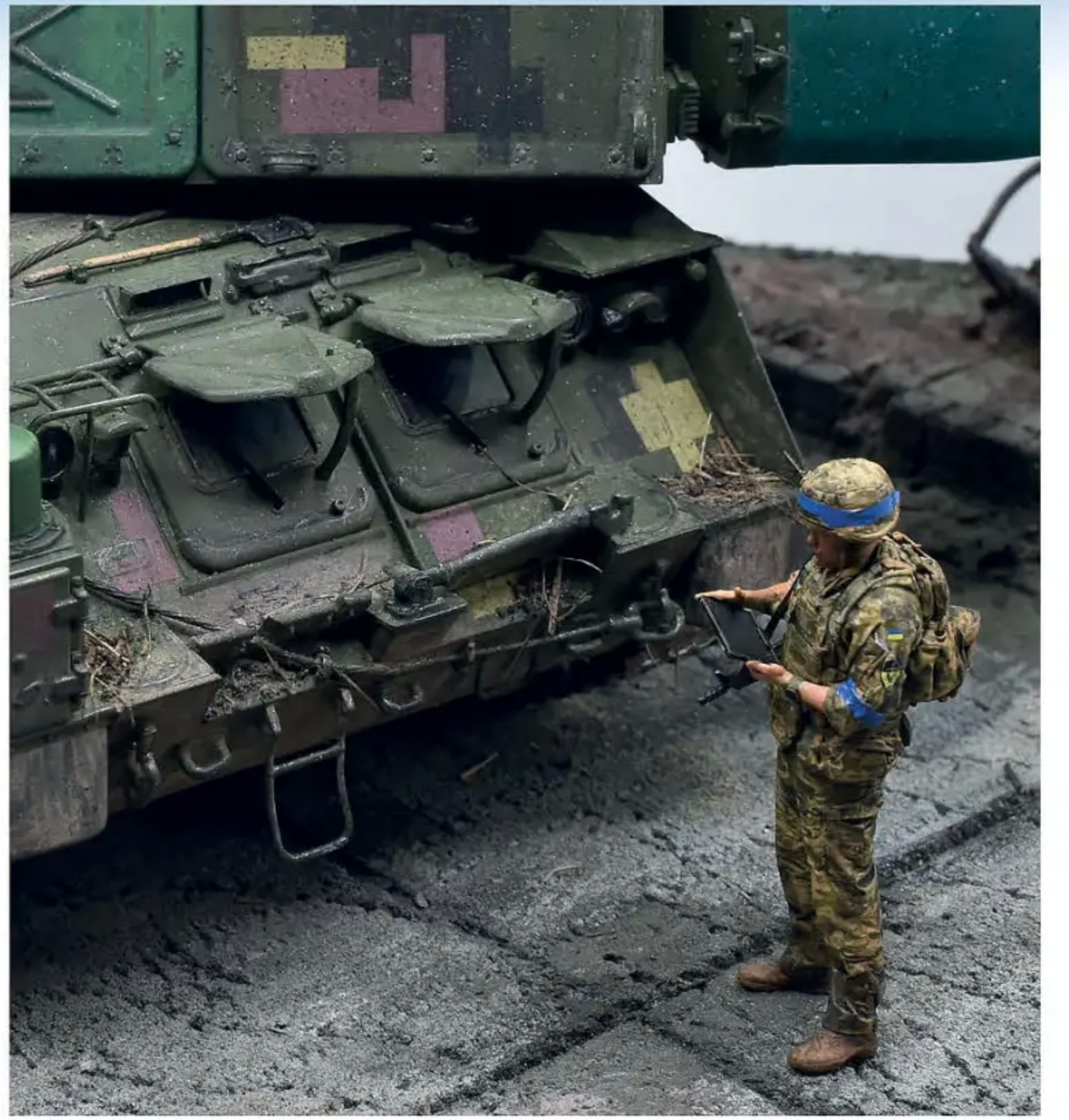
I printed out an image of one which had the name of the town in, transferring the text on to plastic card, cut them out and super glued the lot on to a suitably fashioned concrete column, which I then vandalised, at the base of the town sign I dumped an old Miniart tractor tire and 3D print frame from a Stingray kit. This column was then glued onto a blocky platform and positioned on the side of a well worn out concrete road with a little hint of agriculture on the adjacent side of side of the road featuring straw, mud and a pair of fence poles, really for visual interest as much as anything else and to not leave this area of the flat visually and composition wise. I was happy with this rather

colourful project, but it needed two things a flag hanging from the column (as in the reference) and a suitable figure. The flag was fashioned from a flat section of a takeaway coffee cup distorted with a cigarette lighter. After checking out a bunch of possible figures, I settled on a really smashing artillery officer produced by the Ukrainian company SPALAH .

He is checking an I pad or some medium-sized tablet and looks like he has been scanned from real life, this fella nearly paints himself, and while I'm not a figure painter I think he adds to the composition nicely, I added an AK 74U with paper strap to his right hand shoulder but it's not really visible.

I really enjoyed this particular project, I think I pushed it out from the comfort zone on this one a bit more than usual, next I want to have a go at a Thai army Stingray from the recent Thai Cambodian boarder conflict till then enjoy your modelling.

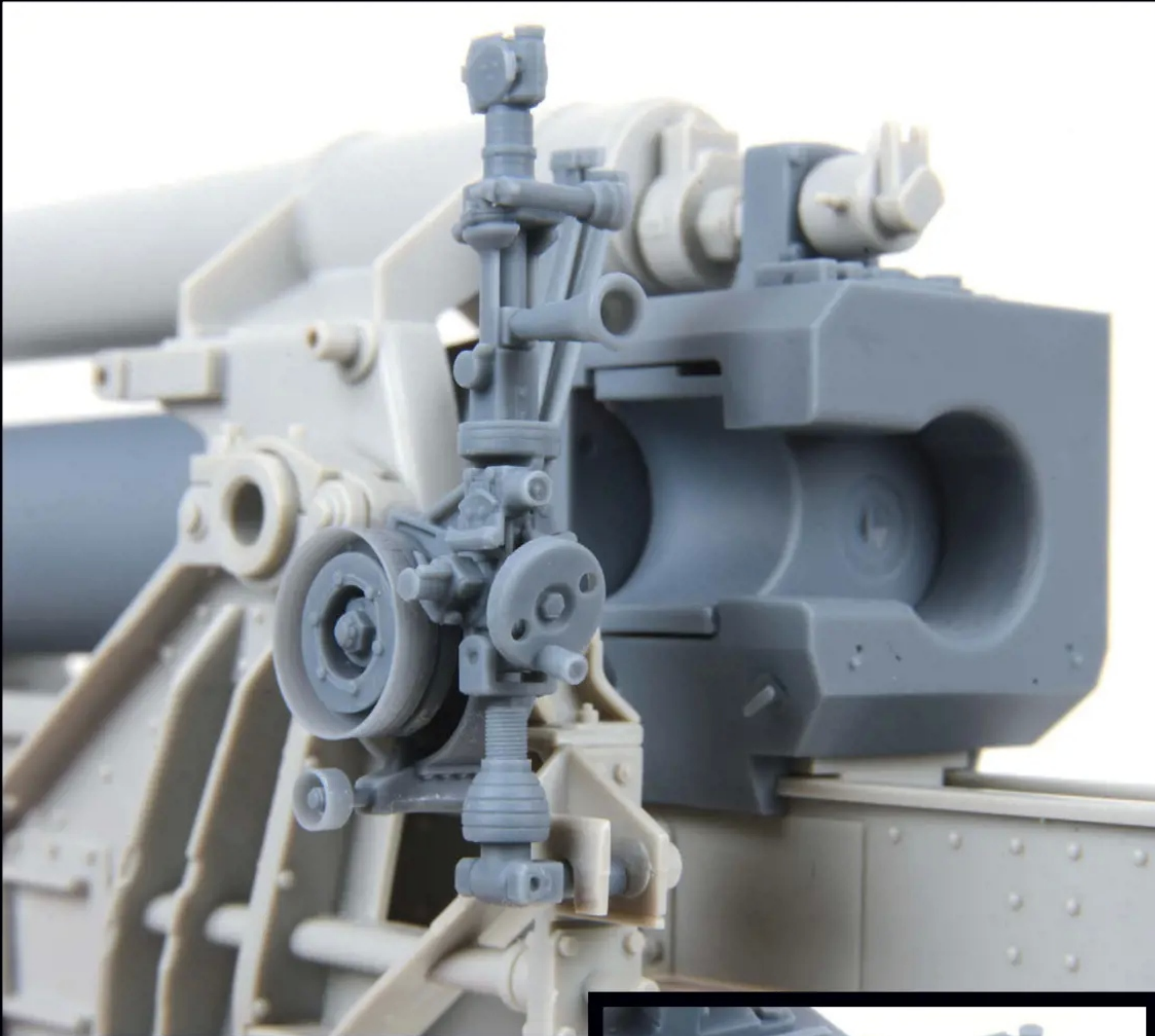






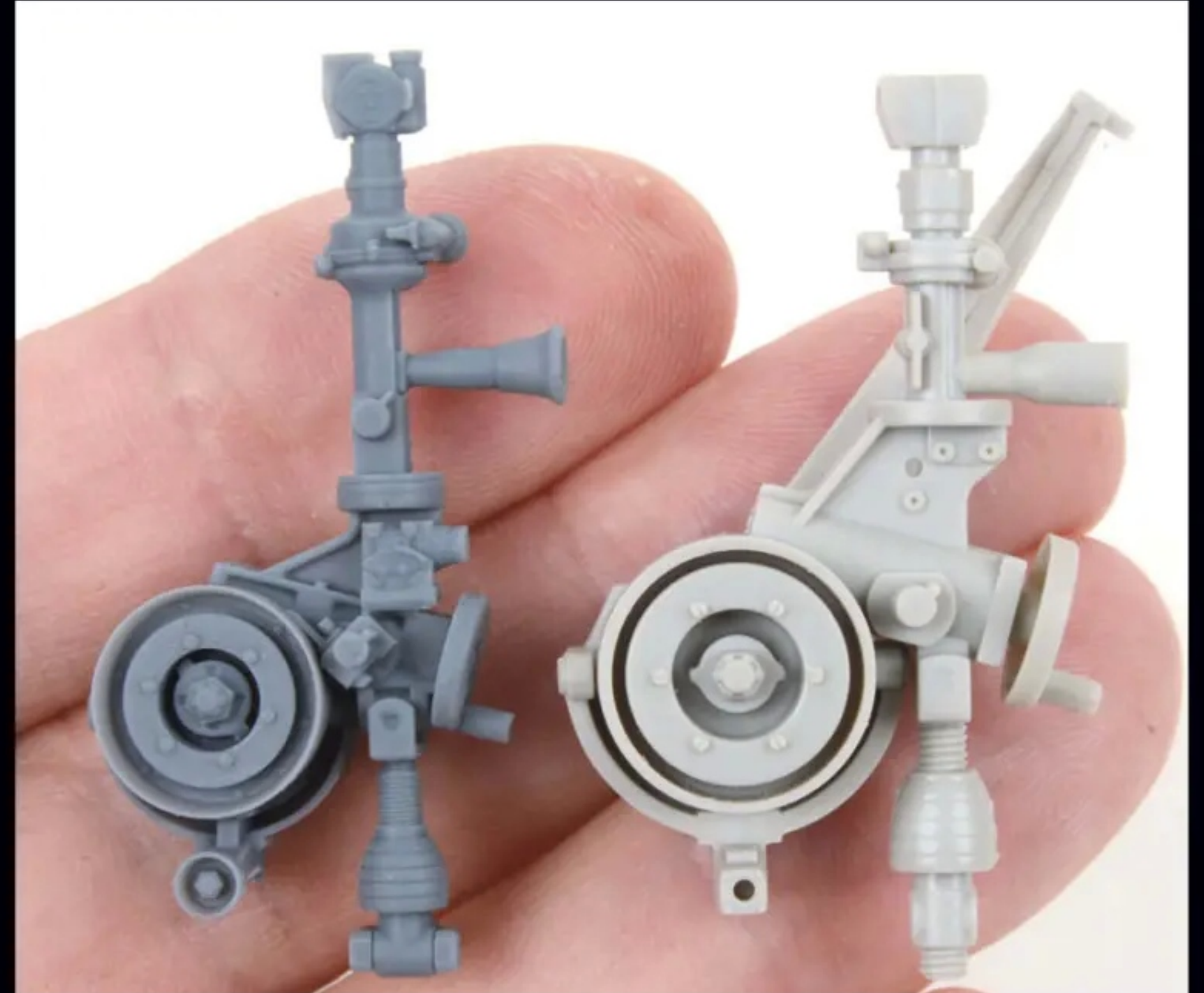
HUMMEL LATE VERSION

AFV
modeller
1:16



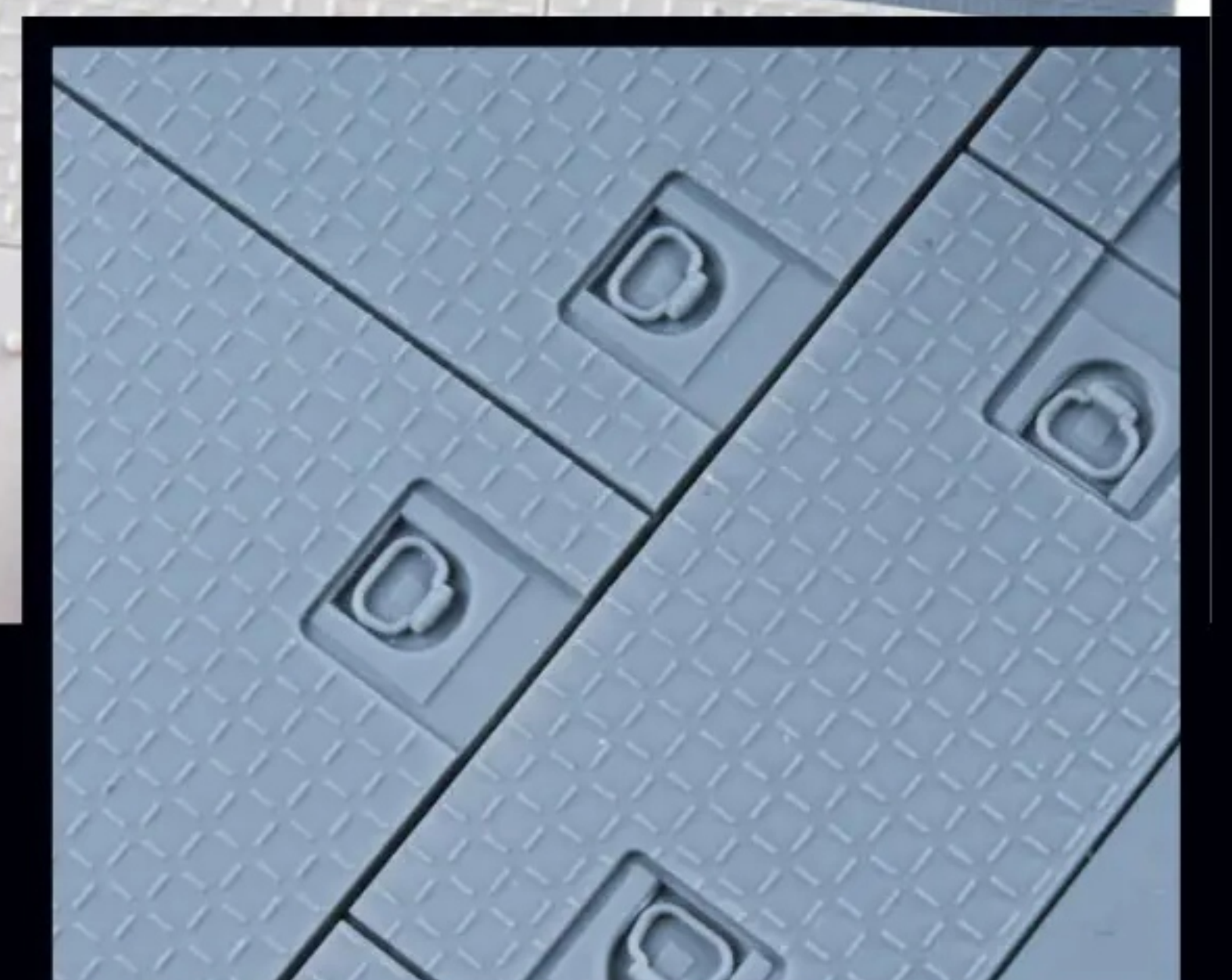
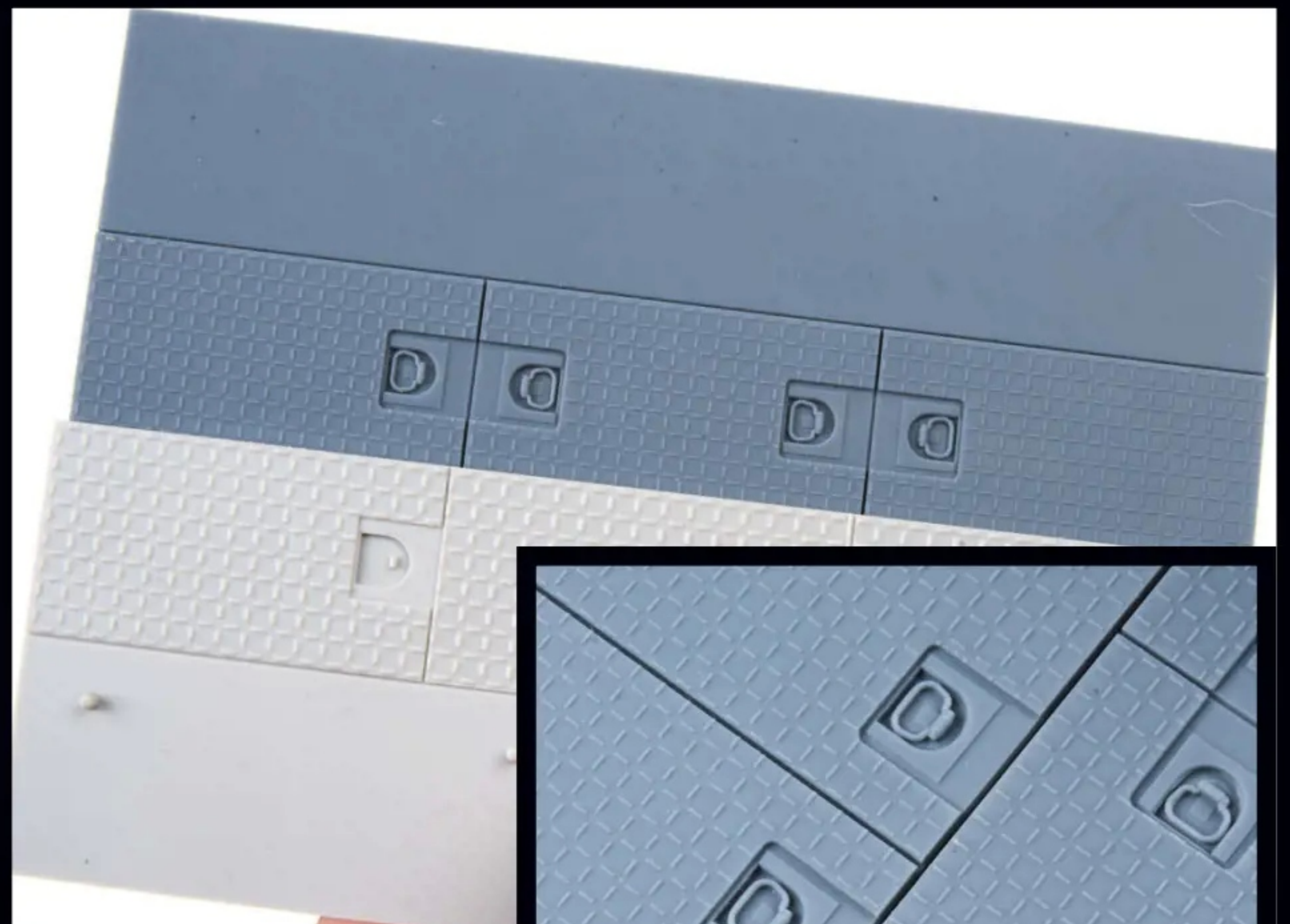
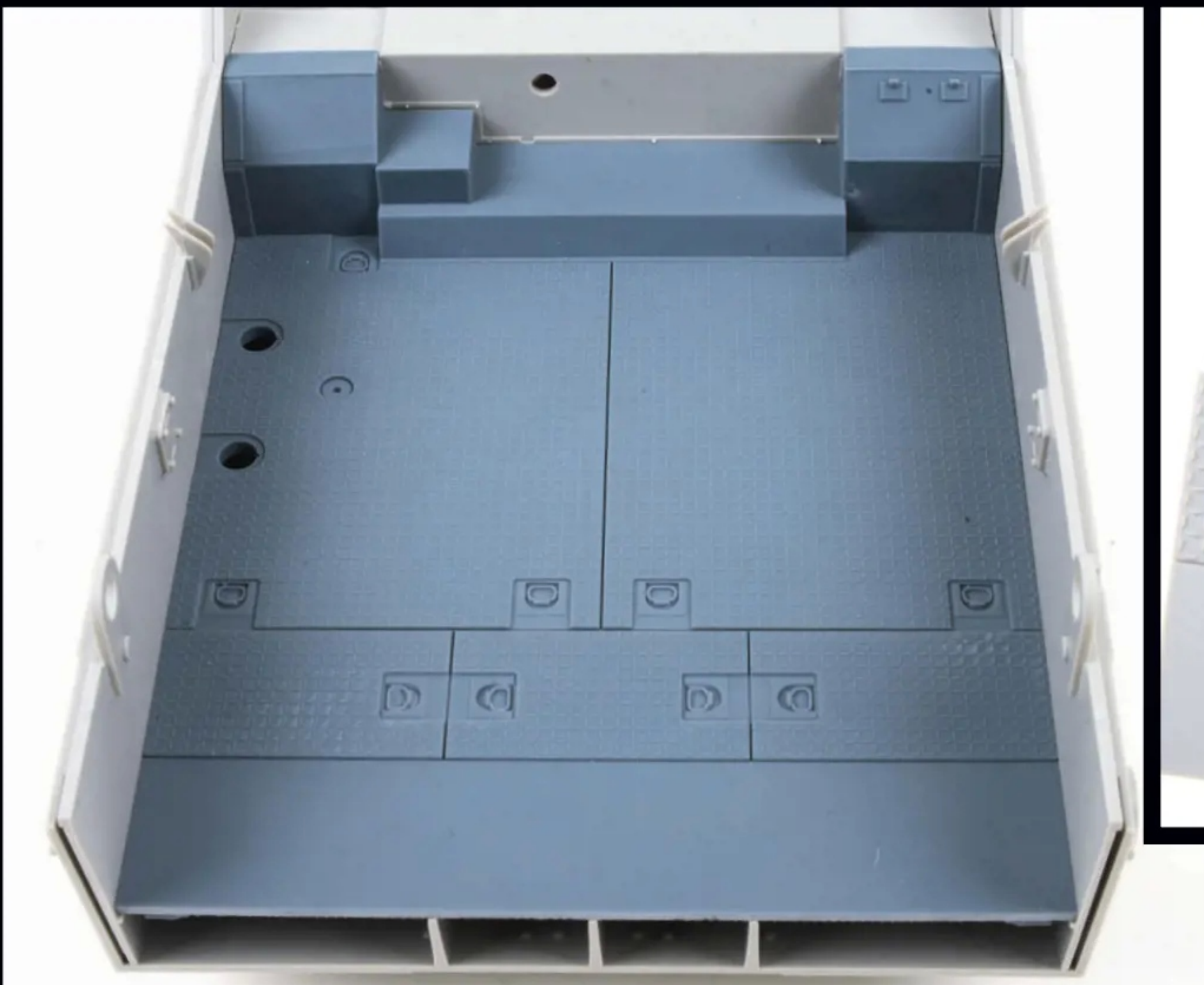
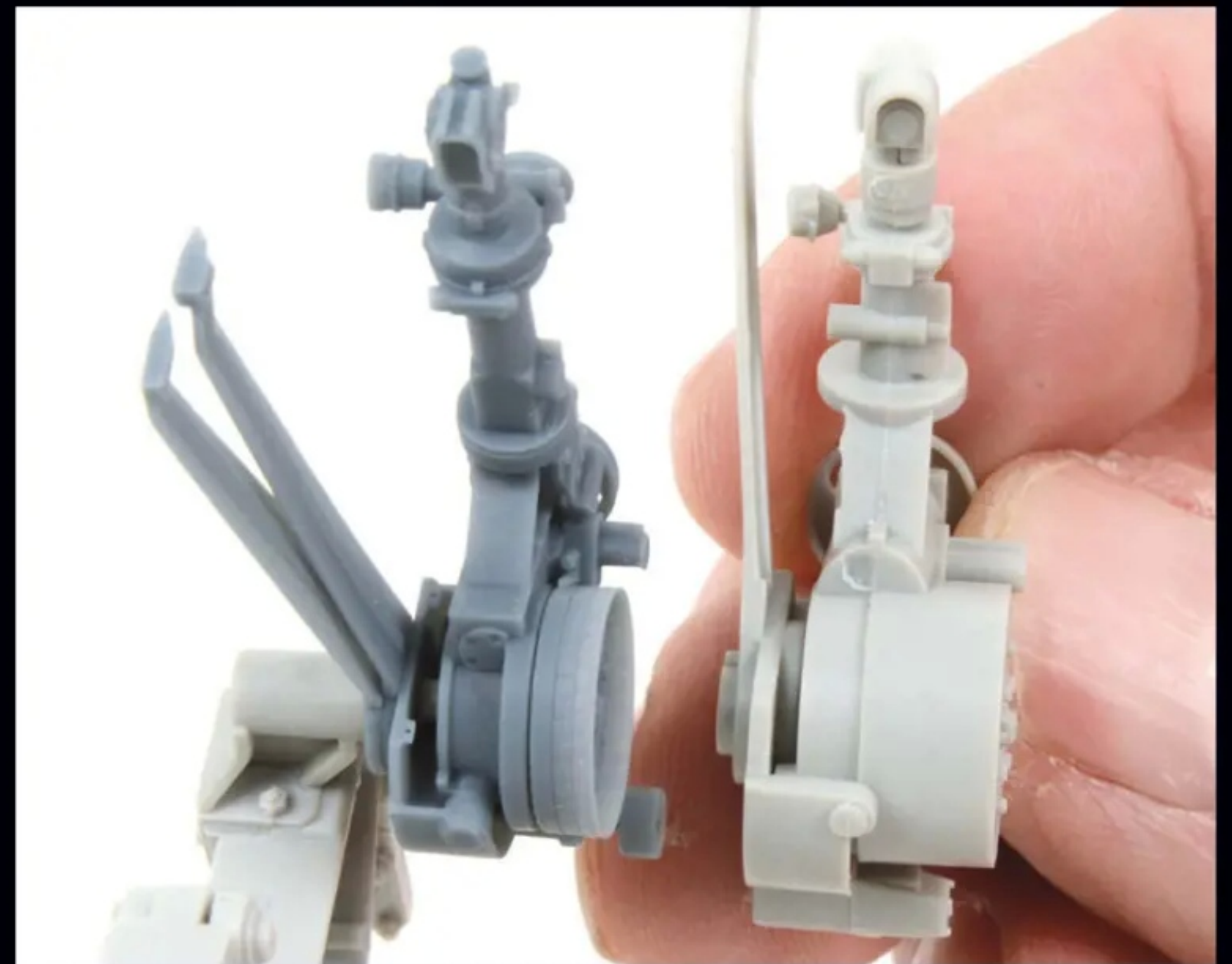
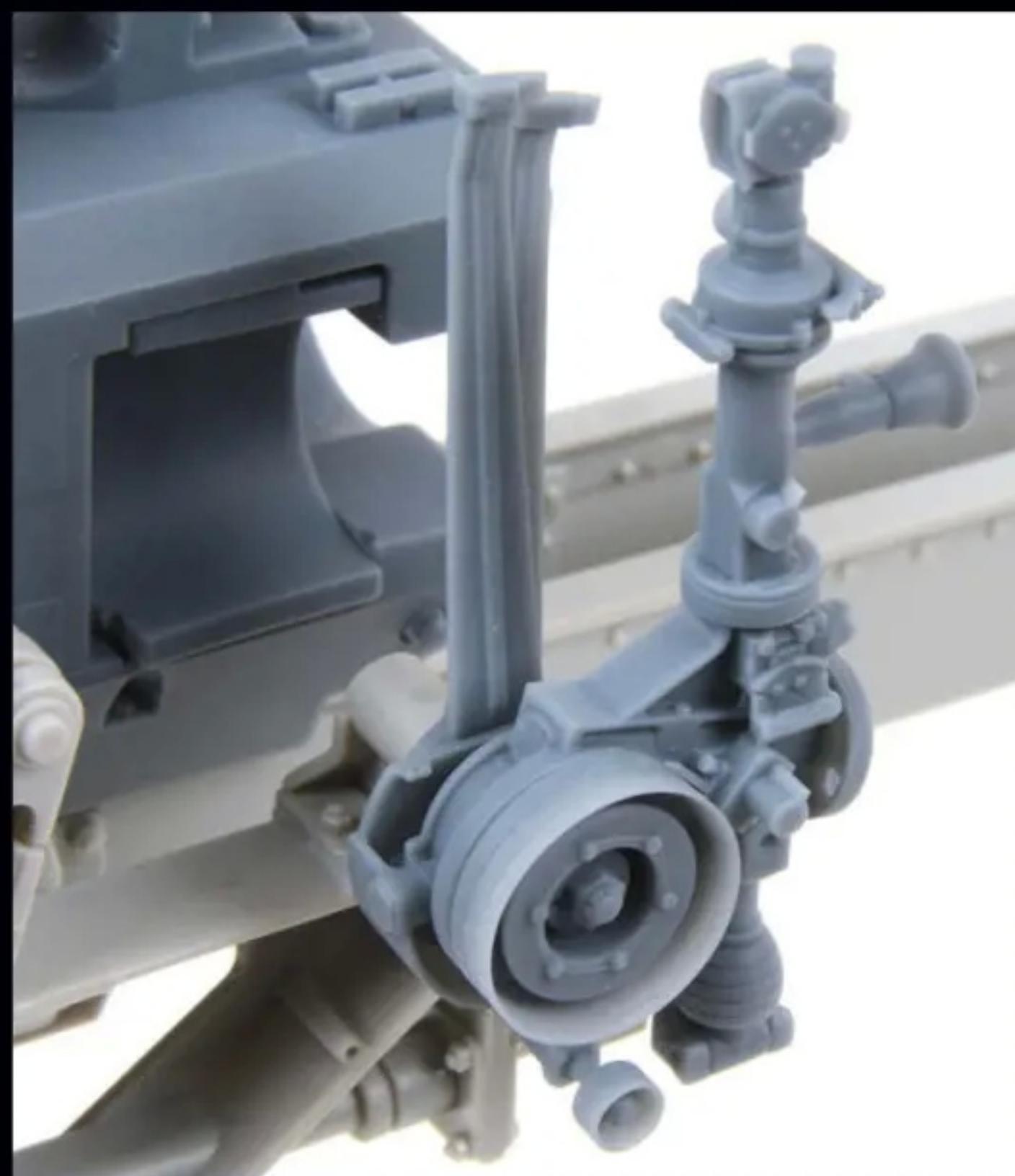
1:16 Hummel Corrected RbLF.36 Artillery Sight

This highly detailed 3D printed replacement gun sight replaces the oversized and incorrect kit part offering a focal point of detail inside the fighting compartment. Printed in 6 parts for optimum detail the set comes with assembly and fitting instructions.



1:16 Hummel Corrected Fighting Compartment Floor

This 3D printed part replaces the kit fighting compartment floor with the correctly scaled tread plate pattern in place of the overscale kit pattern. Simple to substitute, just trim the two triangular flanges on the kit firewall part A2 which we have integrated into the new floor parts for a better finished appearance.

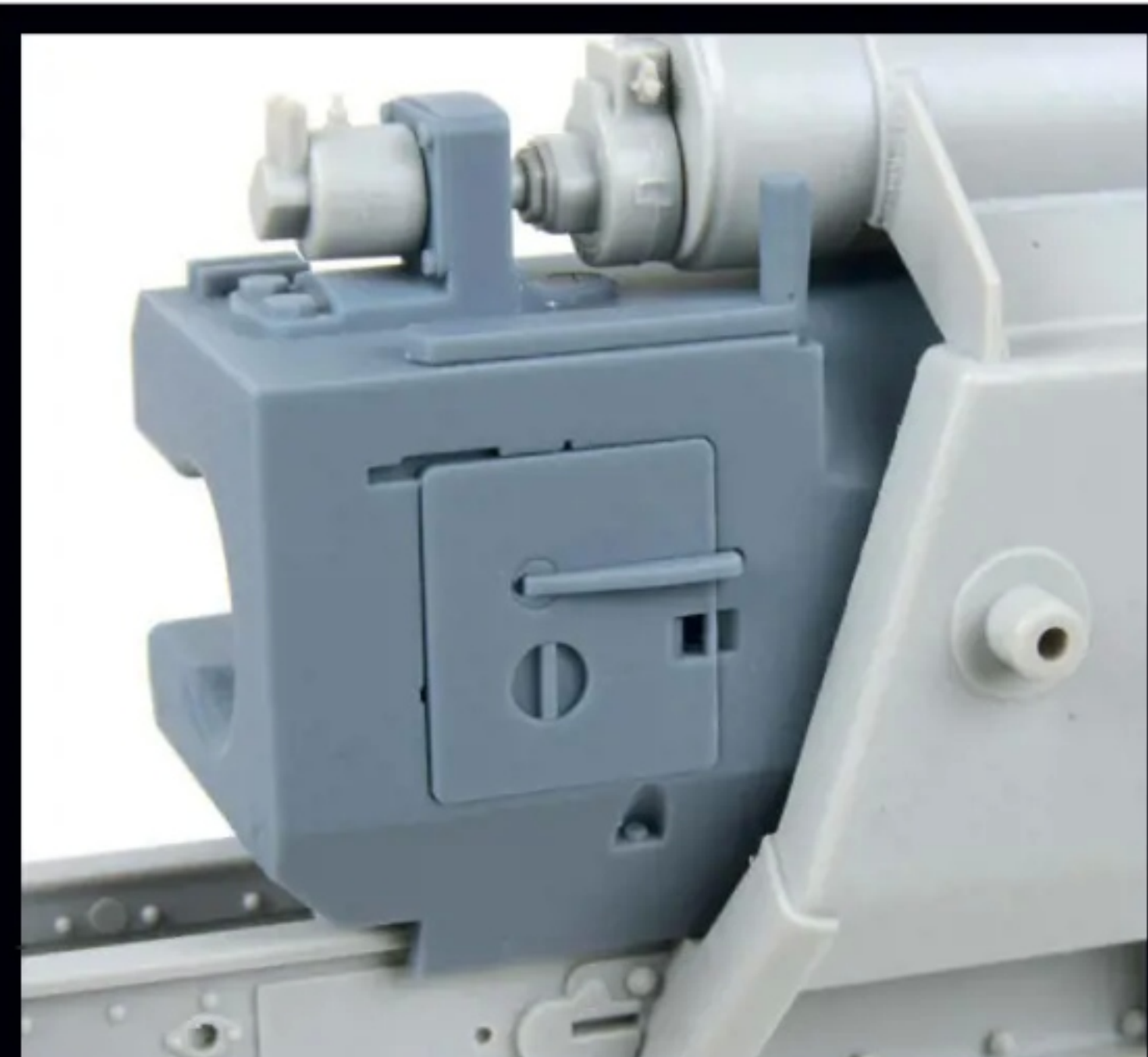
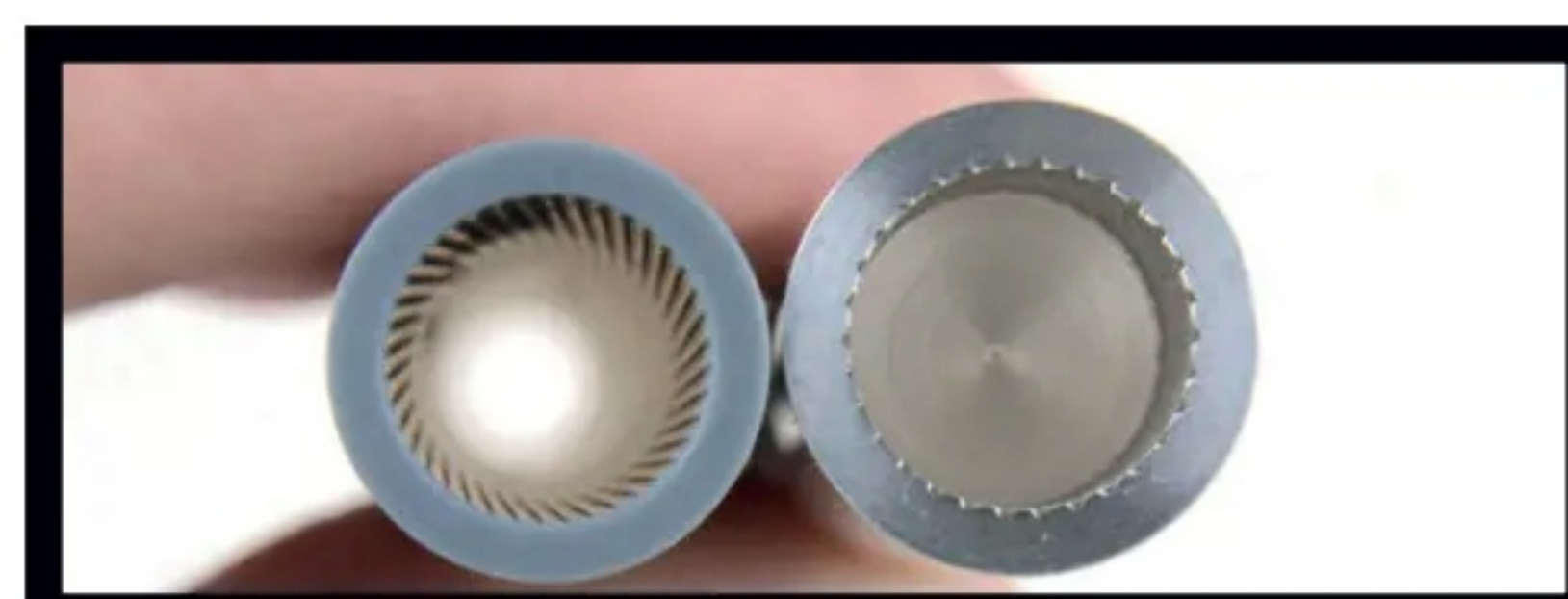
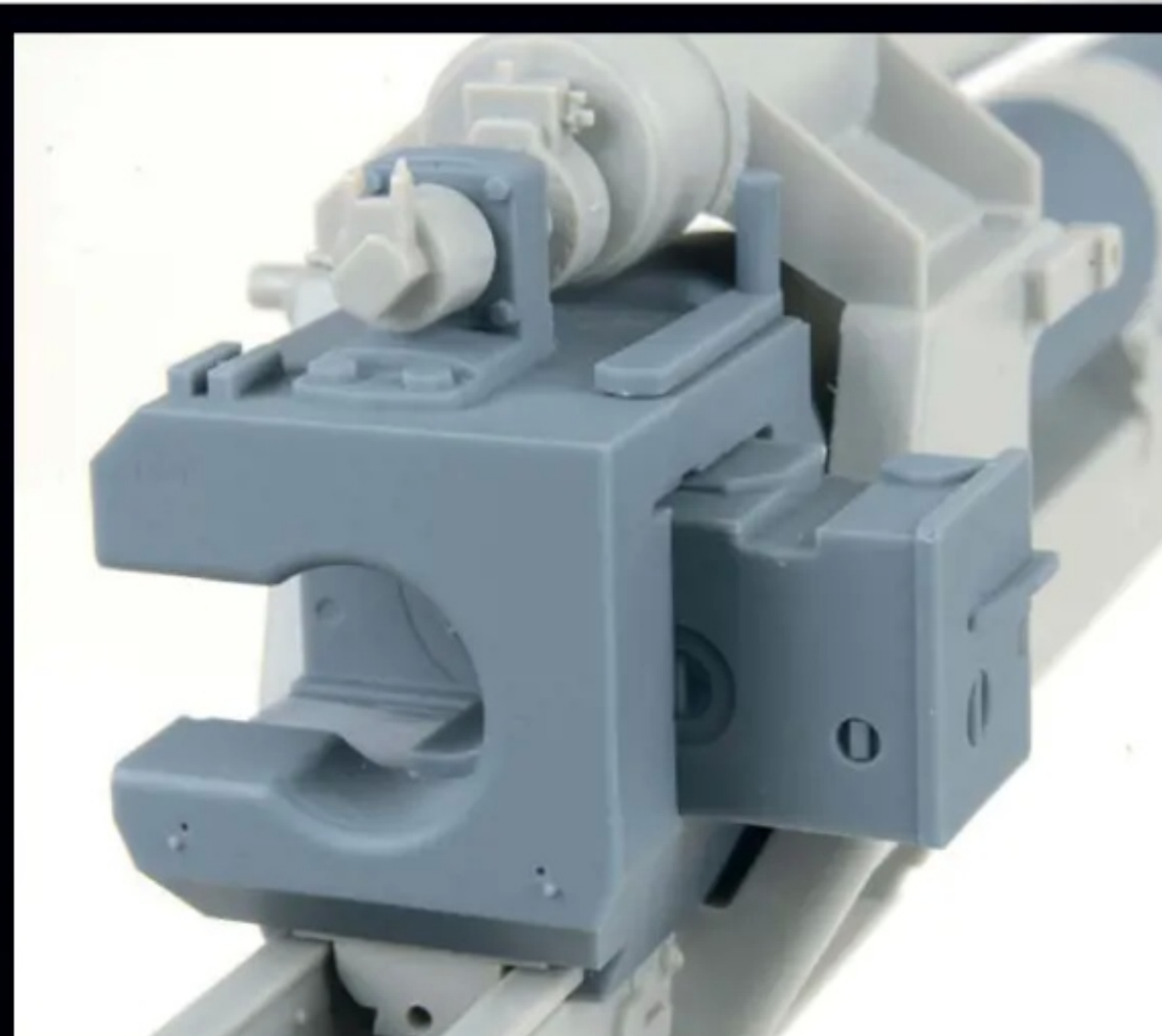
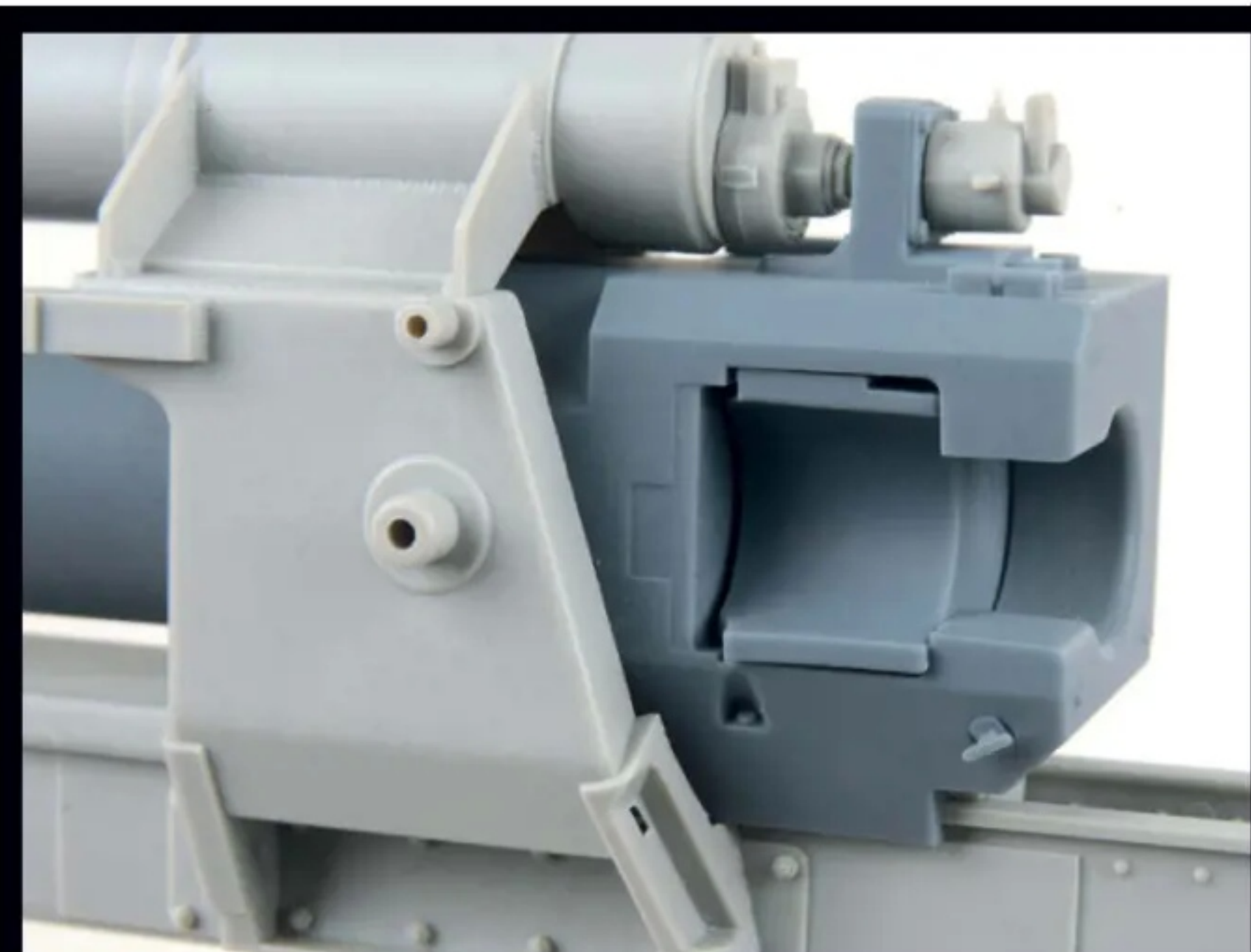




1:16 Hummel Detail set

This 3D printed set provides a welcome upgrade to many of the smaller details in the Trumpeter kit. Beginning with the stowed MG34 which is mounted onto its stowage brackets and feature an accurate hollow barrel sleeve and folded down sights for stowage. Along with this is a set of two stowed MG ammunition boxes, complete with strap securing them and we have included one of our spare MG barrel cases. Two stowed MP40 along with their stowage frame are included and three intercom boxes. We have included a flare cartridge box and a Fire Extinguisher. Externally we have one of our detailed panzer spades complete with fixings, replacement Bosch headlamp and new Jack and jack block with the correct stowage fittings. There are four Panzer IV pattern tow rope eyes and finally replacement tarpaulin loops for the top edges of the superstructure.

HUMMEL LATE VERSION



1:16 Hummel Corrected Breech and Barrel

Our corrected breech fixes all the filling and sanding needed on the kit part and will work with the kit barrel. The barrel is realistically hollow with the correct rifling and reduces the considerable weight of the kit barrel by about 100 grams

1:16 Hummel Late Engine Intake covers

These intake covers are a distinctive feature of Late production Hummels but missing from the Trumpeter kit. Simply sand off the two fixing plates on either side of the Louvred intakes and place the new cover over the louvres. Set of two 3D printed covers.



1:16 15cm Hummel Ammunition and wicker transport tubes

Single piece shells remove the joint lines in the two-part undersized kit ammunition. To compliment these we have also modelled the wicker transport tubes for the shells.

8 TON ITALIAN



SdKfz 7? not quite... BRED A 61

The Auto Carro Semicingolato Breda 61 was the Italian version of the ubiquitous German SdKfz 7 8-ton half-track. The Italian military prior to WW2 were less interested in half-tracks, preferring heavier trucks or tractors instead. In early 1941 however, there was a keen interest in the German SdKfz 7. After tests and negotiations, Italy acquired the rights from Kraus-Maffei to manufacture their own version but with unique Italian modifications. However of the 500 Breda 61s ordered by the Royal Italian Army, only the prototype was delivered before the 1943 armistice.

The Germans, who occupied northern Italy at that time, commissioned 300 examples of which 199 were delivered in 1944 to both German Luftwaffe and Wehrmacht anti-aircraft flak units, and hence the markings on this model.



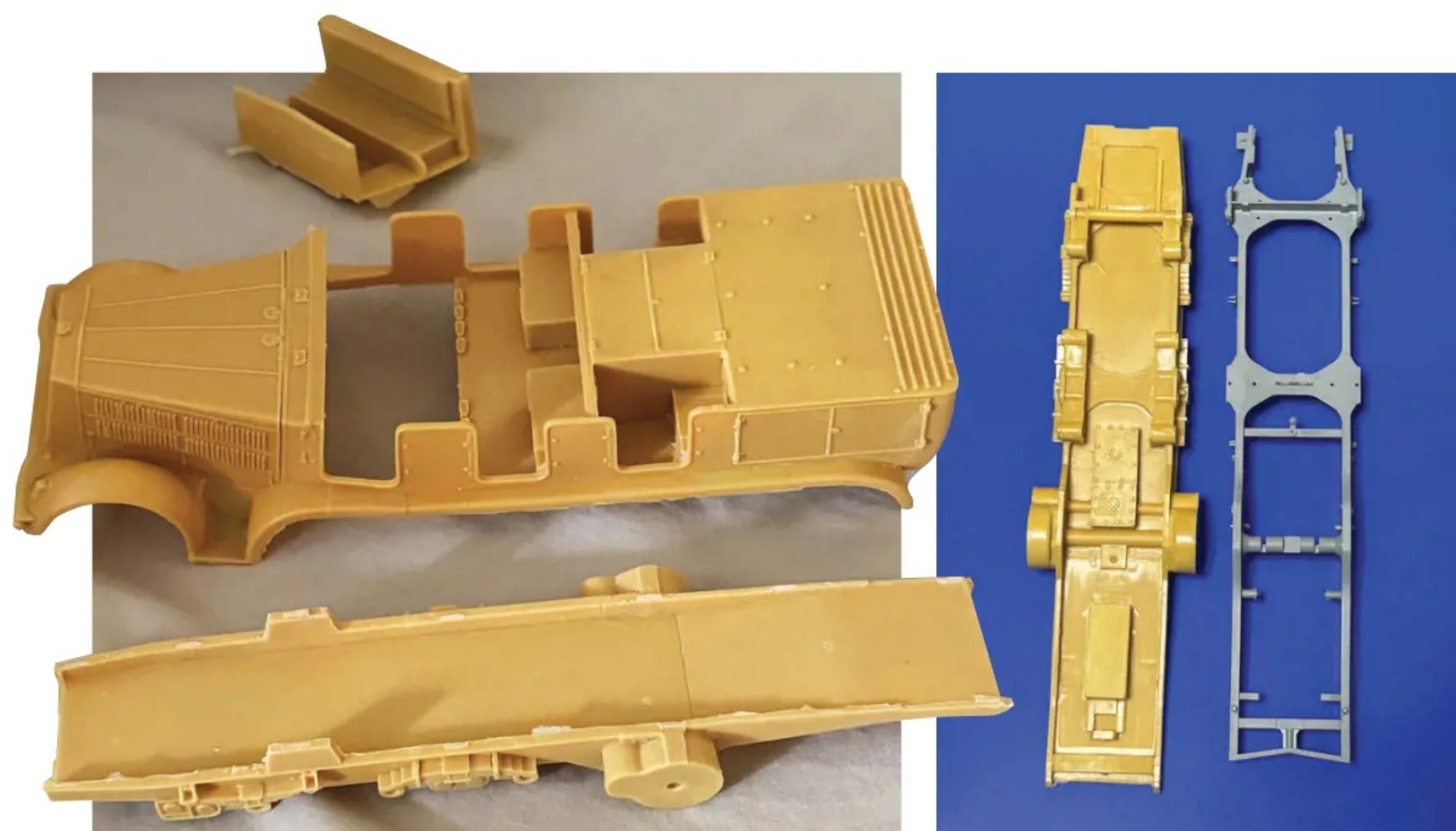
Harvey Low wrestles with some old-school resin



1:35

There were several notable differences between the Breda 61 and its German counterpart. Instead of the original Maybach HL62/64, the Italian tractor was equipped with a 6-cylinder Breda T14 petrol engine with a Solex 40 IFF II carburetor, resulting in a much larger and different engine bonnet and slightly longer length. The front wheels were replaced with Italian 3Ro wheels. The driver sat on the right-side. Seat arrangement was different while the rifle racks on the backrests of the seats had a different arrangement. There was also a noticeable large stowage bin in the third row of seats at the rear allowing storage of gun shells.

As of this writing, there is only one kit of the Breda 61 in 1:35 scale – the old but rare Criel kit (#R102) released in the early 2000's in cast resin. There are no injection models of the Breda 61 in any scale. There is HOWEVER, a new 3D printed version in 1/35 by WIP3D that is readily available but it is not injection plastic and thus more costly. Even though the Criel kit is out of production, I hope this article still helps modelers with similar “kit-bash and mash” projects, and how I combined two kits to arrive at a unique vehicle!

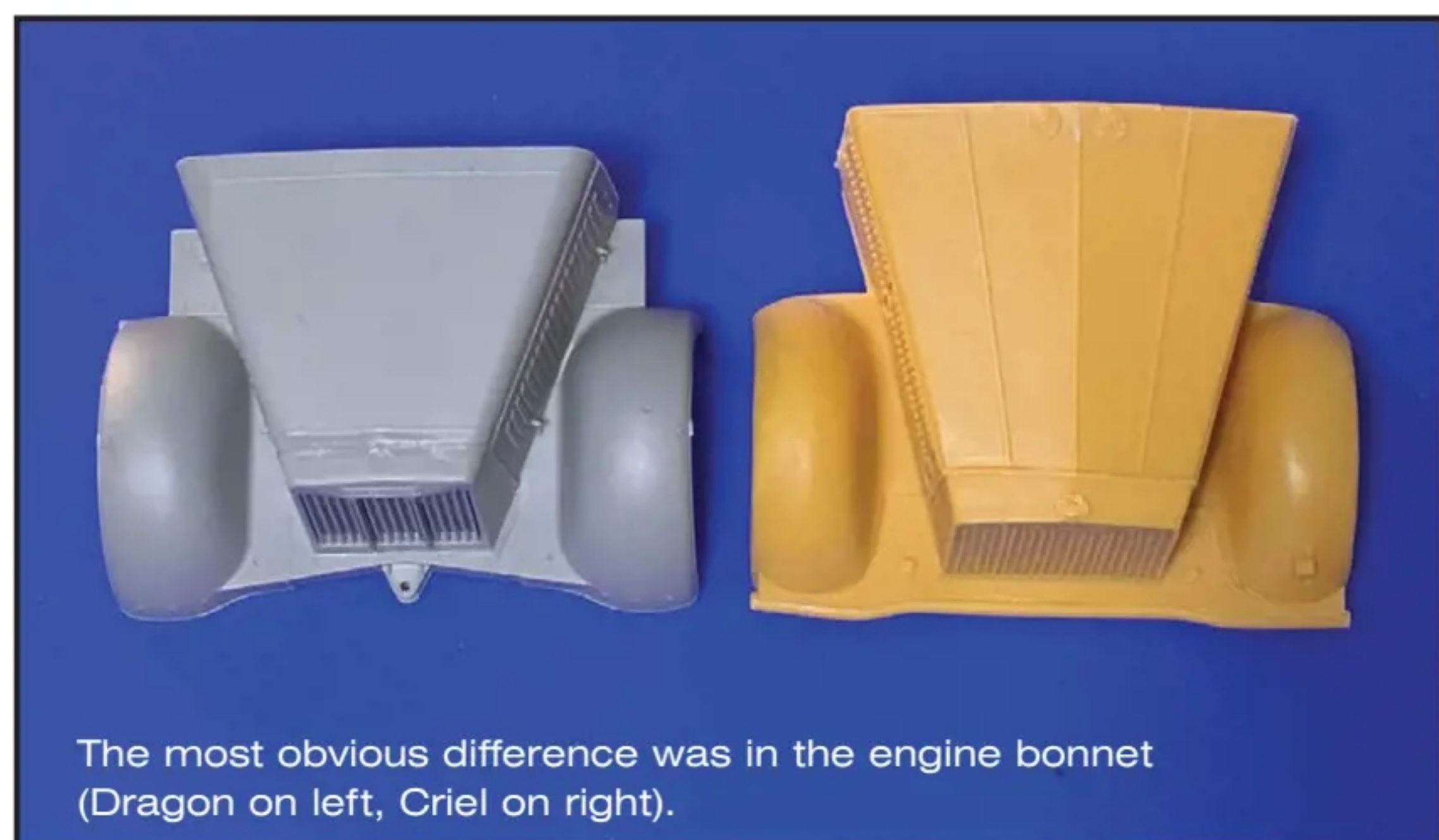


While I could have built the Criel kit, I found it very basic, soft in detail, and simplified – especially the chassis – not uncommon for older limited run resin kits.

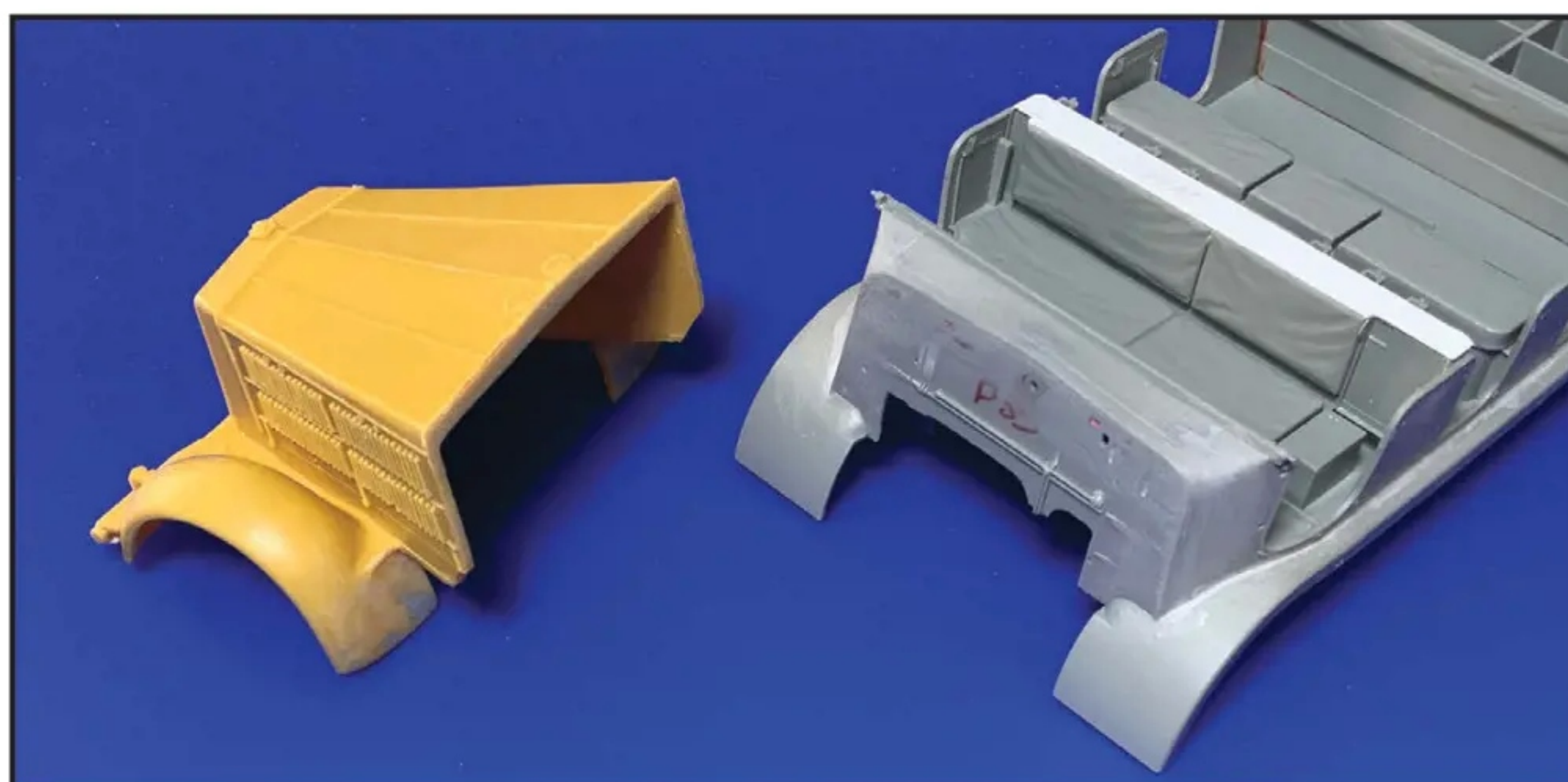
Here is a sample of the chassis comparisons (the Criel part is beige coloured, while the Dragon kit part is grey).



Since mine had warped parts with a lot of damage, I decided to mate the important and noticeable parts with the finer detailed Dragon SDKFZ 7. I used Dragon's Initial Production kit (#6466). The running gear was identical so that made this project a bit easier.

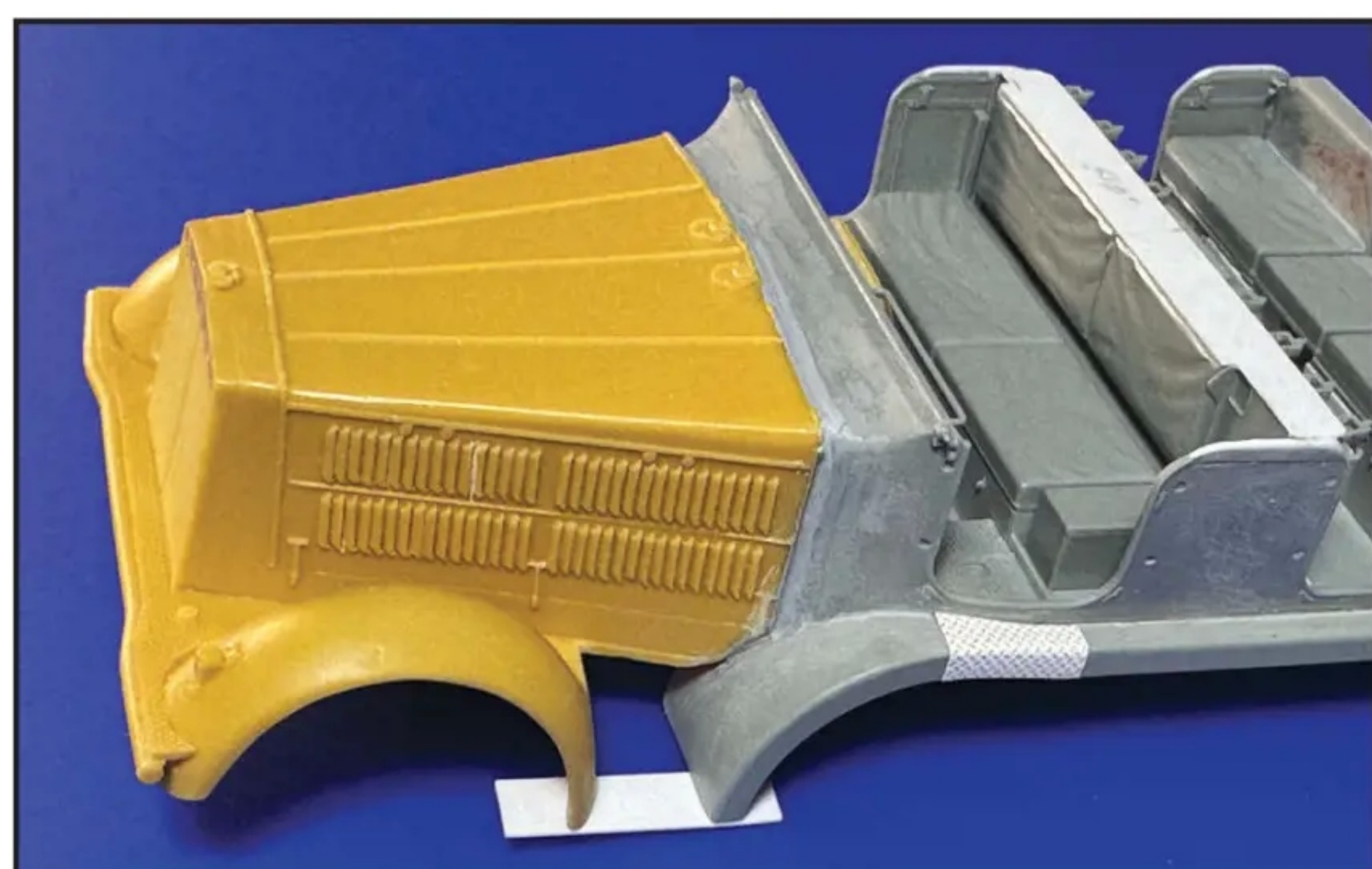


The most obvious difference was in the engine bonnet (Dragon on left, Criel on right).



This photo shows where I made the cut on the Criel kit. I use a table hobby saw. Remember to wear protective clothing and a mask when cutting resin with a saw!

The Dragon kit only needed the firewall (part D35) surface detailed sanded down. Subsequently the entire Dragon 8-ton hood bonnet assembly (parts D3, 9, 11, 12 and 22) were sent to spare parts box. I was then ready to join the two sections!



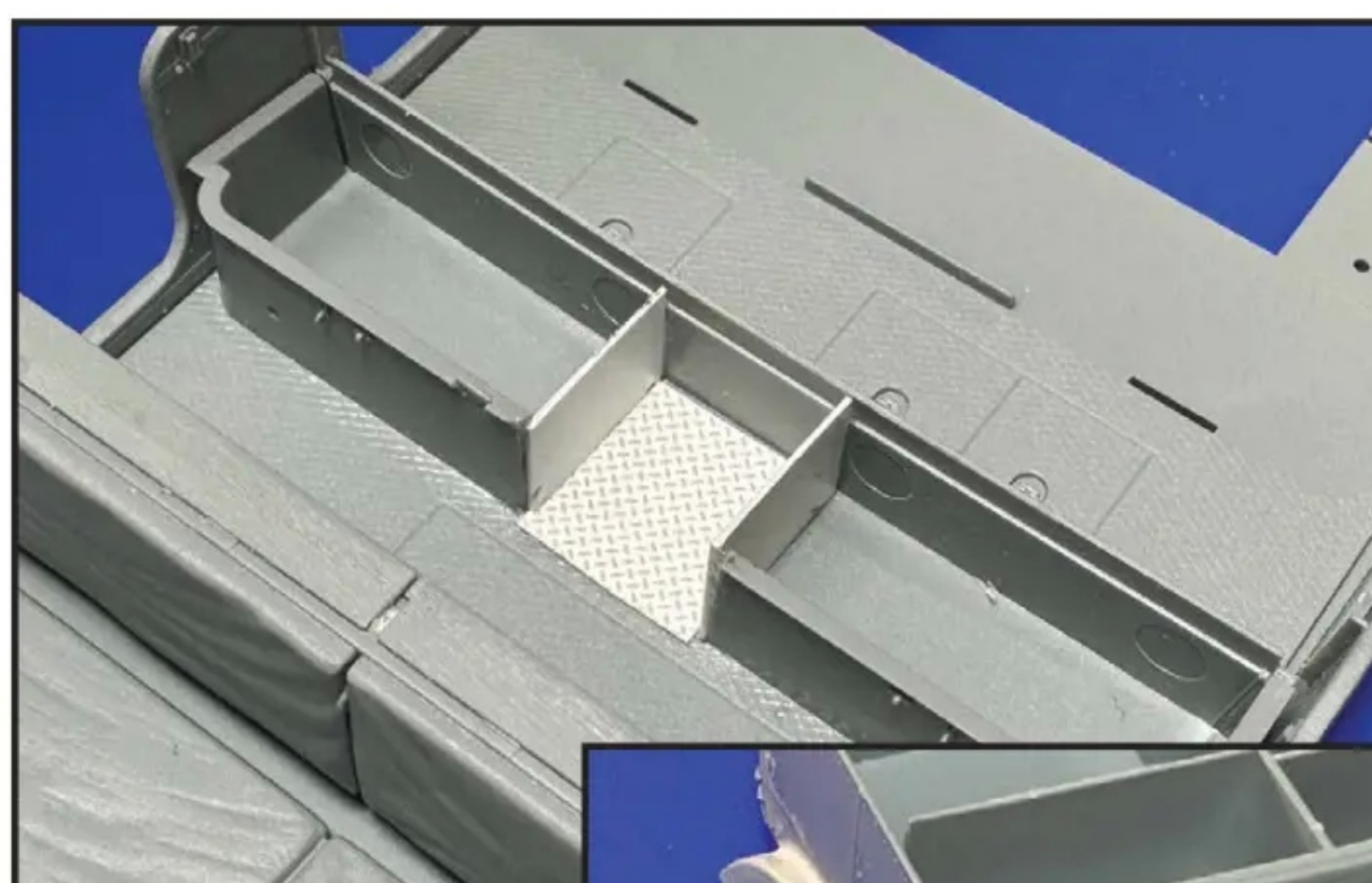
I was pleasantly surprised at the precision of the joined parts! Make sure that you use 5-minute epoxy in these situations where different materials exist, as the epoxy also gives you time to align the two sections. I used super glue but only after the epoxy glue has set, to re-enforce the joint. Notice the abundance of Tamiya putty to seal the joint lines, as well as the small styrene step plate on the bottom between the front and rear fenders



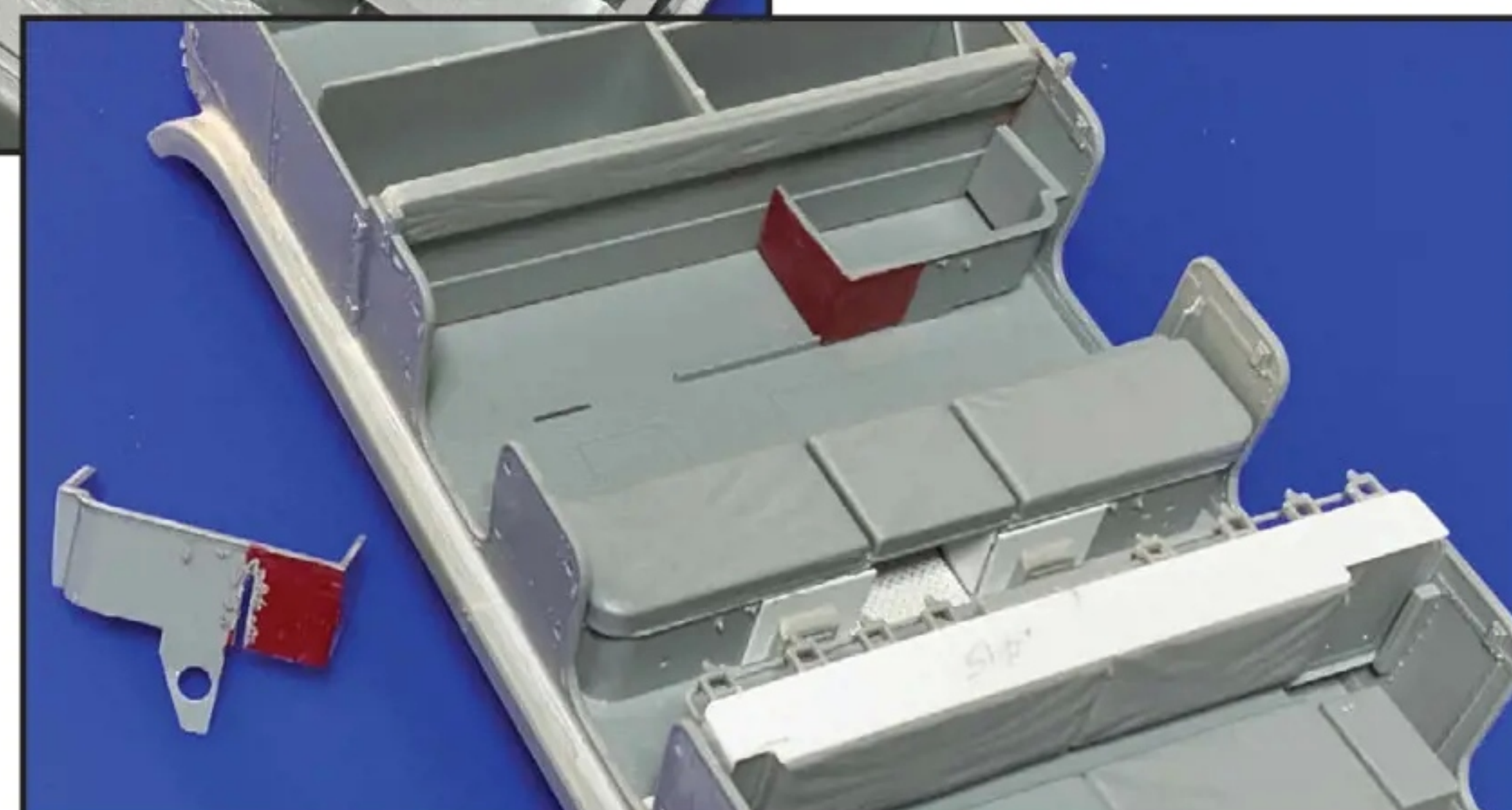
The next modification was how to tackle the switch to a right-hand drive. I solved this problem by simply gluing dashboard passenger-side parts (e.g., D21 electrical battery box) on the left-side instead. I then inverted the dashboard (D1) so the steering wheel was now on the right-side! I built a new floor board using .015" styrene with a portion of the floor covered with treadplate (S&S Products EZ Safety Tread #3111), and holes drilled to accept the steering column and pedals.



This photo shows all the details in the forward cab area: 1) switch to right-hand drive with old Criel Breda kit instrument panel and some styrene panels added; 2) new shift gear handles using styrene rod and a dab of 5-minute epoxy glue for the knobs; and 3) miscellaneous windshield details.



Now onto the rest of the passenger area. The cushion arrangement was different on Breda. The second row had three seat cushions (the German 8-ton had three seat-cushions but in the third row).



I simply swapped the seat cushion parts by installing part E18 in place of where E17 was to go, while re-arranging the individual rifle racks. The second row on the Breda also had a small storage space under the middle seat. I cut-down E5 and E6 slightly, added some .015" styrene detail plates, and inserted treadplate on the floor.



The rear/third row had the large stowage bin in the centre. I cut part E14 to accommodate this large bin and scratch-built it with .015" styrene using dimensions estimated from photos. The seat cushions on either side were then taken from the Criel kit. I also had to cut down rear third row seat back (E28) to make it flush with hull sidewalls. Lastly, the rear-most tall stowage railings were retained from the Criel kit.



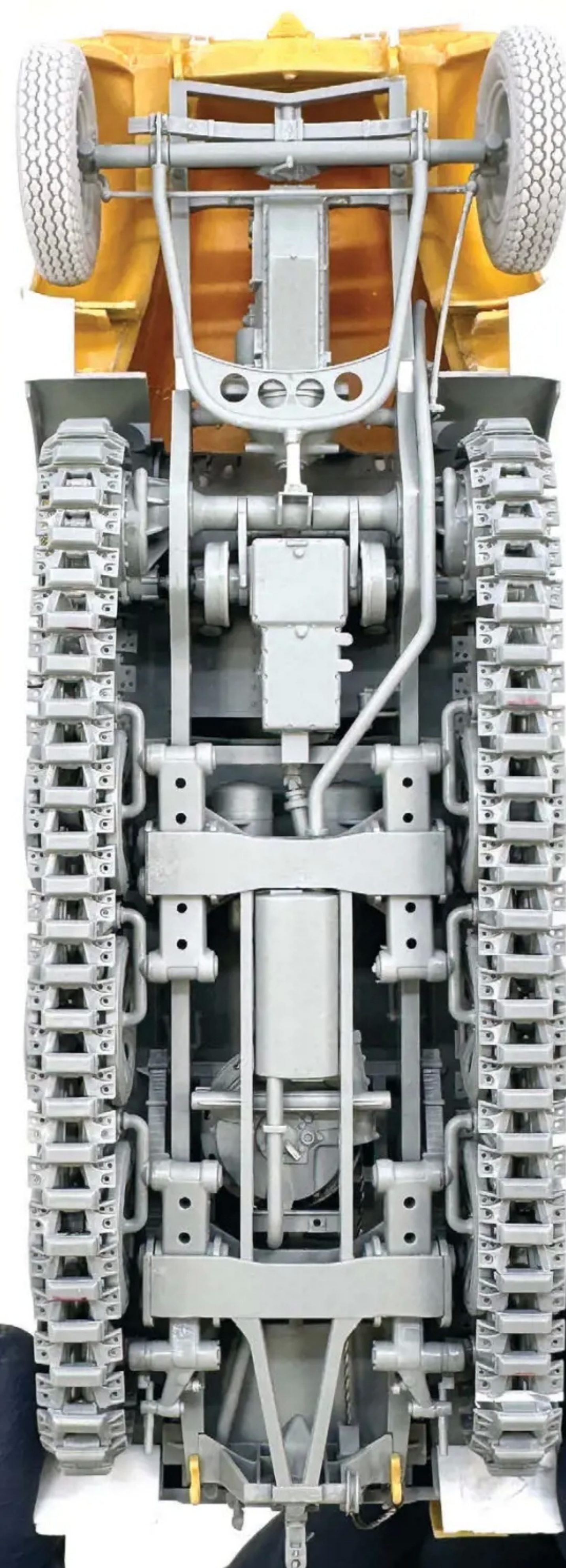
I made my own track guide tool out of Evergreen styrene strips glued to a styrene base, to assist in the assembly of the small fragile Dragon tracks.

I built the chassis as per the Dragon kit, but added 4mm thick styrene shims to the frame to extend it as the Breda 61 was a bit longer than the 8-ton. I also had to lengthen the central drive shaft (B17) equally by 4mm, and added a tow hook assembly on the front bumper as per Breda.

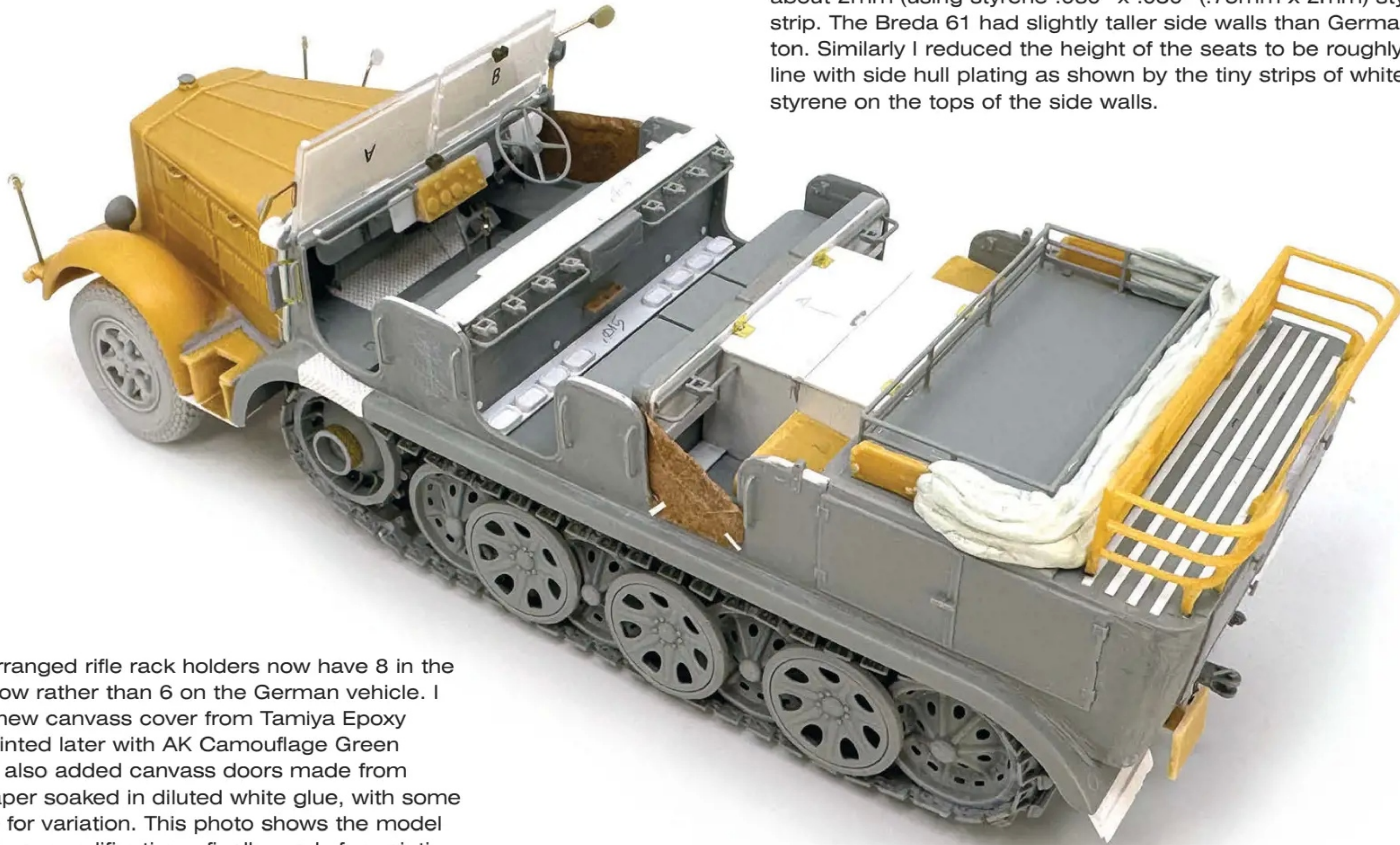
Note the details in the chassis which includes the installation of the wheels and tracks before painting. I lightly sanded down uneven areas of the wheels and track to ensure proper surface contact. Note the new mud guards made from .020" styrene.

The front details include: 1) new wheels (replaced with Italian 3Ro Sigillo Verde wheels from HDM Models #HDM35103); 2) a new step plate on the hull fender; 3) fuel cap and headlamps from the Dragon kit; 4) wire grab handles using .022" brass wire; 5) styrene made license plate holders on the bumper; and 6) a small scratch-built search light near the left rear view mirror.

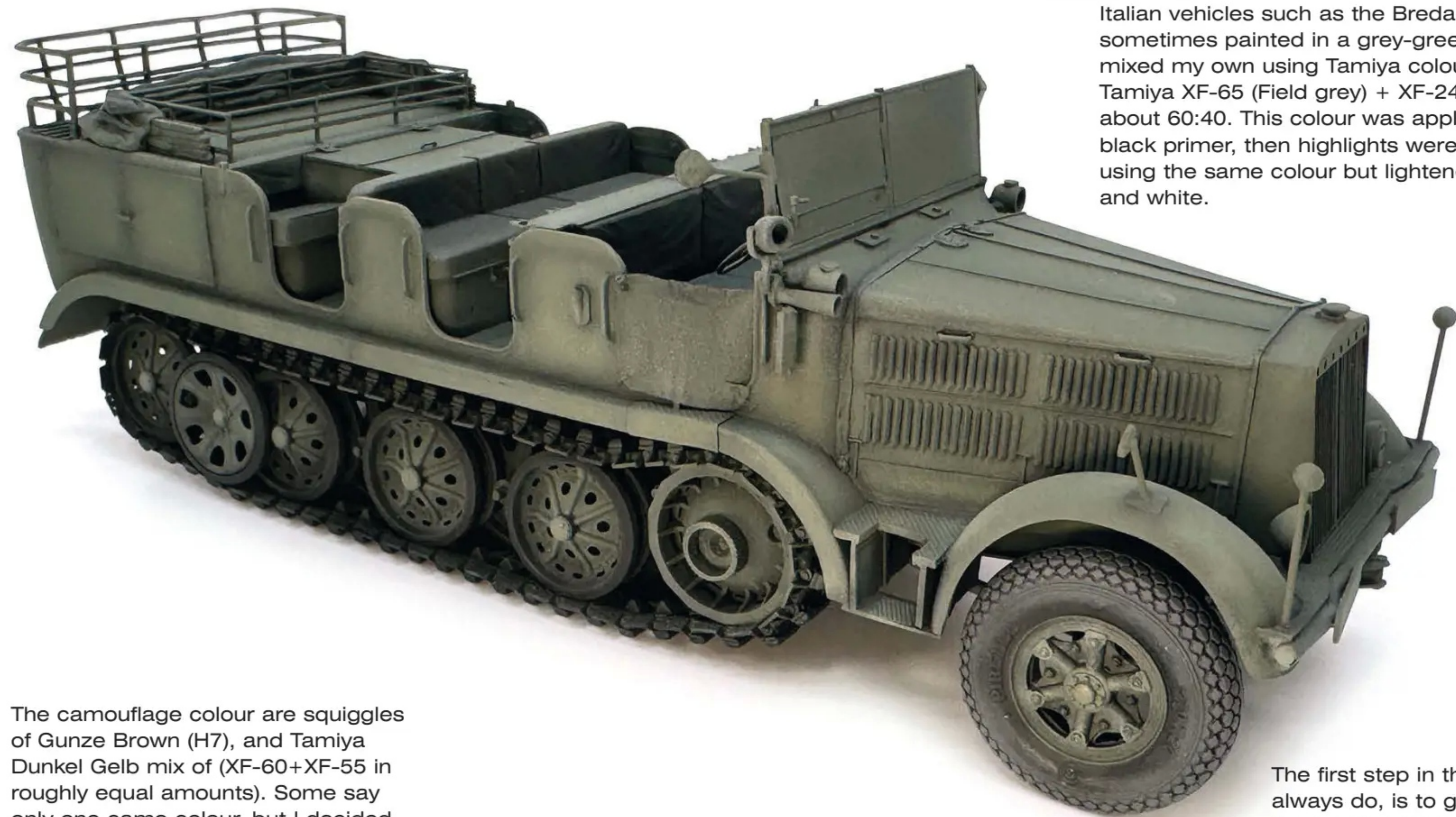
I finally added thick brass rod and a styrene shaft to ensure the wheels would be solidly secured to the chassis.



The devil is in the details as can be seen before paint is applied. While not hugely noticeable, I raised the side hull plating by about 2mm (using styrene .030" x .080" (.75mm x 2mm) styrene strip. The Breda 61 had slightly taller side walls than German 8-ton. Similarly I reduced the height of the seats to be roughly in-line with side hull plating as shown by the tiny strips of white styrene on the tops of the side walls.



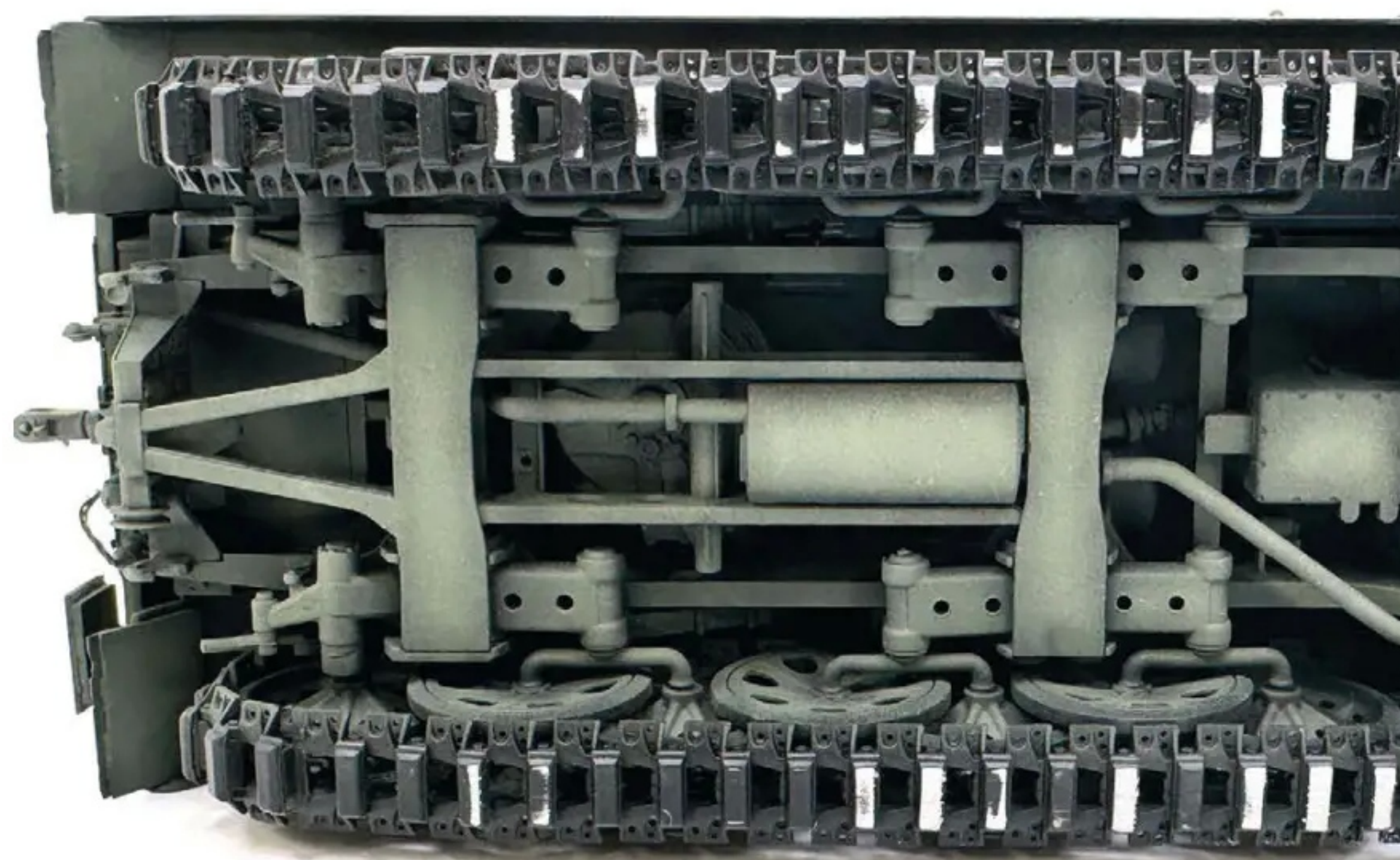
The re-arranged rifle rack holders now have 8 in the second row rather than 6 on the German vehicle. I made a new canvass cover from Tamiya Epoxy Putty (painted later with AK Camouflage Green 11156). I also added canvass doors made from tissue paper soaked in diluted white glue, with some rolled-up for variation. This photo shows the model with all these modifications, finally ready for painting.



Italian vehicles such as the Breda, were sometimes painted in a grey-green colour. I mixed my own using Tamiya colours as follows: Tamiya XF-65 (Field grey) + XF-24 (Dark grey) about 60:40. This colour was applied over a black primer, then highlights were airbrushed using the same colour but lightened with buff and white.

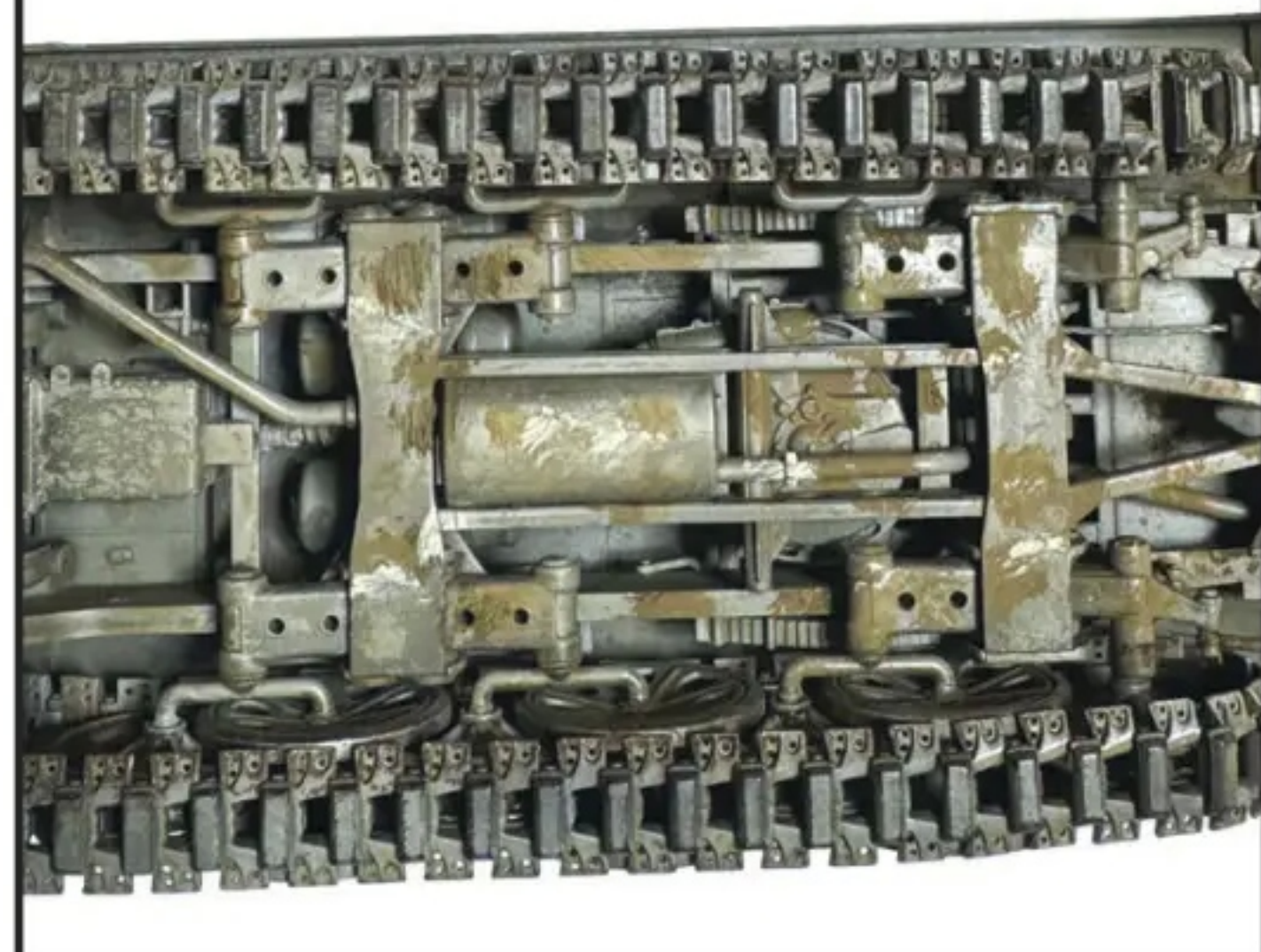
The camouflage colour are squiggles of Gunze Brown (H7), and Tamiya Dunkel Gelb mix of (XF-60+XF-55 in roughly equal amounts). Some say only one camo colour, but I decided on two for more interest with no solid evidence to the contrary. The seats were painted using Tamiya XF-79 Linoleum lightened with white. The tires were painted Tamiya Black (XF-1) mixed 50:50 with IJN Sasebo Grey (XF-77) over a black primer but only hitting the highlights of the tires. The same colour was used on the rims of the wheels. The tracks were painted a black primer and then airbrushed with Vallejo Camo Black Brown (70.822), and weathered as shown in the next section.

Since these vehicles were pressed into German service, they have German Flak Unit markings. I used Peddinghaus decals of the Regiment Hermann Goring in Italy 1944, from set #35-2676.



The first step in the weathering process I always do, is to gently mist-on layers of Tamiya Flat Earth (XF-52) on all undersides and the lower half of the hull. You can also use light gray tones as

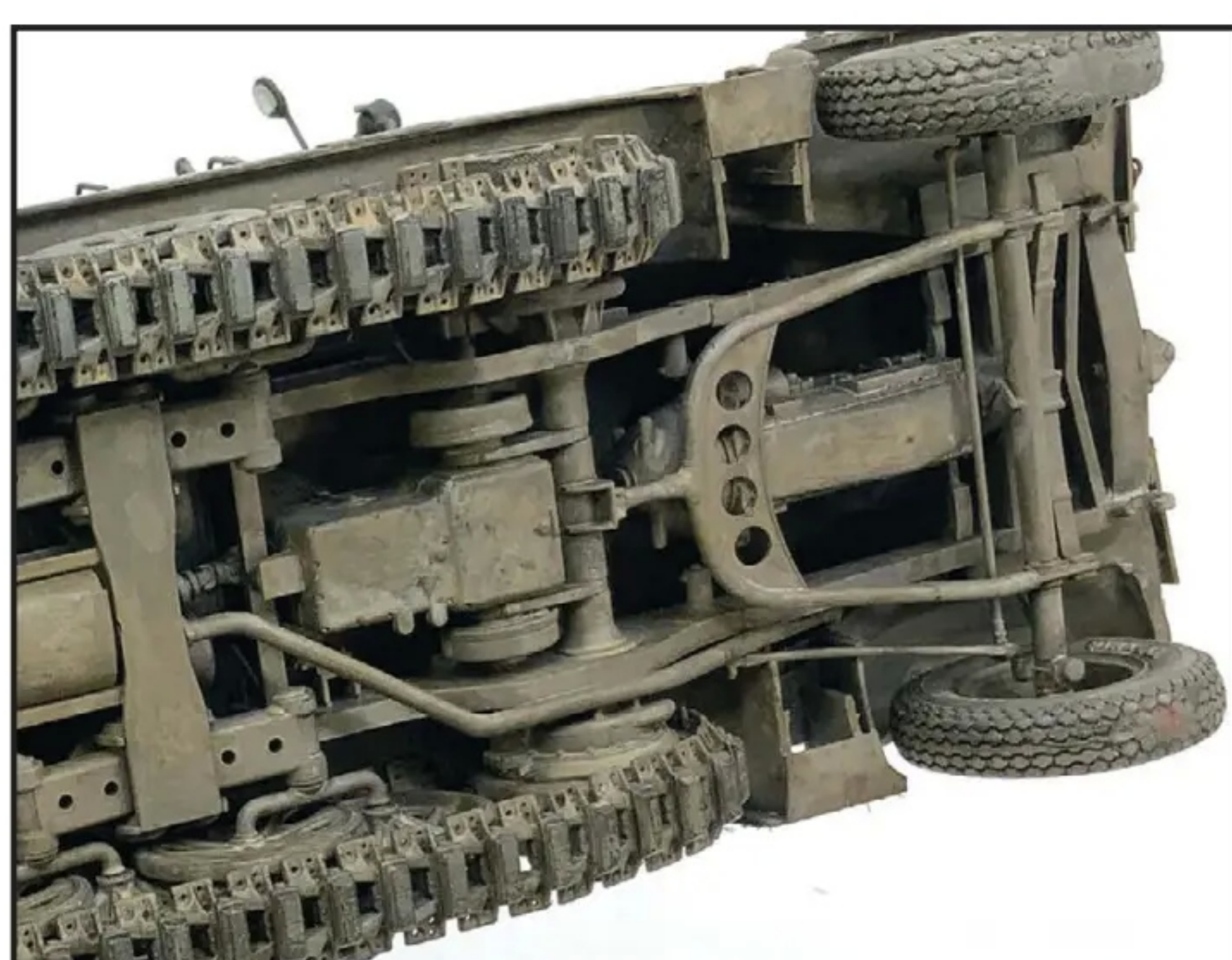




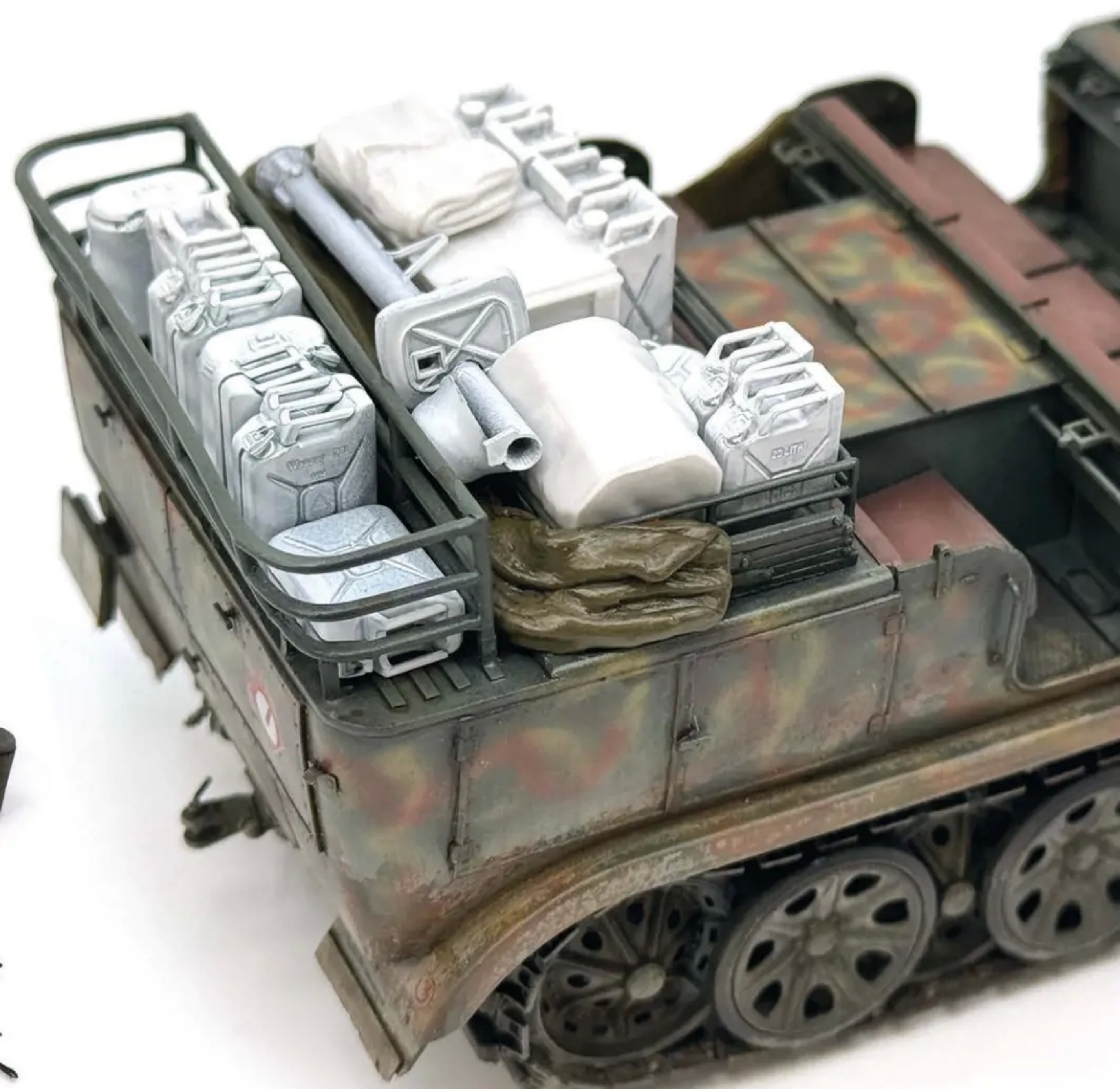
I found Mr Hobby's new Weathering Gouache very useful in producing light layers of mud. Note period photos show that these vehicles were not heavily caked in mud. Gouache is great as it reactivates when you add water, giving you time to re-work it where necessary.

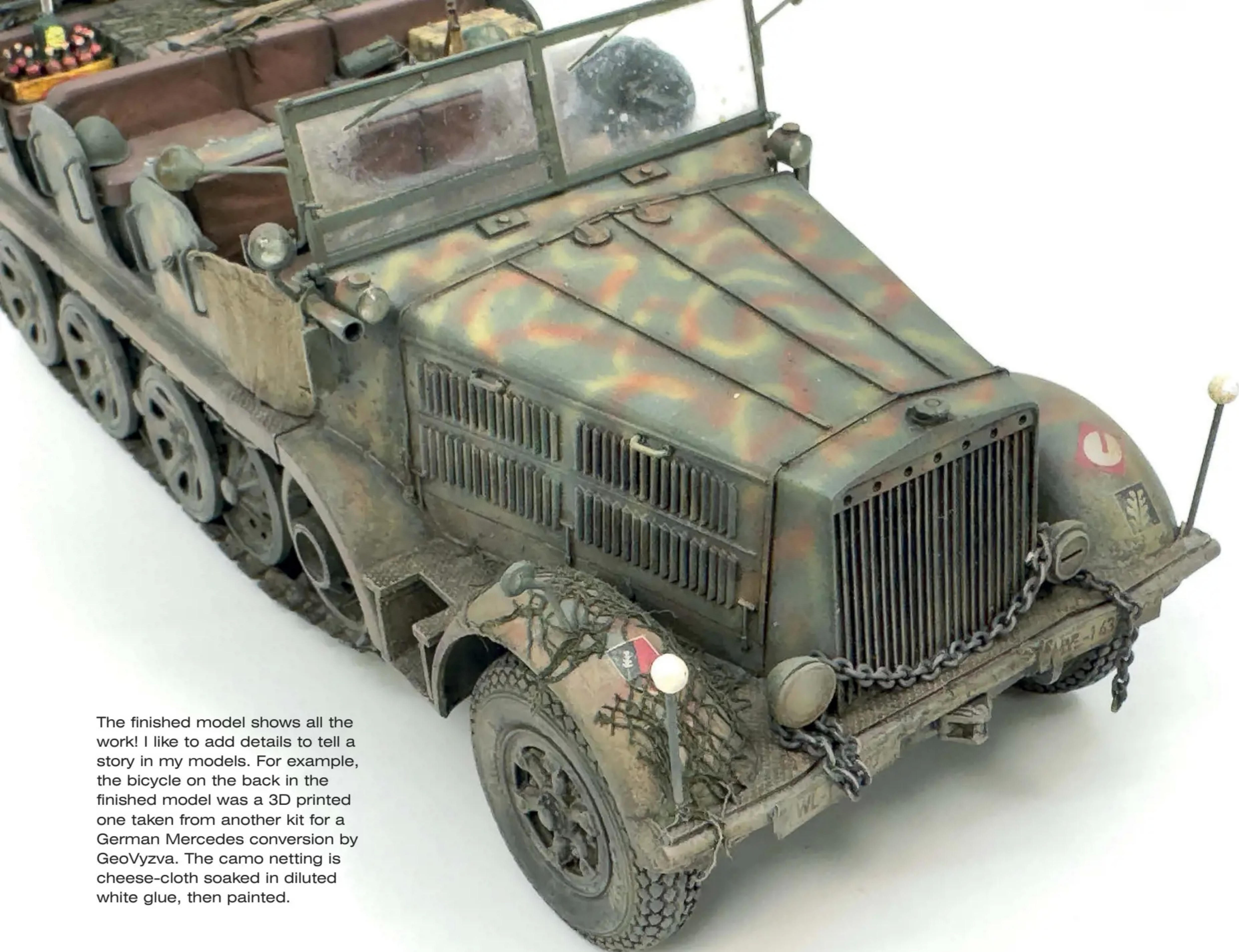
These are the weathering products I used. Remember to apply each product individually and then re-apply if needed to build up the weathering in layers. Apply them over a semi-gloss acrylic coat to protect previous effects.

I spot-weathered areas, such as mud on the floors using dry pigments fixed with Tamiya acrylic thinner.



Stowage was added from the spares box comprising both German and Italian equipment. I also used after-market sets such as Model Victoria's Italian Jerry Can set, and other weapon sets. These two photos show firstly, where I wanted the parts to be placed, and then all the stowage parts painted afterwards and ready to install.





The finished model shows all the work! I like to add details to tell a story in my models. For example, the bicycle on the back in the finished model was a 3D printed one taken from another kit for a German Mercedes conversion by GeoVyzva. The camo netting is cheese-cloth soaked in diluted white glue, then painted.

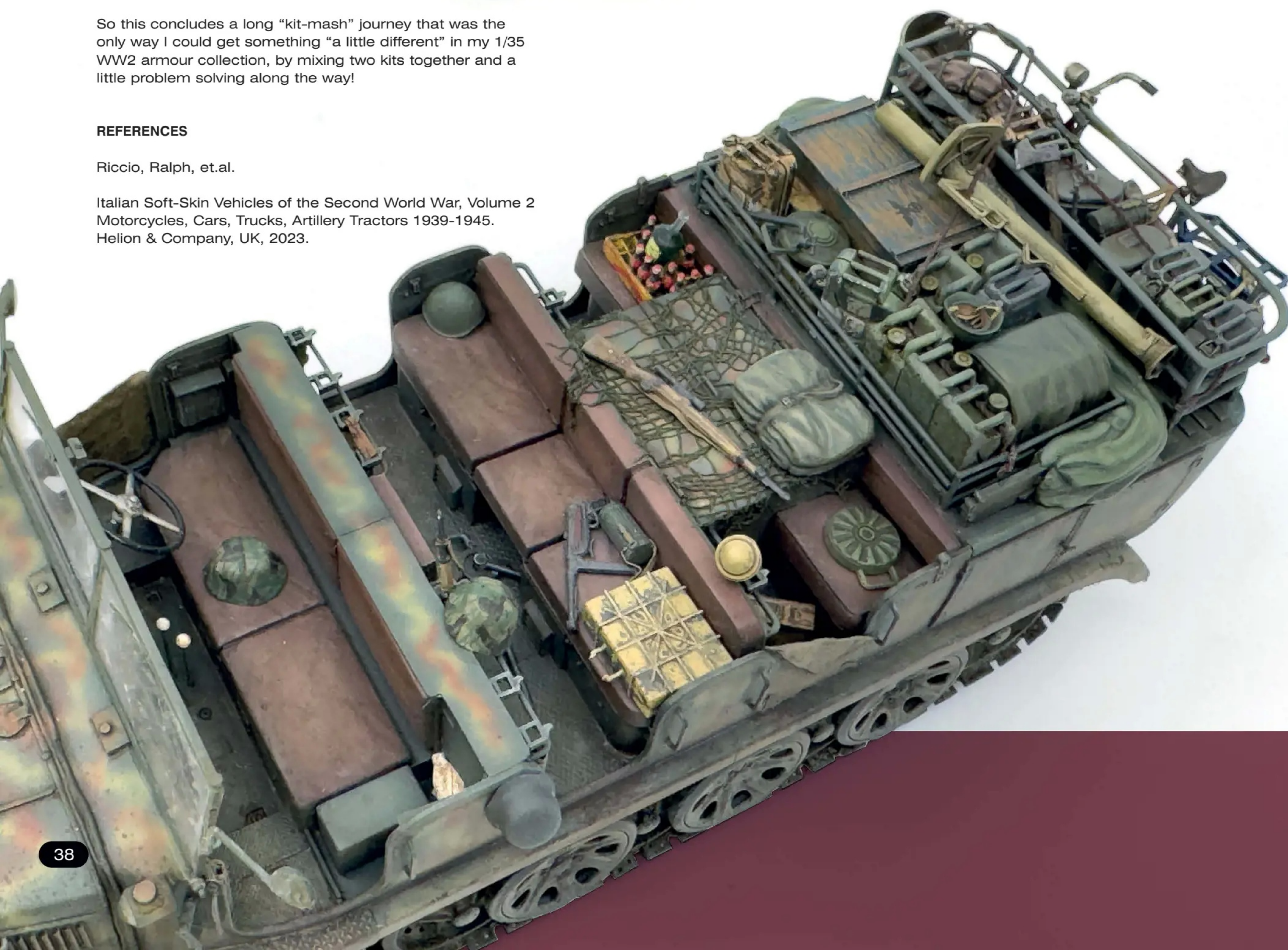
CONCLUSIONS

So this concludes a long “kit-mash” journey that was the only way I could get something “a little different” in my 1/35 WW2 armour collection, by mixing two kits together and a little problem solving along the way!

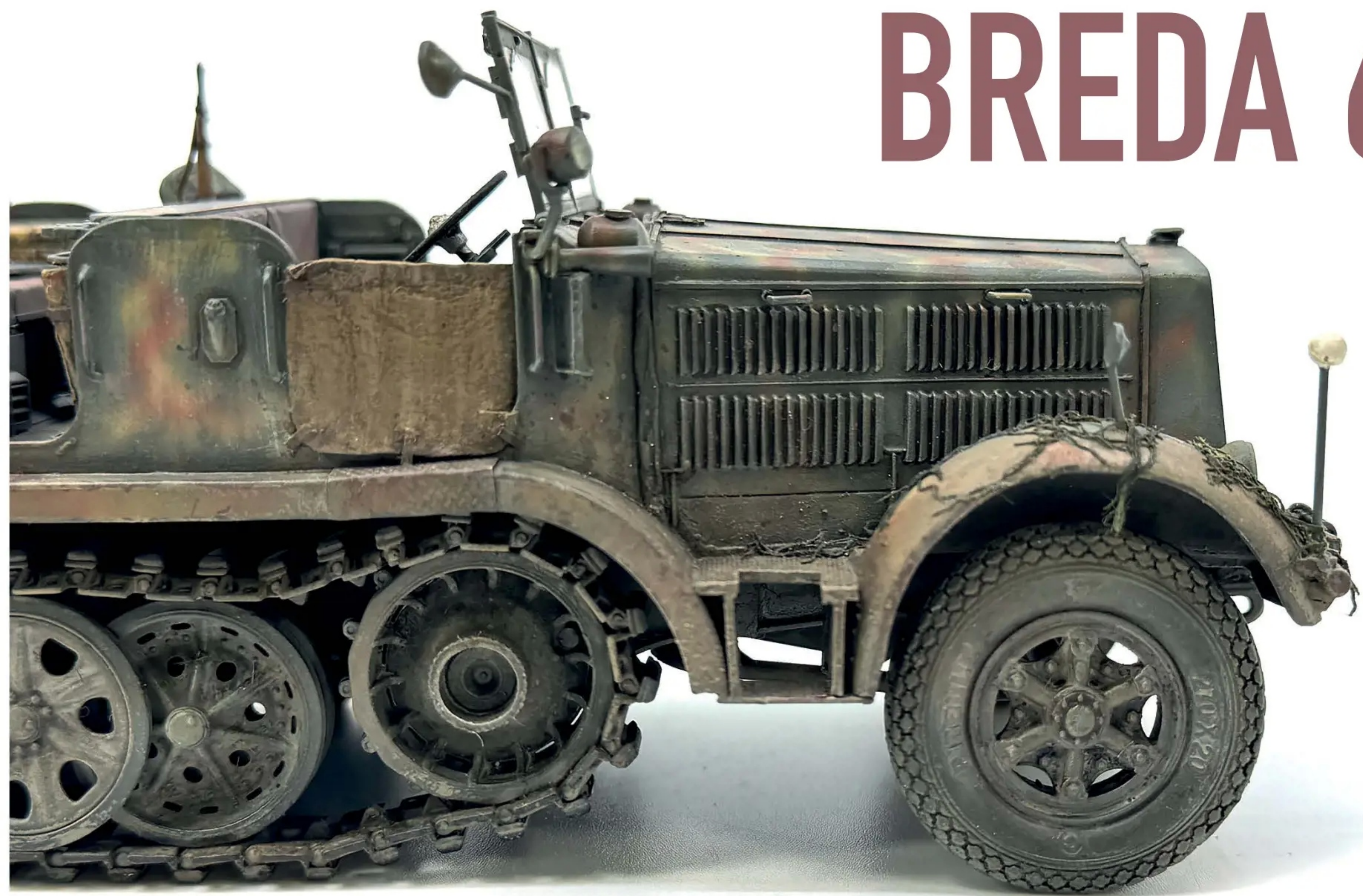
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Italian Soft-Skin Vehicles of the Second World War, Volume 2
Motorcycles, Cars, Trucks, Artillery Tractors 1939-1945.
Hellon & Company, UK, 2023.



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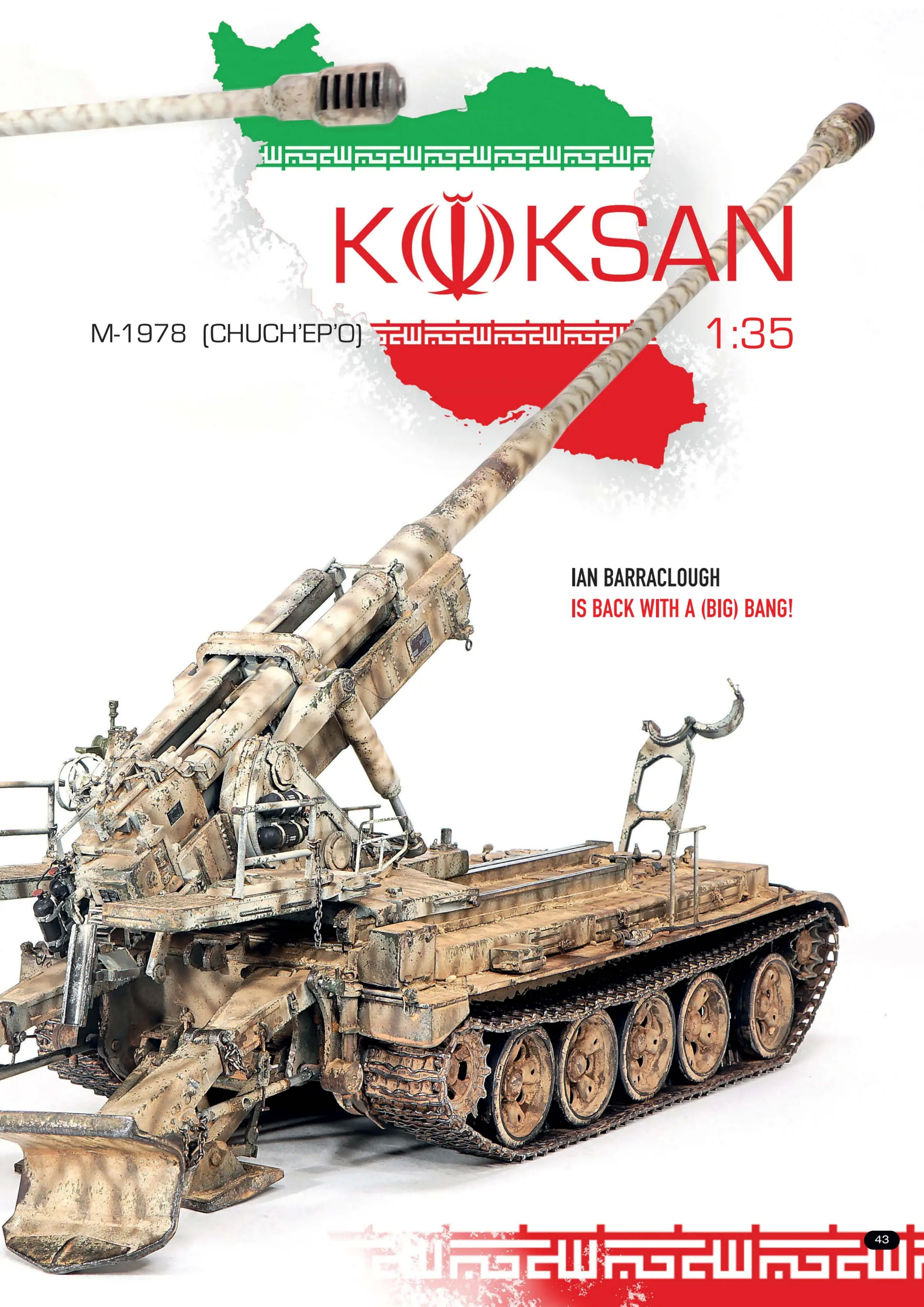
The North Korean Chuch'ep'o (rough translation - Cannon) was first observed in the North Korean district of Koksan in 1978, resulting in US military analysts naming it the M-1978 Koksan; although it is suspected that its in-service date may have been as early as 1973. The system uses an impressive 12 metre long, 170mm rifled gun (approximately L70 calibre) on a Type 59 hull. An upgraded M-1989 Koksan uses the same 170mm gun and mount but is based on a heavily modified AT-S tracked artillery tractor (see Alex Clark's fantastic 1/72 build in AFV Modeller Issue 137).

As is common with North Korean military equipment, information on the Koksan is scarce. It is thought that the gun may have

been developed from the German 17cm Kanone 18, although the appearance of the gun closely resembles the Japanese Type 96 17cm Cannon, which were sited as coastal defences in Korea at the end of WW2 and may have been recovered and copied.

The Type 59 (T55A copy) hull is suspected to have been bought in batches from China and is modified with a plate mounted over the turret opening, new fuel cells fitted to the right-hand fender and huge hydraulically operated spades are fitted at the rear of the hull for stabilisation when firing. In service the Koksan could hit targets 27 miles (43km) away, meaning it could hit targets comfortably in the Republic of Korea with conventional, rocket assisted (60km range) and possibly chemical rounds.





KOKSAN

M-1978 (CHUCH'EP'O) 1:35

IAN BARRACLOUGH
IS BACK WITH A (BIG) BANG!



In 1978, a number of Koksans were exported to the Islamic Republic of Iran Army (IRIA) and used in Iran's war with Iraq. Although exact details of their use remain unknown, photos of Koksans show them painted in dark green and retaining the North Korean 'Red Star' on the front of the gun mount. Other images also show Koksans painted in sand and green, or sand and brown camouflage, with the red star replaced with the IRIA crest. At least one Iranian Koksans was captured and put on display by the Iraqis, and US forces captured and attempted to recover an Iraqi 180mm 'Koksan' with what seems to be a S-23 artillery gun based on a heavily modified German-made BLG-60 bridge layer chassis. My interest in the Koksan started with images of the US forces attempting to recover the 180mm gunned Iraqi variant – unsuccessfully, resulting in the 'Koksan' being burnt out when the gearbox caught fire.

I realise this isn't a 'Koksan' per se, but it started me off investigating further. There's no model in any scale (apart from some very small-scale wargaming pieces), so not feeling confident and with very limited reference material, I put my interest aside, awaiting Tamiya (...oh please!) or, more likely a resin manufacturer to put a kit together of the Koksan. Fast forward many years and in 2025 I noticed a 3D printed offering of the Koksan for sale on a well-known auction site. I contacted the seller and he pointed me towards his website, Dent-By-Design (DBD), and I was able to buy the 3D files to self-print. I'll say now that there are many inaccuracies with this initial model, although the designer is in the process of addressing these and will rerelease the corrected files once available (for free to those who have already purchased the first design). The set comes as Stl files for home printing and a colour instruction pdf document.



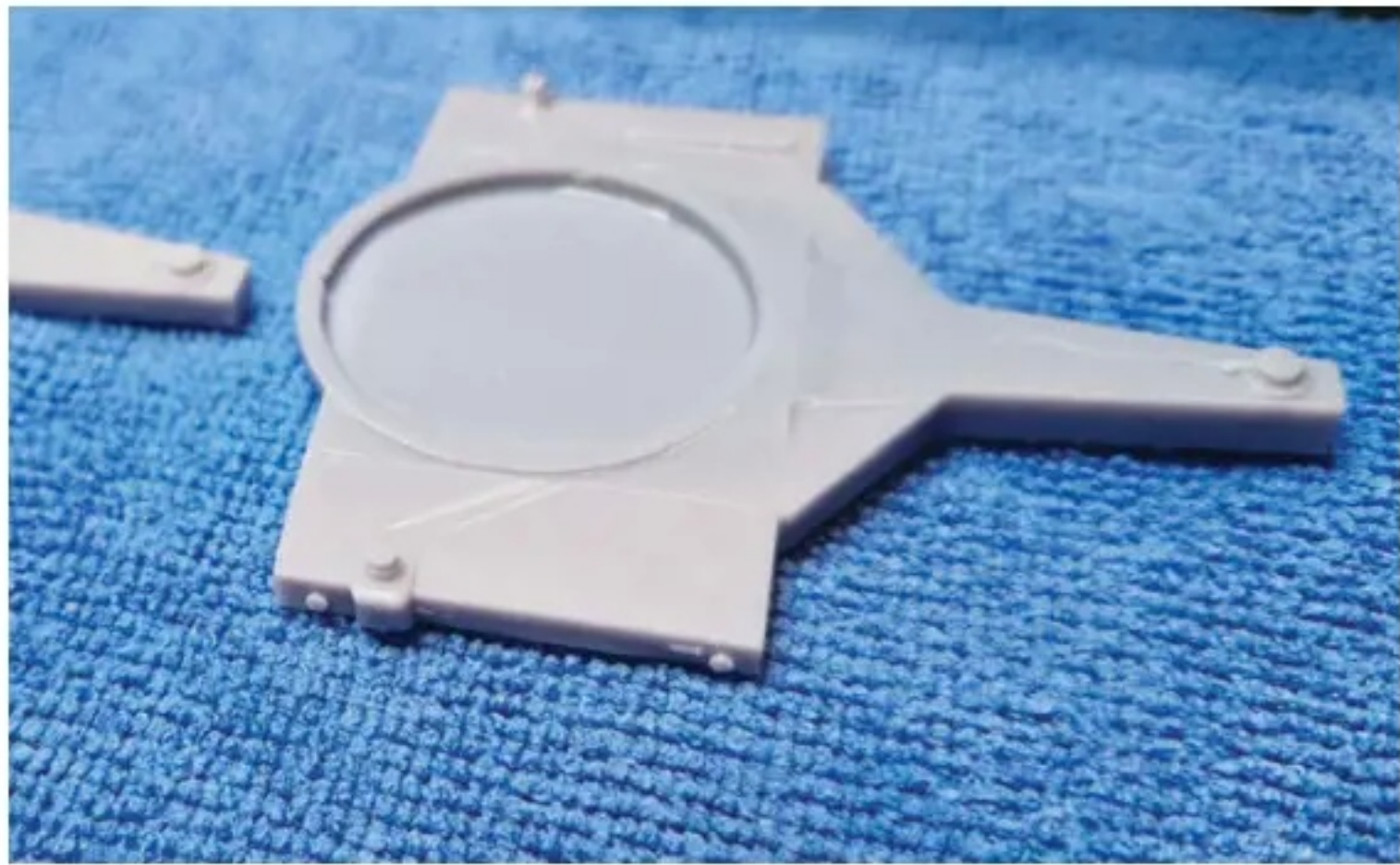
Measuring up the 3D printed parts from DBD



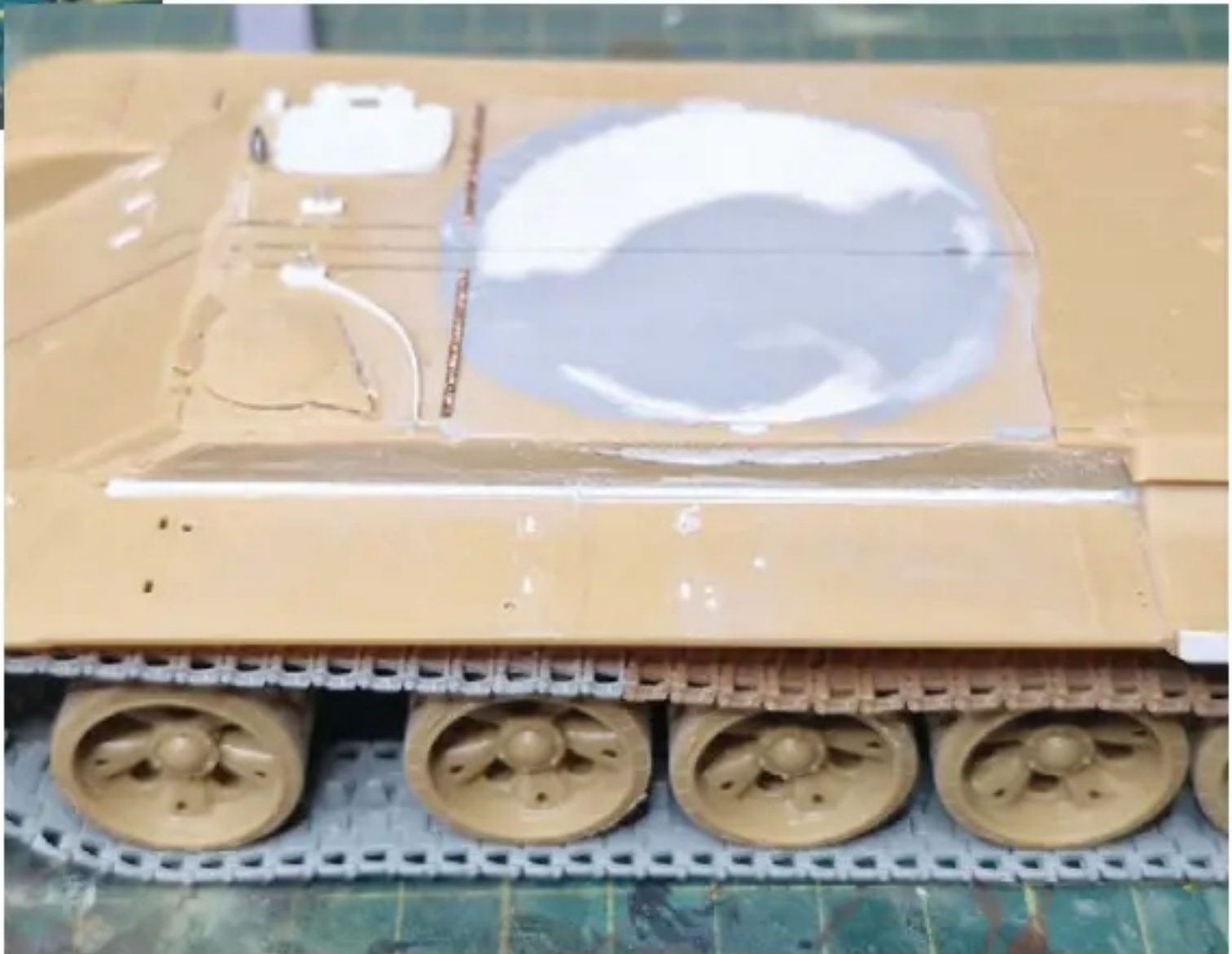
Note the scratchbuilt bracket at the rear of the hull.



Using my homemade track building tool to put the plastic tracks together



The amended 3D printed part on the right with added fillets and fittings



The DBD set includes a 'plug' to fill the turret hole. I used my own plug made from plastic card as the DBD part warped when printing

In addressing the inaccuracies, I was very lucky to be able to rely on Alex Clark, who had already designed many 3D parts for his own 1/72 scale M-1978 and M-1989 models; and Matt Reeves, who had also bought the DBD files and was quick to identify the issues with it. Matt also kindly shared a fantastic workaround of an Iranian Koksans, showing many of the areas I hadn't seen before. I used the Hobbyboss Type 59 kit for the hull, built from the box and using the kit supplied plastic individual tracks. At the hull rear I added the two 3D printed hydraulic spades, upscaled from designs supplied by Alex.

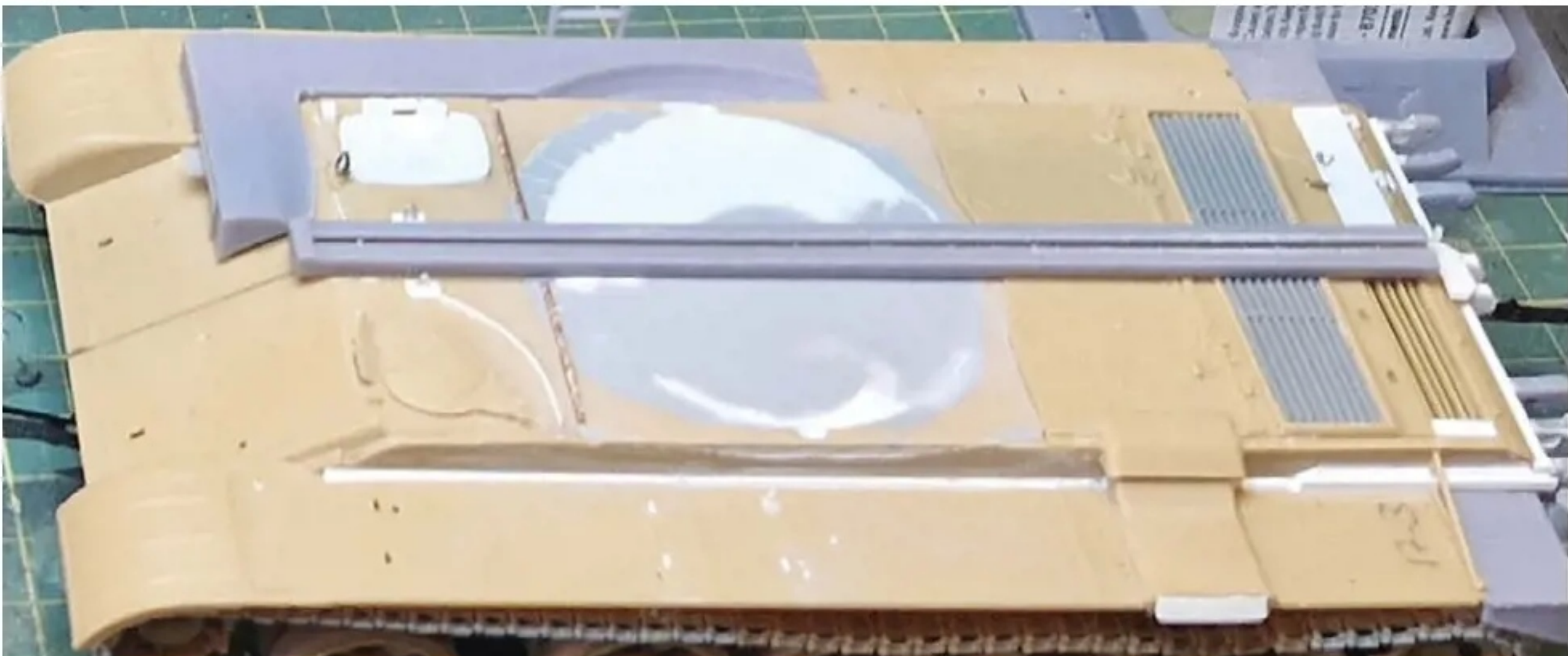
The DBD set incorrectly fits a central rail for the sliding gun frame all the way across the engine bay. In reality this stops short of the engine deck at the back of the aforementioned square plate. For the other fittings I used a mix of the DBD parts and files shared by Alex, as well as the 'old school' skills of scratchbuilding.

Alex's parts trump the DBD parts in accuracy; and I placed these in their correct positions on the outside of the rear hull plate. I drilled out all hinge points and used brass pins so that the spades folded as per the real thing. There's also a central spade in this area that also folds upwards, not supplied in the DBD set. I designed this myself using Tinkercad and 3D printed it. On the top of the hull, I filled the turret opening with a round piece of plastic card although there's also a square plate fitted over the top, so this isn't strictly necessary.

The gun itself is built up of 3 main assemblies. Excuse my use of incorrect terminology, but there's a sliding frame which moves on the 3 rails: forwards for travel and rearwards for firing. Into this slots the gun carrier frame. In reality this can rotate but is usually locked into the forwards position by two bolted brackets - I'm unsure why the need for the rotation, as I'm certain it could never fire in this configuration. Into the carrier frame, the main gun itself is mounted, allowing for elevation. There are two handwheels on the left- hand side of the gun for elevation and traverse, as well as compressed air (gas?) bottles - I believe these are used to assist with elevation (?).

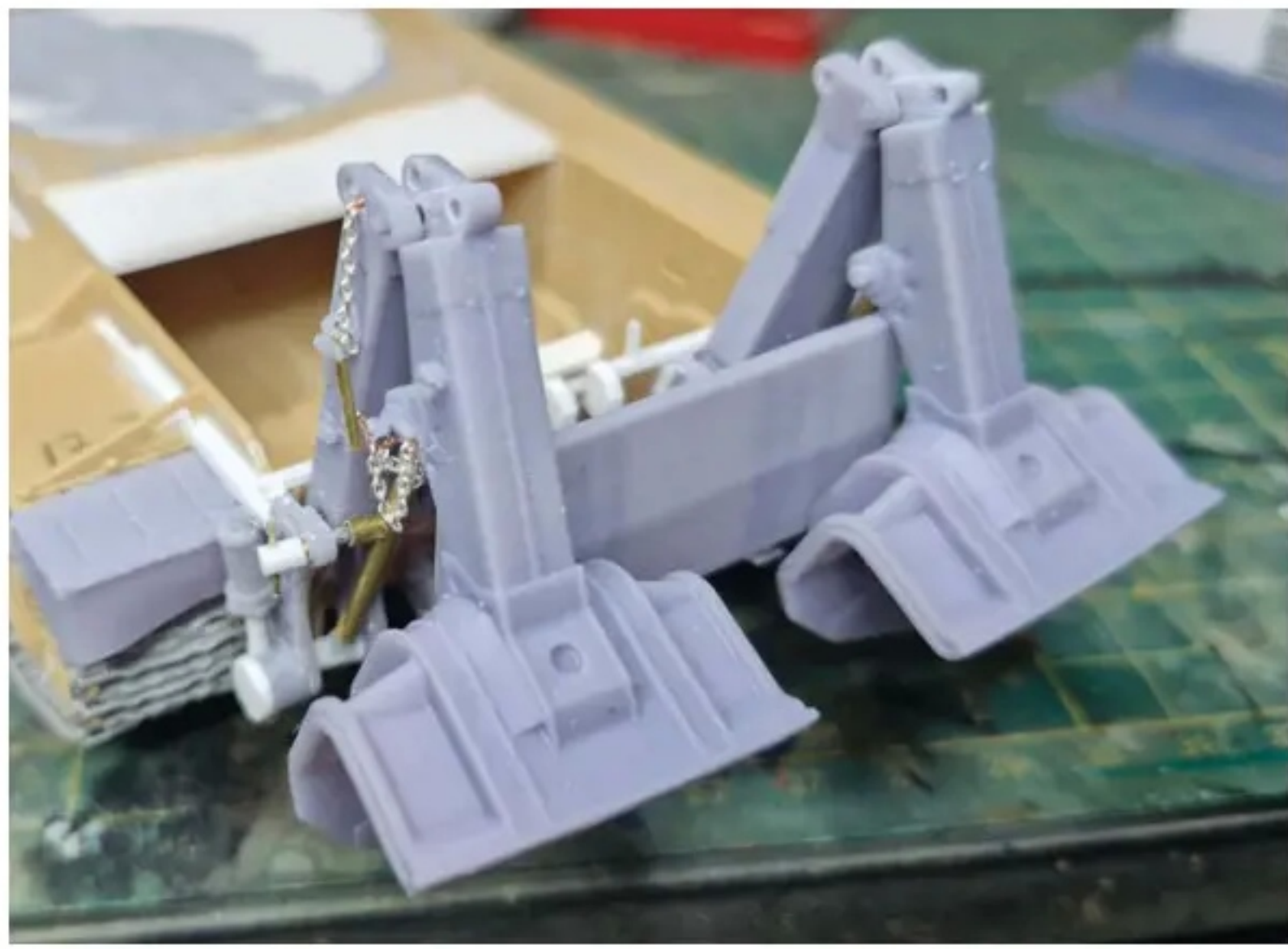
used the 3D spades and fittings kindly provided by Alex Clark

The DBD central rail is too long and should stop forwards of the engine deck.

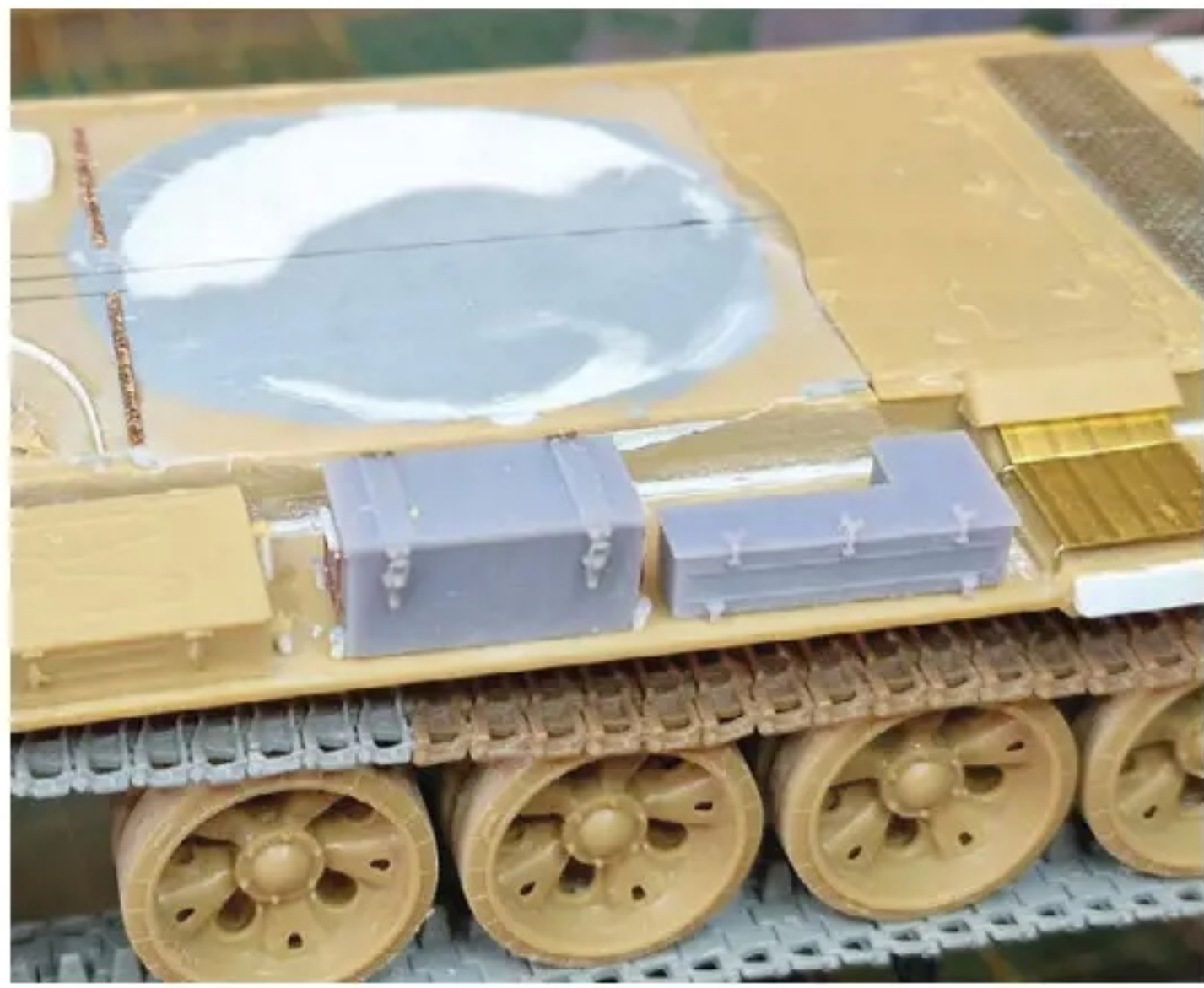




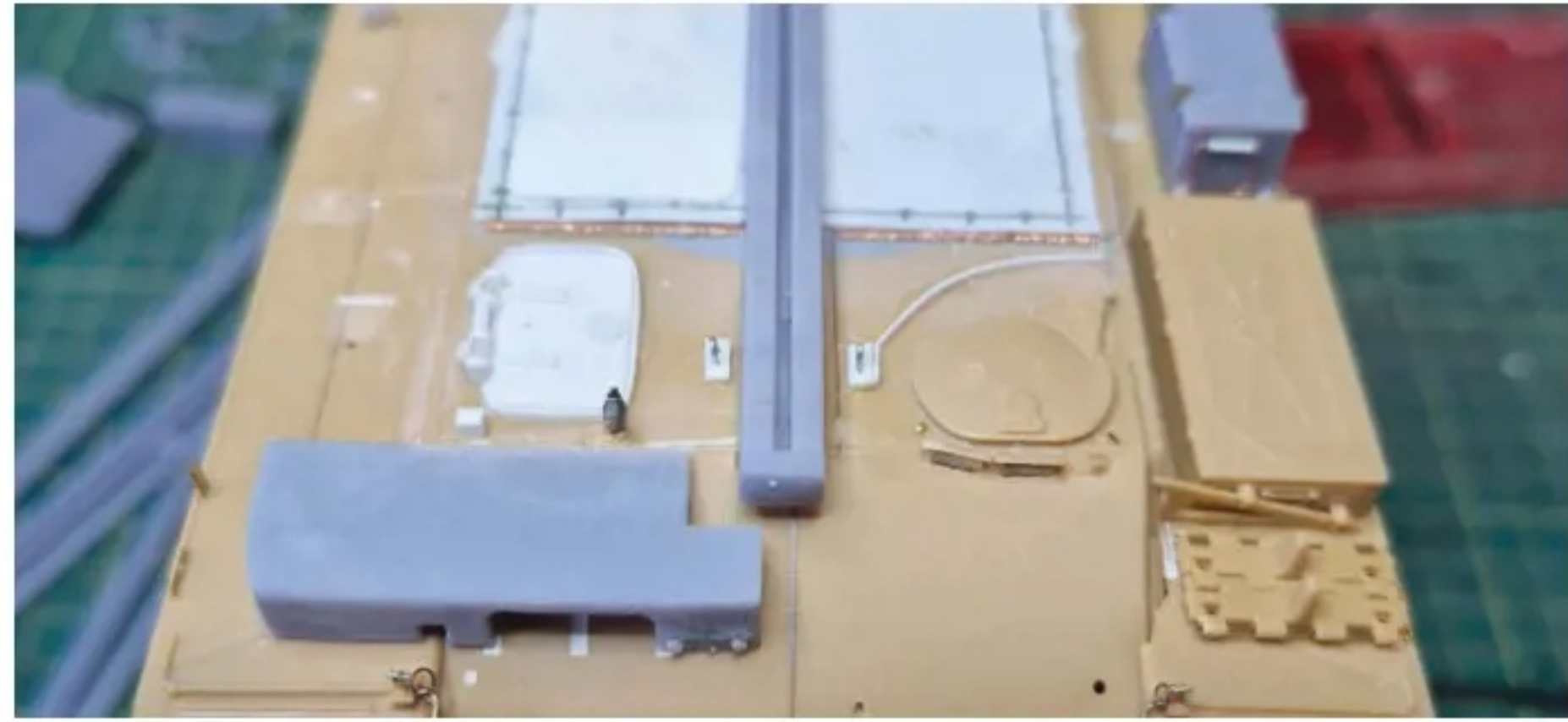
I drilled out all of the pivot points so that the spades can fold as per the real thing



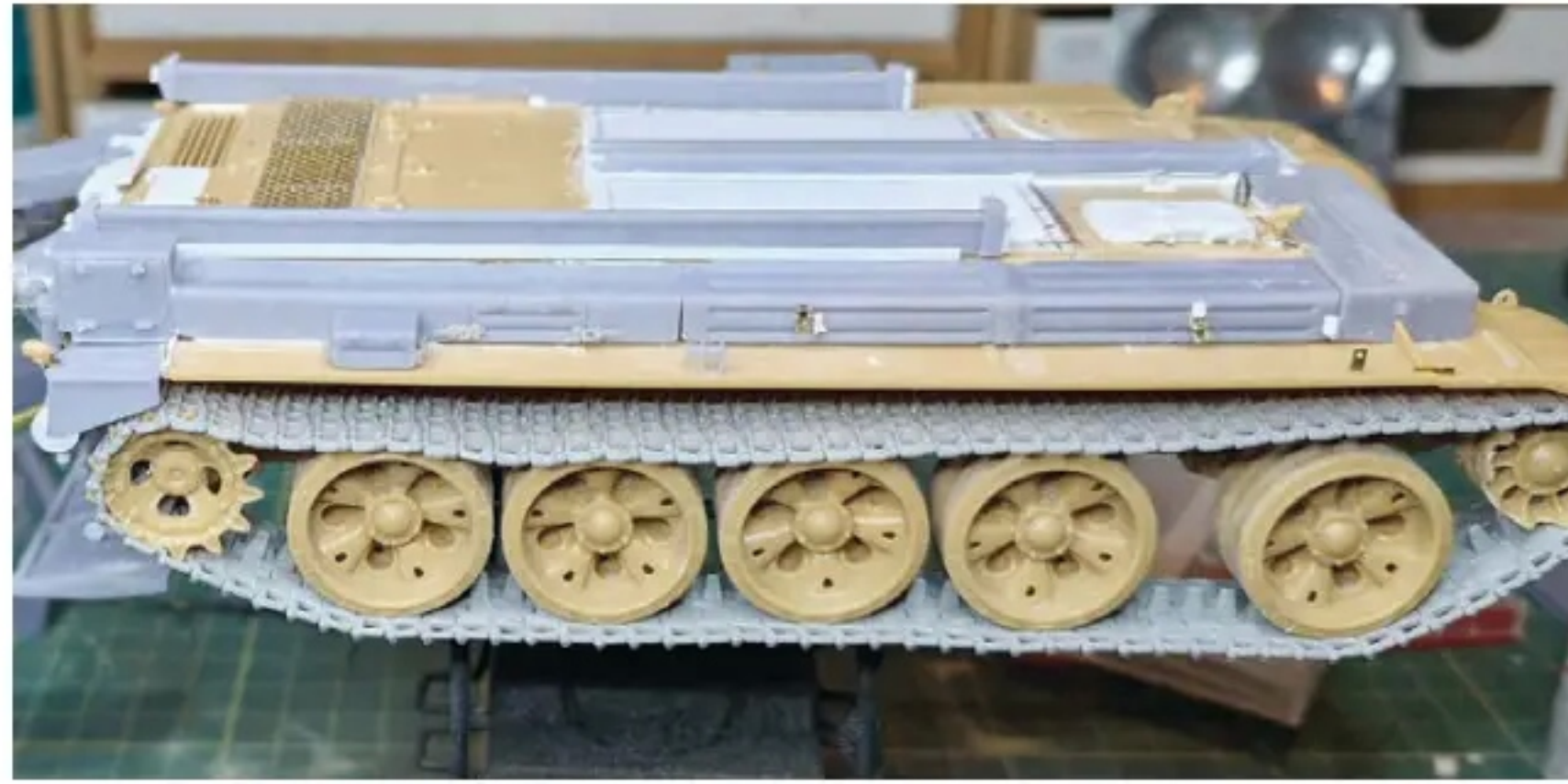
I added micro chain to the retaining pins



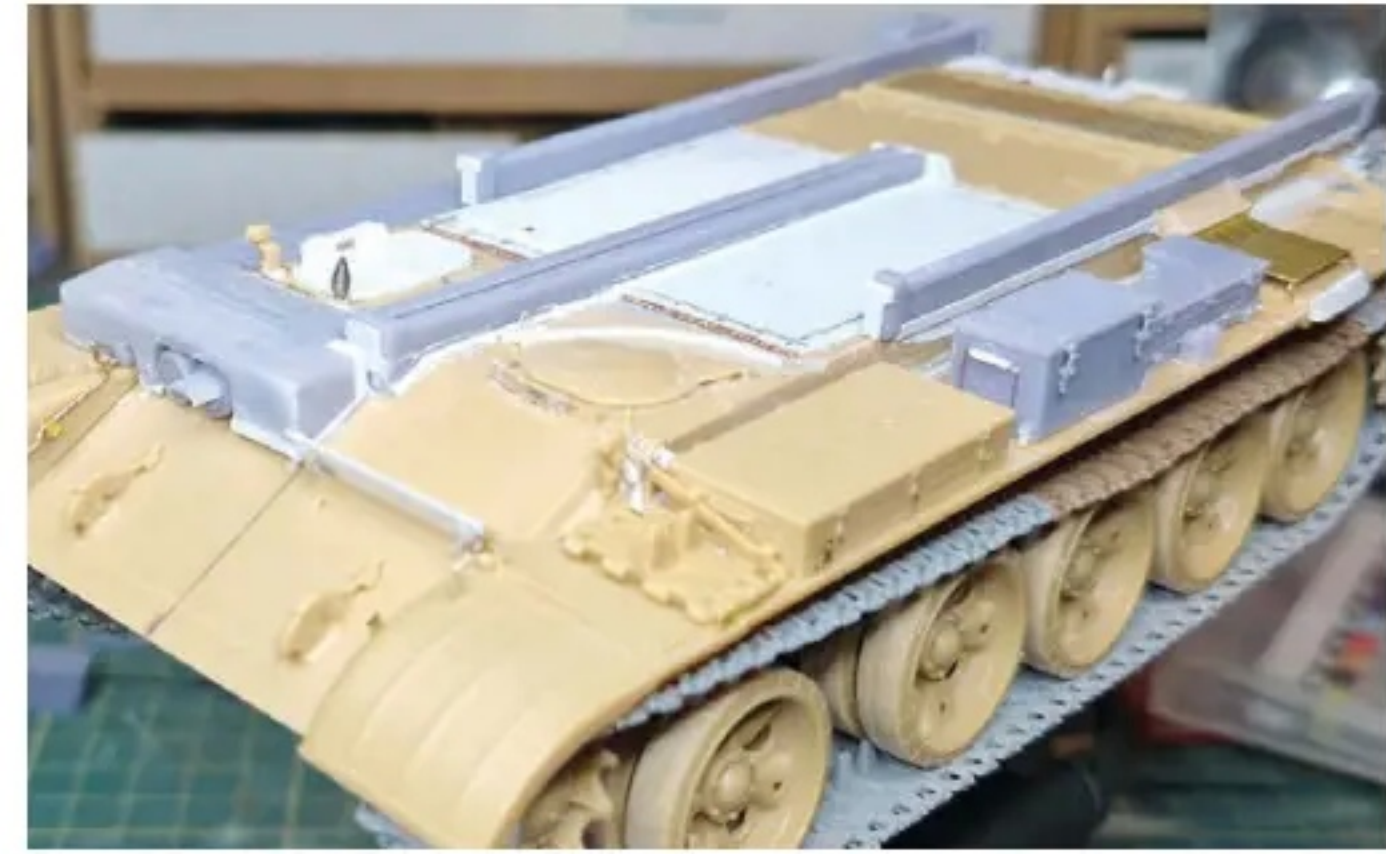
I used the boxes from the DBD set.



The correctly proportioned central rail. I've also added the large square plate of the turret hole here and the complex shaped front fuel tank over the front lights



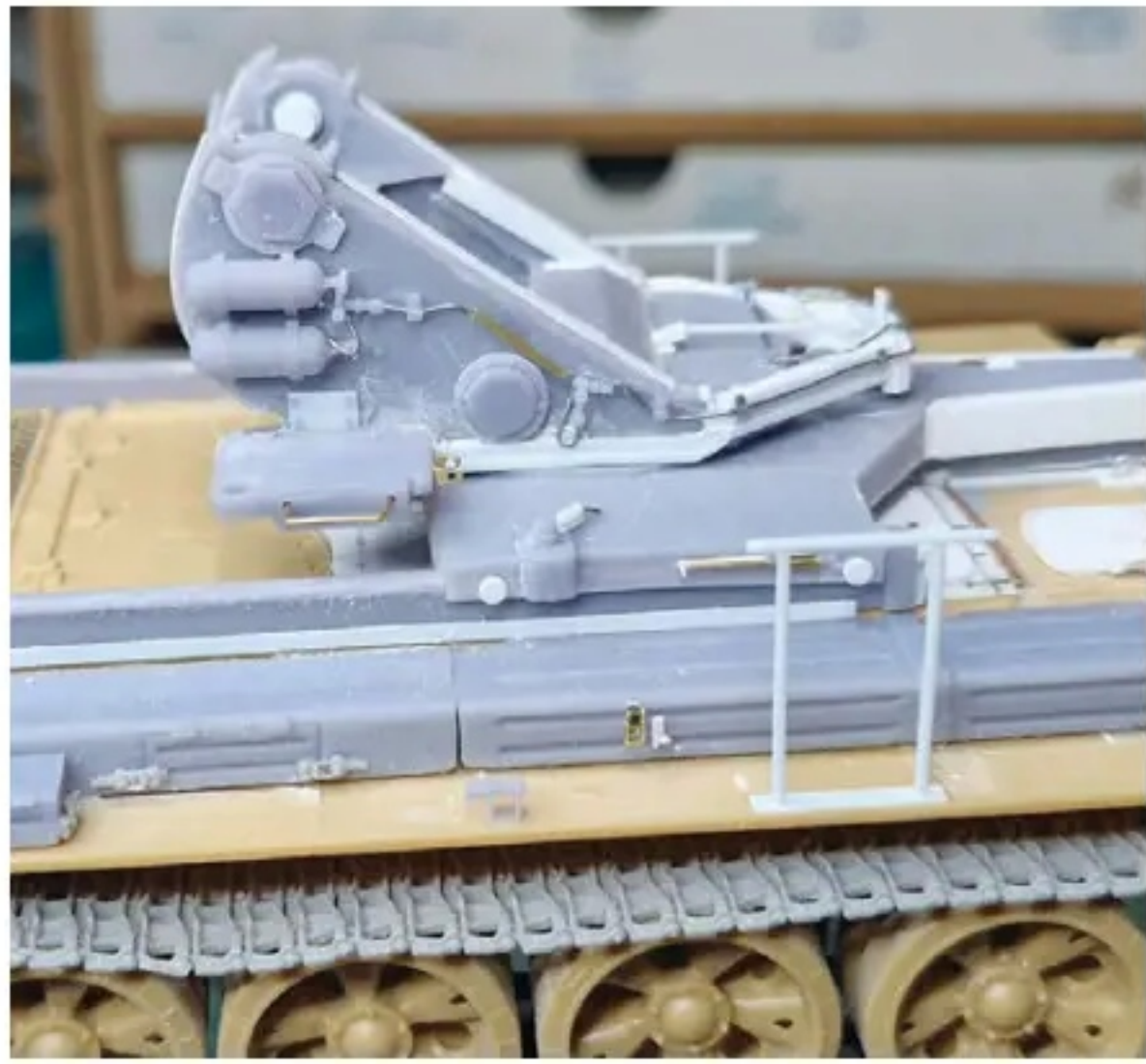
The long fuel tanks along the right hand fender



The double rear rails added. Much test fitting was needed to ensure the sliding frame fitted and slid easily



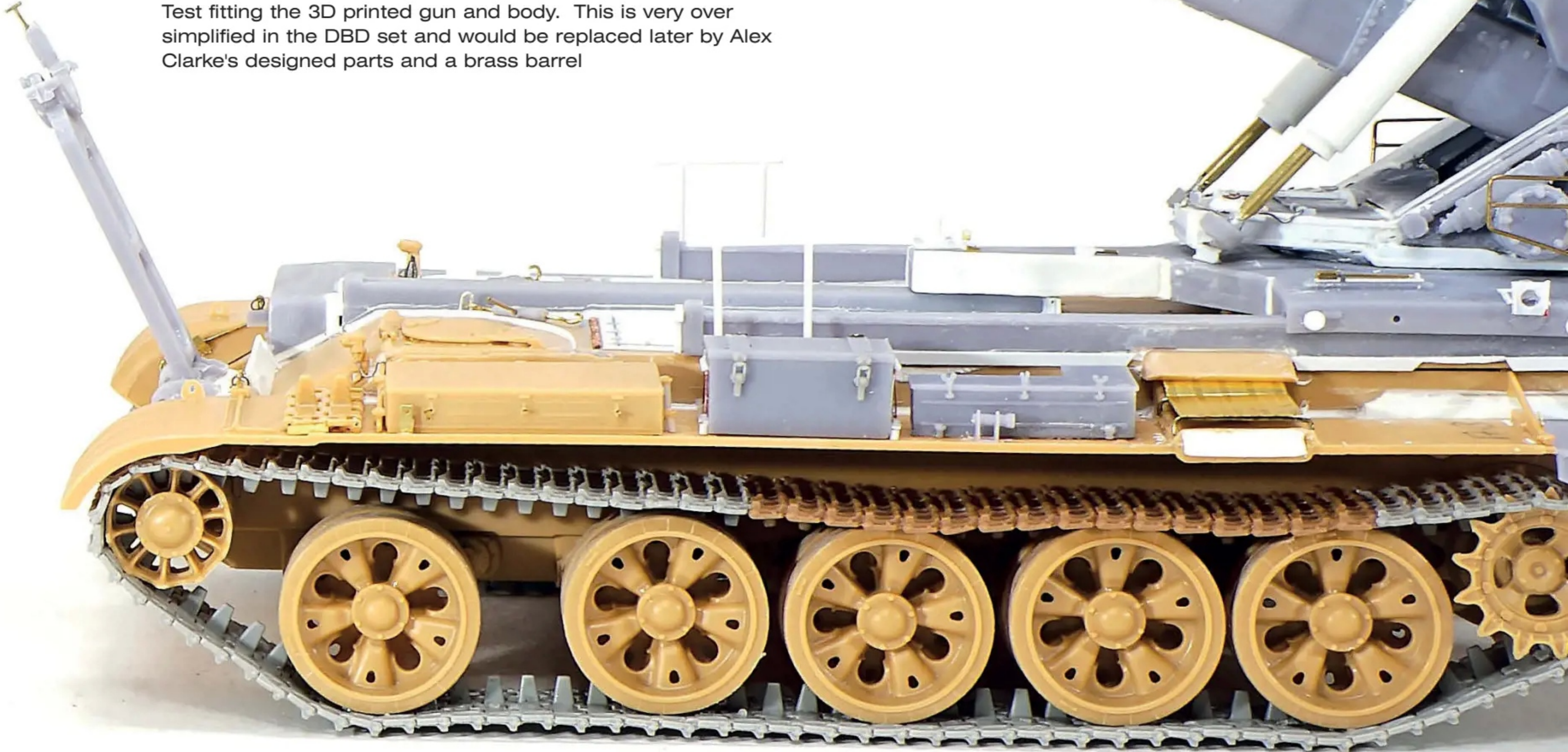
The heavily modified sliding frame and gun cradle. The massive gun locking device is also now fitted to the front hull

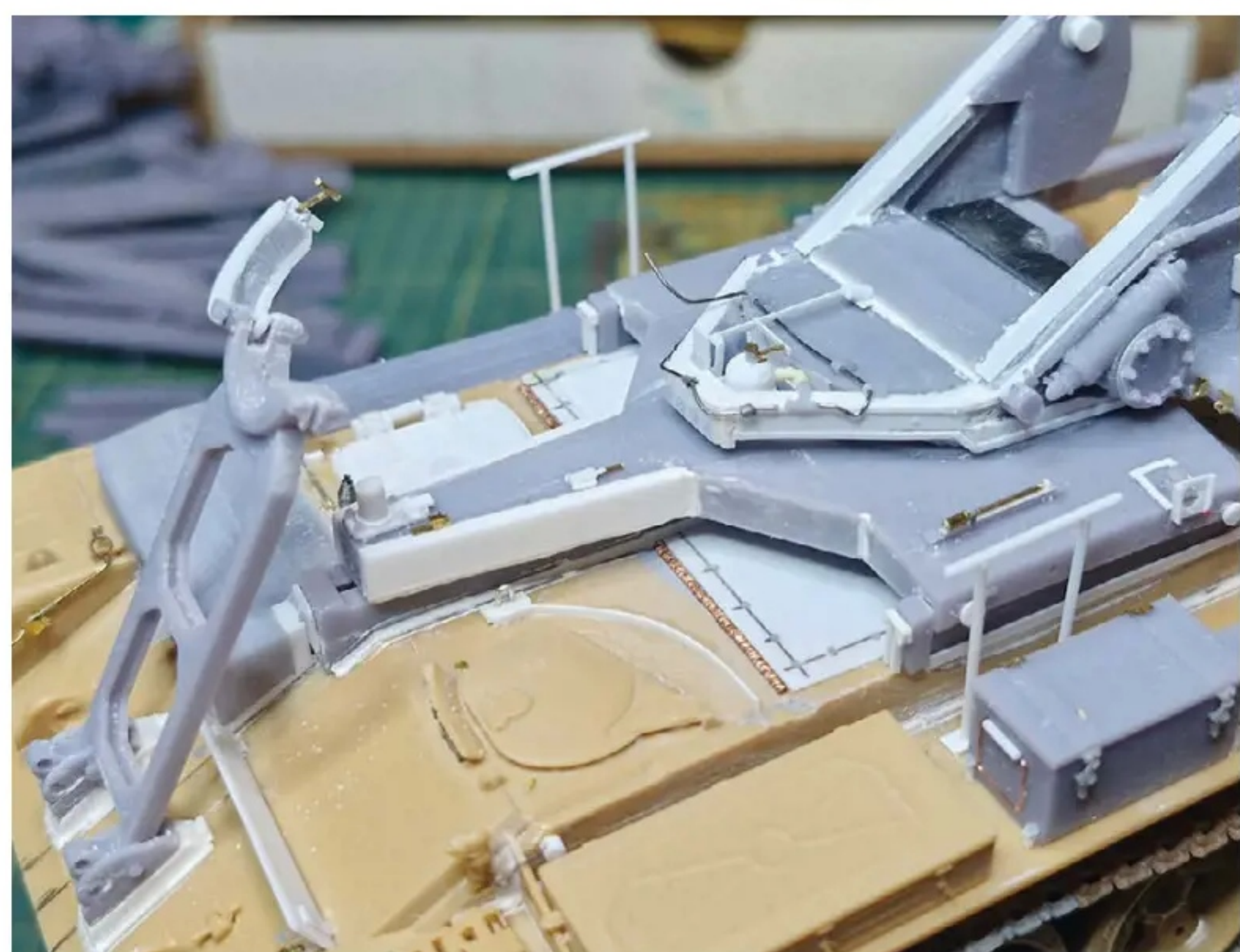
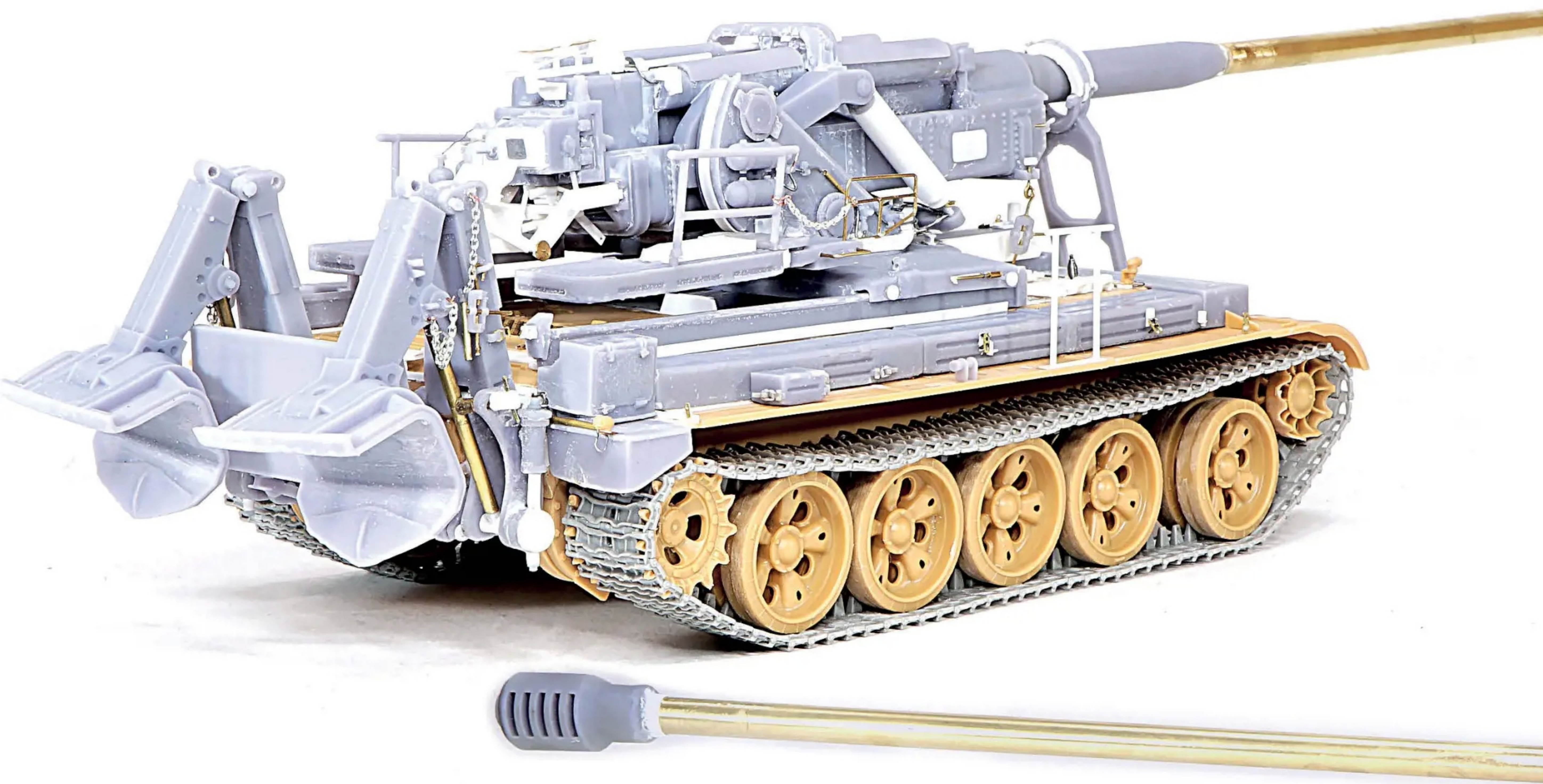


Right hand side. The handrails were knocked off at least 50 times!

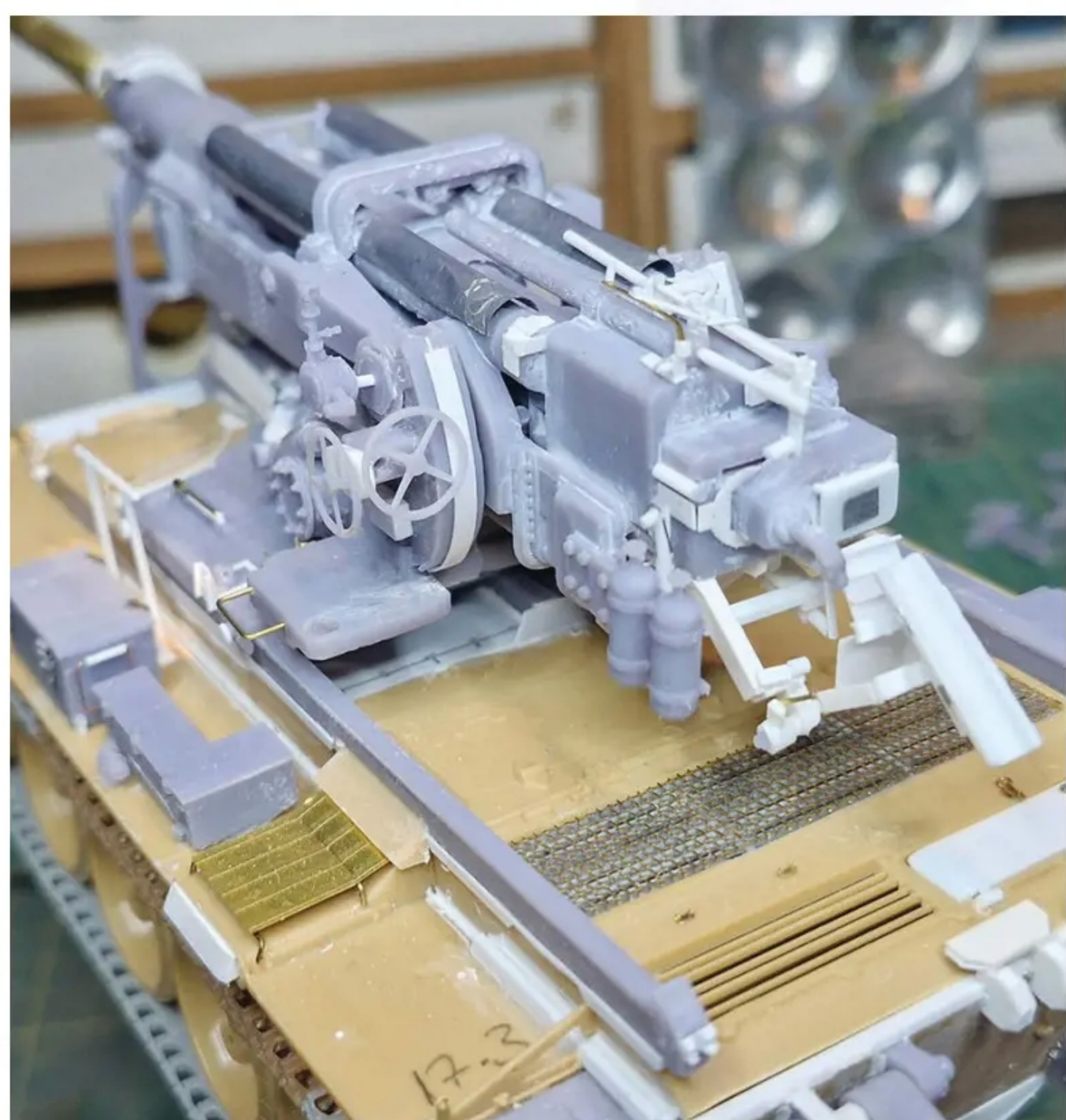


Test fitting the 3D printed gun and body. This is very over simplified in the DBD set and would be replaced later by Alex Clarke's designed parts and a brass barrel

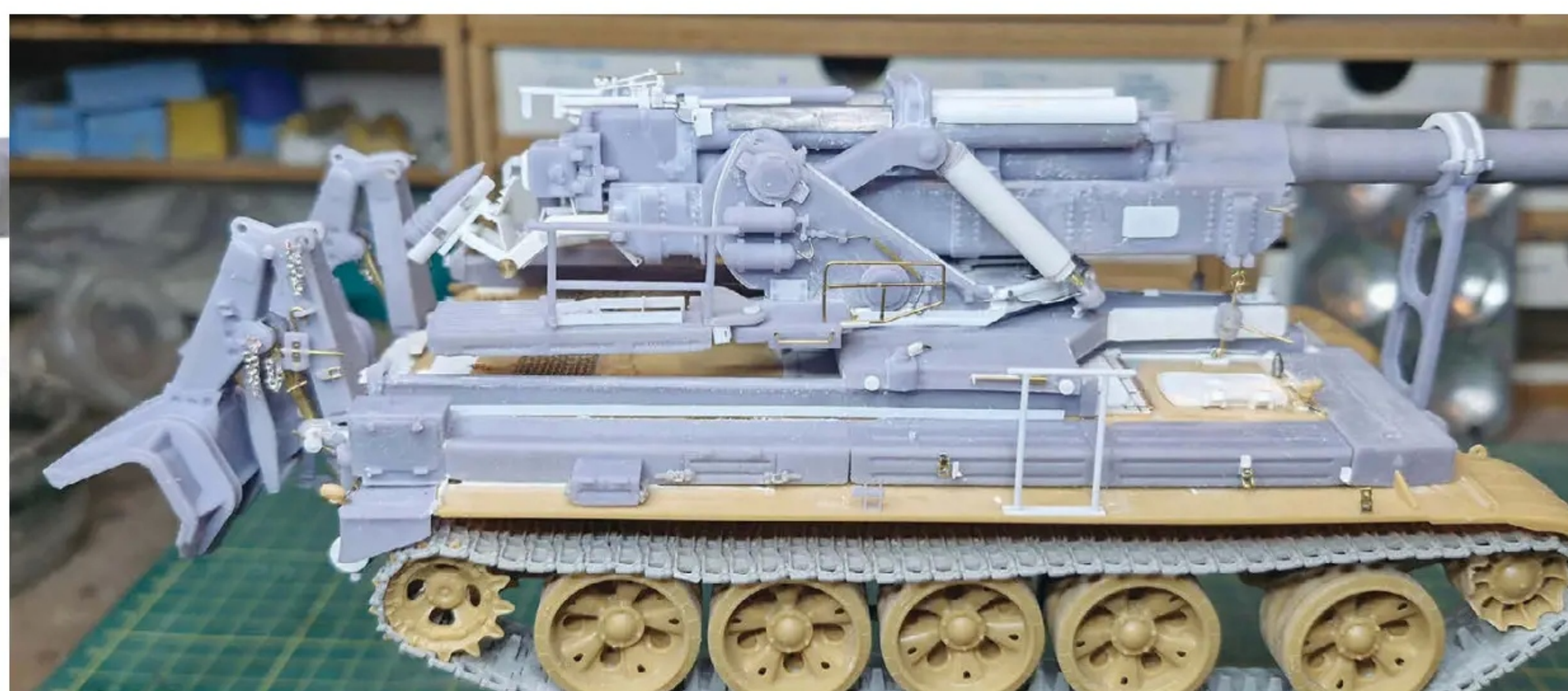




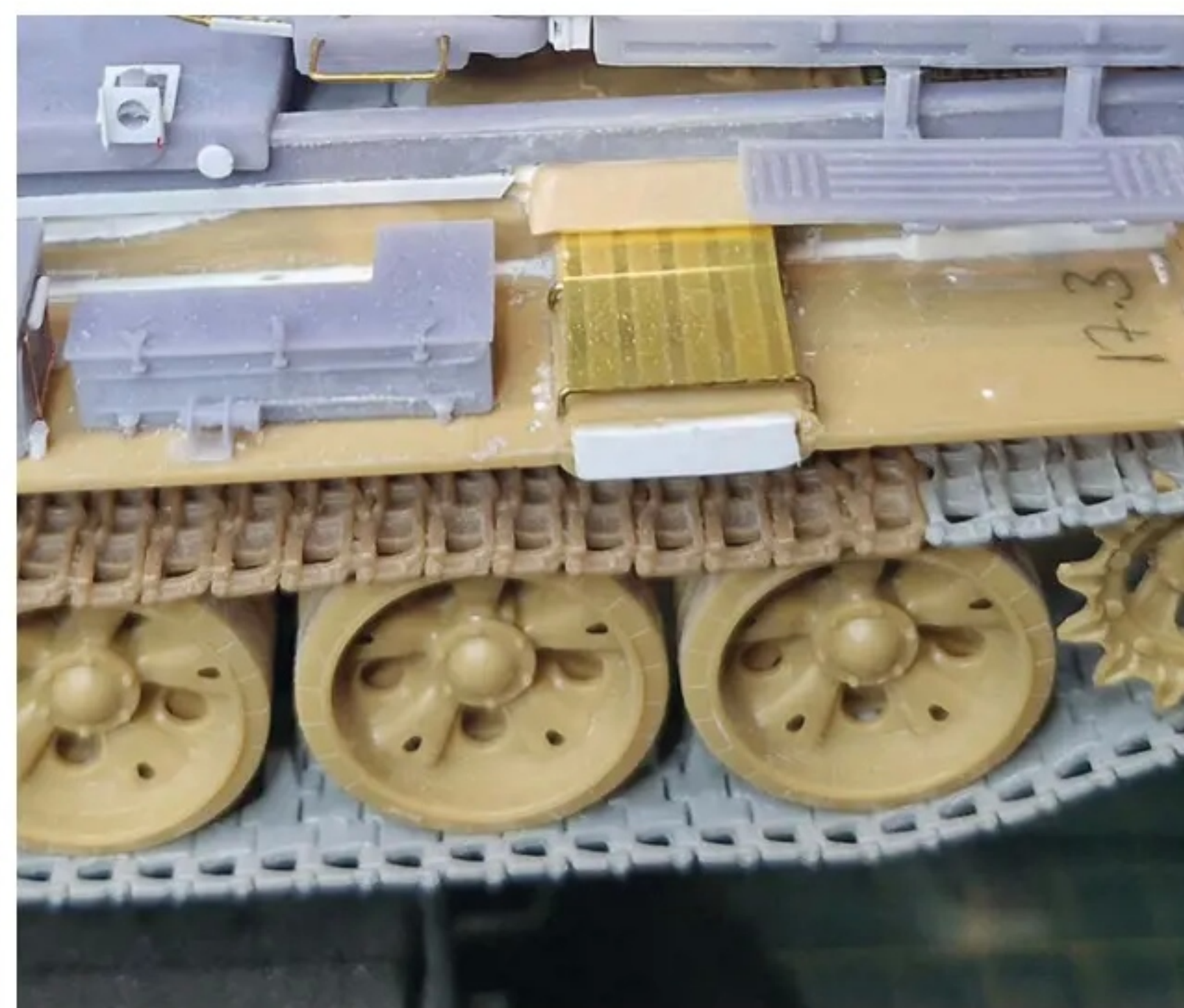
Brass barrel fitted. The item at the rear of the gun breech is a cradle to assist with loading rounds. I noticed that something looked a bit off - the gun barrel was too short and needed to be lengthened



For firing position the gun was slid back on the rails



For travelling the gun was slid forwards. Travel position with spades raised

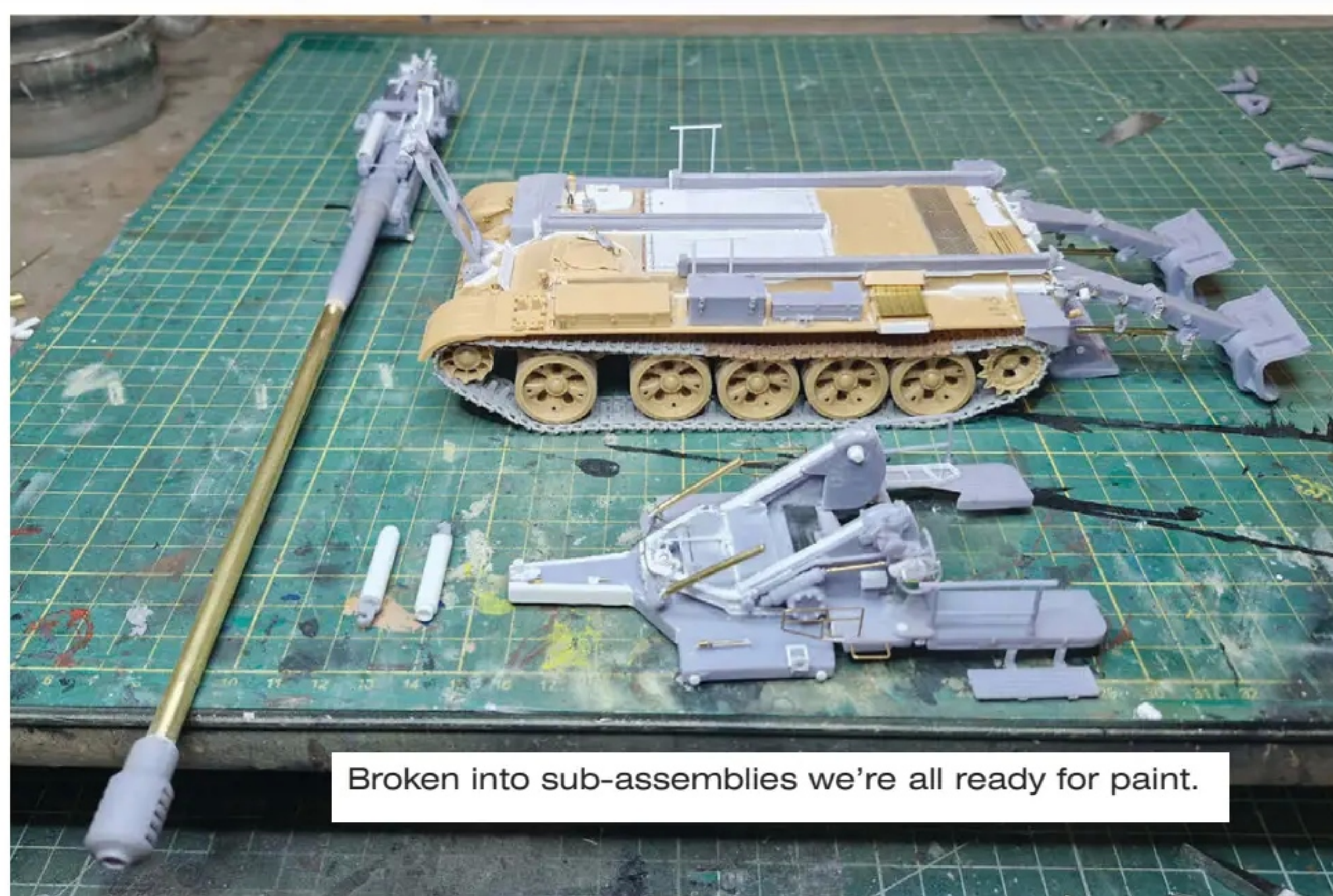
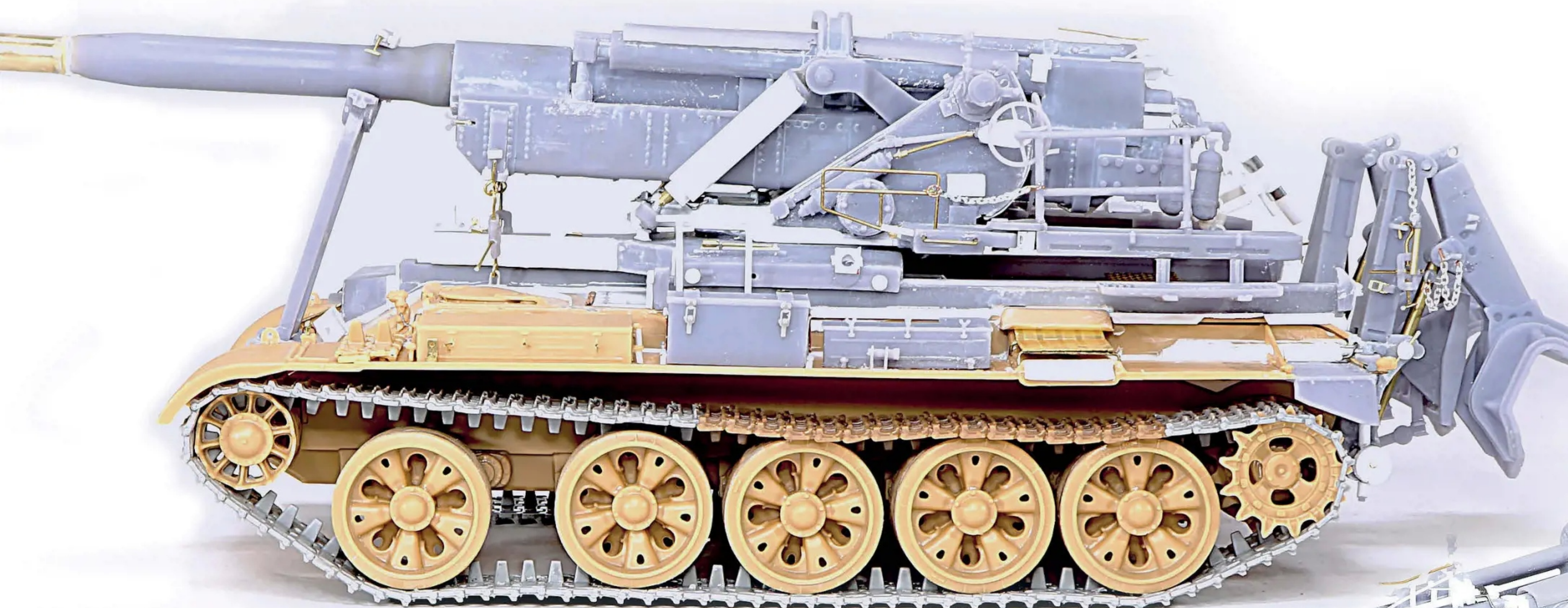


I managed to lose a section of track along the way and had to use some from the spares box

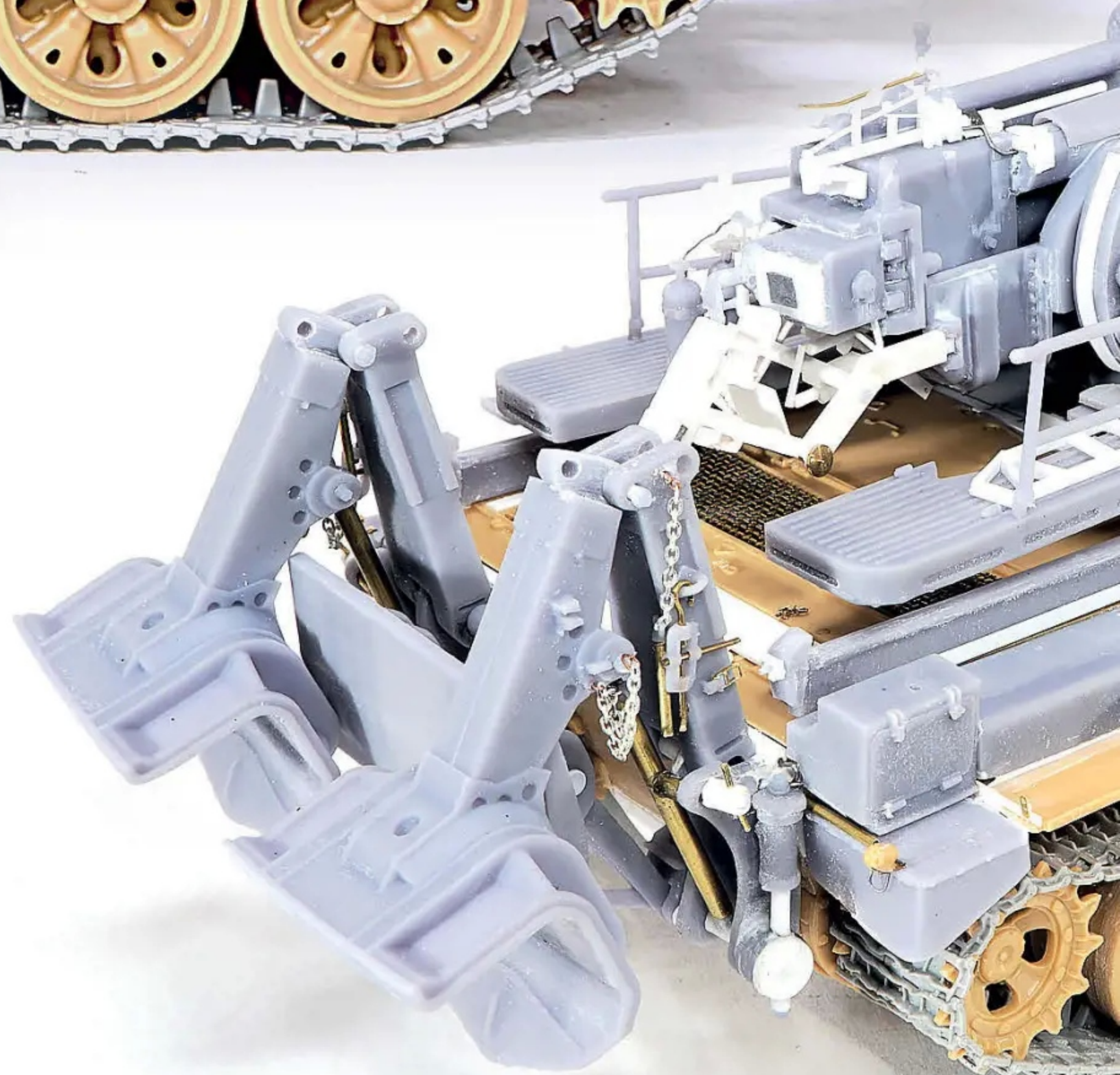
All three parts of the main gun assembly were modified from the DBD set, using both my own 3D design abilities (very limited) and scratchbuilding. Using the images supplied by Matt I was able to add much of the missing details from the DBD set and modify parts to better represent the real vehicle. For the main gun I replaced the resin barrel with a length of 6mm brass rod. Initially I miscalculated the length, so later had to remove the barrel and refit a longer one (cue the double entendre).

For painting I left the model in 3 main parts: the hull, sliding frame/carrier frame and the gun itself. After a soapy bath (resin sanding produces a lot of dust) I primed the model in flat black.

It was my initial idea to paint the model in dark green, with a thick coat of red-brown dust typical of the Iranian landscape, but after some testing of colours decided that this was too bland. Matt's workaround machine had a great scheme of sand and brown, but Alex had already done this finish on the M-1978 in 1/72 scale; and there was no way I could match his amazing finish. Some more internet scouring resulted in a sun-bleached image of a Koksan driver in a fine striped pattern of sand and brown – this was exciting enough!

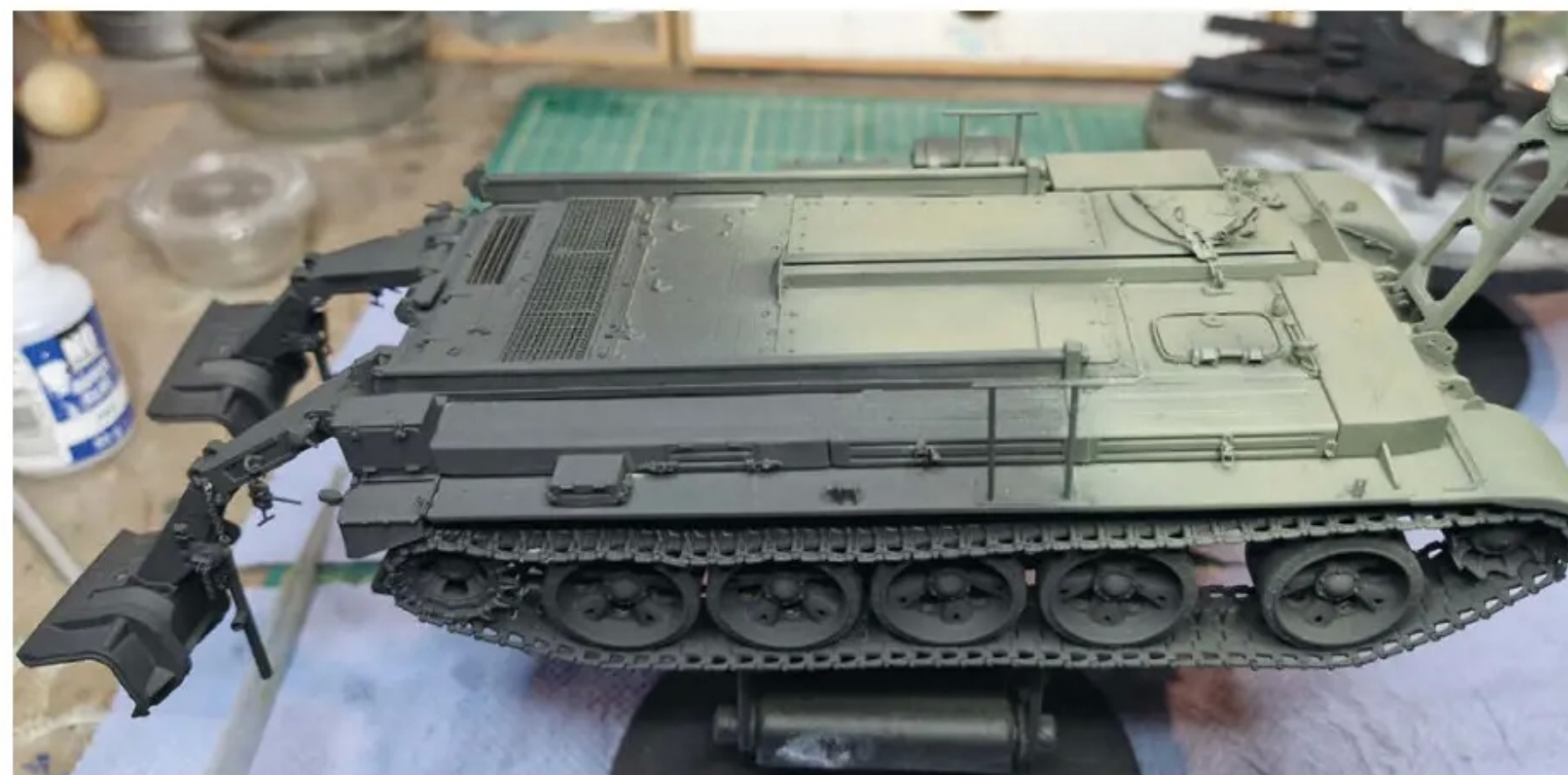


Broken into sub-assemblies we're all ready for paint.





Primed with matt black from a rattle can



It was my initial idea to paint the model in dark green



On reflection I decided to go with a sand and camouflage scheme



A fine wavy pattern was added with heavily thinned Vallejo Green Brown



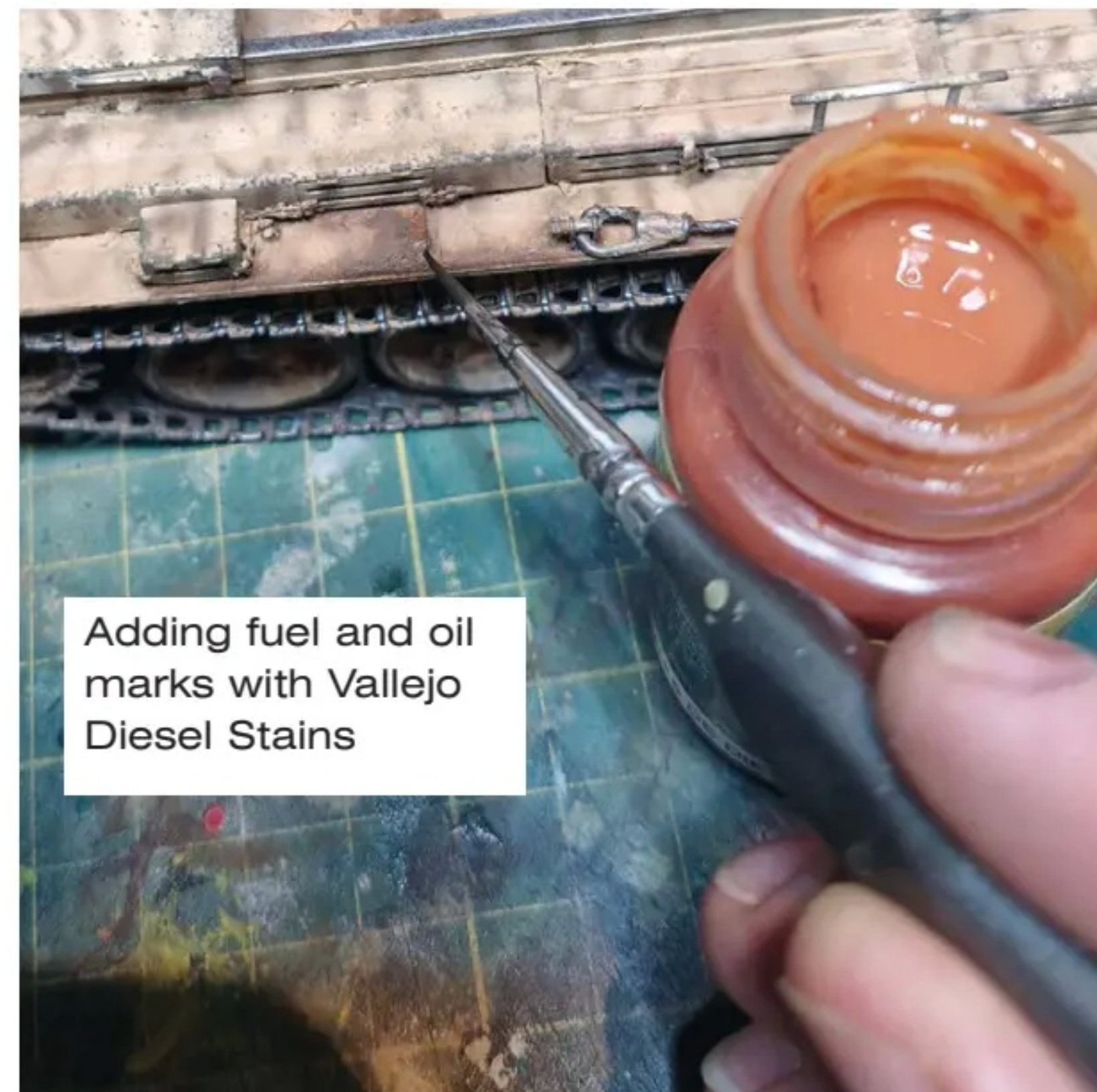
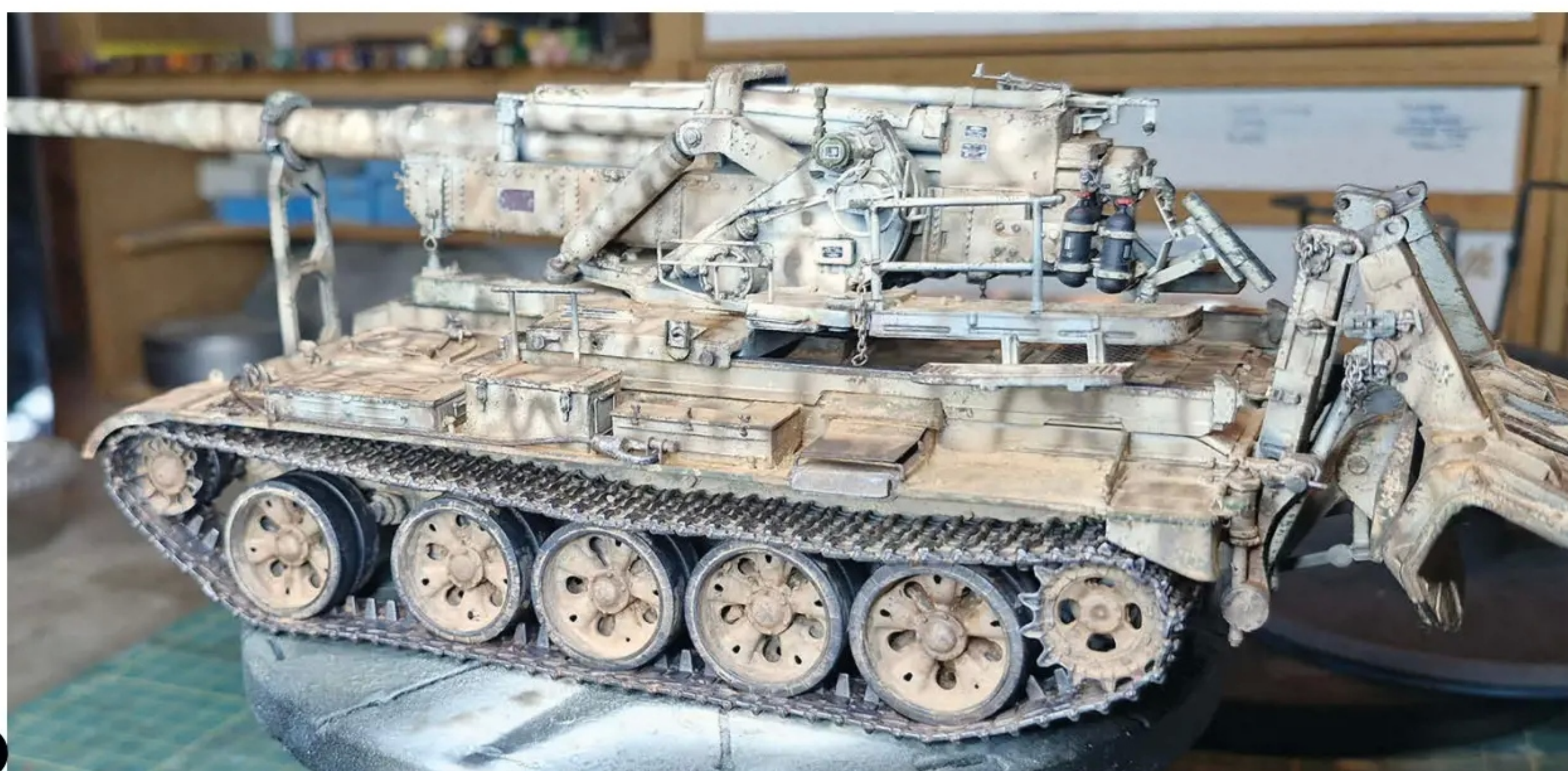
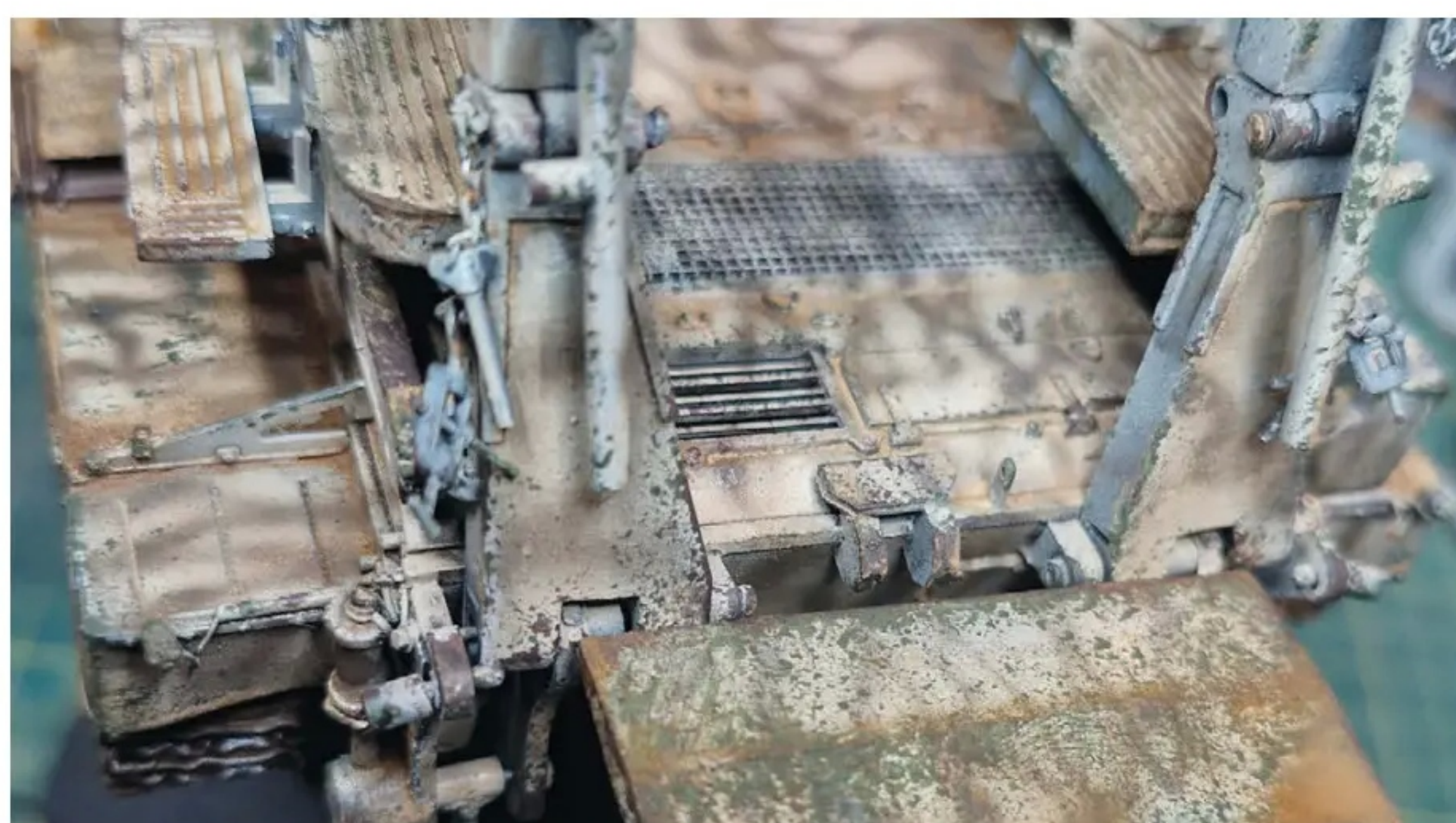
Colours on tracks and wheel handpainted



Chipping added with dark greens and a sponge



Weathering powders heavily watered down were added across the model



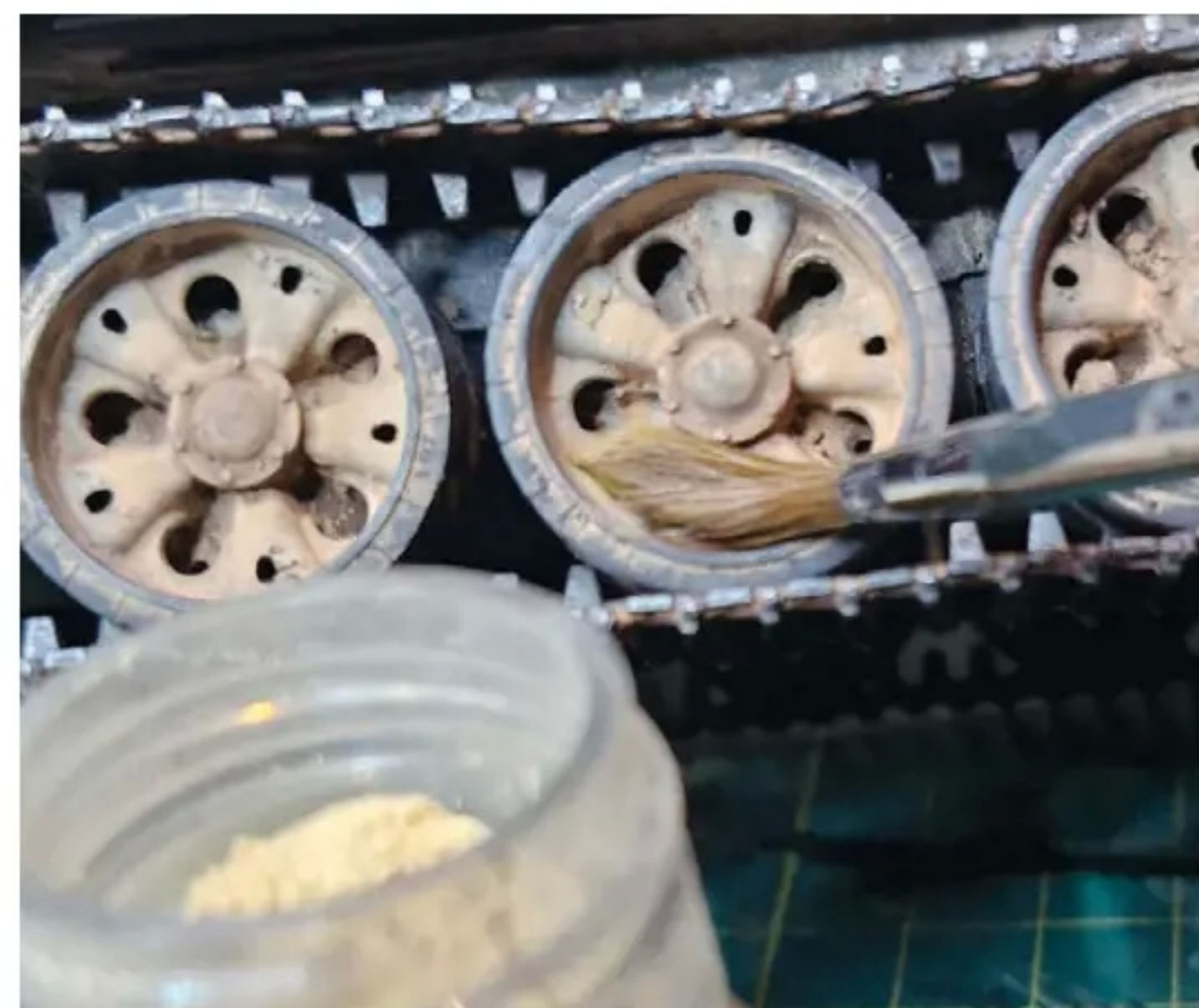
Adding fuel and oil marks with Vallejo Diesel Stains



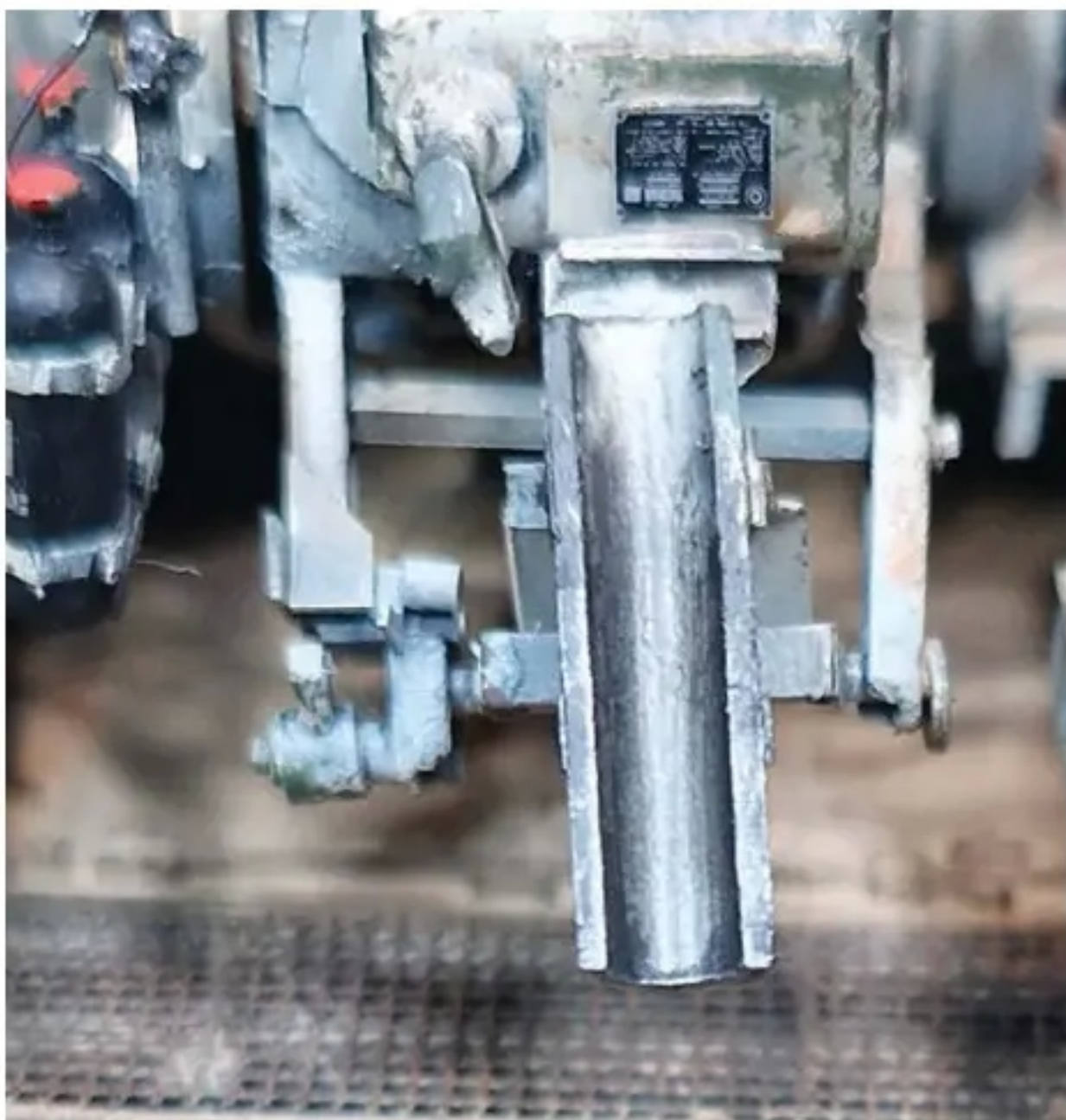
Adding bright worn metal effects to the tops of the rails.



Adding rust to heavily worn areas using a sponge and Vallejo Dark Brown



Adding dust and sand effects to the running gear using weathering powders



Dark streaks added with a sepia watercolour pencil.



Compared to my previously built T55 with 130mm gun, that 170mm gun looks massive!



The DBD set comes with some shells and cases to print

I used Tamiya Dark and Sand Yellows, airbrushed over the previously tested green, allowing some of the darker shade to show through the yellow finish. Over the top of this I airbrushed a very fine wavy pattern of heavily thinned Vallejo Green Brown. There was no real method to this, although I concentrated on getting a repeating pattern along the gun barrel. Details were blocked in with a paintbrush, including the tracks and tyres and I sealed in the finish with a coat of Future Klear. I applied some decals from the spares box – mainly nameplates and placards from aircraft sets, before sealing again.

I mixed up my usual potion of black/brown/sepia oil paints into a thin mix and applied this as a pin wash, concentrated around details and into crevices. After 24 hours I wiped off any excess with a soft wide brush, soaked in odourless thinners, streaking downwards to replicate dark streaks. I added chipping using a sponge and Tamiya Brown and Dark Green paints, concentrating on areas of heavy traffic around the vehicle. This was then sealed again with future Klear, ready for a dusty weathering powders wash.

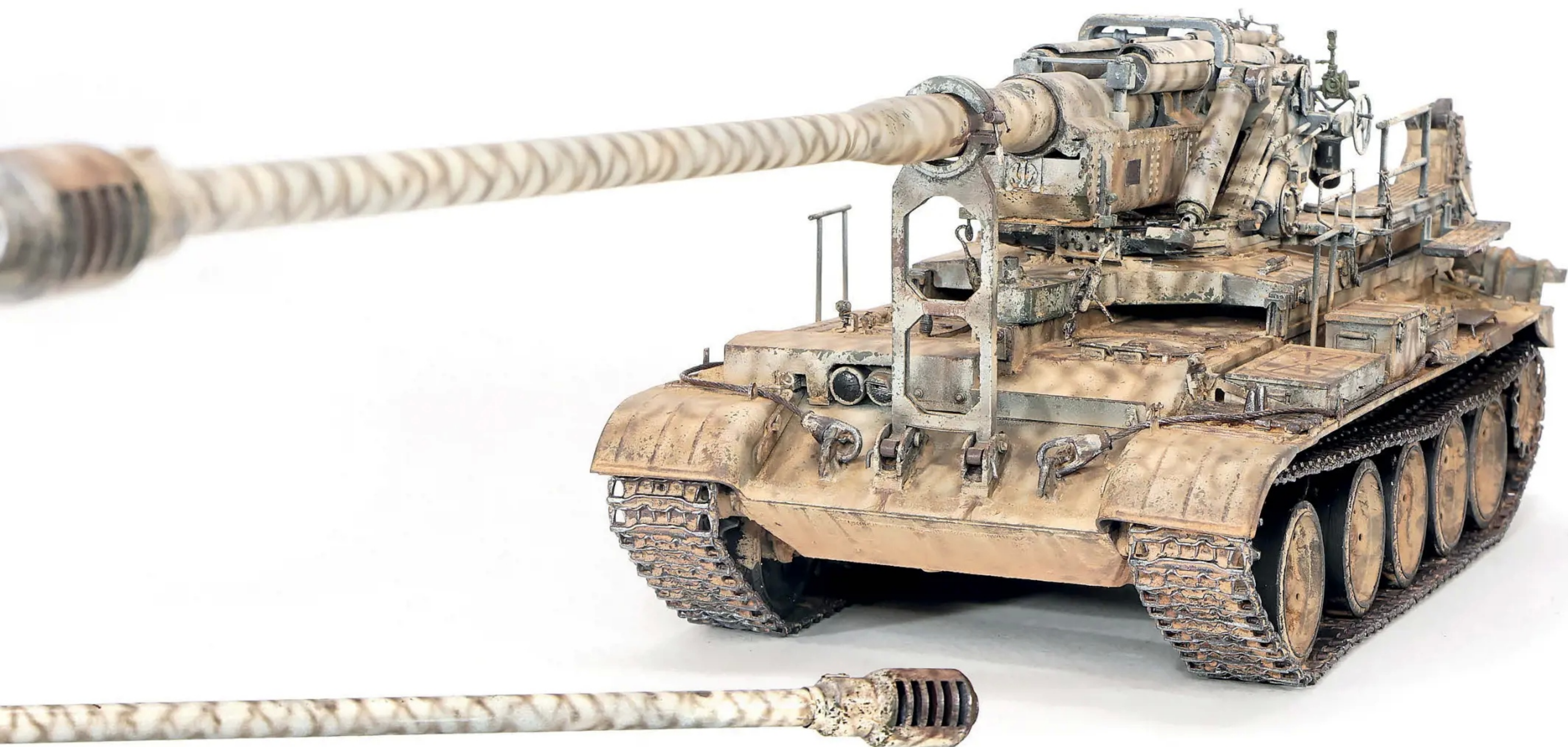
I mixed up some Vietnamese red earth with sand yellow weathering powders and heavily thinned this mix with water, Tamiya thinners and fixative liquid. I find weathering powders very difficult to control so I always heavily thin the mix and apply it over a gloss coat, meaning it can be wiped off easily if I'm not happy. This was applied with a thick brush onto all surfaces, using water sprayed through an airbrush to move the mixture around the model and getting it to settle into cracks and crevices. I used a dry mix of the same powders around the wheels and running gear, applied over the previously dampened parts. To finish off I dry brushed Vallejo Burnt Iron on areas of heavy wear, on top of the travel rails and on the tracks. This was further emphasised with Vallejo Flat Aluminium.

This article is by no means meant to be a criticism of the Dent-By-Design set. I have spoken with the designer and as I mentioned previously, the set is being redesigned – once it is available again, I strongly recommend either buying the files or the 3D printed parts directly.

A huge thanks to my good friends Alex Clark and Matt Reeves.

M-1978





M-1978 KOKSAN IN DETAIL





1:16
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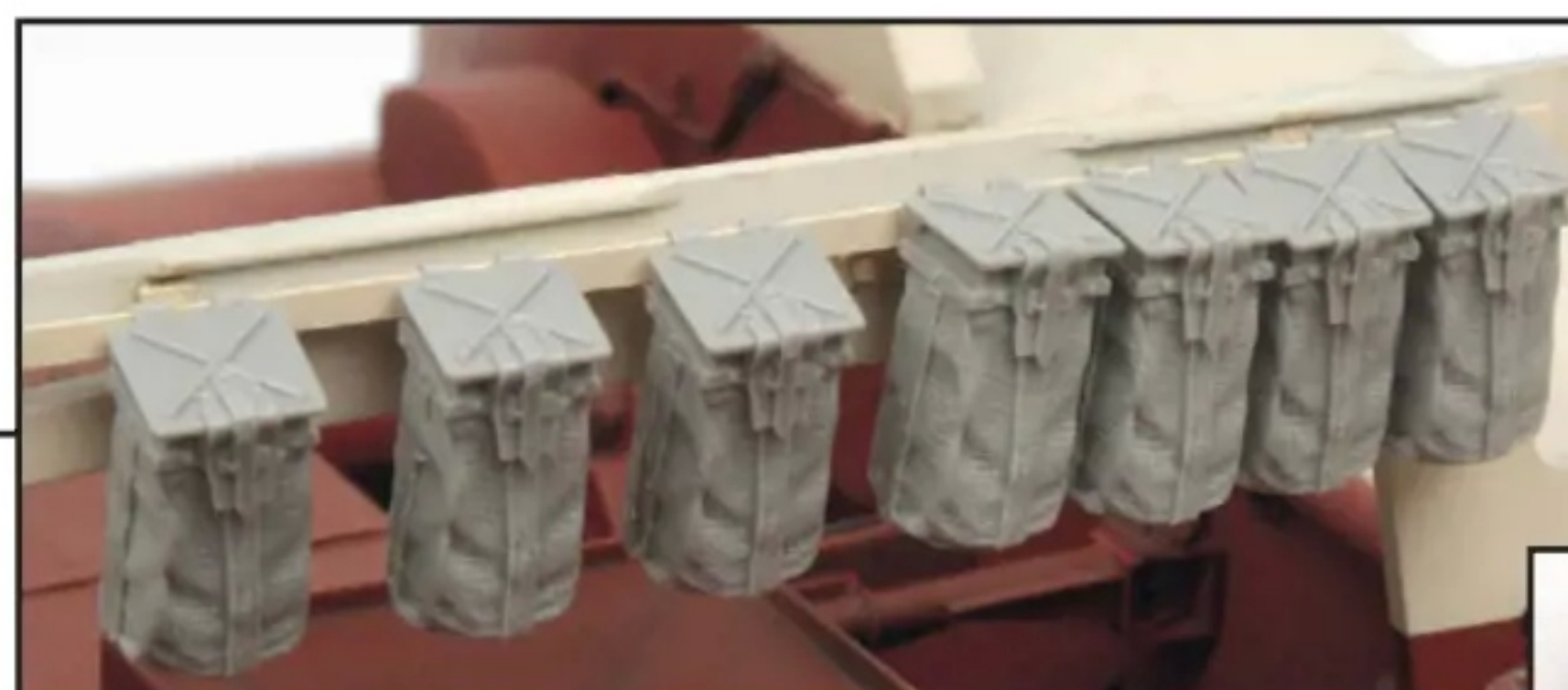
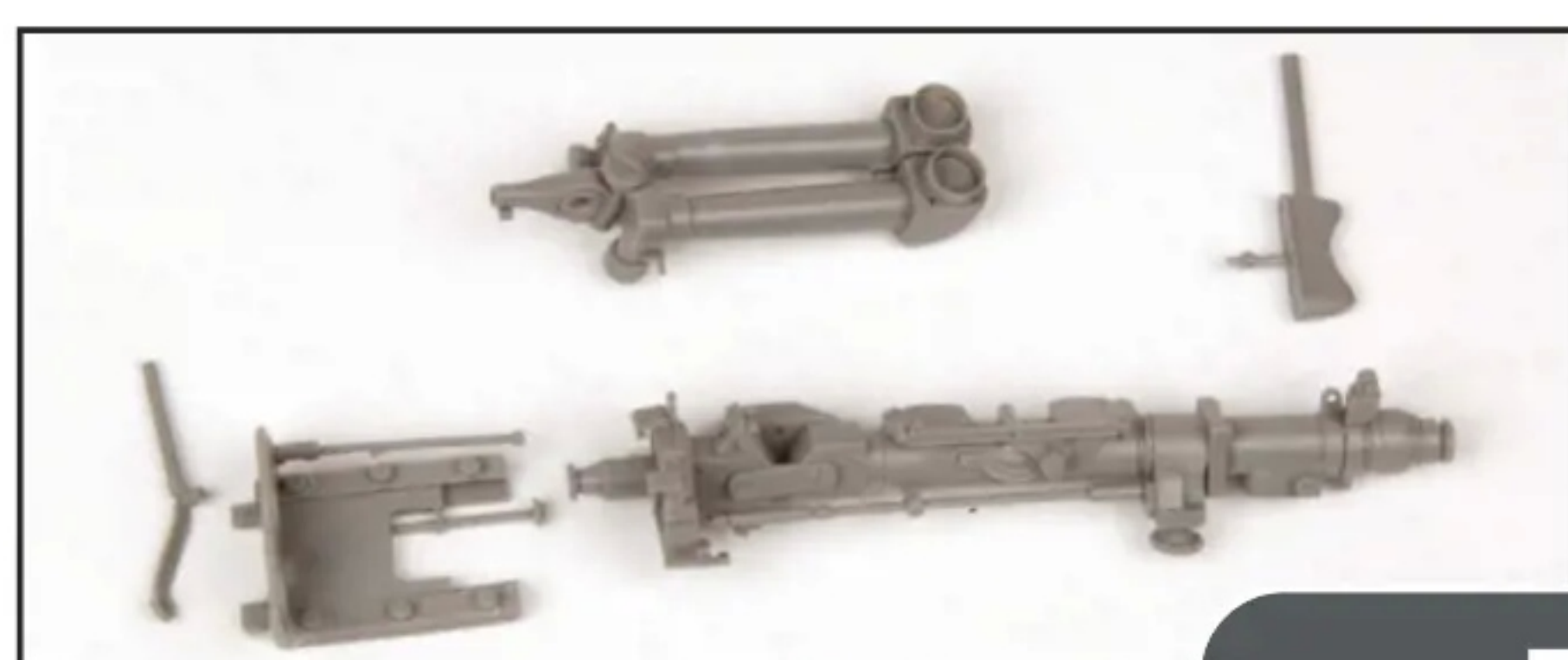
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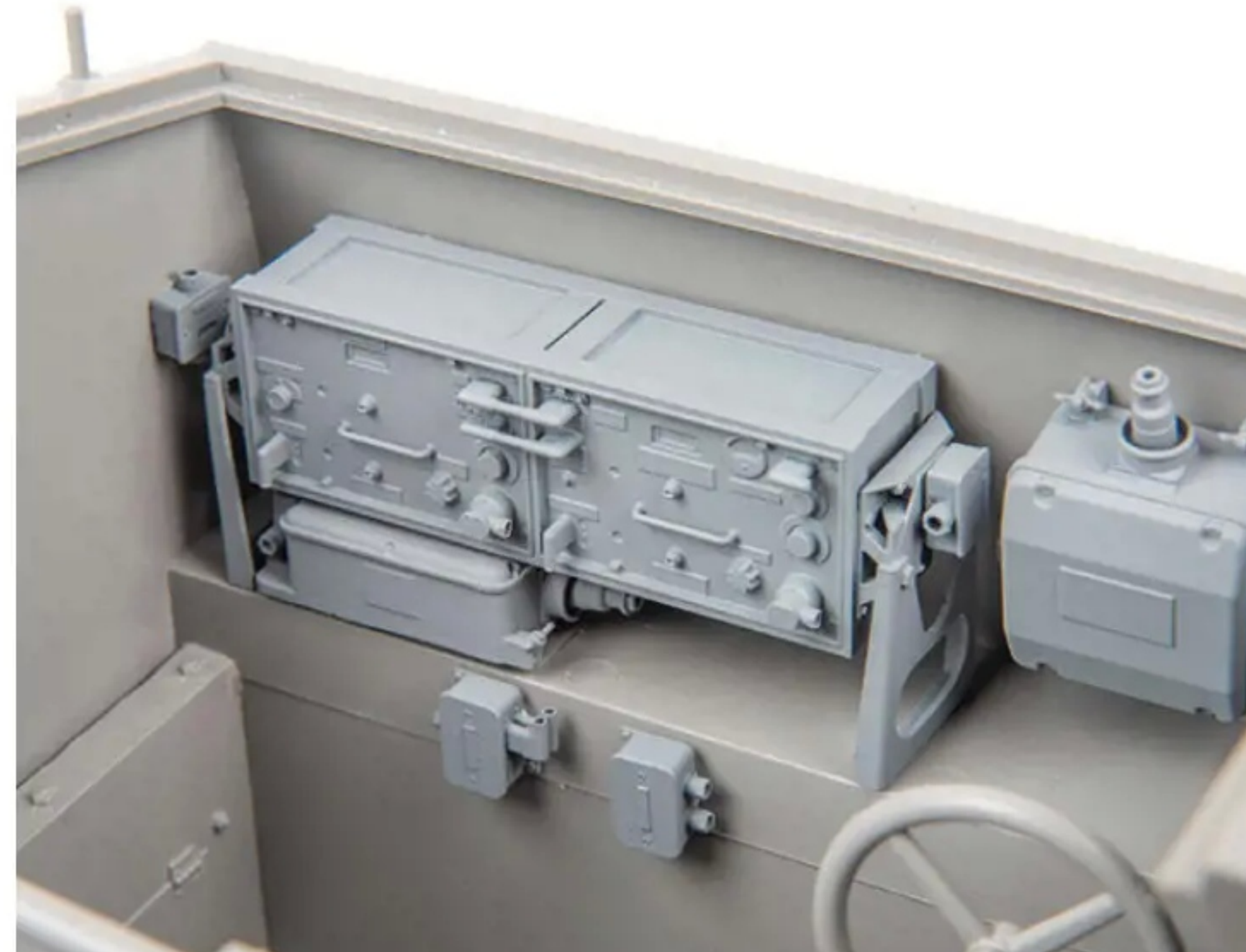
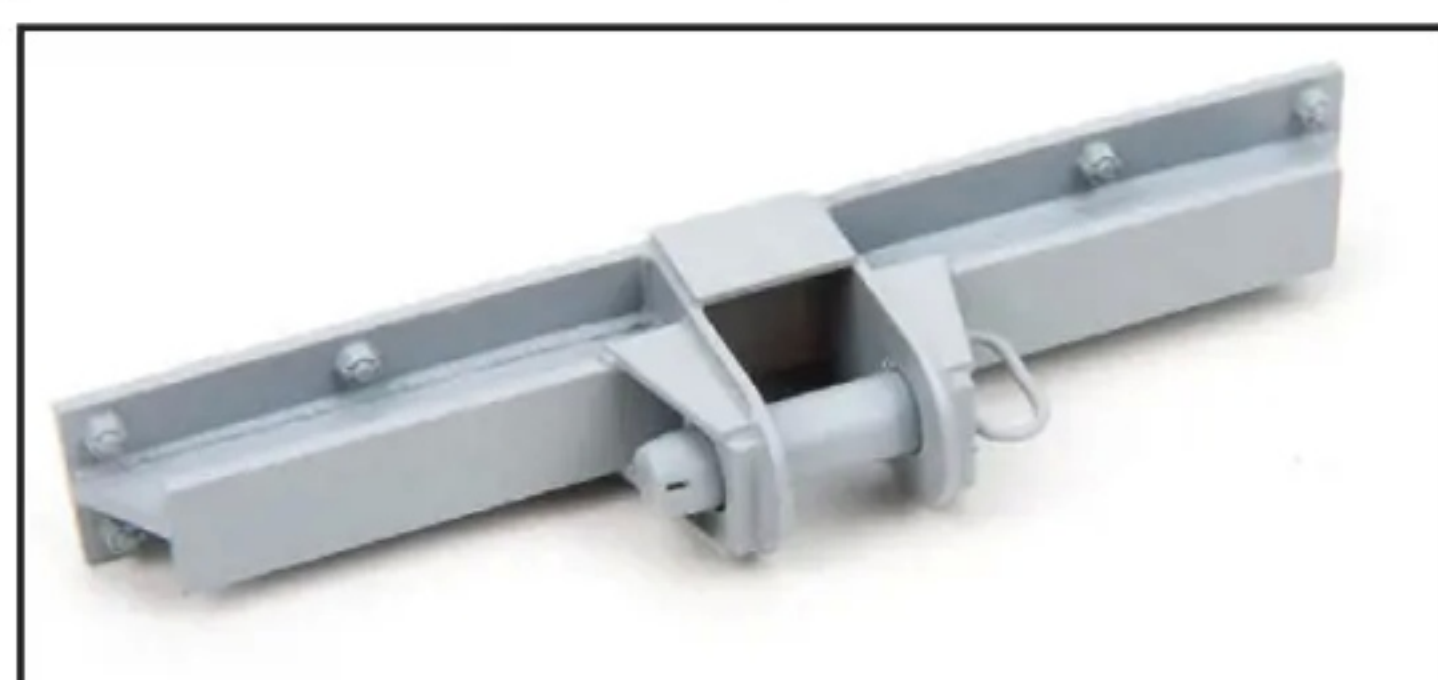
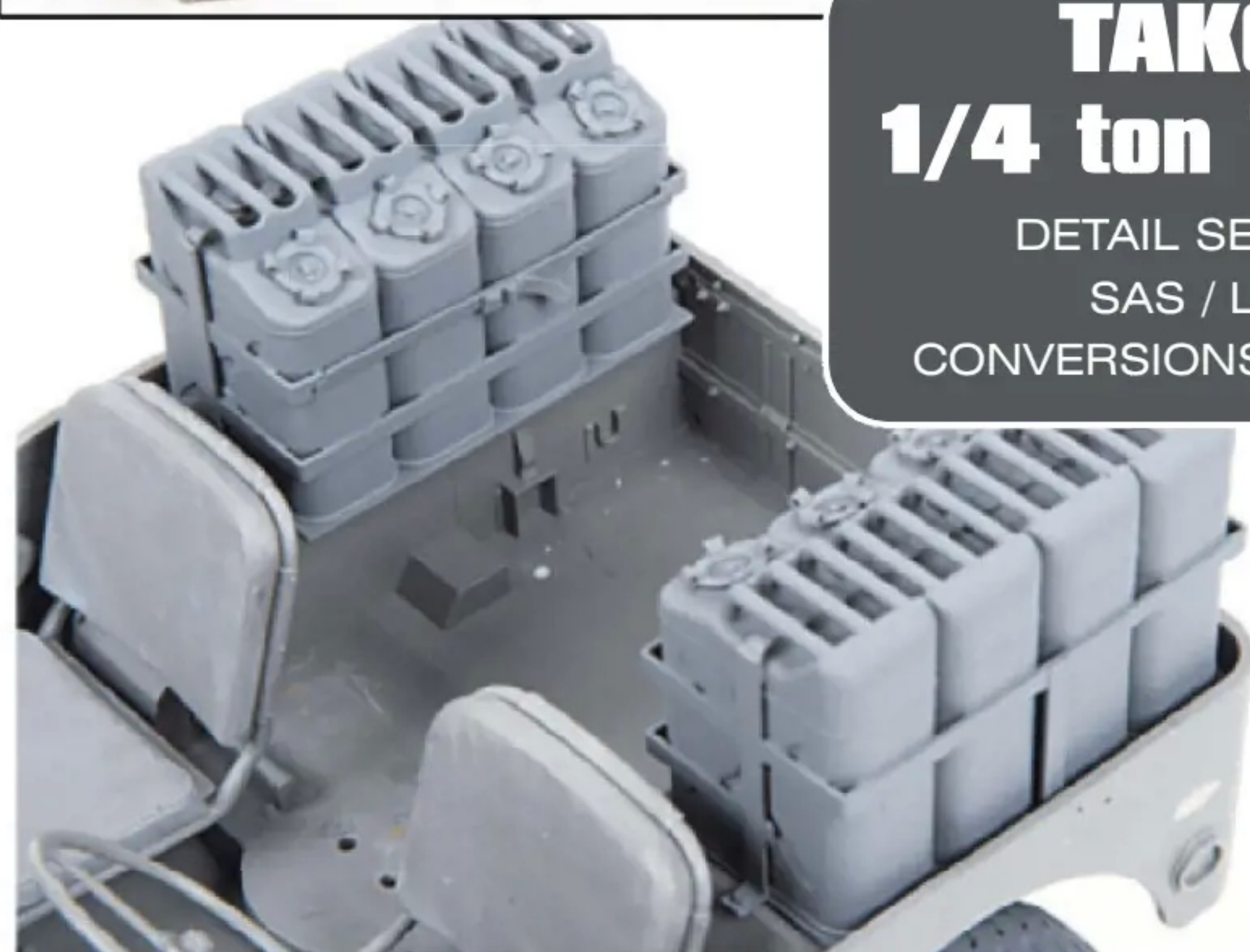
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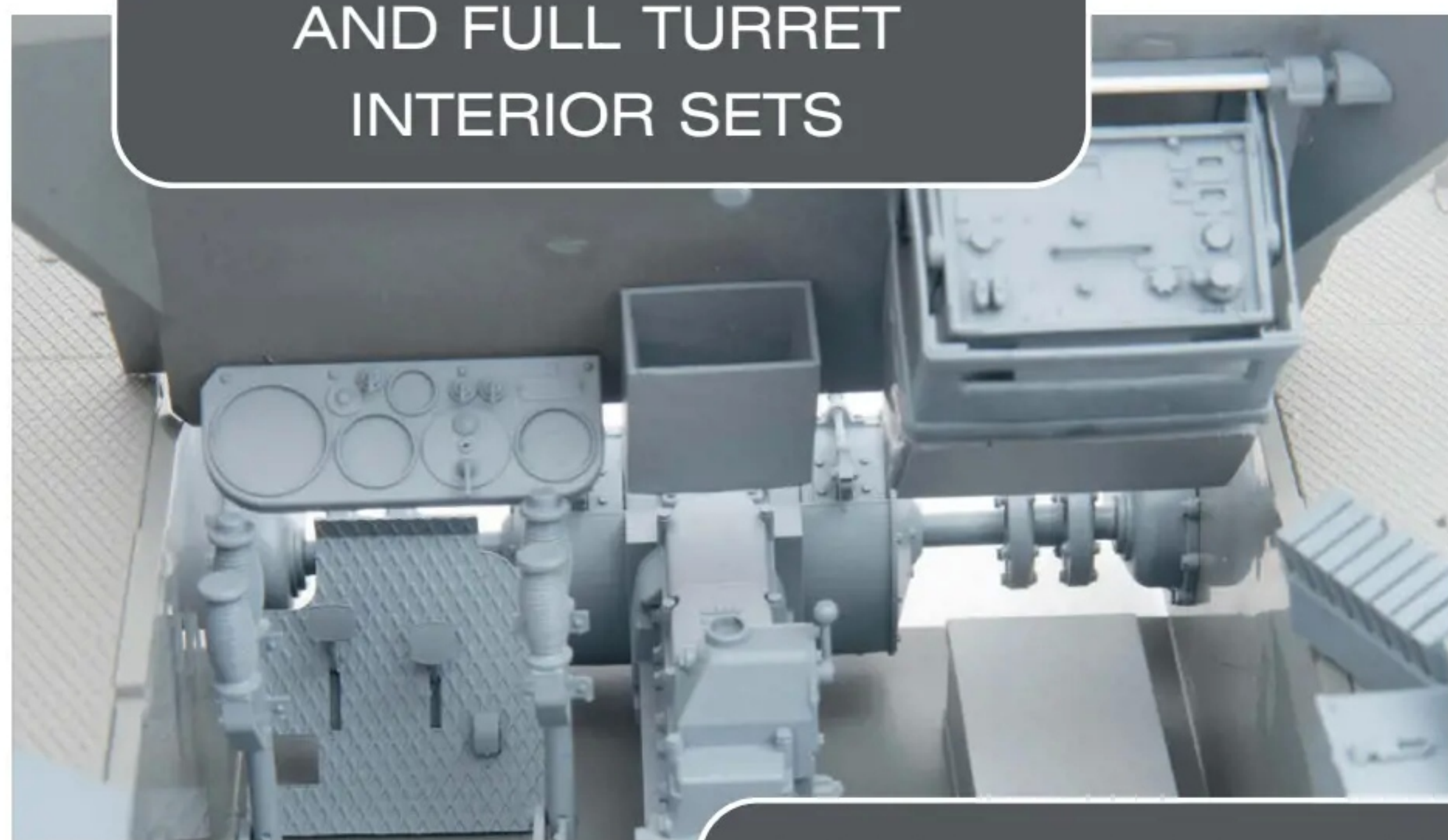
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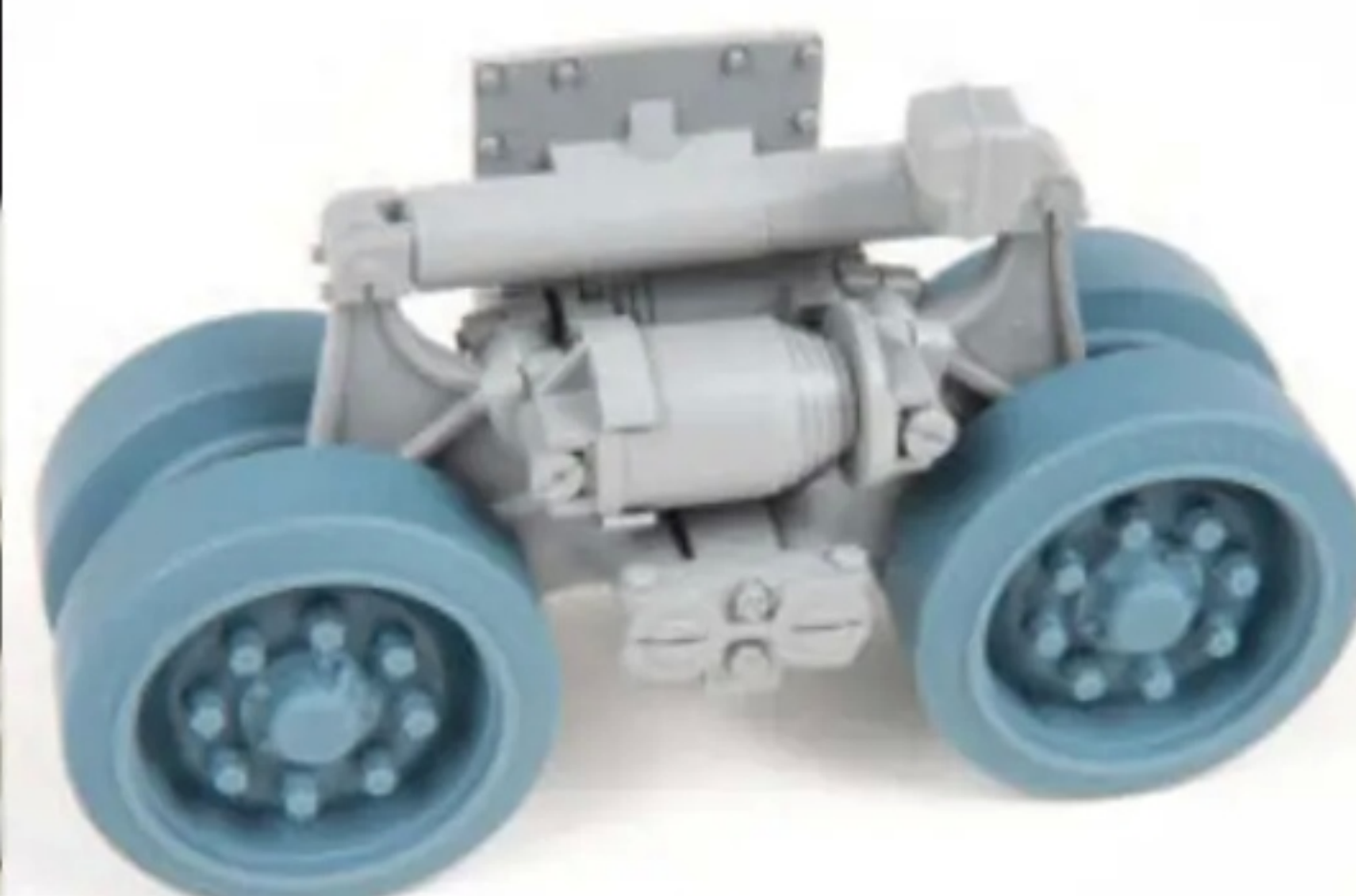
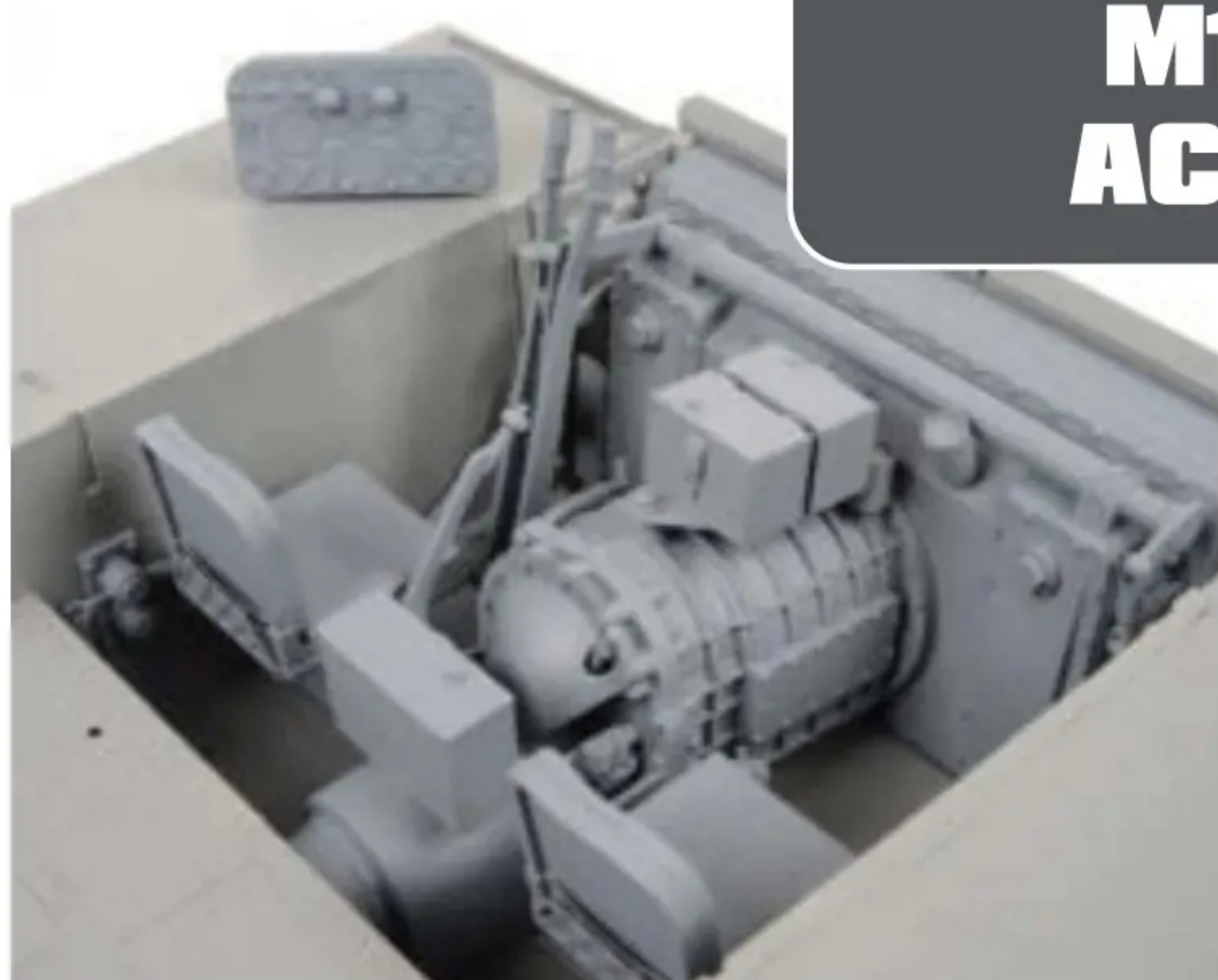
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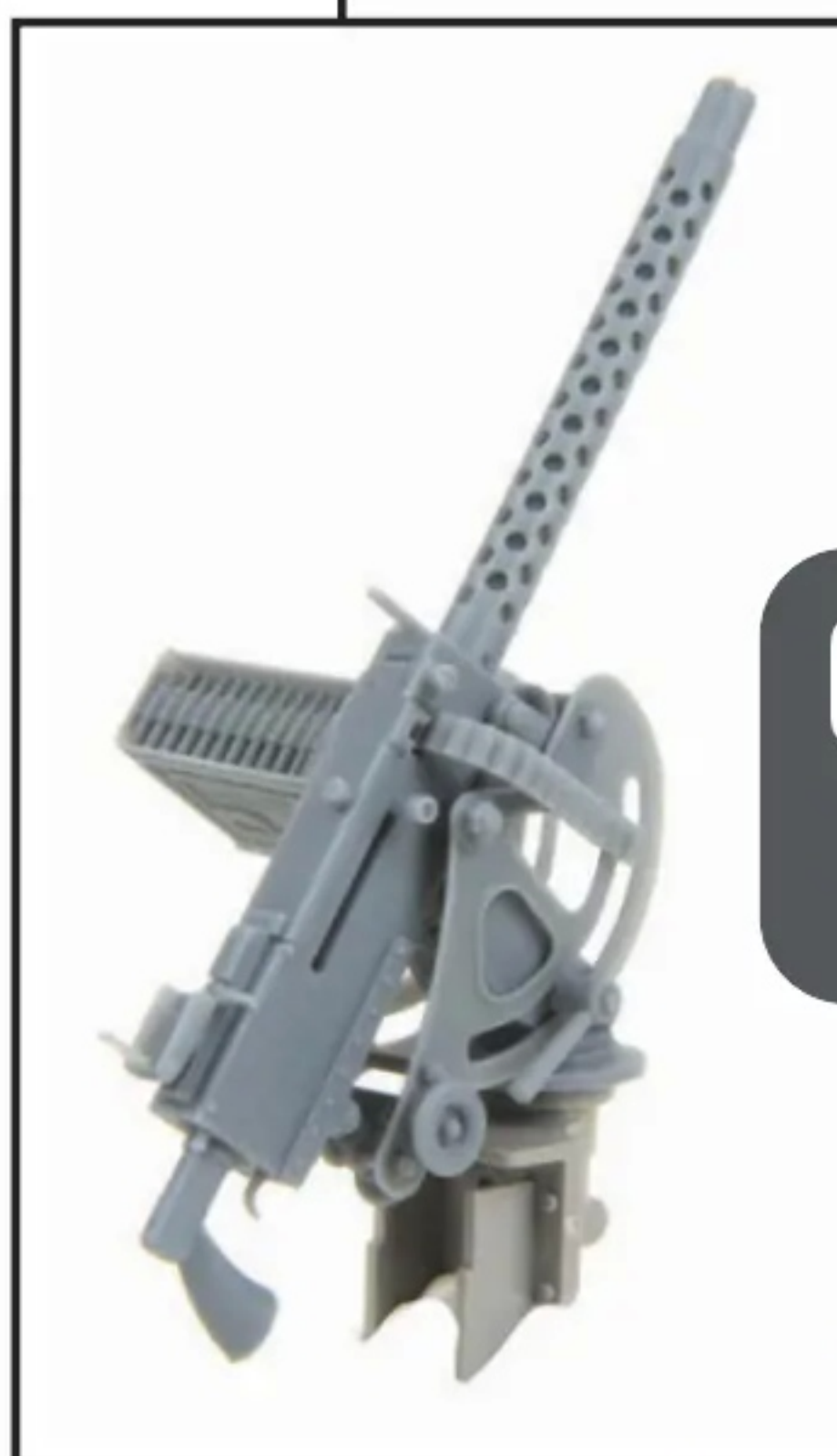
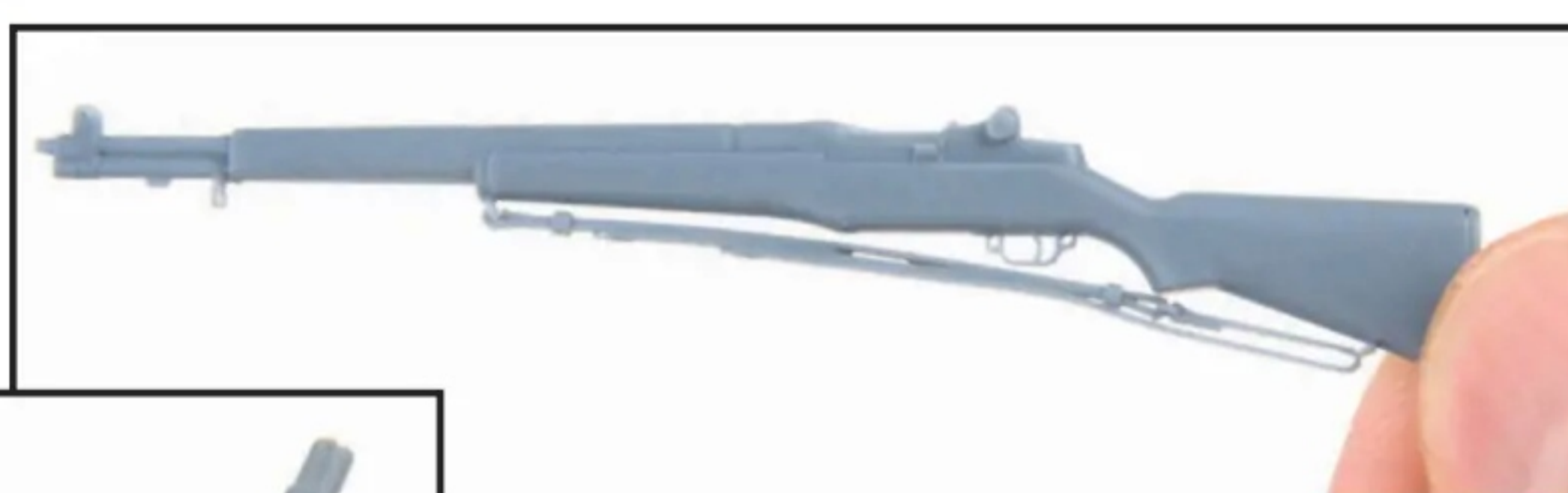
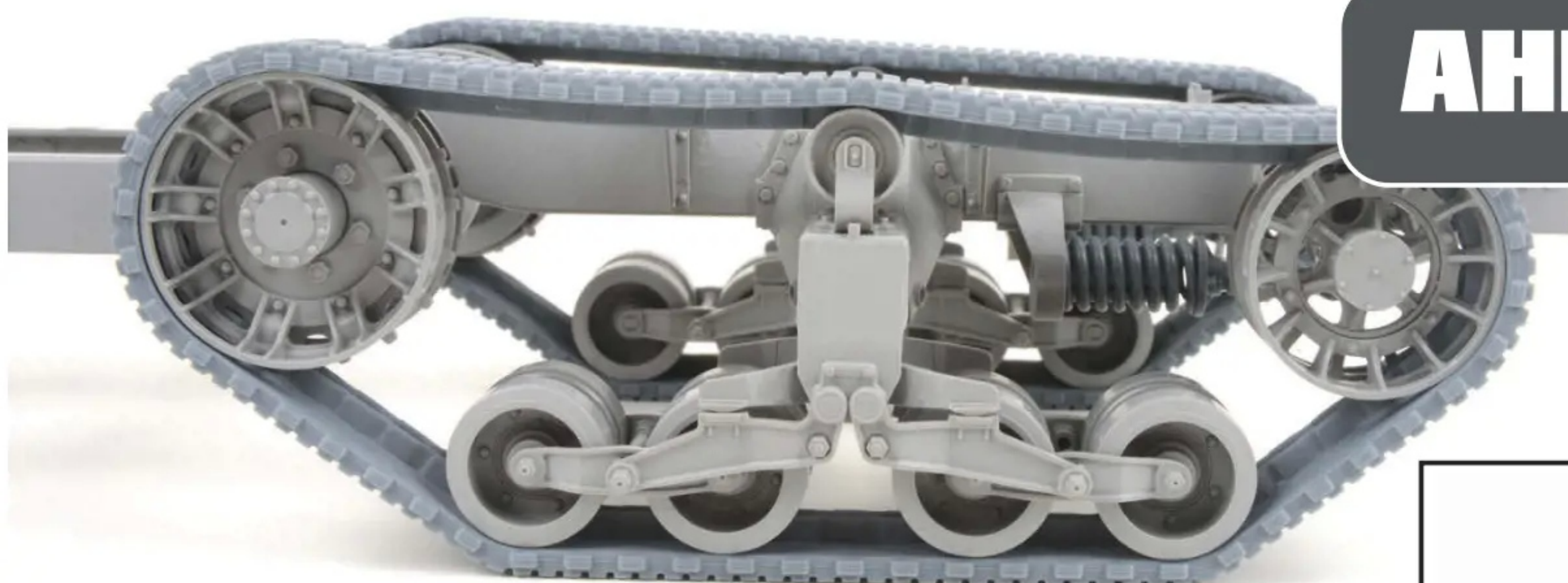
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AHHQ M3 halftrack



CLASSY HOBBY M5/8





I predominantly make aircraft models. The inspiration for building this kit came from a video which I watched on Scale Model Shed YouTube channel. The level of realistic detail and depth created with use of pigments caught my attention. With a number of unused pigments lying on my paint shelf, I thought I got the right motivation to make an attempt at using them.

The kit comes in a top opening box with plastic sprues of different shades of green and different versions of Centurion kits AFV Club have released over the years. When some of the sprues remain mostly uncut at the end of the build, one wonders what was the reason for including those parts in the box. And some of those parts are very big like armoured glacis plate, the top of cupola and types of guns fitted to different Centurion versions. The volume of plastic in the box is compounded by fact that the kit, which is the subject of this release, is very highly detailed.





LET TAL DOZIE

Sohaib Talal takes a break from winged-things and gets grounded with AFV Club's Centurion AVRE

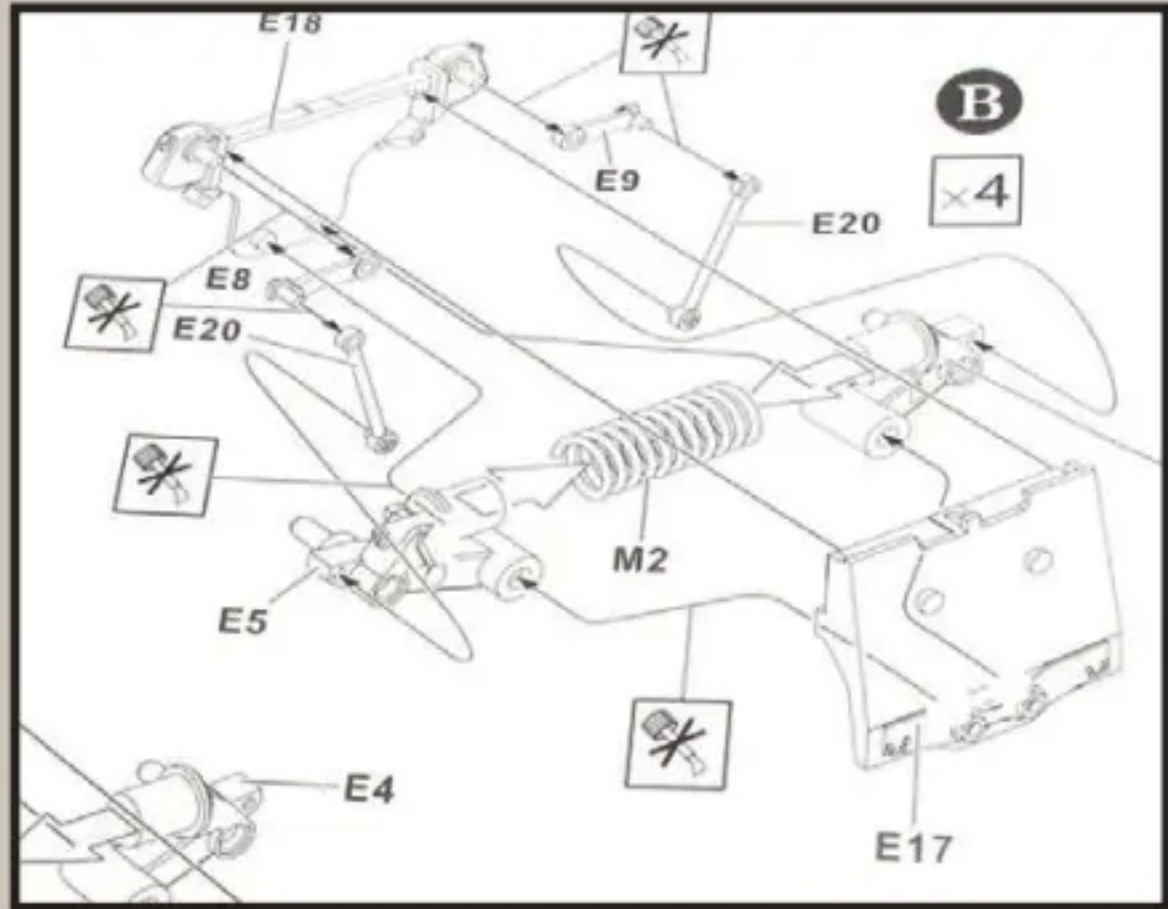


1:35

The assembly begins with lower hull covered over 27 steps. Good thing with this kit is that it comes with full length rubber tracks. That is an added encouragement for me to get on building this kit. Many of my tank projects have stopped dead in the tracks due to those 'working tracks' – the tracks with individual track pieces that take ages to assemble with not even nominal advantage of added detail relative to time spent in building them.

The hull assembly is straightforward, albeit very detailed, that any modeller with some experience can easily build. Centurion tanks feature Horstmann suspension, which is a horizontally sprung bogie mounting two wheels. In the kit, this is faithfully featured as six bogies, three on each side. Each bogie is actually horizontally sprung with metal spring and supporting torsion bars. The instructions recommend to use heated pin to fuse the pins on to retention brackets in step 5.

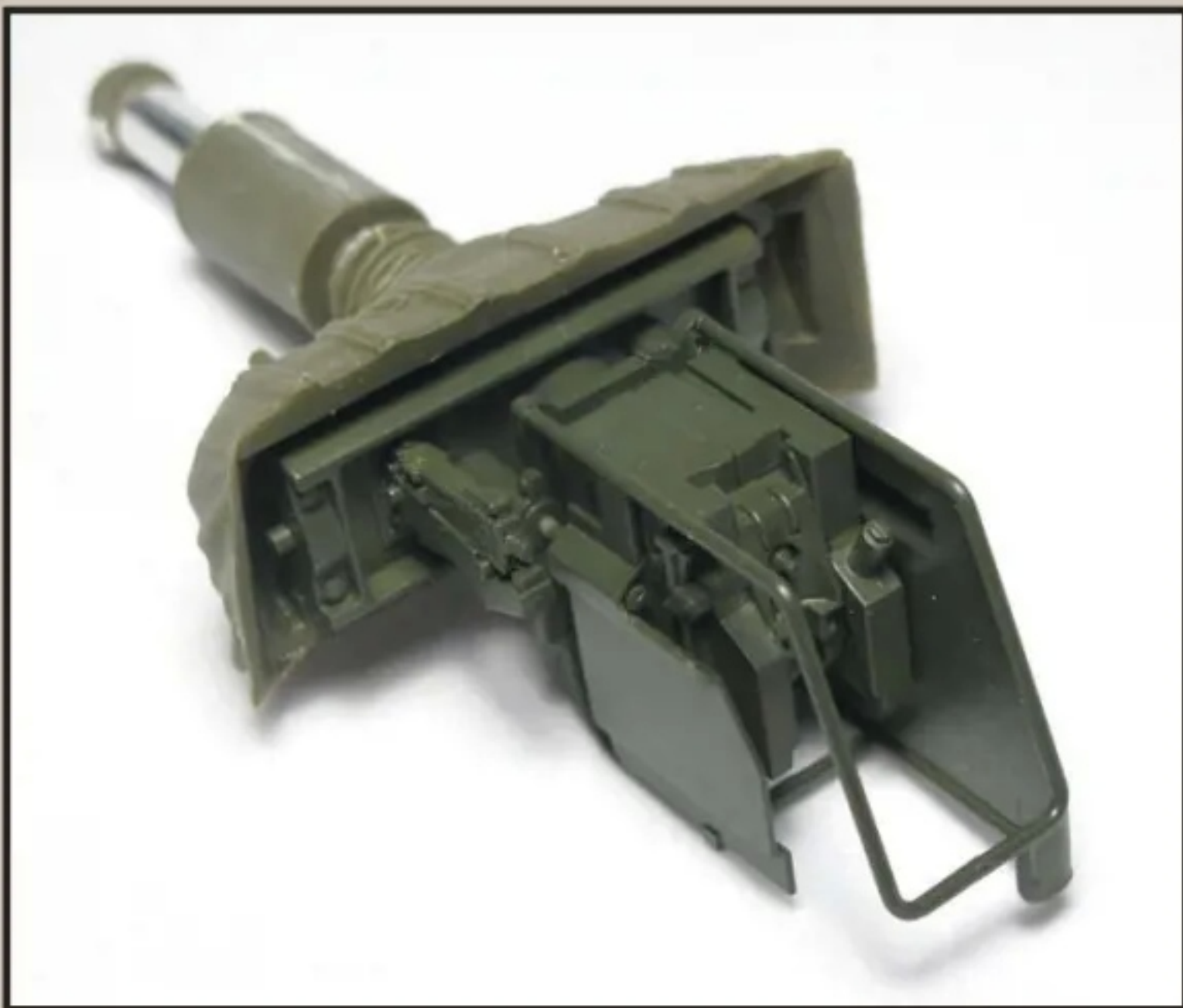
I employed a different technique. I used a Wave punch tool and punched 2mm discs from it. I then glued those discs on the pin instead of melting them to seal the torsion bars.



the grab handles that go on top of engine covers are extremely delicate with a very thick root connecting to the sprue. I broke some removing with a nipper before using 0.1mm Tamiya saw to cut them off.



I roughed up the road wheels using different grades of files, sanding sticks, knife to cut off edges and Dremel tool.



Turret construction begins in step 28. There is a detailed construction of gun breech and the support structure around it. This built structure will be inside the turret and most of it will not be visible. If you model the hatches open, it will only be partially visible with a black, gaping hole with no other interior detail. The turret assembly is also very detailed but straightforward and like the hull, it has great amount of detail.

the sides and bottom of the turret were covered with Mr. Surfacer 500. Some white putty was needed to fill the gap at the rear of the turret.



the roadwheel is a separate part from tyres. This makes the assembly faster and painting easier. However, there are some sink holes to fill.



The tarpaulin was made from a napkin. A napkin was folded and tied with a thread. Then dipped in water mixed with paper glue. Once it was dry, it was painted with Tamiya khaki and weathered with different pigments.



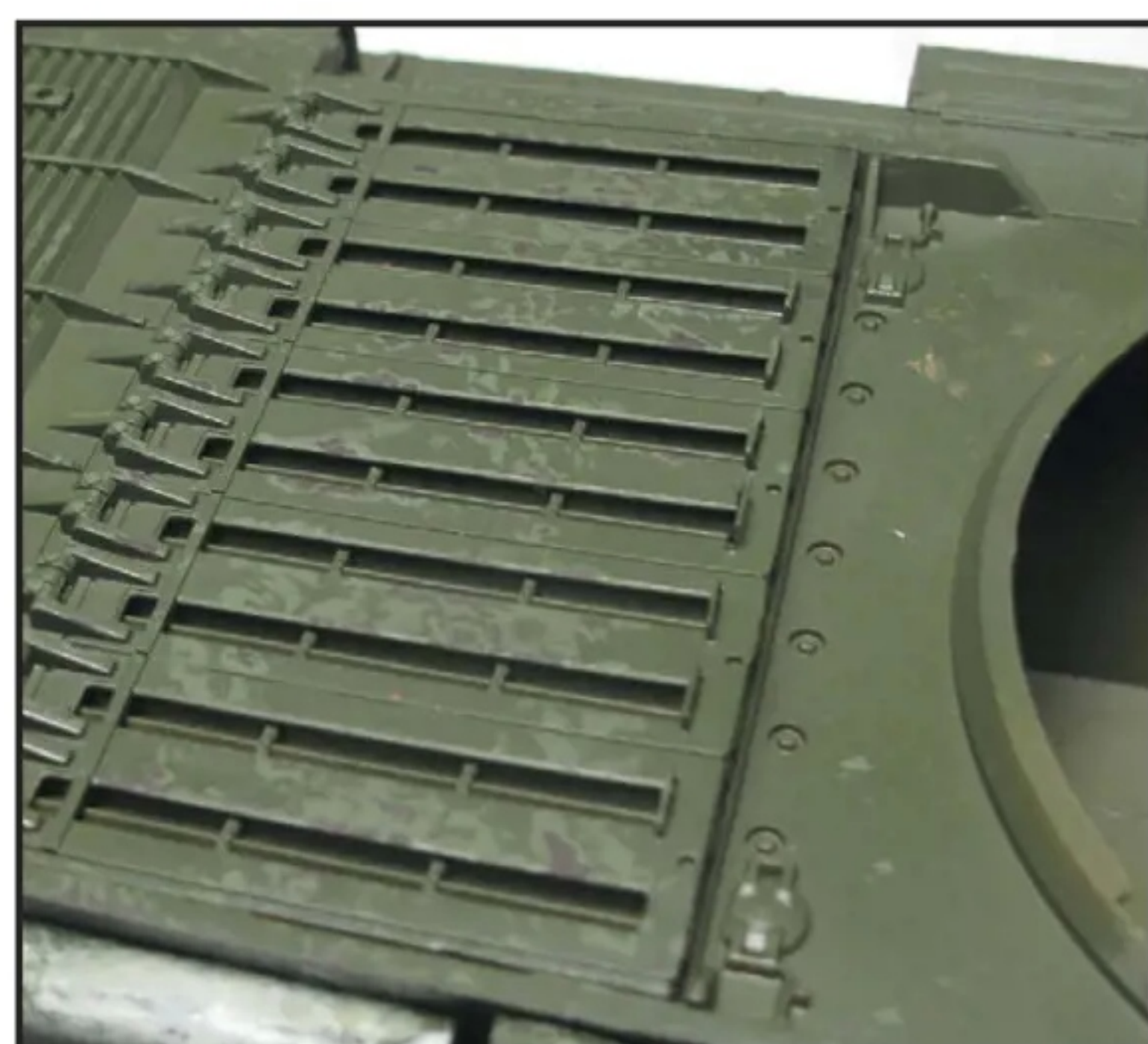


Camouflage was painted free hand using Mr Color C319 Bronzegrun, Tamiya XF-49 Khaki & Tamiya XF-69 NATO Black. C319 could be replaced with Tamiya NATO Green. I only found out after spraying it.

Compared to Tamiya, Mr. Color provides a super smooth surface which helps in weathering in subsequent steps.

After painting the camouflage, the body was weathered using Vallejo paints. Vallejo 884 Stone was mixed with 893 US Dark Green to create an effect of light green patches. German Black brown 822 was then used to create paint chipping effects.

The overall weathering on the hull, side skirts and running gear was done with MIG Europe Earth and Burnt Umber. The glacis plate was weathered using a thin layer of mixture of pigment fixer and Europe Earth shade. This provided a base for the layers of weathering. Then some Burnt Umber was washed on this layer with white spirit and removed where it looked heavy.



The grilles on top of hull were first weathered using German Black brown 822 to create a chipping effect. Then a layer of MIG Dust Effects was randomly applied and blown away with airbrush. Once dry, it gave an effect of dust bellowing out of the vents. MIG Industrial City Dirt was generously applied and then washed away with white spirit to leave a random, patchy surface.

Mr Surfacer 500 was used to create an uneven effect on the exhaust cover. The edges of the covers were then painted Vallejo 853 white. Its looks overdone!



Now comes the fun part. In previous step, I over did the Mr. Surfacer treatment. So, I painted over green again on some part of the exhaust leaving just the edges. Using MIG Vietnam Earth and Light Rust, I started randomly putting the pigments on the white paint. This is just powder without the pigment fixer. Where I wanted the exhaust to appear badly burnt, I used Black Smoke pigment.

The shade created by applying Black Smoke over the rusty surface, gives a very realistic impression of burnt metal.

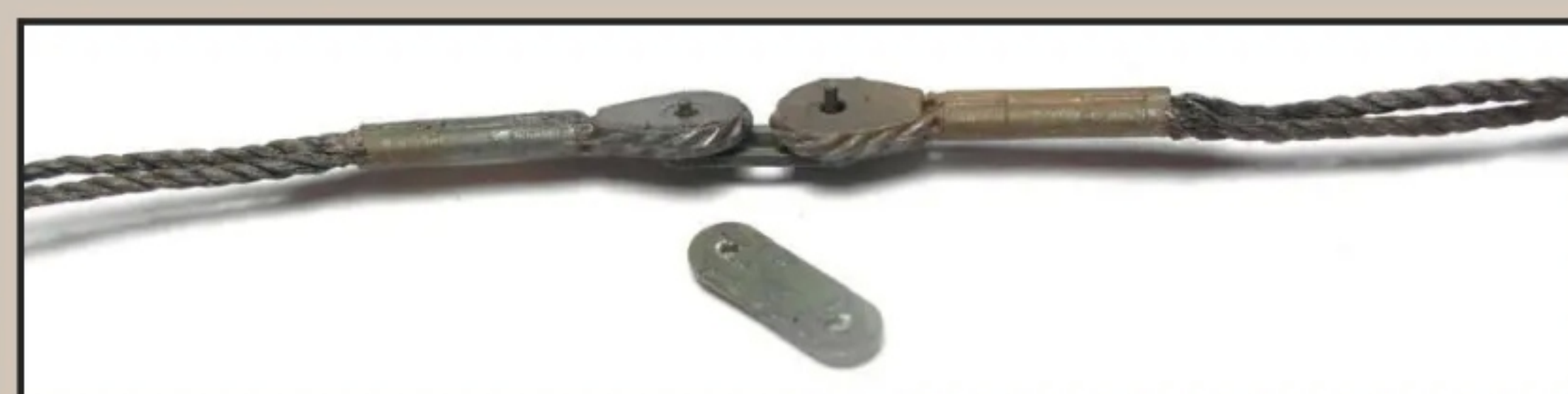
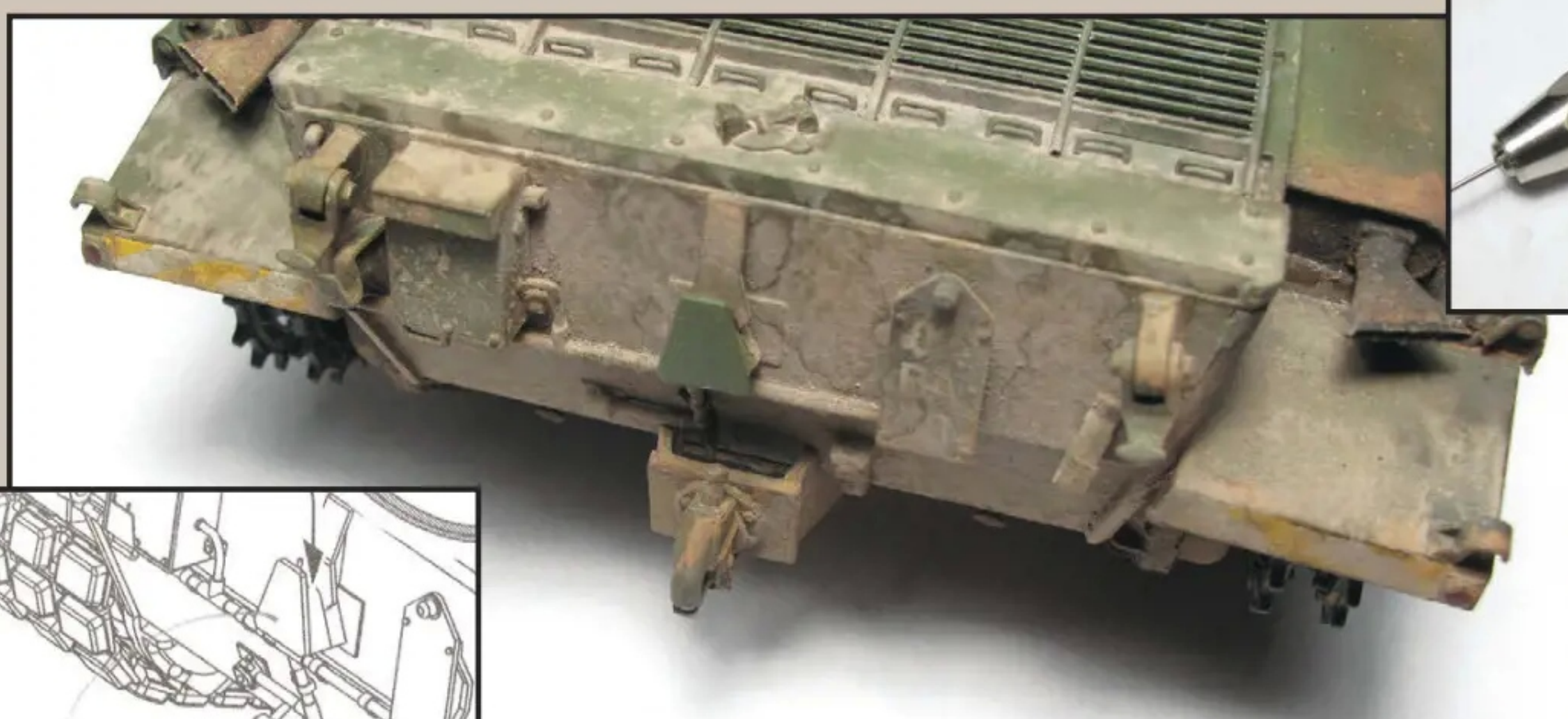
The fascine is a multi part assembly. Once the camouflage colours were applied, it was covered with Winsor and Newton latex mask using a kitchen scrub. Then Model Master Steel was painted on top. Once the paint was dry, the mask was removed revealing a patchy pattern.



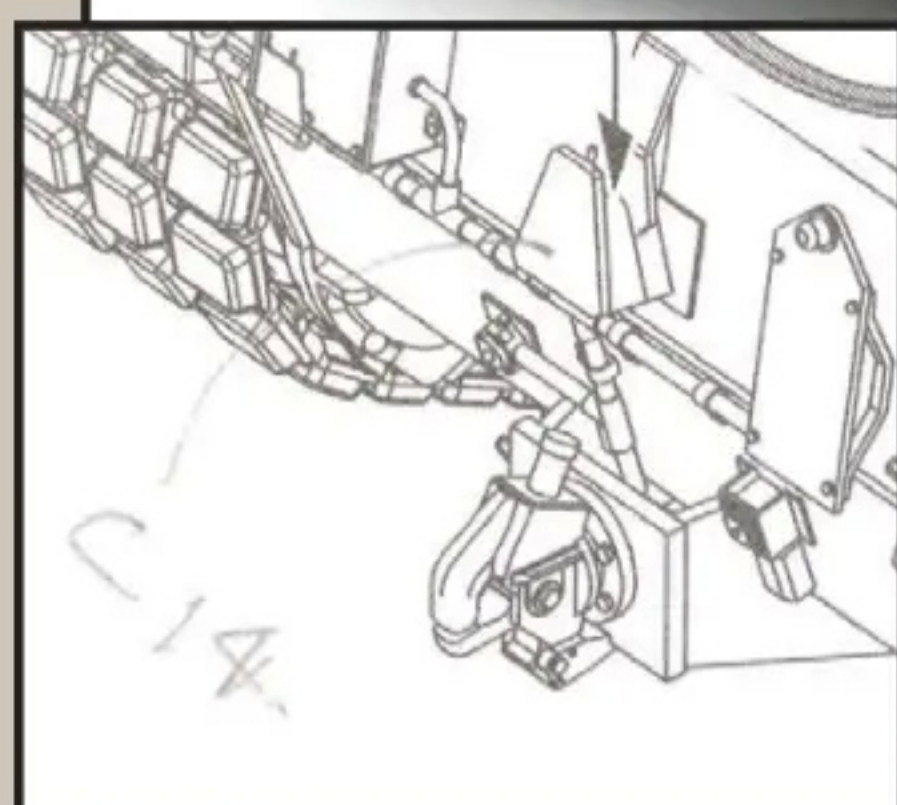
Then a heavy layer of MIG Dust Effects was applied. This almost covered the whole assembly. The enamel colour was gradually removed in several passes using white spirit until only a slight layer of dust was left on surface with crevices and edges having some paint deposit. AK Interactive Dark Steel pigment was then scrubbed on exposed surfaces to complete a convincing, used look.



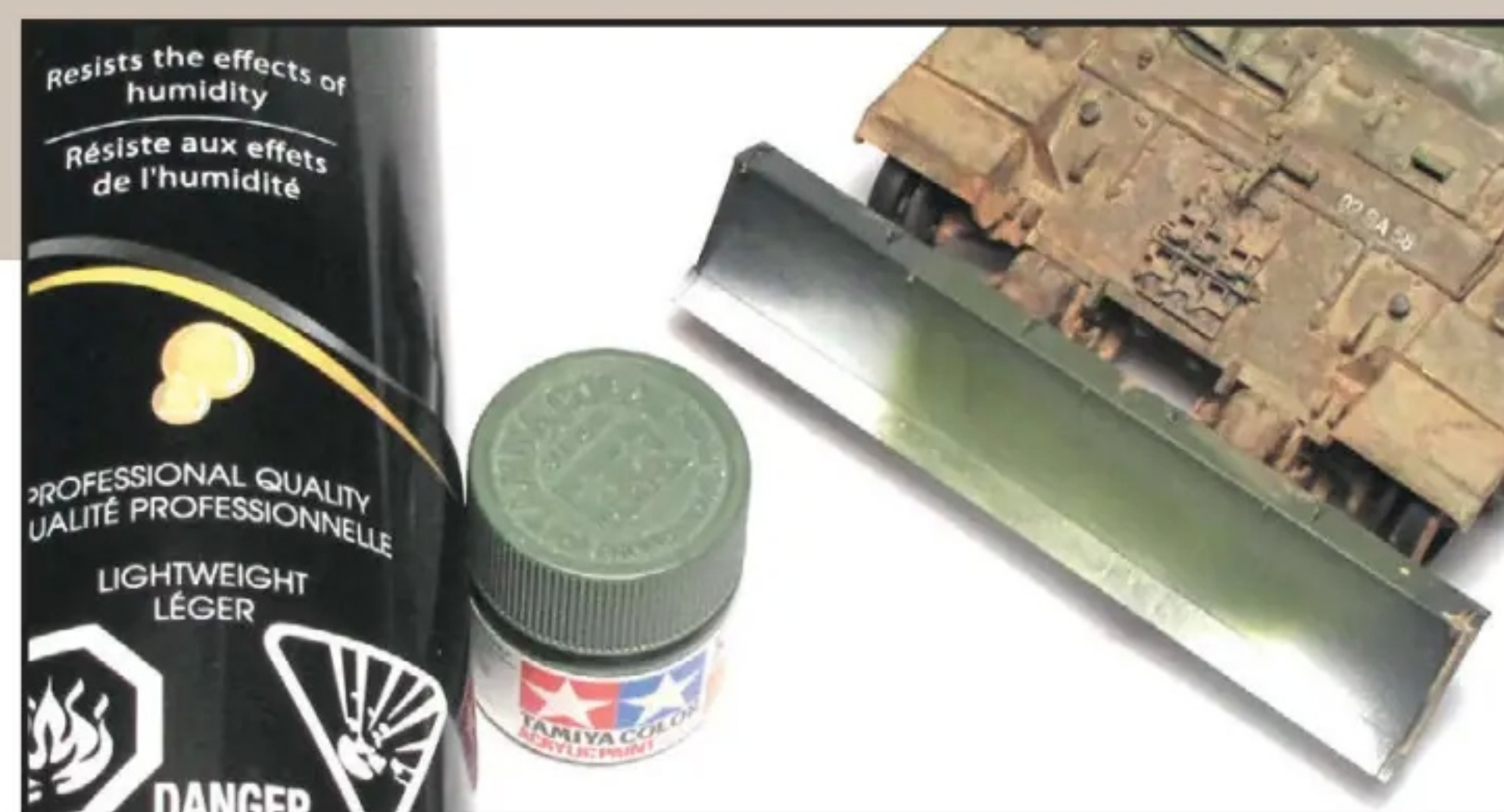
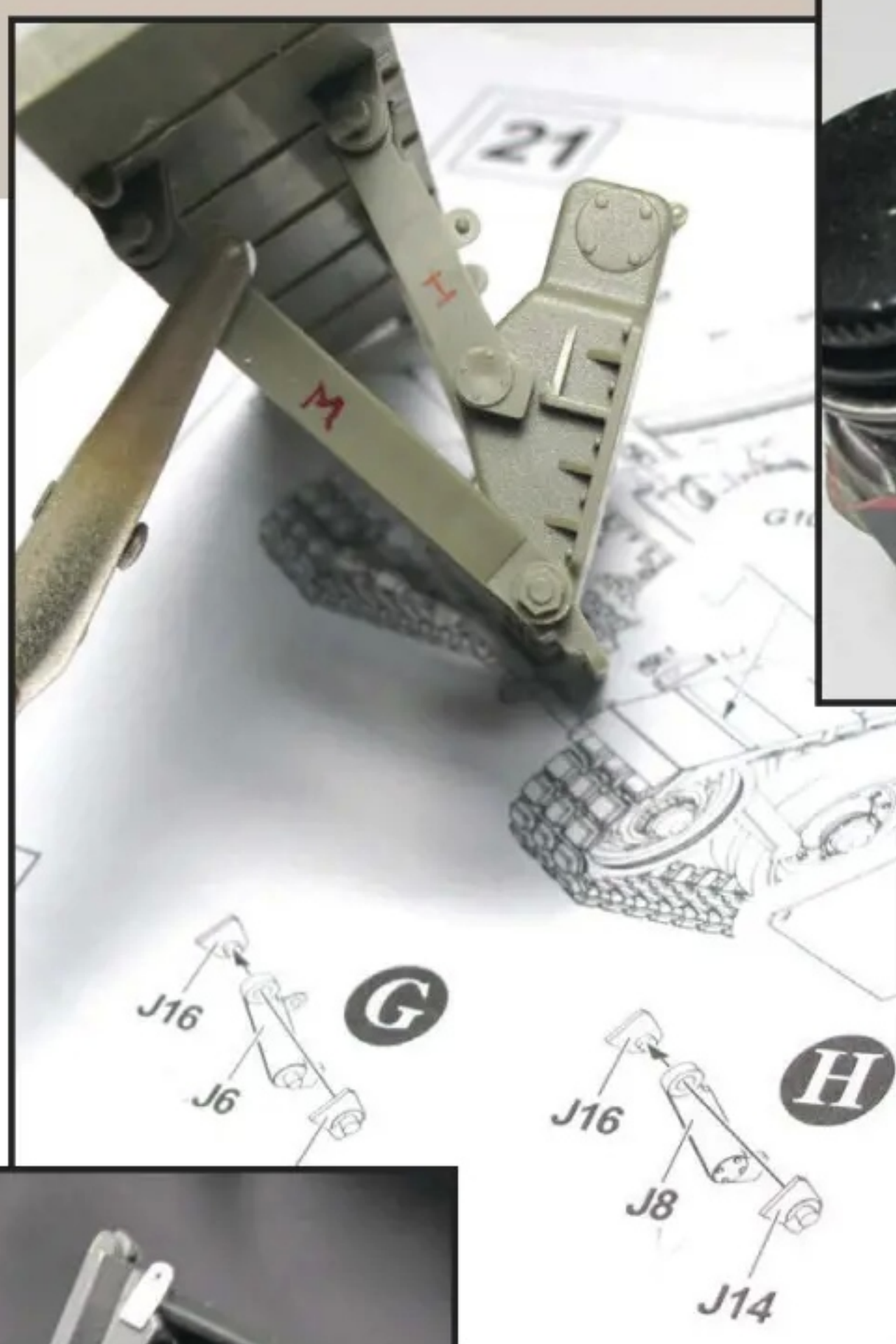
The turret was first covered with MIG Light Dust and then MIG Industrial City Dirt was generously used to cover the surface. Then as in previous steps of weathering, several passes of white spirit were applied to remove the pigment. When the pigment was heavy and it could not be removed enough with white spirit, a napkin was used to absorb it from the surface. With patience, a realistic used look can be achieved.



The rope needs flex to fix in the position. Parts C9 and C10, which hold the two lengths of rope together, have very small studs to glue them in position. I removed those studs and drilled holes in both the parts in their place. I then used thinnest Evergreen plastic rod to join those parts together without gluing the rope ends. This helped in mounting the rope in proper position giving it a realistic sag.



Part C14 shows up in step 27 but its not mentioned in assembly sequence. That is why it looks so clean relative to the rear of the hull. I caught it only when I was attempting to put a rope.



I painted Testors Model Master Steel on the dozer blade. Its sad to see demise of this brand. I have just a few shades left. I then sprayed a thin layer of hairspray on the dozer. Once the hairspray wasn't wet to the touch, I applied shades of Tamiya NATO Black and Green. Once that is almost dry, I sprinkled water on the surface and using a thick paint brush, randomly removed the paint to leave a very used and badly scrubbed dozer front. Tamiya paints are the best for hairspray technique as they come off quite easily.

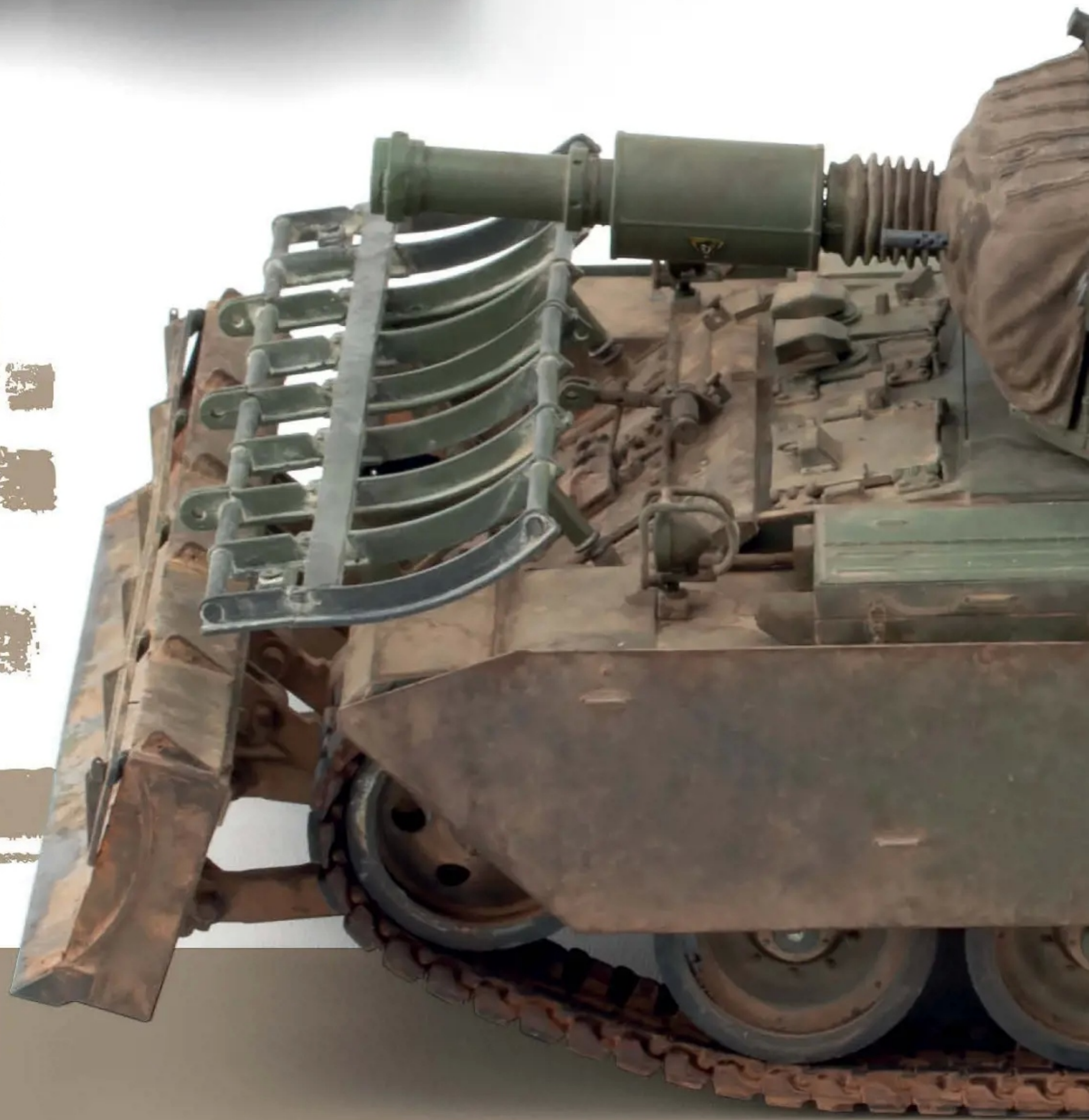
MIG Europe Earth was used with pigment fixer around the edges to give the pigment a caked, deposited look. Overall, this same pigment was applied randomly and then washed off with white spirit to give a streaky, used look. Some of the highlights were created using MIG Burnt Umber and washed off where it looked disproportionate or overdone.

Care must be taken building the support arms of the dozer from step 22. Once assembled, they all look similar. So, I marked them individually to avoid confusion in assembly.

Some missing details were added to the dozer blade using Evergreen plastic sheet.







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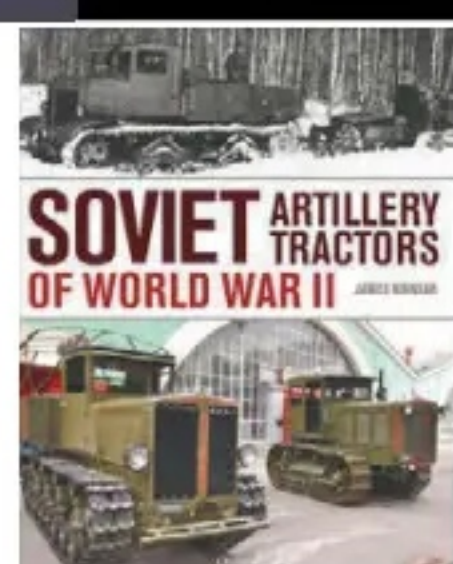
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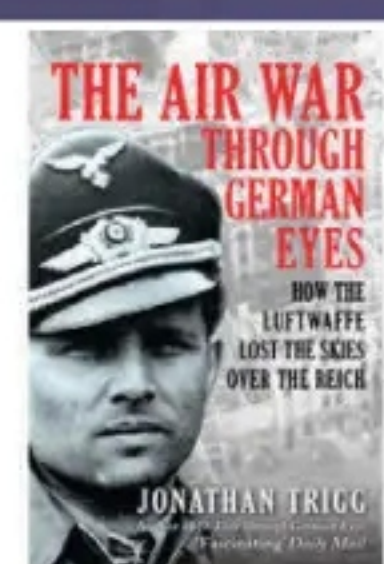
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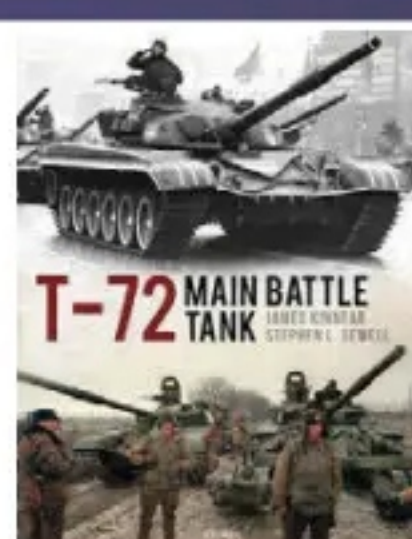
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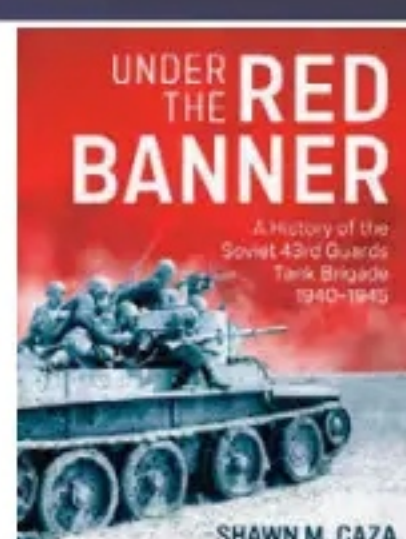
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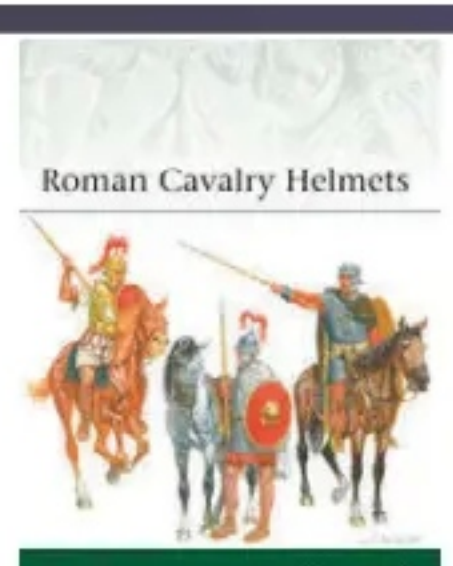
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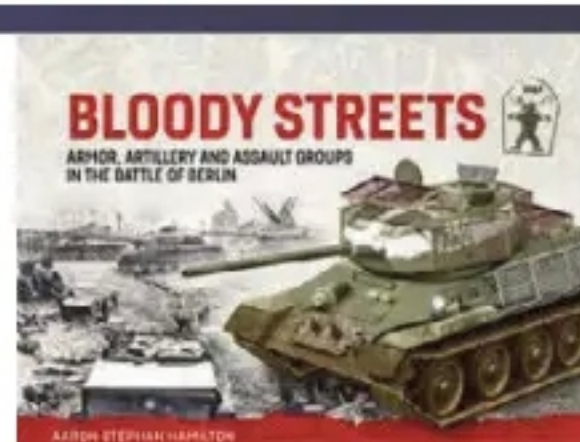
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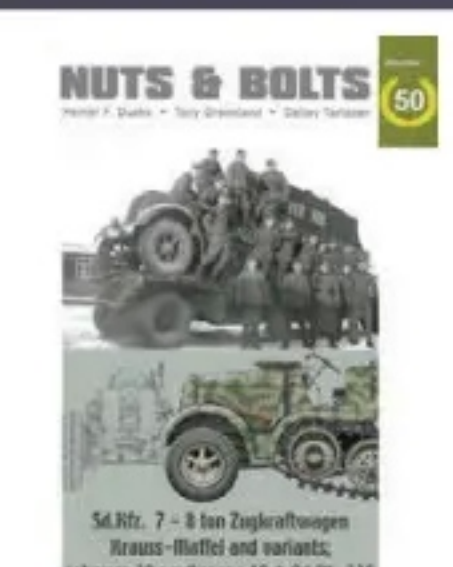
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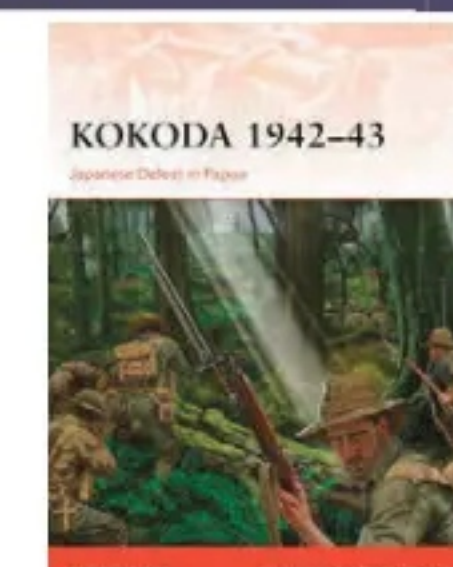
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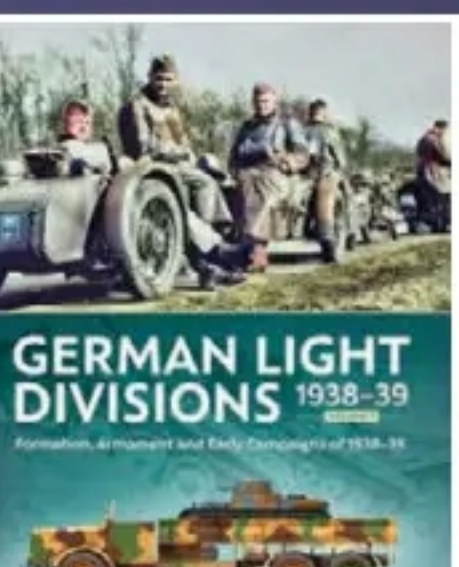
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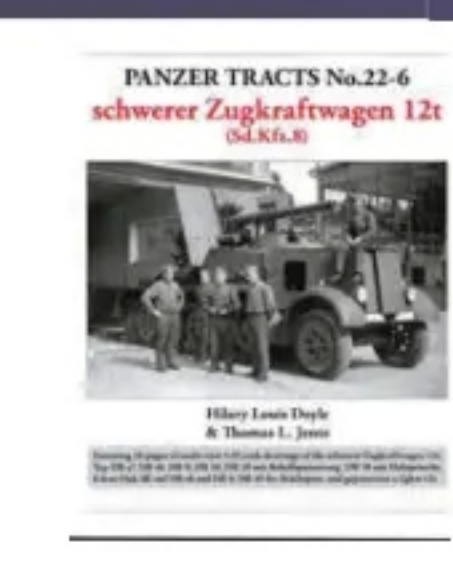
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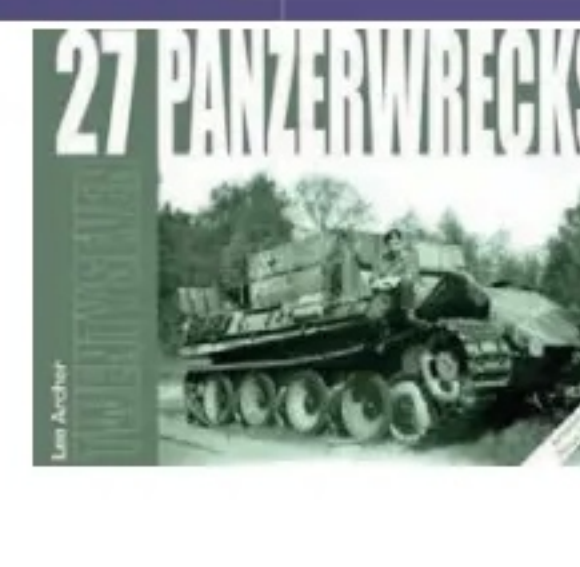
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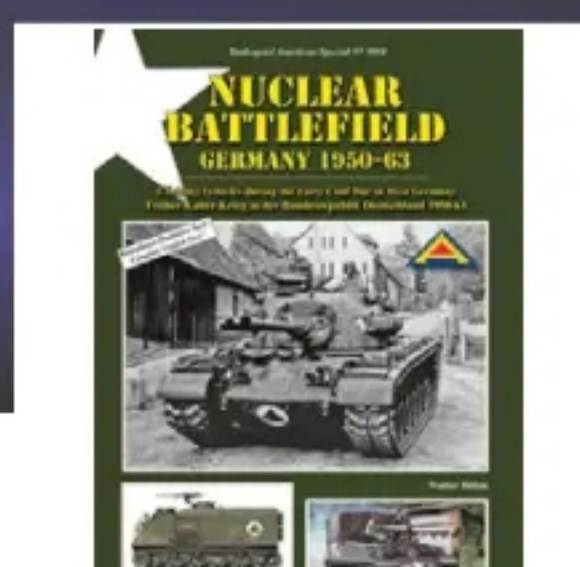
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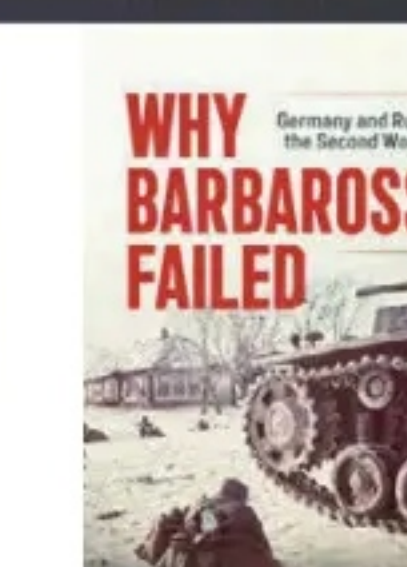
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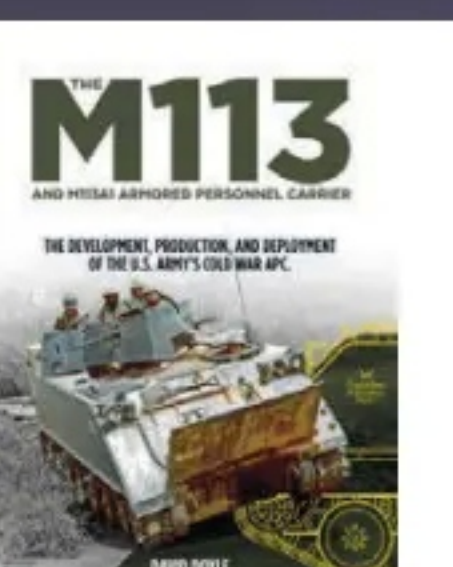
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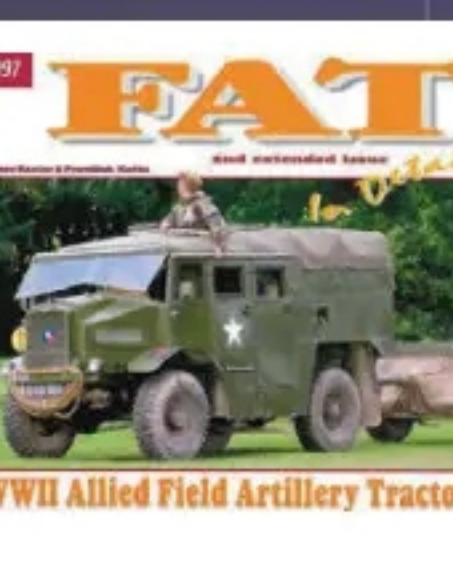
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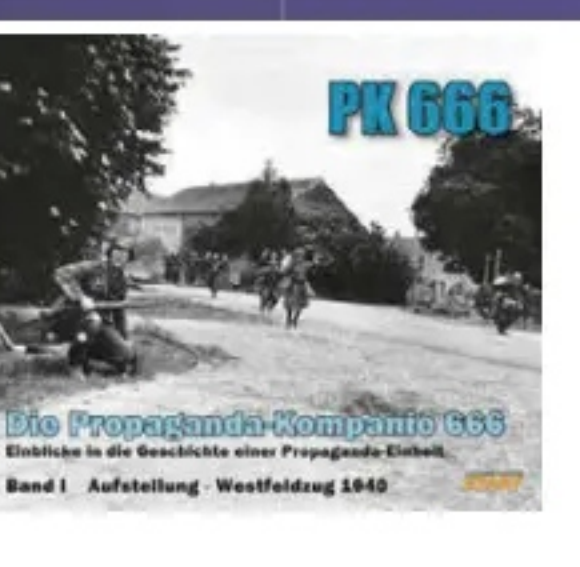
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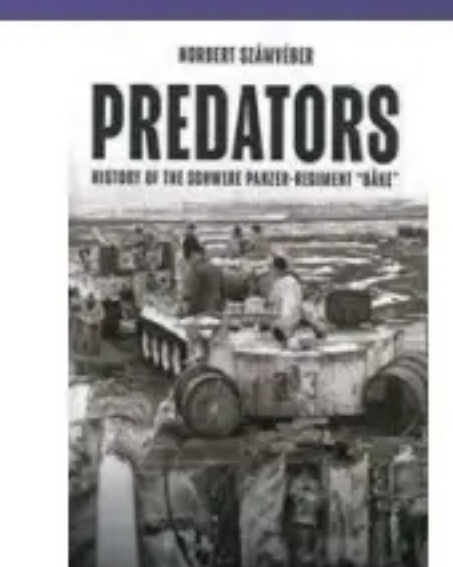
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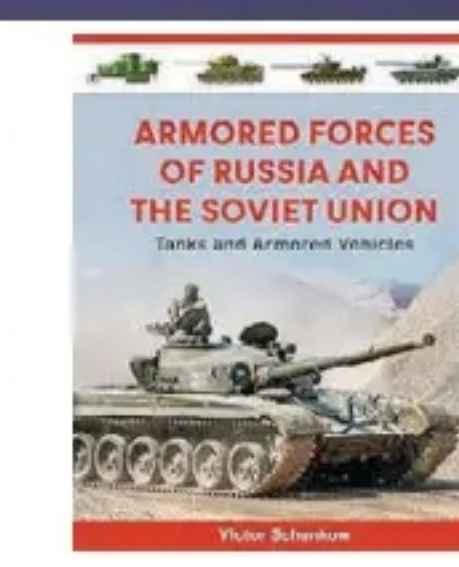
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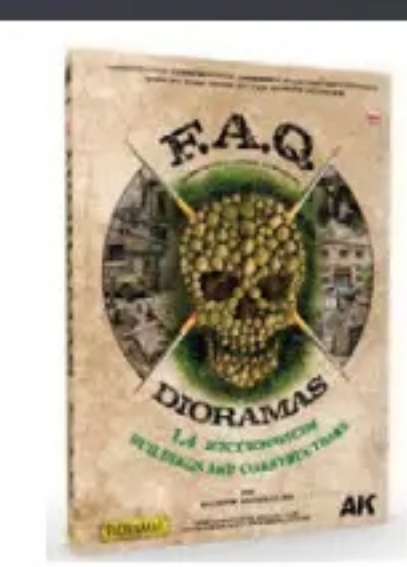
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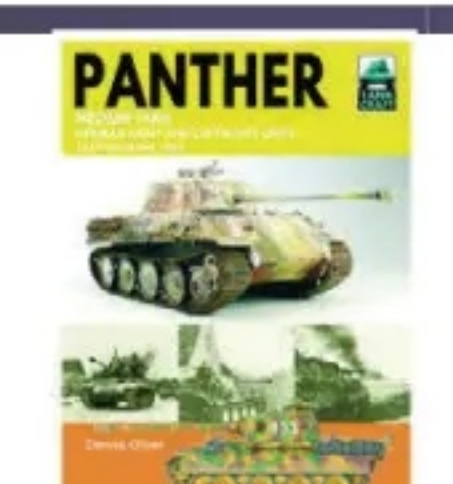
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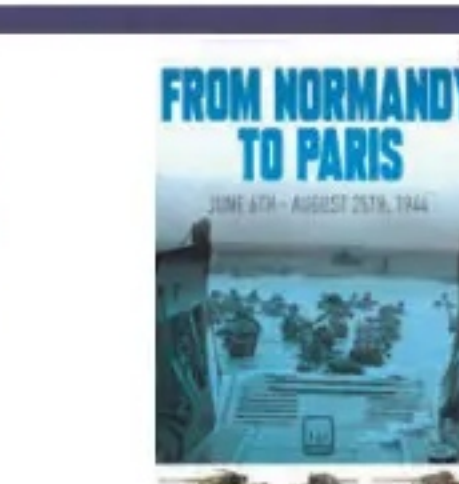
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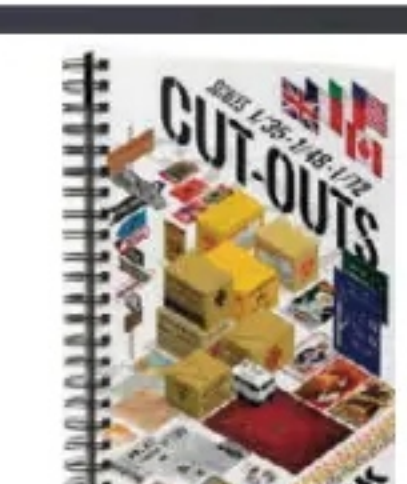
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