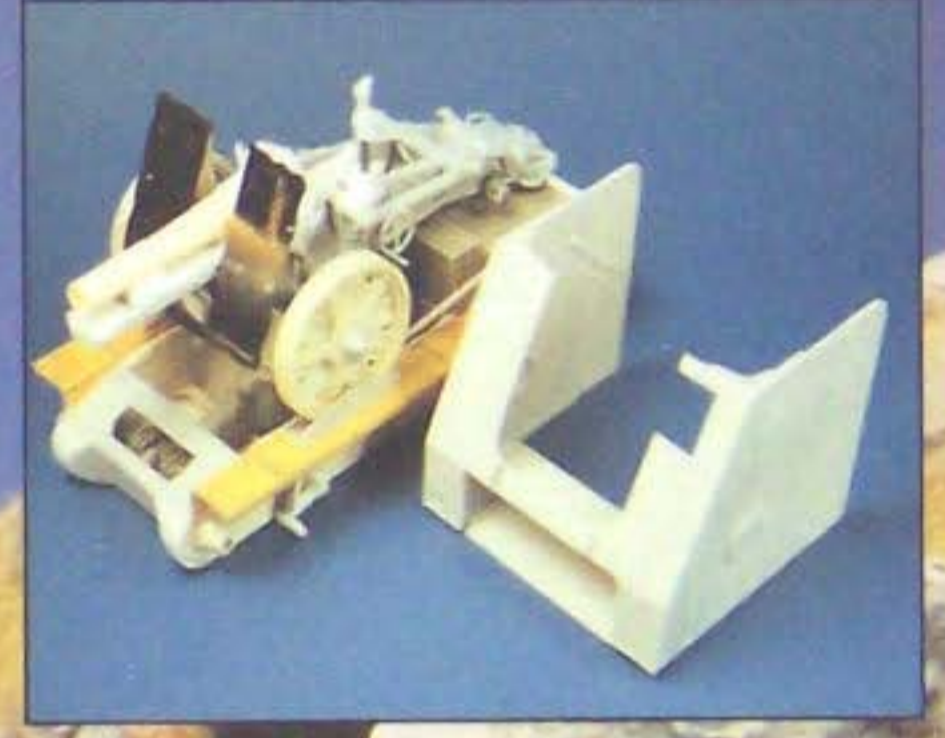


# Modelling the German 15cm sIG33 Bison and Grille

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*Consultant editor* Robert Oehler



\$ 39.95

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# Introduction

The 'Bison' and 'Grille' are generally accepted names for Germany's self-propelled 15cm schwere Infanteriegeschütz 33 (sIG33) vehicles from World War II. One of Germany's chief weapons manufacturers, Rheinmetall, introduced the schwere Infanteriegeschütz 33 (sIG33) in 1927. With a firing range of 4.7km it was the most powerful support weapon for the German infantry, and in January of 1940 the first attempts were made to adapt it to a tracked vehicle. The entire gun carriage, complete with wheels, was mounted on the Panzer I Ausf. B chassis, with tall shields of armour plate added to protect the front and sides. Six companies of these vehicles were deployed on the Western Front, with each company having six self-propelled guns. The sIG33(Sf) auf PzKpfw I Ausf. B (Bison I) stayed in service until 1943. Thirty-eight examples of this vehicle were built.

Efforts to mount the gun on an improved chassis continued soon after the campaign in France. A Panzer II chassis for this vehicle was developed by widening the hull by 32cm and lengthening it by 60cm, necessitating an extra roadwheel. Twelve vehicles were completed after many delays in design and production. The 15cm sIG33B Selbstfahrlafette auf veränderten Panzer II Fahrgestell (Bison II) served in Rommel's Afrika Korps with sIG Kp (Sf) 707 and 708 from late 1941 to spring 1943. Although it had a lower profile than its successful predecessor, its career was plagued with mechanical problems.

Further efforts to mount the sIG33 gun onto a reliable self-propelled chassis, coupled with the need for a fully enclosed fighting compartment, resulted in 24 Sturmpanzer IV Ferdinand being built on re-worked StuG III hulls. The vehicles were needed on the Eastern Front during the Stalingrad campaign and 12 were delivered for action beginning in November of 1942. They served there with Sturmgeschütz Abteilung 177 until the surrender in February 1943. A surviving example of this vehicle is kept at the Kubinka Museum in Russia. The other 12 vehicles of this type were also sent to the Eastern Front, seven of which ended up serving with the Infanterie Geschütz Batterie of Panzer Regiment 201 of 23. Panzer-Division.

The Grille Ausf. H (SdKfz 138/1) was the adaptation of the sIG33 onto the Czech Panzer 38(t) chassis. The BMM factory in Prague was already developing a mid-engined chassis for the self-propelled gun, but in order to get the Grille into action as quickly as possible, an interim plan was implemented producing 90 vehicles using the rear-engined Panzer 38(t). From early 1943 until the end of World War II the Grille Ausf. H served in all theatres of the European war with the schwere Infanteriegeschütz companies of the Panzergrenadier regiments.

The Grille Ausf. K (Alan Hobby's kit is called a Grille 'M') went through two production runs at the BMM factory in Prague in 1943. A total of 282 vehicles were manufactured, and the SP gun saw action on all fronts until the end of the war.

This book will demonstrate the construction of five 1/35-scale models of specific examples of the various self-propelled sIG33 vehicles. The modeller will be led through the various skill levels of construction by combining existing kits with some aftermarket accessories and scratch-built items. Within the last ten years there has been an effort by plastic model companies to release kits of the Bison and Grille previously only available in resin and multimedia form. Dragon Models affiliate Kirin came out with a 1/35-scale Grille H in the early 1990s followed soon after with DML's Sturmpanzer IV Ferdinand. Alan Hobby of Russia has recently populated the market with some welcome releases of the Bison II, Grille M (officially Ausf. 'K') and at the time of writing, the Bison I.

# Materials

The following section describes the various tools and materials used in the construction and painting of the models. One of the most useful items used throughout the construction of the models was a set of small plastic parts drawers containing spare model pieces and small scraps of styrene rod, tube and sheet.

## Styrene sheet, rod and tubing

A good selection of styrene sheet, tubing and rod was needed for the more challenging aspects of the model construction. Typical sizes used were .040in., .020in., .015in., .010in., and .005in. When thicker sheet sizes were needed, the styrene was laminated together with liquid glue. Invaluable tools for working with styrene are a large straightedge ruler to use as a cutting guide and a smaller ruler with millimetre and inch markings. Sharp No. 11 X-Acto hobby blades are essential to most of the work this book describes, and a box of 100 ensured a good supply.

## Punch and die set

Although expensive, this handy device helped with many of the parts such as spacers, washers, rivets and other details.

## Soldering equipment for the etched-brass parts

Cyanoacrylate glue can be used to bond etched-brass parts together in most cases. However, for some of the bigger jobs where strength is needed, the brass needs to be soldered together. The fenders on the Bison I and Grille H, and the front shield assembly on the SIG33 gun were put together using a small butane soldering tool.

## RTV rubber moulds and resin casting

Resin parts were cast for some of the detail on the models. Two of the road wheels for the Bison II, as well as the radios for three of the vehicles were made from masters using two-part resin and RTV rubber moulds.



This pin-vise and mini drill bit set has bit sizes ranging from No. 80 to No. 60.



A butane soldering tool was purchased from a local electronics supply shop. The glass filament brush is for cleaning etched-brass details before soldering.



A sharp pair of side cutters is ideal for trimming the pour-plugs from resin castings, in this case the hull from the Bison I conversion kit.



Two-part resin was poured into a mould to make a radio. The amber liquid hardens into the final part seen to the left.

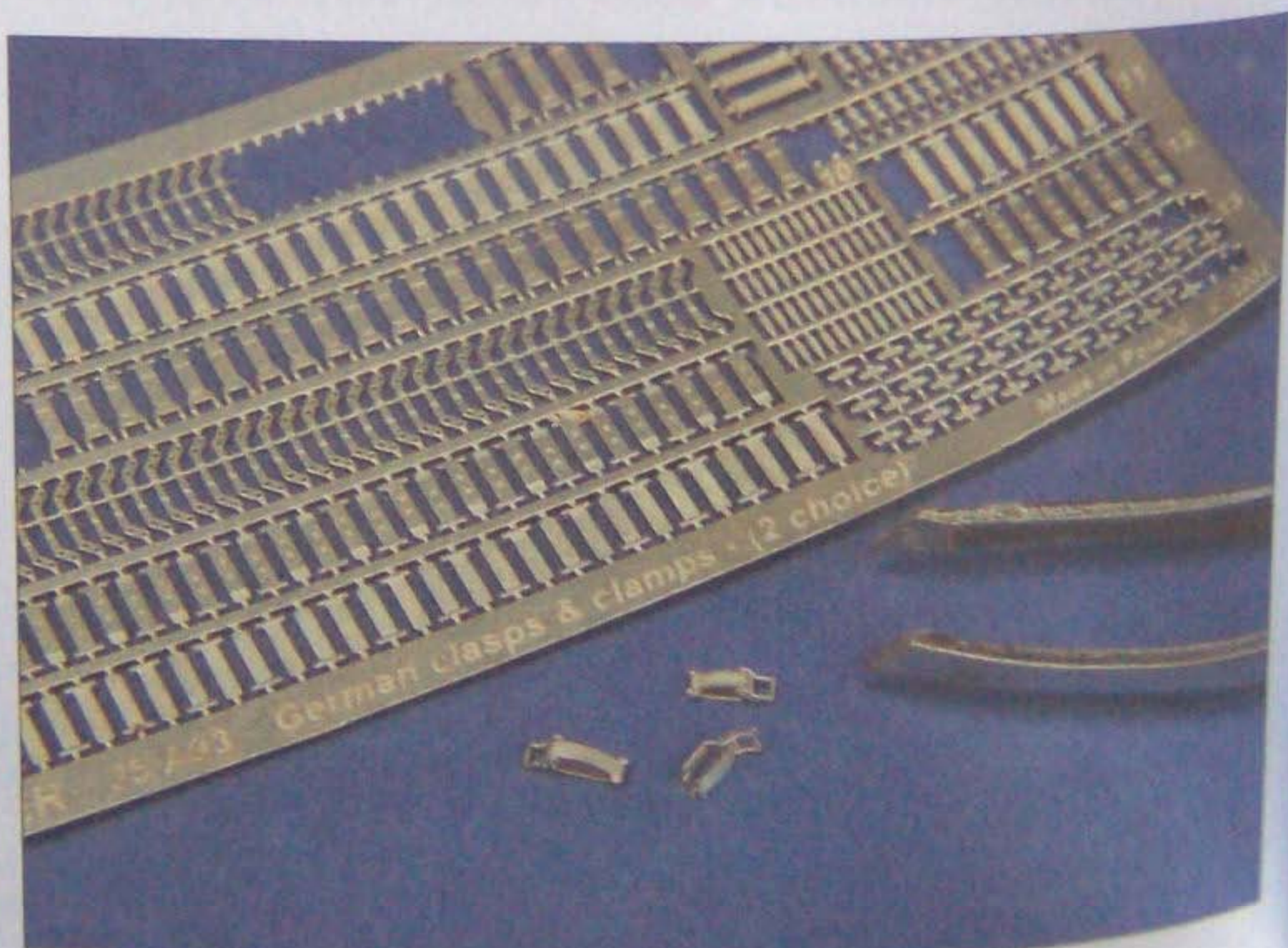
## Etched-metal bender

To help bending the etched-brass parts a tool called 'Hold & Fold' was used. There are now several different brands of this kind of device at the time of writing, sold in different sizes. The 4in. size was needed to work with Aber's etched-brass fenders.

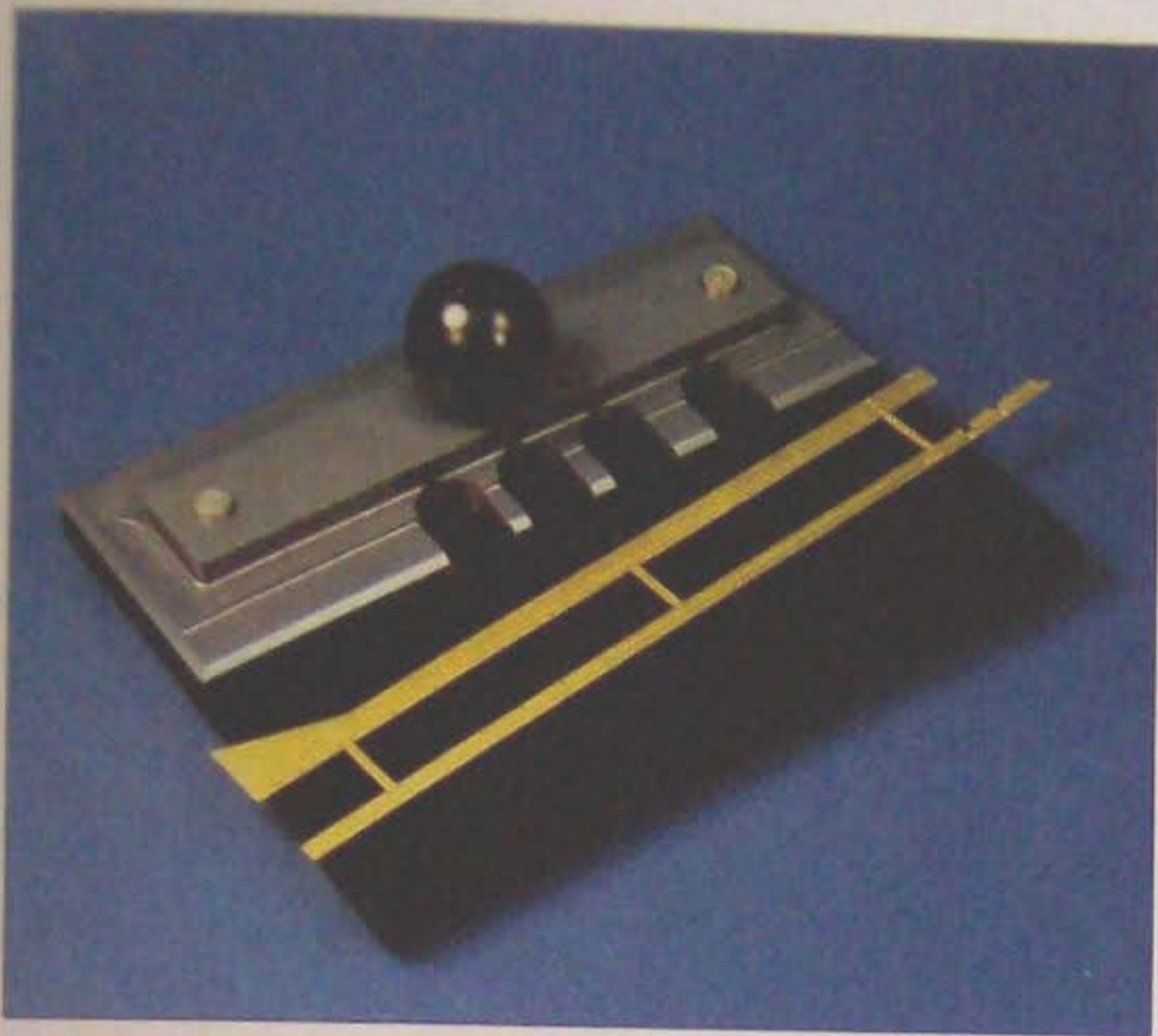
## Putty and glue

'Zimm-It-Rite' epoxy putty from R&J Enterprises was used for the models in this book. Small details like seat cushions and weld beads were formed from this material, which dries rock hard overnight and is easy to work with.

Tamiya's lacquer-based putty is an excellent medium for creating cast metal texture as well as filling gaps. Larger holes and gaps were filled with epoxy putty or styrene.



Etched-metal detail is an important component of super-detailing models, and a good pair of tweezers is needed to ensure a good job. These are Aber's workable tool clamps.



An etched-metal bending tool makes the job of bending longer parts easier, such as the frame for a Bison I fender.



A Dremel motor tool is a versatile aid in forming parts. Care must be exercised when using this tool, and safety glasses are a must.

To help adhere the various plastic, resin and metal parts cyanoacrylate was used, commonly referred to as superglue, or 'cyano' for short. Styrene bonds were formed with Testors' liquid cement, which also works for resin to styrene bonds. Liquid cement softens the styrene enough to stick to smaller brass parts for alignment, which were then fixed permanently with cyano glue.

## Lead wire and foil

Sold as solder in hardware shops and fly-tying wire in fishing shops, hobby companies now carry various sizes of lead wire for detailing models. Conduits and wiring are easily formed and cemented using the various sizes available, with .010in. and .020in. used mostly on the models in this book.

Lead foil can be purchased, or scavenged from tops of wine bottles. Its many uses include forming retaining straps, gun slings and conduit supports. The foil can also be obtained with an adhesive backing. Thicker lead sheet from a ski wax container was used to make the ammo preparation tray and front-hinged armour plate on the Grille H.

## Airbrush and pressure supply

To obtain the finish quality and take advantage of the painting techniques described in this work an airbrush and pressure supply are essential. The single-action airbrush used to paint these models was a Paasche H-1, and was supplied with pressure from a compressor with a 7-gallon tank and regulator.

## Paints

Various types of paint were used to finish the models in this publication. Each one has a unique advantage for the situation in which they are used. In summary, the models were primed with Floquil lacquers followed with Tamiya and Model Master acrylic paints for the overall finish of the models. Vallejo water-based paint and Humbrol enamels were used for the detail. Winsor & Newton oil paints were used for figure painting and weathering washes.

## Pastel powders

The weathering effects on the models portrayed in this book relied heavily on the use of chalk pastels. Several colours in earth tones are handy, including raw and burnt umber, raw and burnt sienna, orange, black and white.

# Sturminfanteriegeschütz 33B

<i>Subject:</i>	<i>Sturminfanteriegeschütz 33B</i>
<i>Skill level:</i>	<i>Intermediate</i>
<i>Basic kit:</i>	<i>Dragon Models Ltd. Sturminfanteriegeschütz 33B kit No. 6042</i> <i>Tamiya sprue 'A' from PzKpfw III kit No. 35215</i>
<i>Tracks:</i>	<i>ModelKasten workable track PzIII/IV Type A No. SK-18</i>
<i>Etched-metal detail:</i>	<i>Aber air intake screens No. G05</i>

## Introduction

DML's kit of the Sturminfanteriegeschütz 33B (kit number 6042) was built to represent vehicle 'G3' serving with Panzer-Regiment 201 in Russia during summer 1943. When modelling vehicles of this type, it is important to study the period photos of the various examples since some feature different parts. Vehicle 'G7', for example, was built on an earlier hull that had different brake access hatch hinges, tool stowage, and early rear idlers. Two views of the vehicle 'G3' have been featured in available reference books; the small Schiffer publication *German Self-Propelled Artillery in World War II 'Bison'*, and the larger *Sturmgeschütz and Its Variants*, also by Schiffer. The chassis appeared to be based on a StuG III F, and had two large stowage boxes on the engine deck.

The Sturminfanteriegeschütz 33B served in Russia from late 1942 until the end of 1943. This vehicle served with Panzer-Regiment 201 of 23.Panzer-Division.



## Lower hull and running gear

Although adequate for the build, the kit's running gear was replaced with the more finely detailed Tamiya mouldings from their Panzer III. Rather than pilfer an entire kit, separate parts sprues were mail ordered from a company in Japan, Rainbow Ten Co. Ltd. In addition to the required wheels and suspension components, a bonus of extra tools, brackets, headlamps and tow cable ends are included on the sprue. The roadwheels had six tubes welded in place that supported the two sides. These were modelled by chopping .040in. styrene rod into small lengths, and gluing each into position before cementing each of the road wheels together, including the spares. Care must be taken when adapting the replacement wheel mounts to the DML hull that they are all correctly aligned.

The return roller mounts, which are part of the Tamiya hull, are a better example of the real thing. These were cast in resin after making a rubber mould, and then added to the hull of the DML model replacing the kit mounts. The two conical bolt heads for the torsion bar mounts were incorrectly positioned on the DML left hull side. They were moulded to the right of the suspension arm hole on the kit, and need to be moved to the left. There were also four conical bolt heads that needed to be added on the left lower hull, located between and below the last two return rollers. Grandt Line No. 155 bolt heads were used for those tasks.

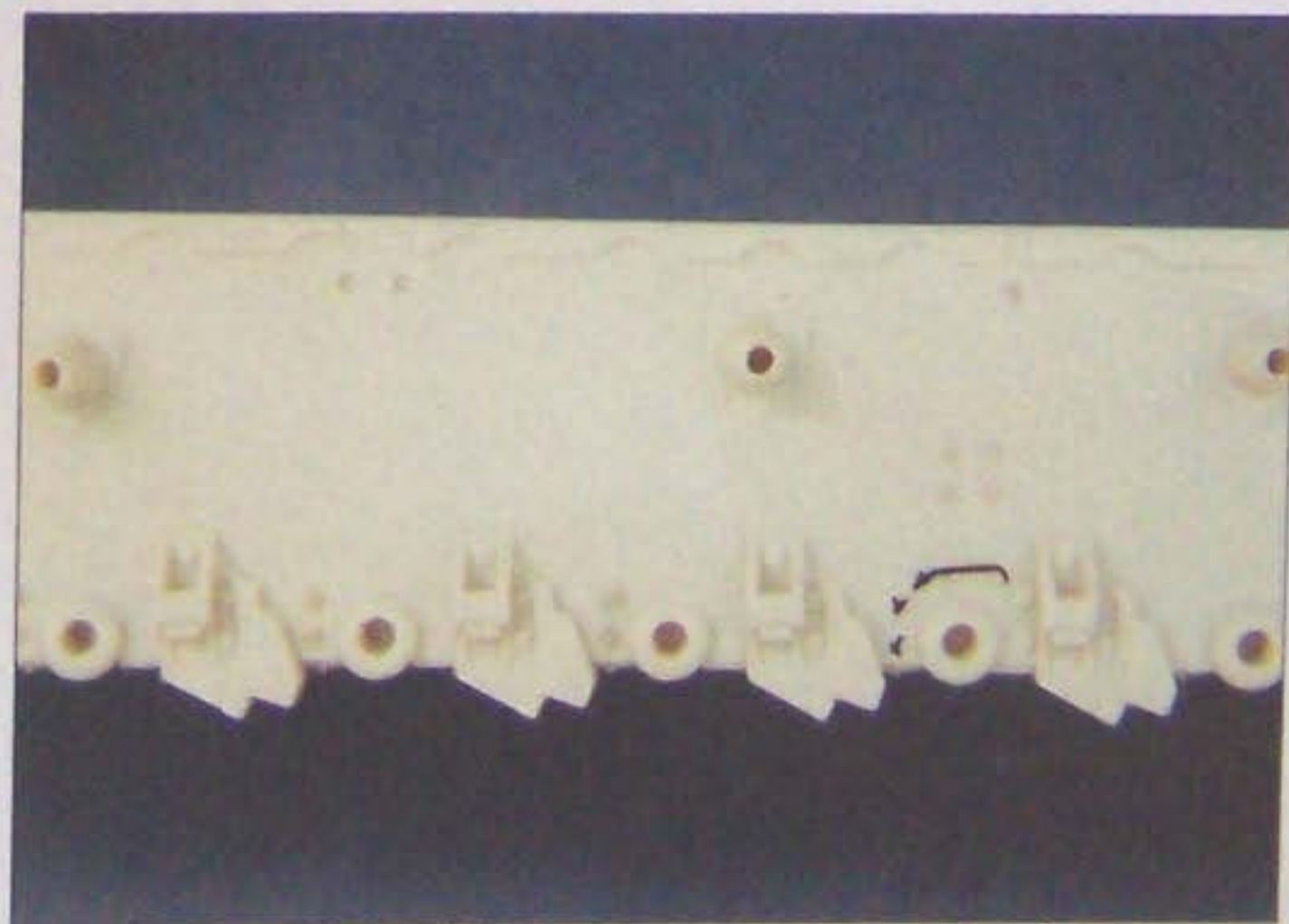
This vehicle featured a distinctive deflector plate mounted on the exhaust, typical of the StuG IIIF. Using the Dragon Models StuG IIIF kit's etched-metal deflector as a guide, a plate was fashioned from lead sheet. Typically, these thin plates got bent during service, and this part endured the same during the construction and painting of the model.

Missing from the kit (and all other DML Panzer III type variants) is the rear fender support bracket. This bracket was located underneath the very rear of the fender, and was also used to support the hinged rear mudflap. These supports were made from  $\frac{1}{16}$ in. brass channel, and were bent and glued in place above the rear idler adjustments. A small piece of etched-brass strip was bent into a 'V' shape, and added to the rear of the bracket to act as a support for the mudflap. Grandt Line bolt heads were cemented into the appropriate spots. Pins for the rear towing pintles were made from brass rod, and were given small brass chain retainers. The pins for the front pintles were not just a bent rod, but a two-part assembly, which were made from two sizes of white styrene rod.

The rear plate of the vehicle, located above the muffler, is flanged to the upper hull. The lower edge of the plate should be modified to not appear so flat, since it angled up at each side more significantly than the kit part. Two



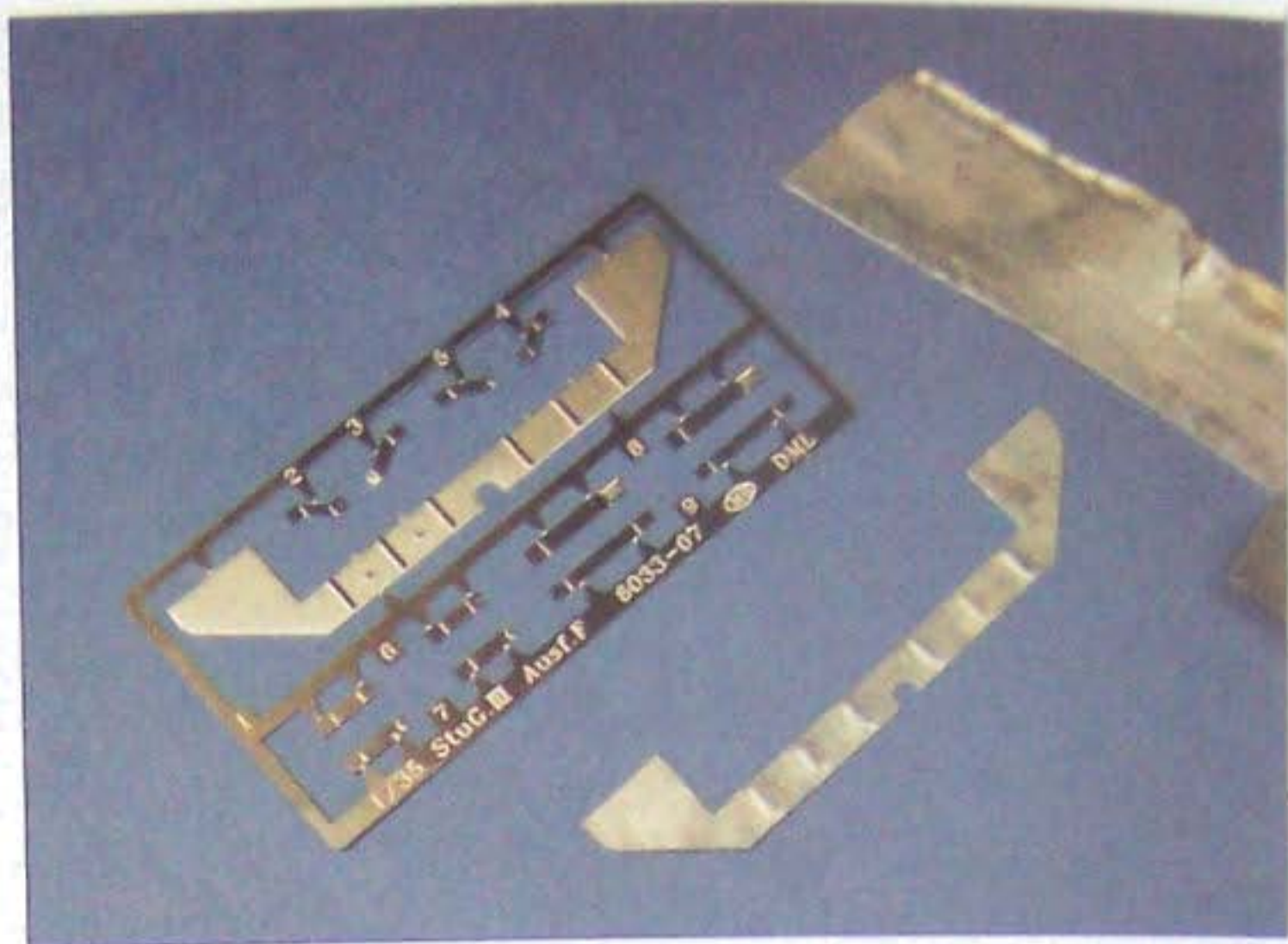
*Styrene rod was glued in place between the roadwheel halves to represent the stiffening tubes.*



*The location of the torsion bar bolt heads was corrected by moving them from the right to the left of the roadwheel support, shown by the arrow. This was only needed on the left hull side.*



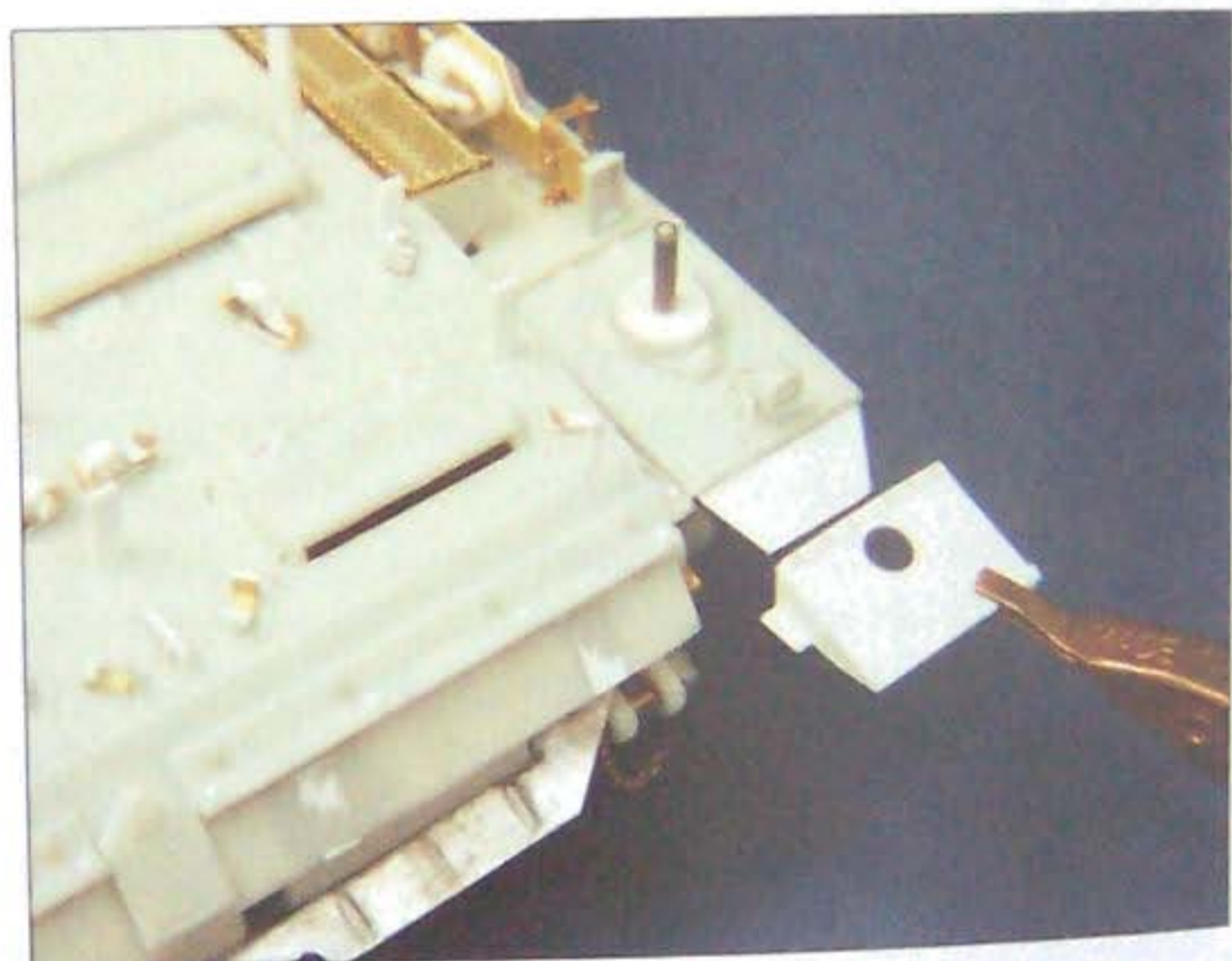
The kit's running gear was replaced with parts from Tamiya's PzKpfw III. The return roller mounts were resin castings made from the Tamiya kit's hull side.



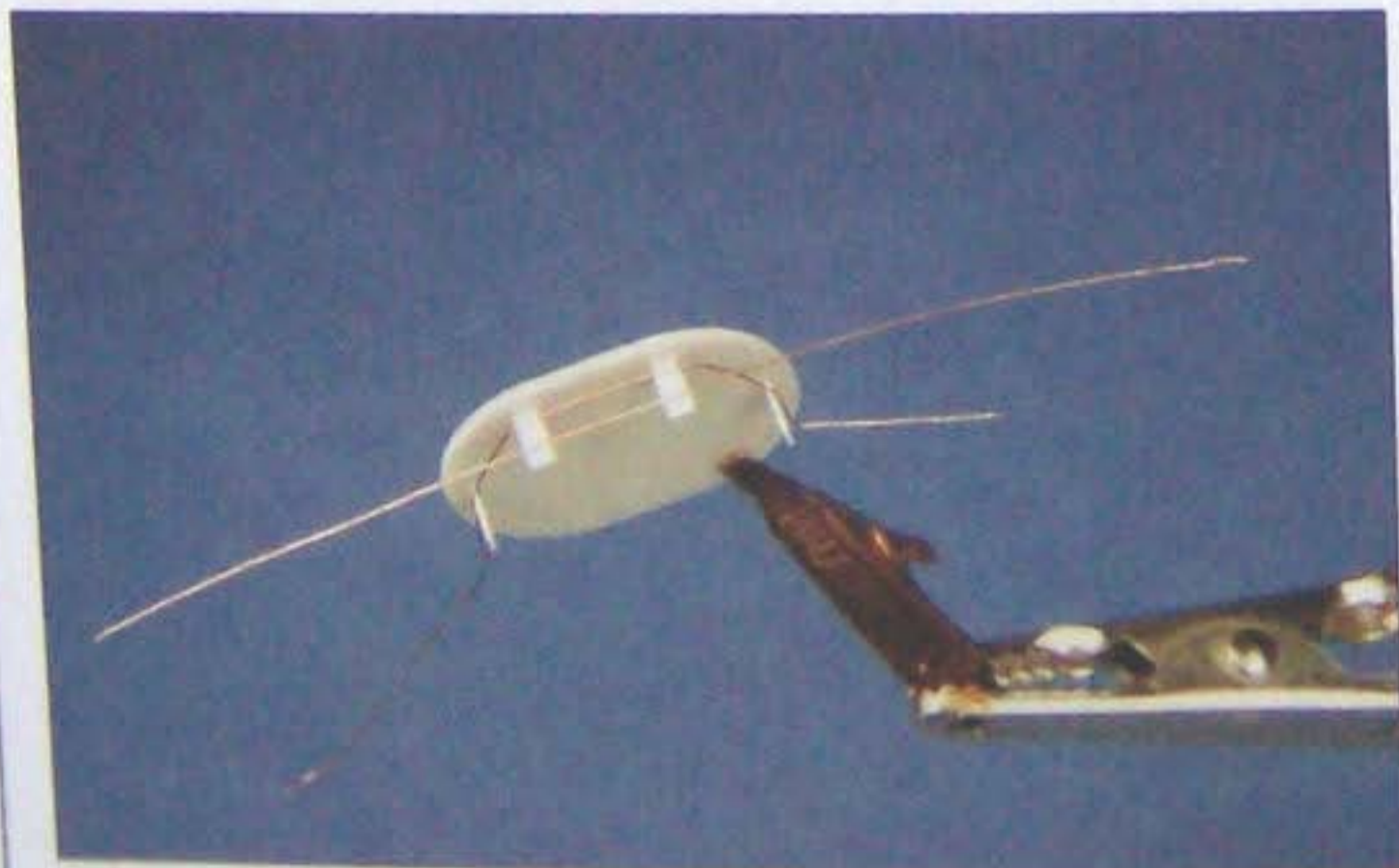
The exhaust deflector was made from lead sheet, using the etched-metal part from DML's StuG IIIF kit as a reference.



The rear fender supports were bent from 1/16 in. brass channel. The tow cable mounting hardware was scratch-built from soft metal, styrene and ModelKasten wing nuts.



Since the hole for the light on the kit's right rear mudflap is not properly aligned, a new one was made from styrene card. Hexagonal styrene rod was sliced to create the bolt heads for the hull flanges.



Thin copper wire was salvaged from an electrical cord and was glued into place on the protective plate for the gun sight.



ModelKasten's No. SK-18 track links replaced the kit's tracks. The links have a hollow guide horn that had to be glued in place on each of the 92 links per side.

depressions in the rear plate at the right-hand side were filled with thin styrene, puttied, and sanded smooth. Tamiya (basic type) putty is ideal for this since it bonds to the plastic well and dries quickly. The cover plate for the inertial starter port is shown on the DML instruction sheet as being mounted with the hinge at the top, which is incorrect. All StuG IIIs with this design of cover plate had them configured with the hinge at the bottom.

The kit tracks were replaced with ModelKasten's SK-18, an earlier 40cm Panzer III/IV type with the hollow guide teeth. The individually moulded links need to be constructed by adding the guide teeth and pins to eight links at a time in a small jig supplied. Ninety-two links per side were needed to complete the runs. There were enough links left to put together a spare track run of ten on the front plate.

## Upper hull and fighting compartment

Depending on which vehicle the modeller has chosen to make, the DML hull offers the options of adding a choice of transmission/differential access hatches on the front glacis. Although not provided in the Sturmpanzer III kit, the plate with earlier hatches with larger hinges is an optional part in several of the other DML Panzer III kits and can be used if vehicle number 'G7' was to be modelled, for example. The kit-supplied hatches with the smaller hinges were used on 'G3'. The feet and release handle for the gun's travel support were made from styrene strip since the kit detail is over simplified.

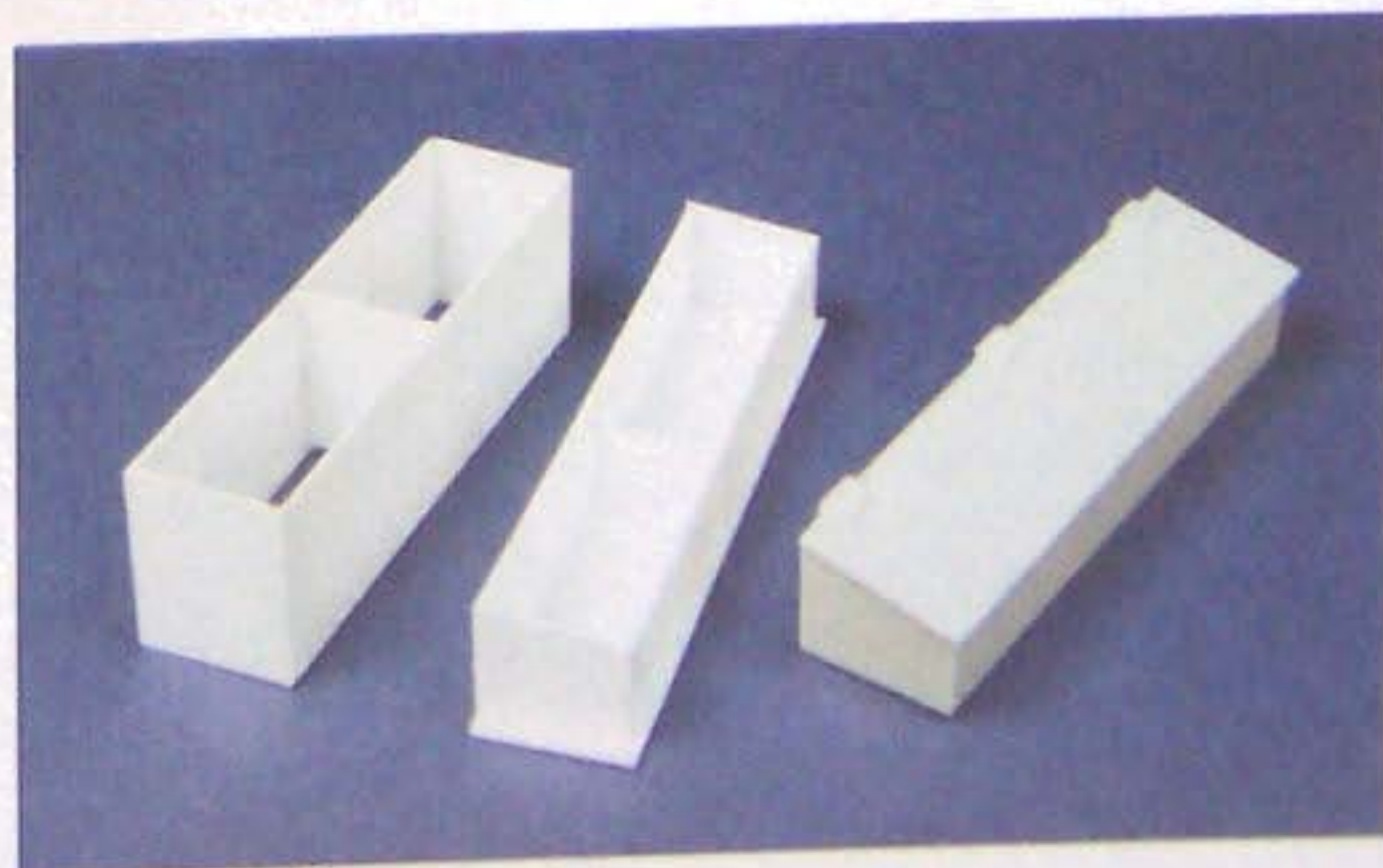
Thin styrene strip was used to modify the area where the fenders meet the front glacis plate, and small resin fasteners from Royal Model's StuG III detail set were placed on the inside edge of the front and back mudflaps. These fasteners were actually hooks on springs, and could be unlatched to allow the flaps to be folded right back. Tamiya's Bosch headlamp was used as a retrofit from the DML one provided, and an electrical conduit made from solder wire was run down to a connection on the top of the left towing pintle.

The engine deck features the standard fittings for a StuG III. Although various aftermarket details are available, the parts for this model were easy to make. The kit's moulded-on guides for the tow cables were shaved off, and replacements were fashioned from soft metal sheet. The sheet used was an expired tube of contact cement that was cleaned and burnished flat. ModelKasten's wing nuts were used to detail the clamps for the tow cable ends. Because this hardware became obstructed by the large stowage boxes mounted on the engine decks of these vehicles, the tow cables were typically fastened to the front towing pintles and draped around the fighting compartment. Engine deck lifting hooks of the earlier design featuring two holes were made from .015in. styrene card and cemented into position.

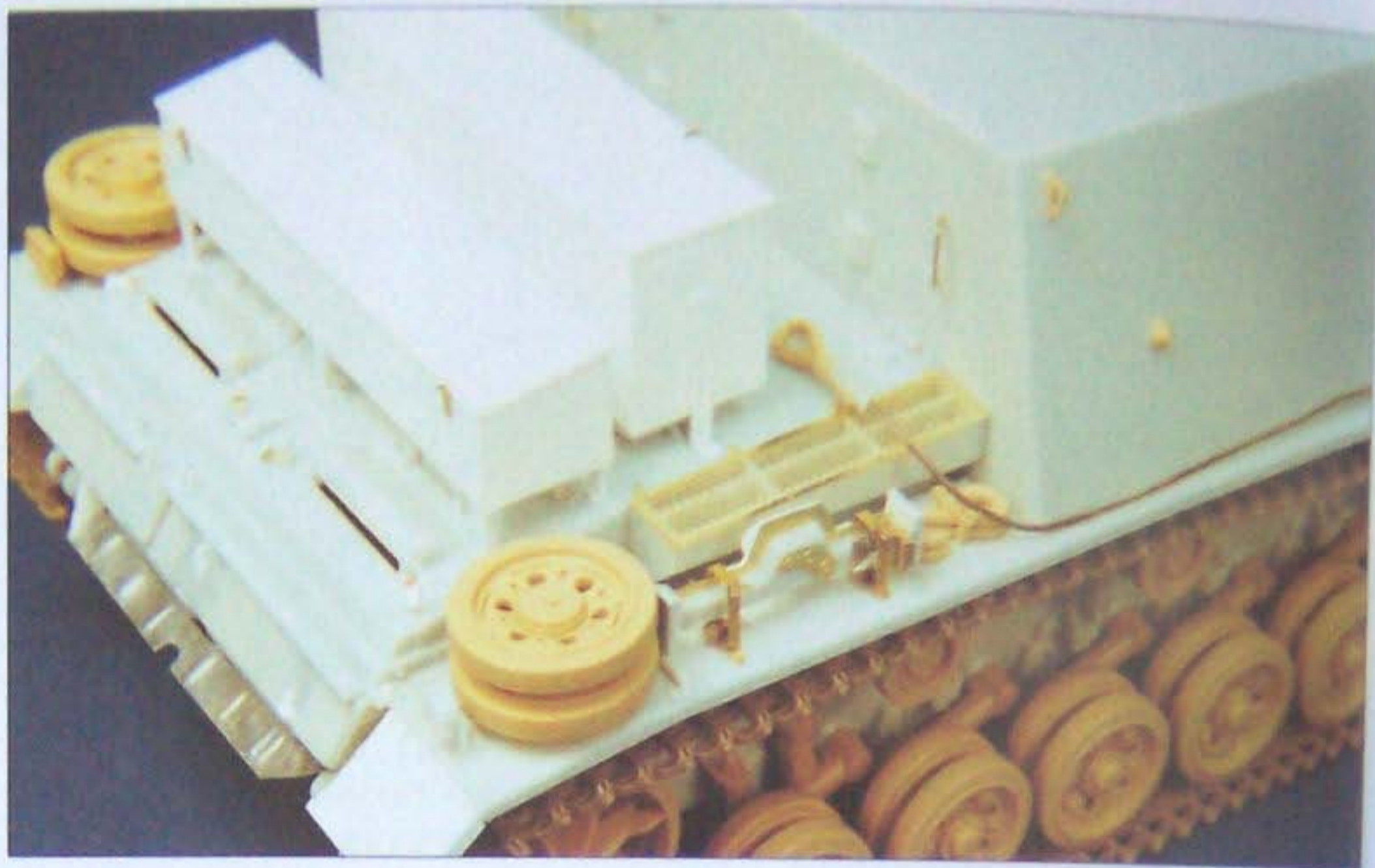
'G3' had what seems to be a typical arrangement for these AFVs of two large stowage boxes mounted on the engine deck. DML's kit provides the rear one and just the mounting brackets for the larger one in front of it. Based on photographs in *Achtung Panzer* no. 5 and Spielberger's *Sturmgeschütz and its Variants*, two stowage boxes and their brackets were constructed from .015in. styrene card. The larger one measured 48mm long x 12mm wide x 15mm high. The rear one measured 52mm long x 11mm wide x 10mm high (sloping down to 8mm high at the rear). Hasps from Royal Model were added to dress them up, and they were cemented in position on the engine deck. The air intakes were covered with Aber's etched-brass screens, which have a woven mesh effect compared to the kit-supplied offering.

The right rear mudflap had to be replaced on the model since the impression representing the hole for the taillight is not correctly aligned. Tools stowed on

Two stowage boxes were constructed from photo reference, with the kit-supplied one shown to the right. A styrene support member was glued inside to reinforce the box.



Aber's etched-metal air intake screens were used, along with various tool clamps. A pistol port was added to the right side of the upper hull.

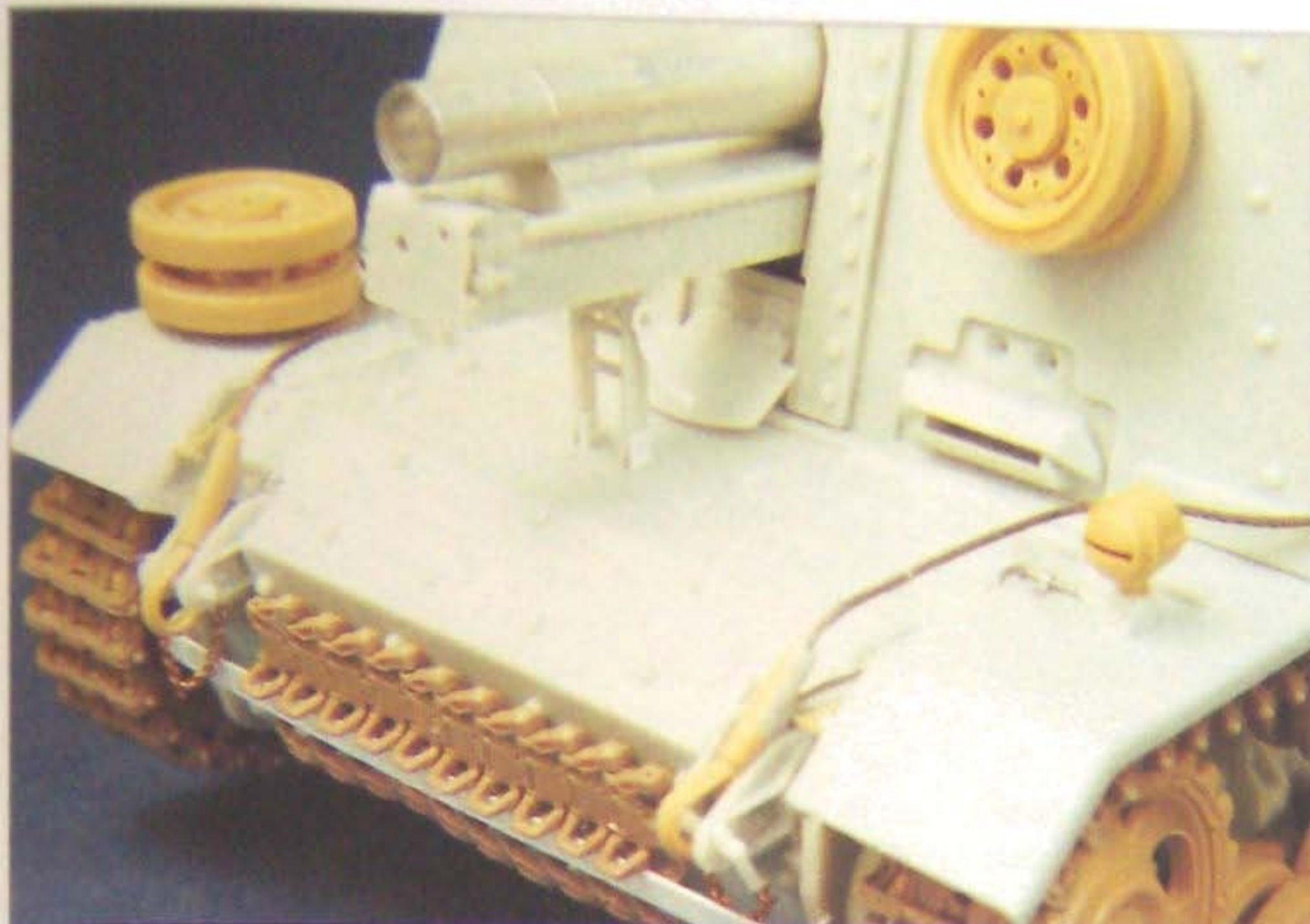


Tamiya's PzKpfw IV OVE set was used for the tools stowed on the fenders. Brass rod was bent into shape and replaced the kit's thicker hatch handles.



The gun assembly, featuring a turned aluminium barrel, had to be re-positioned to align with the opening in the front of the fighting compartment. Thin detailing solder from Hudson and Allen formed the conduit for the headlight.





The gun's travel lock was detailed with a new handle and mounting feet. The front mudflaps were secured by spring-loaded fasteners modelled in resin by Royal Model, from their StuG IIIB detail set.



The running gear was obtained by purchasing separate kit sprues of the Tamiya PzKpfw III L from Rainbow Ten Co. Ltd. in Japan.



The position of the rear idlers was set to properly tension the ModelKasten track links without over-emphasizing the sag.



To hold the model while painting, a homemade tool was fashioned by gluing a wood screw into a file handle. The tool was then screwed into a pre-drilled hole in the bottom of the model.



After priming with dark brown Floquil lacquer, a base coat of acrylic three-colour camouflage was airbrushed onto the model.



Using photographic references, camouflage colours were applied following the shapes and intensities shown in the pictures. The paint was thinned considerably to control the pattern.



The end of a paintbrush was trimmed and used to mount the roadwheels for painting the rubber using Floquil's Weathered Black.

the fenders varied between vehicles, and some of the ones on this model were taken from Tamiya's PzKpfw IV On Vehicle Equipment (OVE) set. A mount was made for the shovel, and it was positioned on the left rear fender next to the axe with Aber's tool clamp set. The jack was from the spare parts box, combining Aber's etched brass Hetzer details with the DML kit part and some .040in. styrene.

The main gun mount was moved slightly to one side to allow it to sit centred in the fighting compartment's aperture. The left and right hand side walls of the superstructure have a tendency to want to bow inward, and so they were braced by cementing an internal support of sturdy .040in. plastic to keep the walls straight. The antenna mount was detailed with brass strip and a thin solder electrical lead.

The main gun was replaced with a turned aluminium one from Elefant and the shield on the front of the cradle was given a small styrene addition where it curves at the top. The kit's hull MG barrel was replaced with the end of a solid barrelled MG34 from the Tamiya PzKpfw IV OVE set. The 'G3' vehicle also sported four spare road wheels, two of the mounts coming from the kit, and two from the separately purchased Tamiya Panzer III 'A' sprue that had yielded so many valuable parts already.

## Painting

The Sturmpanzer IV Ferdinand were first painted dark grey RAL 7021 before being sent to the Eastern Front in late 1942. The majority of pictures of the vehicles belonging to Infanterie Geschütz Batterie of Panzer-Regiment 201 have the Panzers with a three-colour scheme of dark yellow base and a mottling of green and brown camouflage.

To prepare models for painting, they are given a base coat of a very dark brown Floquil lacquer. This serves two purposes. Firstly it prepares the surface of the multimedia kit for the final coat of acrylic, and secondly gives a darkened base to allow a pre-shadow effect. To help in holding the model for painting, a small hole was drilled into the bottom of the hull, and a file handle screwed into it. The hole was later filled at the end of the painting process. The wheels were left off the model until the weathering process, since it allowed the rubber tires to be painted with less difficulty.

After painting the entire vehicle in a mixture of Floquil Roof Brown and Engine Black, the model was set aside to dry for 48 hours. This allows the lacquer to cure properly ensuring no reaction to the subsequent layers of acrylic paint. The next step was to coat the model in a dark yellow base. I had previously compared various brands of paints to determine a match for 'Dunkelgelb' and came up with a formula based on the colour of an original artifact from World War II in fairly mint condition. Adding Tamiya's acrylic XF-60 Dark Yellow to XF-59 Desert Yellow in a 4:1 ratio respectively gave an adequate match. The acrylic paint was airbrushed onto the model using a 1:1 mixture of paint and Tamiya's acrylic thinner. By applying the paint gradually, the shadows created by the dark base can be left, enhancing the look of the kit.

To apply the camouflage colours, several wartime photos were studied and kept handy as a reference as the pattern was applied with XF-64 Red Brown mixed with some black, and Model Master acrylic Panzer Olivgrün 1943. These colours were thinned down with 3:1 thinner to paint ratio, allowing control over the colours' intensity and fineness of spray.

The markings 'G3' are supplied with the kit along with options of '2' and '4', but the white part of the national insignia is over-stated. Better examples of the Balkenkreuz were found with Tamiya aftermarket decal sheet 'D', which is one of several sheets carrying numerous valuable decal options. Tamiya gloss was airbrushed onto the areas that were to receive the markings, and Testors' Model Master Flat Lacquer was applied after the decals had been placed.



All of the vehicle's accessories were attached and painted, and decals were applied prior to the weathering stage.



Giving the model a weathered look started with an overall airbrushing of a diluted 'earth' mixture of acrylic paint, with emphasis on the lower rear portions of the model. This step toned down the contrast of the markings and other details.

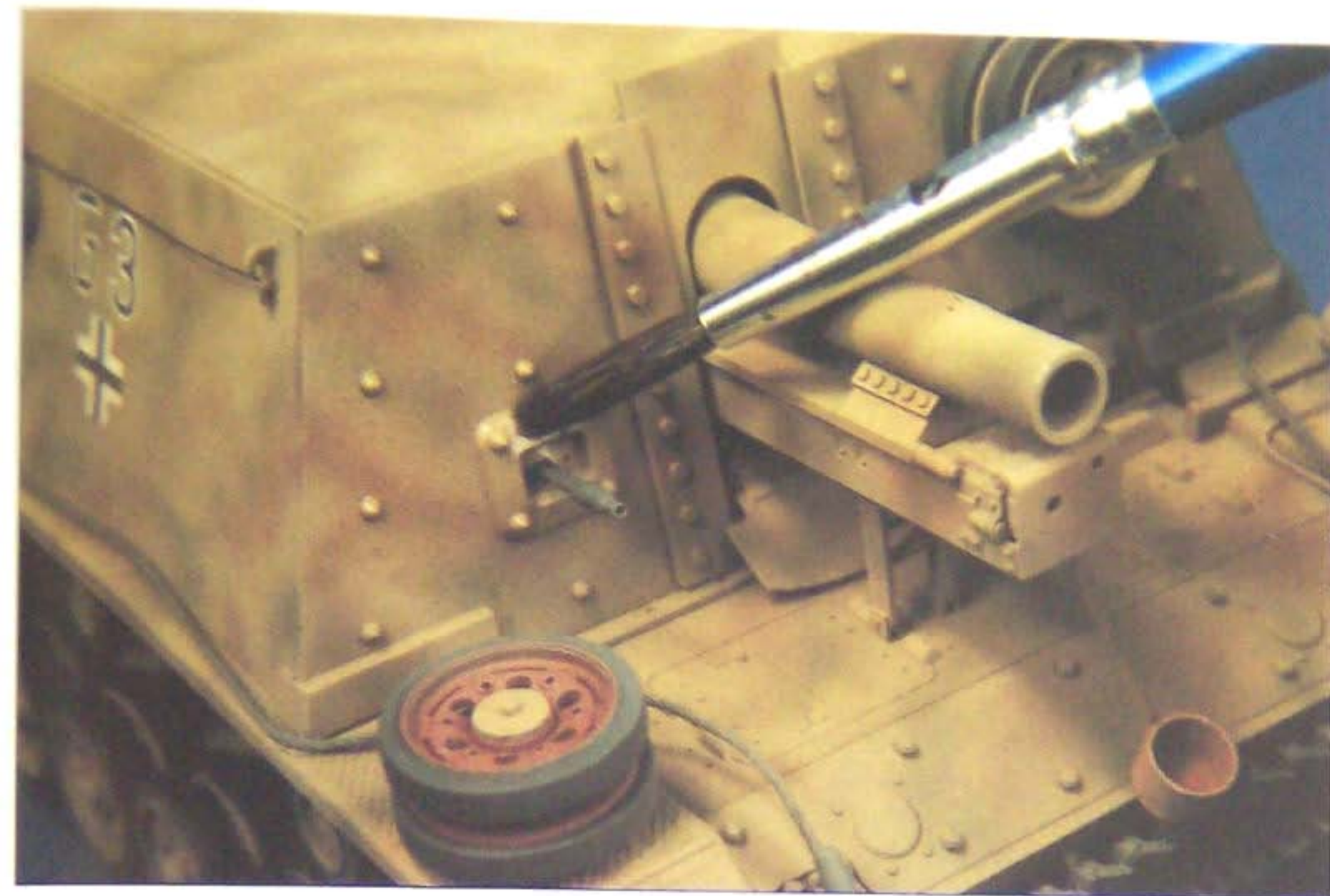
## Painting tracks

The track runs received a base coat of Floquil lacquer. This lacquer paint is resilient to the acrylic-thinned pastel powders that are applied at a later stage. A mixture of Earth darkened with a small amount of Roof Brown was airbrushed on after which mixtures of lighter 'earth' coloured pastel powders were applied. Raw umber pastel, which is actually a very light shade compared to its oil paint namesake, was crushed into powder and mixed with Tamiya acrylic thinner. The soupy mix was then randomly blotted onto the length of the track runs on both sides. Various other shades of pastel were also added including orange, which gives a suggestion of rust. When dry, a mix of Humbrol enamel Gunmetal and Silver was rubbed onto the high points of the entire length of the track runs, making sure that the silver was toned down enough not to appear garish.

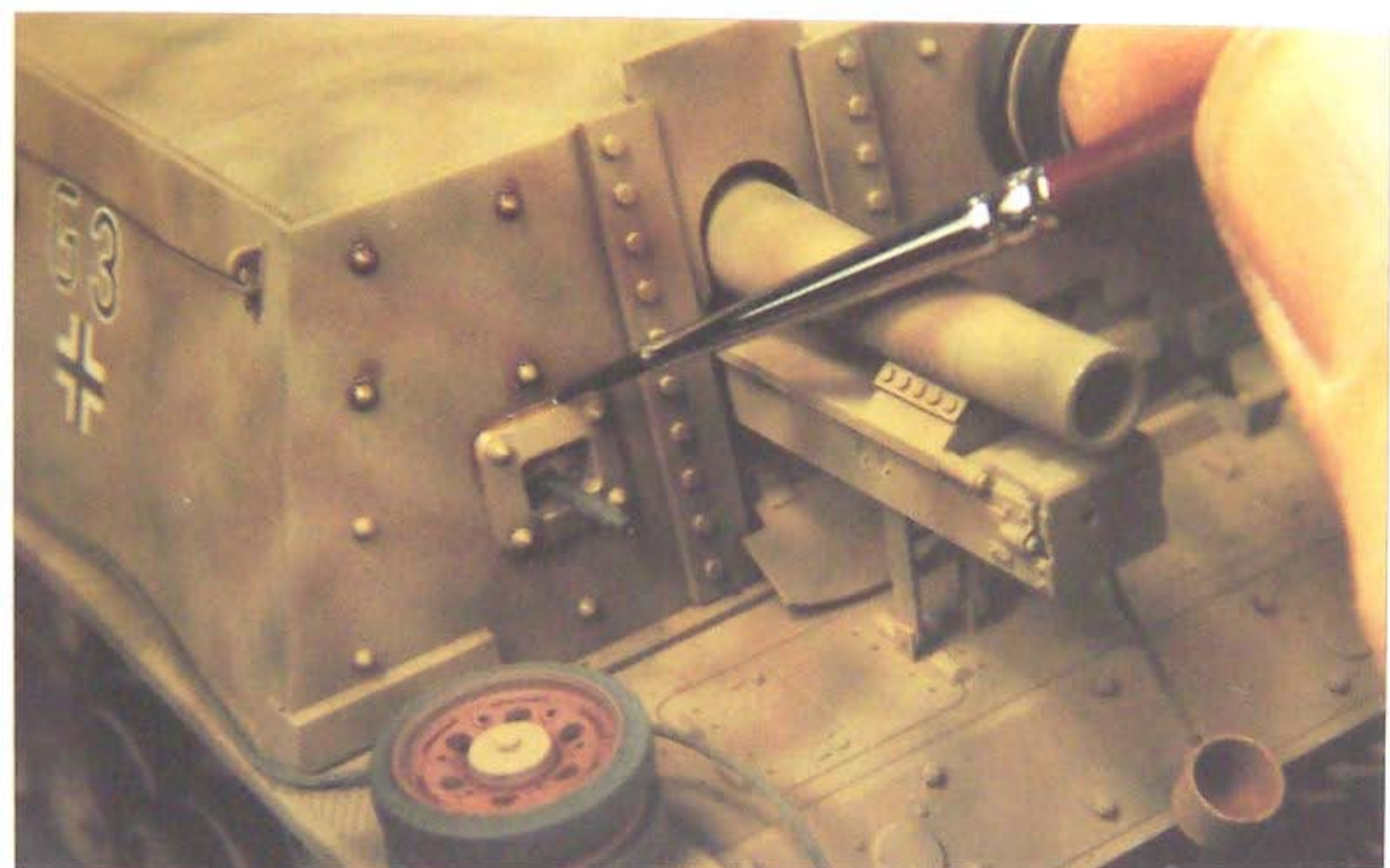
## Weathering

With all of the equipment on the model attached and painted, the assembly received an airbrushing of a dusty acrylic paint mixture, thinned down to 5 per cent paint. The mixture consisted of Tamiya XF-51 Khaki Drab, XF-52 Flat Earth, XF-55 Deck Tan and XF-57 Buff. This 'dusting' was intended to replicate the dirt that settles on an AFV during its time in the field and was concentrated on the lower and rear ends of the vehicle, but also applied to the entire area for consistency. This technique also defeated any sharp contrasts, taking the glare out of markings and other intense shades.

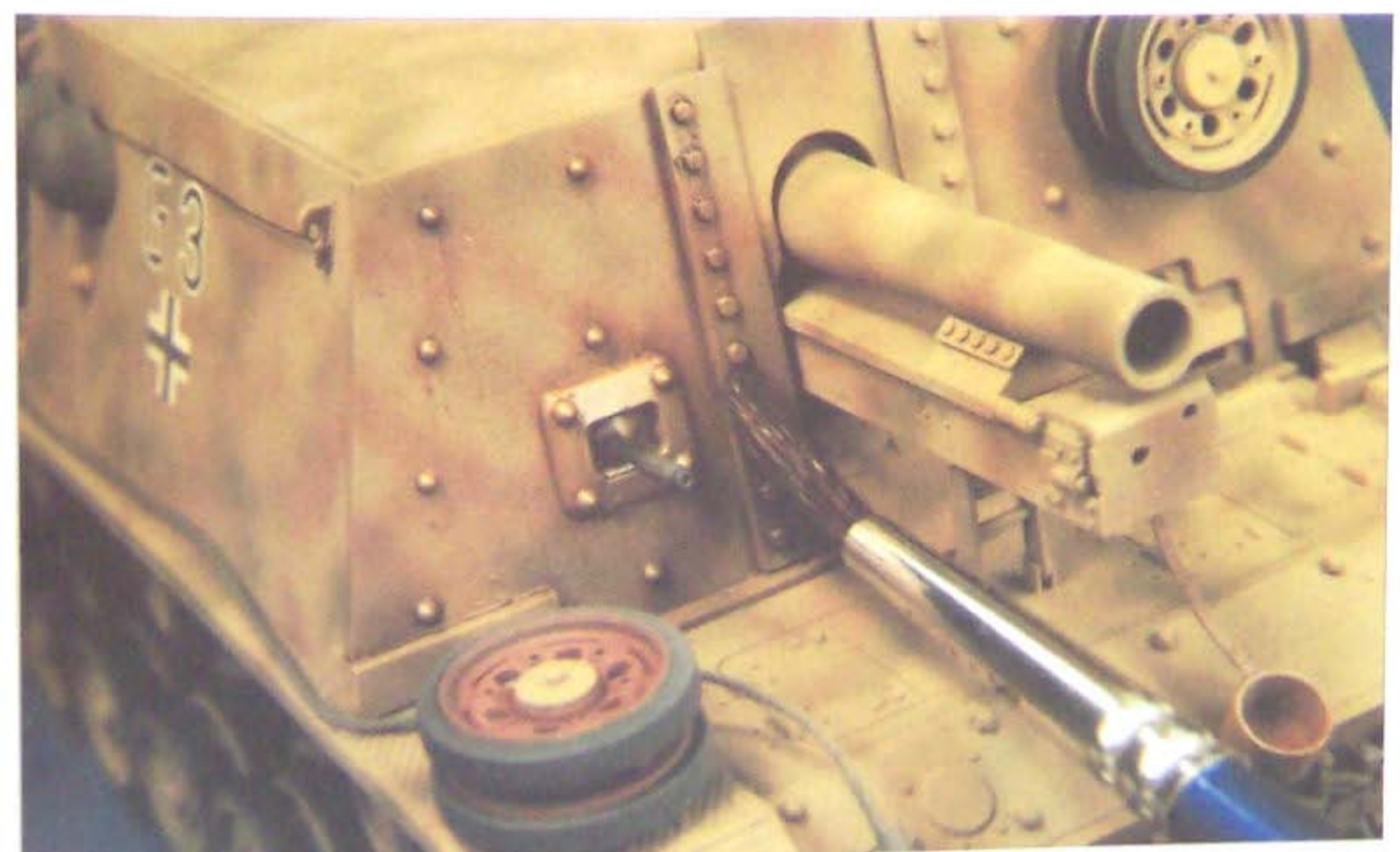
A wash of thinned oil paint to emphasize detail was then applied to all surfaces of the model. Selecting one area at a time, a small amount of mineral spirit was allowed to dampen the finish. With a fine brush, thinned raw umber oil paint was touched to all recessed detail, allowing it to settle in and around the features. Any errant paint was guided away with a clean brush moistened with the mineral spirit. A larger brush dampened with the spirit is used to drag the paint downward on the vertical surfaces. This creates rain streaks and also can lower the intensity of the wash if too much paint has been applied.



A wash was applied to the inside by first dampening the surface with mineral spirit, one section at a time.



Thinned oil paint was added to the details using Winsor & Newton's Raw Umber and Black.



By further manipulating the paint with brushes, the intensity of the wash was varied. By dragging the brush in a downward direction, a streaked look was added.



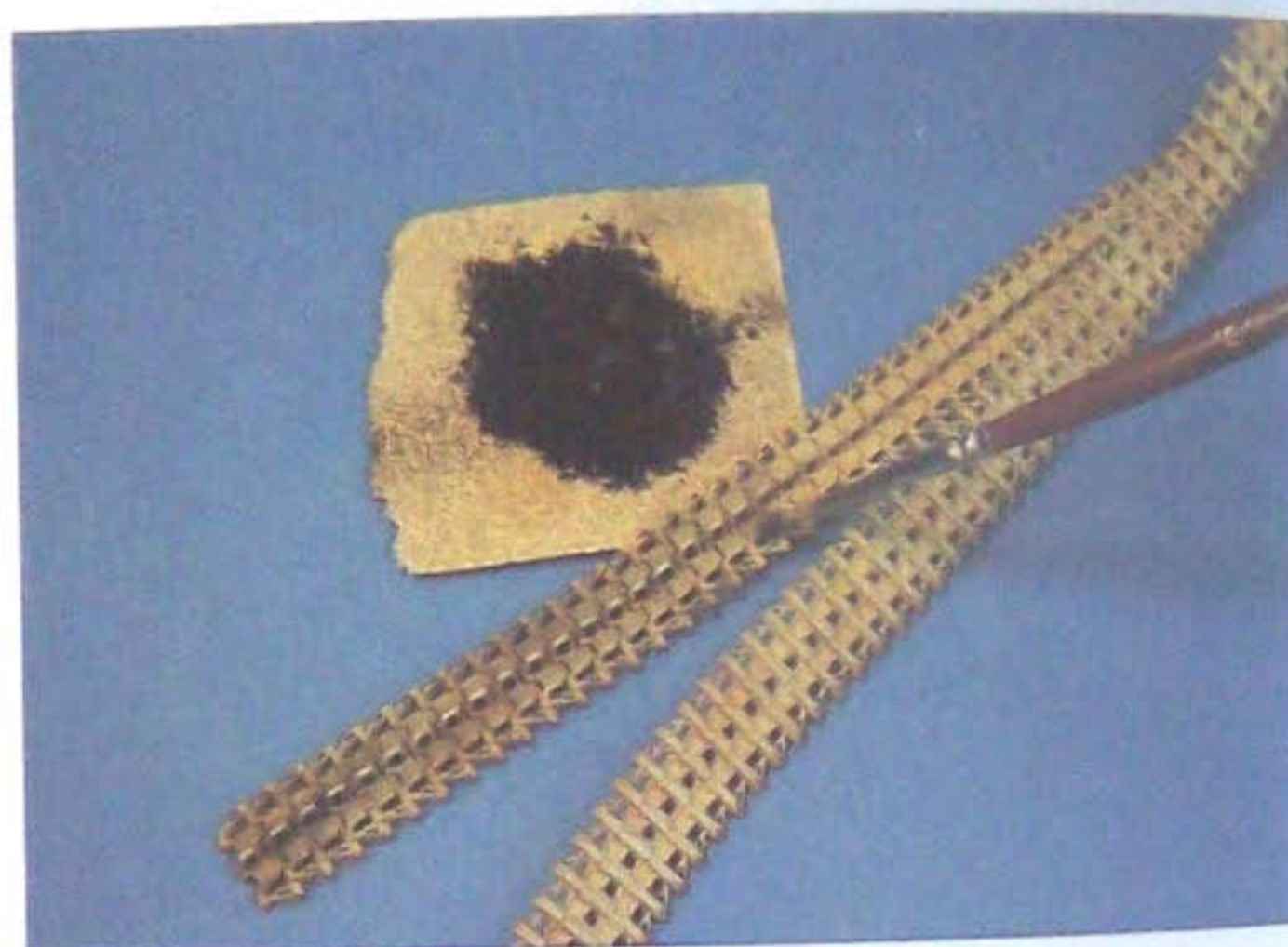
The ModelKasten track runs were given a base coat of Floquil's lacquer mixed into a dark earth colour.



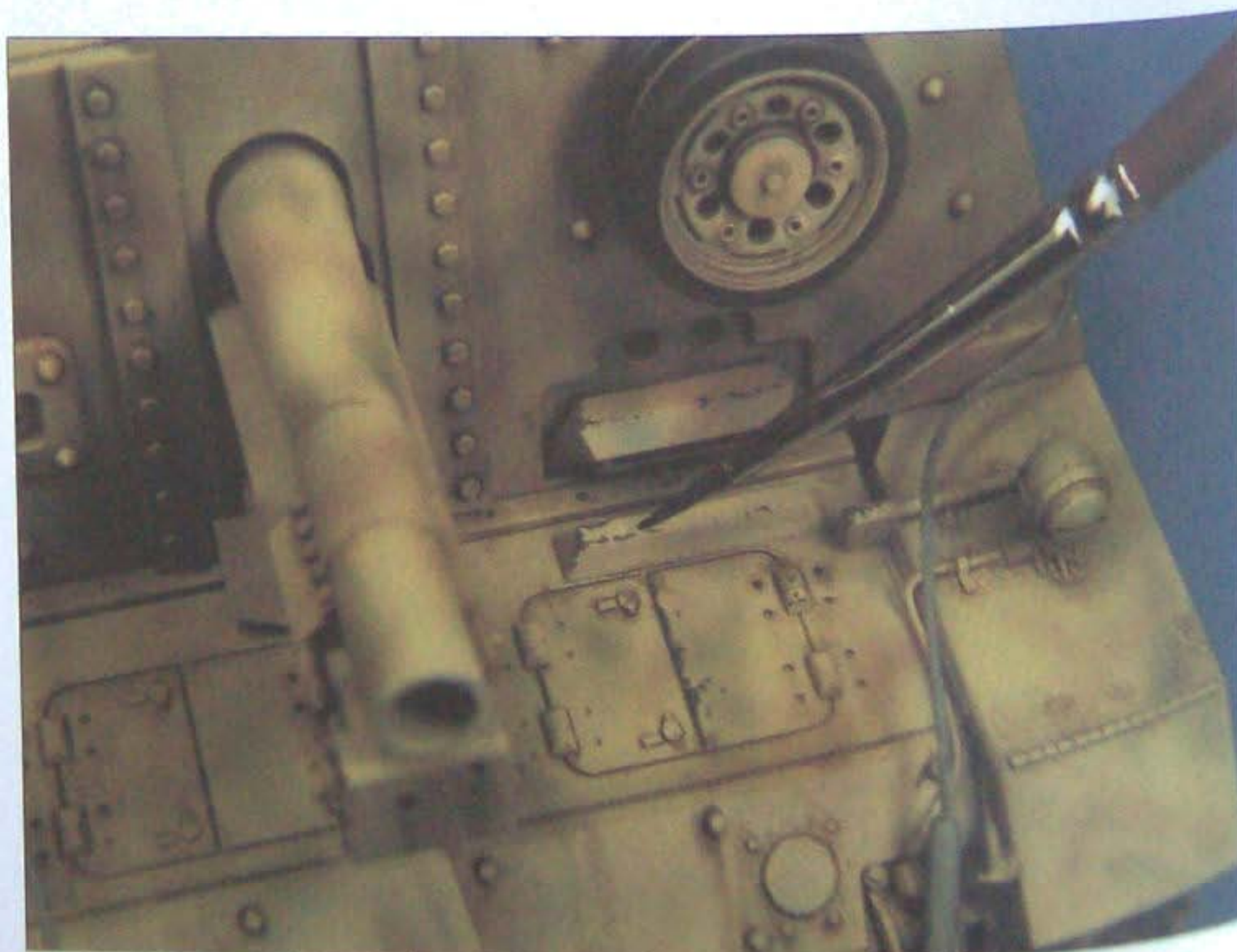
Pastel chalk powders of various colours were thinned with Tamiya's acrylic thinner and randomly daubed onto the track runs. Since this process can be messy, a section of polyethylene served as a base.



Humbrol's enamel No. 11 Silver and No. 53 Gunmetal were mixed and drybrushed onto the dusty surface of the track runs to highlight the areas of worn, bare metal.



Black pastel chalk was rubbed down the inside centre of the track runs emulating marks from the rubber tyres.



Dark grey paint was carefully touched onto the edges of the details to emulate chipped paint. The effect was concentrated in areas of high traffic such as the crew hatches and access doors.



A combination of pastel chalk, Hudson and Allen's Mud, static grass and MIG Productions acrylic paste was randomly applied to the running gear and lower hull with an old paintbrush.

Worn and scuffed paint was simulated around areas of wear from the crew, and to add further detail to the model. Because of this vehicle's original Dunkelgrau RAL 7021 colour, dark grey paint chips were randomly painted on to the edges of the hatches, corners of the stowage boxes, and other high traffic locations. Vallejo acrylics were used for this, since they have a very fine pigment and flow well from a 000 brush. Although chipped paint on a model may be questioned as to its likelihood, artistic licence allows the effect to enhance detail.

To simulate caked-on mud, MIG Productions Acrylic Resin was mixed with paint pigments and static grass and daubed onto the lower regions of the kit. Before it dried, the paint pigments and pastel chalk powder were also randomly daubed onto the sticky mess, varying the texture.

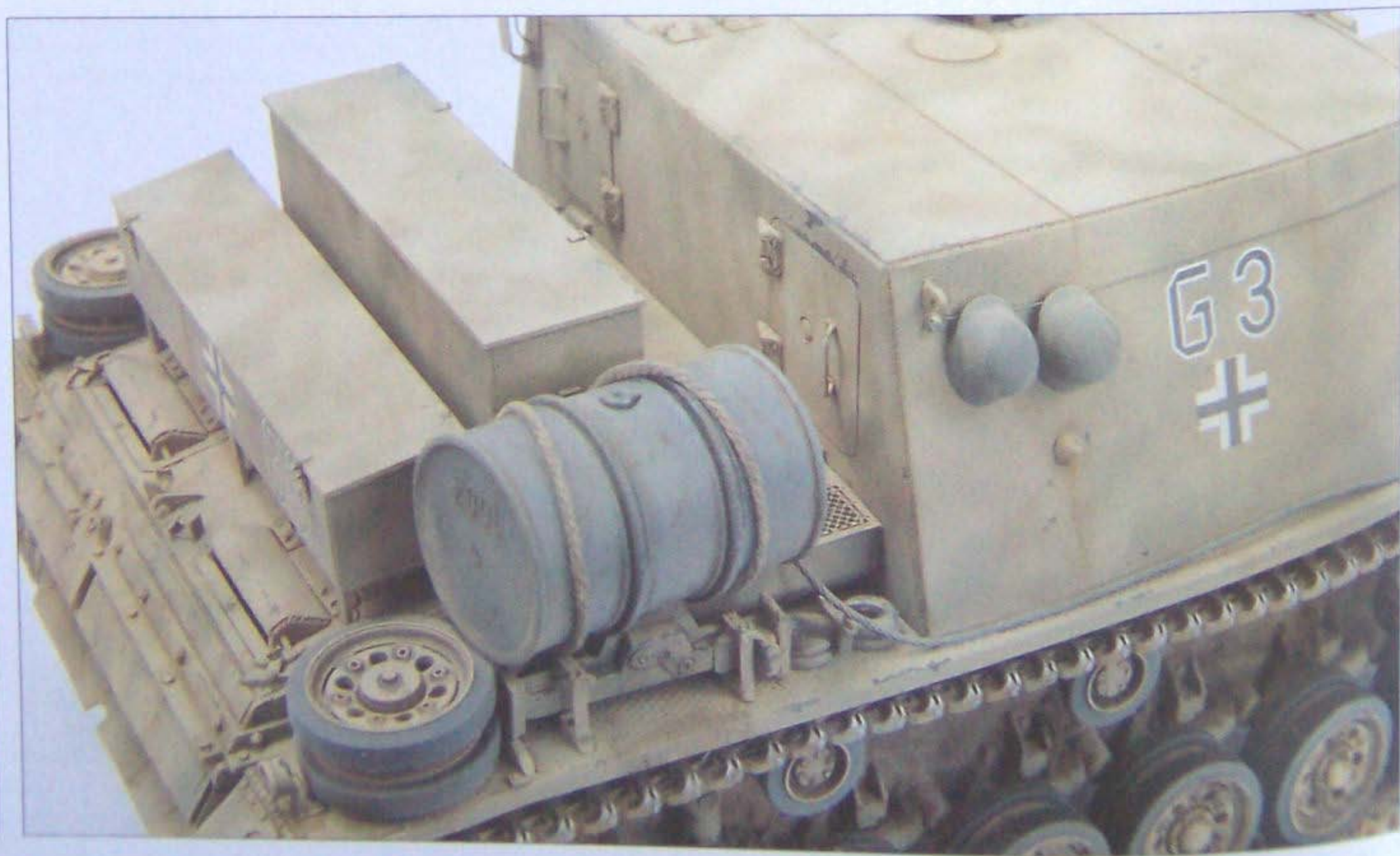
Earth tone pastel chalk powder and MIG Productions pigments were added to various areas of the model.

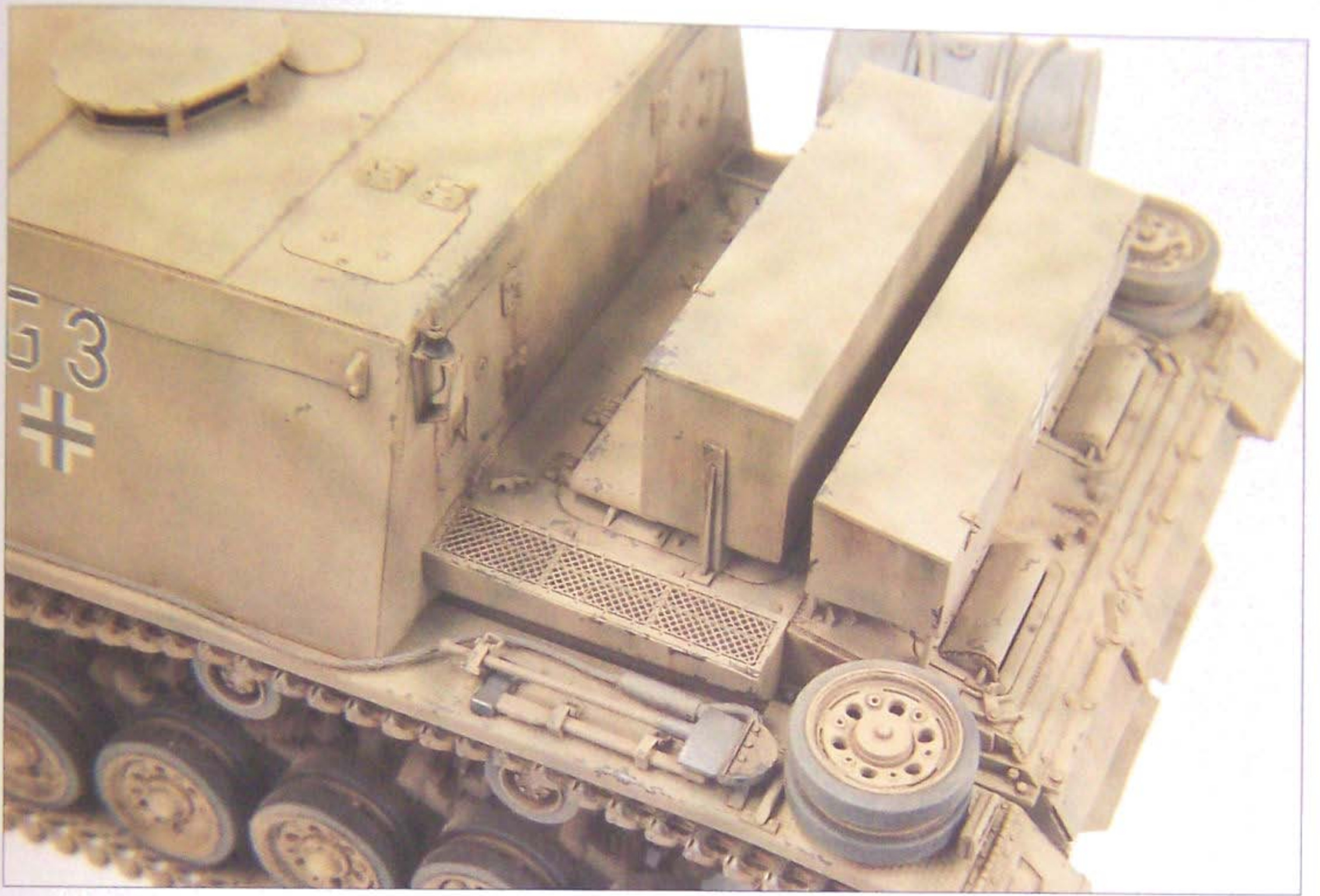




ABOVE Silver enamel, toned-down with raw umber oil paint, was drybrushed onto some of the heavily worn details such as the tow cables and pintles.

BELOW The 45-gallon fuel drum was lashed to the stowage box supports with model ship's rope. The crew's helmets were slung from wire strung between the lifting hooks on the fighting compartment.

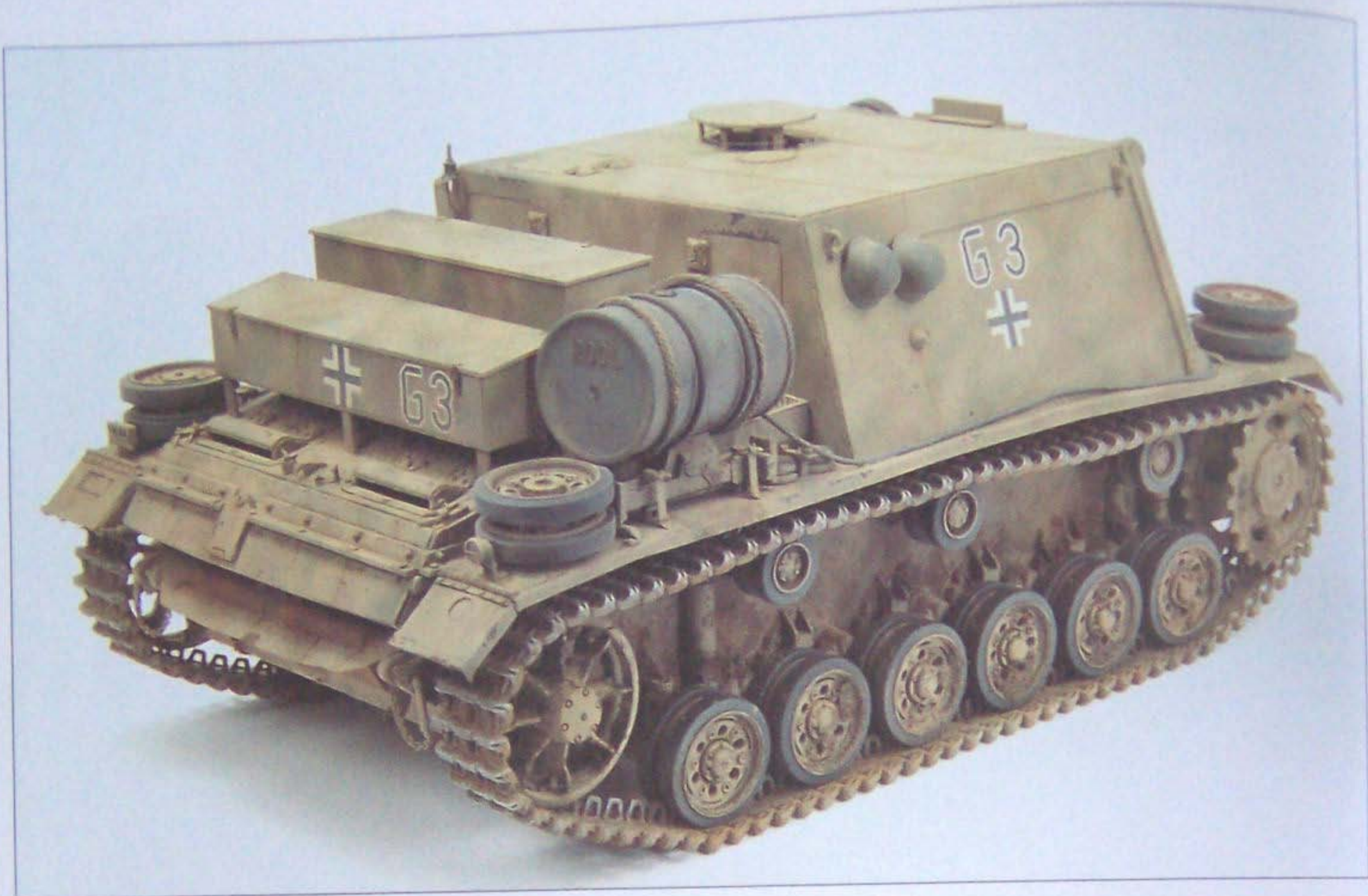




ABOVE The edges of the vehicle near the crew hatches received marks of wear and tear. Paint chipping was added with dark grey lacquer, and graphite from a HB pencil was rubbed onto the model to simulate wear.

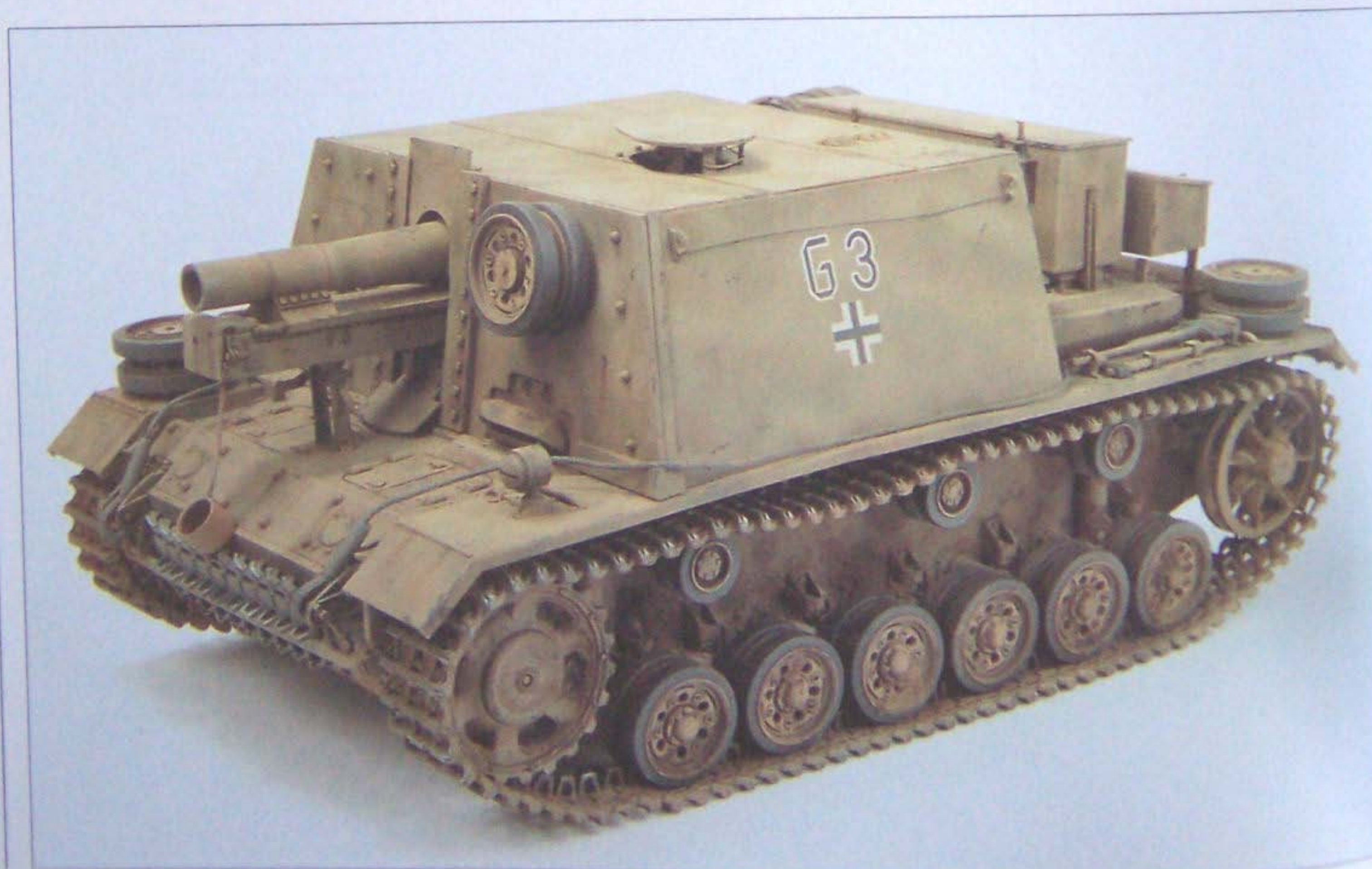
BELOW Rust-coloured pastel powder was added to the vehicle's exhaust components.





ABOVE The Alkett factory in Berlin manufactured only 24 examples of the Sturmpanzer IV Ausf. C.

BELOW The vehicle had a crew of five, and a weight of 21 tons. The enclosed hull limited the gun elevation from  $-3$  to  $+25$  degrees, and the traverse 3 degrees to the left or right.



# 15cm sIG33(sf) auf Panzerkampfwagen I Ausf. B

<i>Subject:</i>	<i>15cm sIG33(sf) auf Panzerkampfwagen I Ausf. B</i>
<i>Skill level:</i>	<i>Advanced</i>
<i>Kits used:</i>	<i>New Connection sIG33 Auf Panzer IB kit No. 35212 Italeri Panzerjäger I Kit No. 358</i>
<i>Etched-metal detail sets:</i>	<i>Aber etched-metal detail set for Panzerjäger I No. 35068 Aber etched-metal fenders for Panzer I A&amp;B No. 35A63 Eduard etched-metal detail set for sIG33 No. 35368</i>
<i>Tracks:</i>	<i>ModelKasten workable track for PzKpfw. IB No. SK-32</i>
<i>Resin detail sets:</i>	<i>Tiger Model Designs sIG33 for Grille H No. 352082 R&amp;J Enterprises cast wheels for sIG33 field gun No. 35268</i>

## Introduction

Modelling the Bison I in 1/35 scale has been challenging in the past with sparse references and few conversion kit options. Airmodel and Commander's conversions along with Maquette's multimedia 1/35-scale kit have received a less than enthusiastic reception. New Connection (N.C.) of Germany released a resin conversion set for the Italeri Panzer IB that met with more favourable reviews. Alan Hobby of Russia have, at the time of writing, just produced a styrene kit of the vehicle that incorporates their sIG33 gun kit with a newly tooled chassis.



Weighing 8.5 tons and having a crew of four, the 15cm sIG33(Sf) auf Panzerkampfwagen I Ausf. B provided immediate fire support for mobile infantry.

The resin conversion kit from New Connection was used to build this model. It was designed to fit the Italeri Panzer IB kit. For the subject modelled in this book, the later Italeri release of the Panzerjäger I kit No. 358 was used as a base kit for the conversion. The model was built to represent a vehicle from the sIG33(Sf) Kompanie 702 of 1.Panzer-Division in Russia, 1941.

## Starting the resin conversion kit

As with all resin kits, the parts were inspected and cleaned with soap and water to remove any mould-release residue. Warped parts were run under warm water and reshaped by gently bending into place. One of the thinner warped parts was placed into boiling water and turned into the consistency of a wet noodle. This was a lesson learned, and the part was straightened on flat plate of glass.

## Alan's sIG33 and detail sets

Included in the N.C. conversion set are the Alan sIG33 infantry gun and a set of resin pressed-steel wheels. The wheels were replaced with R&J Enterprise's versions, which have better detail. Alan's gun and cradle were also replaced with an aftermarket version made by Tiger Model Designs (TMD). Based on the Alan gun, this resin replacement features many improvements including rifling in the barrel, rivet detail and a highly detailed gun sight. The TMD cradle unfortunately suffers the same problem as Alan's original gun, in that the length at the back is about 1/4in. too short, and rather difficult to fix.

An important step was to ensure that the gun carriage wheel spacing would fit the model. The armoured wall assembly needed to be assembled first, and since aftermarket fenders were used, they needed to be attached to the hull in order to dry-fit the components.

To enhance the appearance of the gun shield, Eduard's detail set No. 35368 was added. To construct the shield, the brass pieces were attached with a small butane soldering tool. The mating surfaces were scrubbed with a glass filament brush, wetted with flux and 'tinned' with lead solder. After wiping a small amount of flux onto the joint, the components were held together with small copper clamps and heat applied. Tiny flecks of solder were set at the edge of the joint, and when these melted and wicked into the joint, the heat was removed and the joint cleaned with the glass filament brush. Detail was added to the shield with very small rivets taken from parts in the scrap box. To facilitate attachment of the shield to the carriage, new supports were made from styrene rod. Before the shield could be positioned, the angle had to be checked against the front of the armoured walls since they must run parallel. The carriage must also be positioned to fit between the front walls and its rear towing attachment point. This point was beefed up with .020in. styrene and a securing bolt was added to the top.

The inside of the gun carriage has a couple of joints that were covered with an embossed 'X' made from lead sheet, built to represent a reinforced plate. The gun sight received a commonly seen height extension from styrene rod. The elevation wheel handles were given a more teardrop shape by forming a small ball of epoxy putty on the ends.

It should be mentioned that the large gun elevation equilibrators were reversed in the instruction sheet and parts D76 and D112 needed to be swapped from where shown. This note also applied to the Bison II in the Special feature section of this book, which also uses the Alan gun carriage.

## Aber's brass fenders

Due to the resin moulding process, the edges of the conversion kit's fenders suffered from an alignment shift, and it was decided to replace them with Aber's etched-metal fenders kit No. 35A63. The corresponding rear mudflaps are included in the Aber detail set for the Panzerjäger IB kit, No. 35068. These vehicles typically did not have the front mudflaps attached in Russia, and the thin brass fenders mimic that look well.



Mould-release residue was first washed from the resin parts with soap and water. Warped parts were bent back into shape running them first under hot water.



To make a reinforced plate, lead sheet was embossed over a form built from styrene. The resulting parts were glued onto the sIG33 gun carriage.



Soldering parts on Eduard's metal gun shield for the sIG33. They were first cleaned with a glass brush, and had solder flux applied to the surface.



A thin layer of solder was added to both surfaces with a butane soldering tool, 'tinning' the surface.

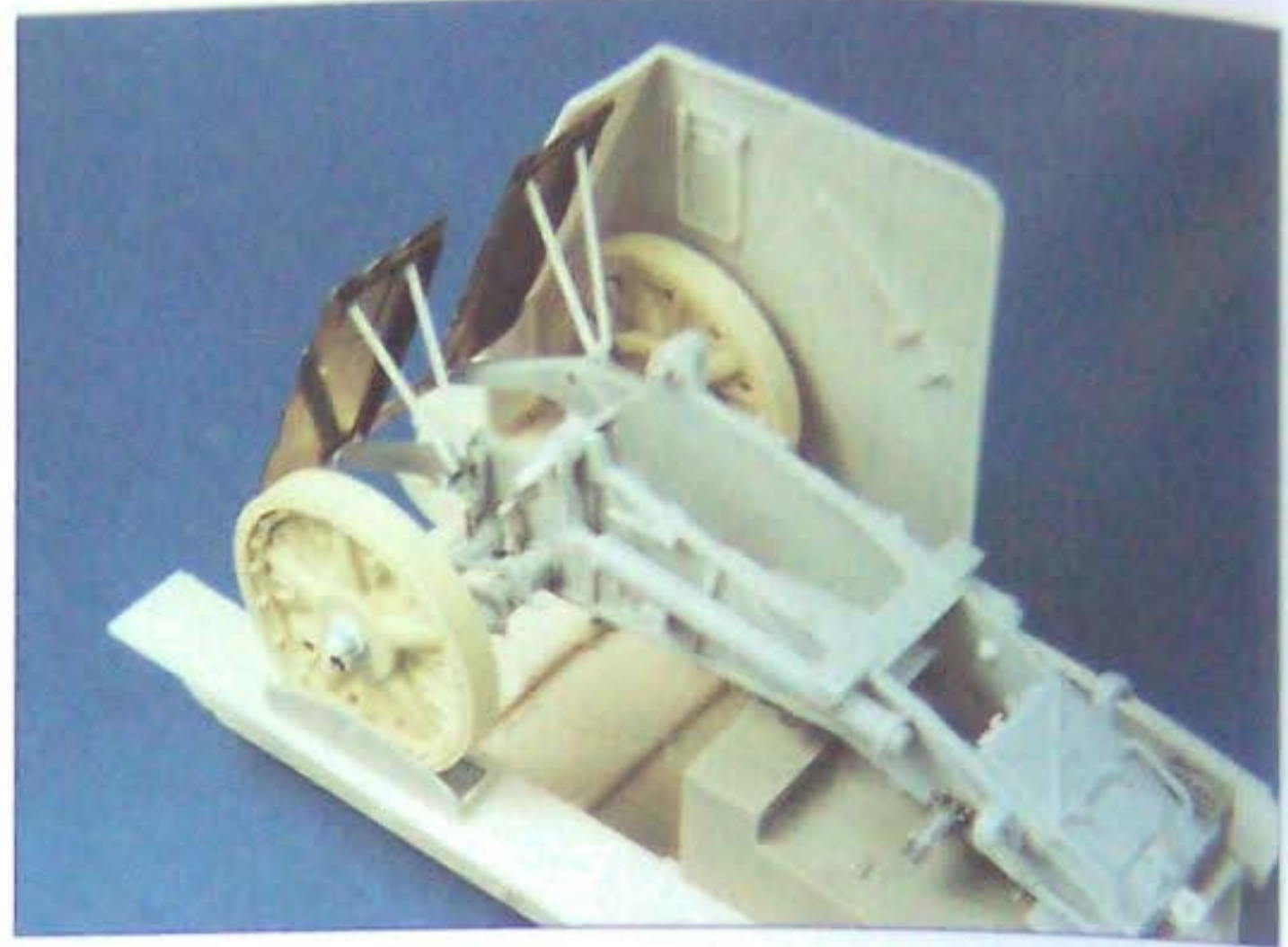
Bending the frame and edges of the Aber brass fenders was done with help from an etched-metal tool called the Hold & Fold. The tread plates were soldered onto the frames using the 'tinning' method previously described. Each fender assembly was then attached to the resin hull by gluing a very thin strip of styrene down the inside, and applying a liberal amount of liquid styrene cement. The styrene/cement bond allows the fender to be positioned correctly, after which the joint can be properly strengthened with cyanoacrylate. Correct placement of the fenders is important for the final fit of the armoured wall assembly around the gun. Rivets for the fenders were made from punching out small discs of lead sheet using the back end of a No. 76 drill bit and a pencil eraser.

## Lower hull and running gear

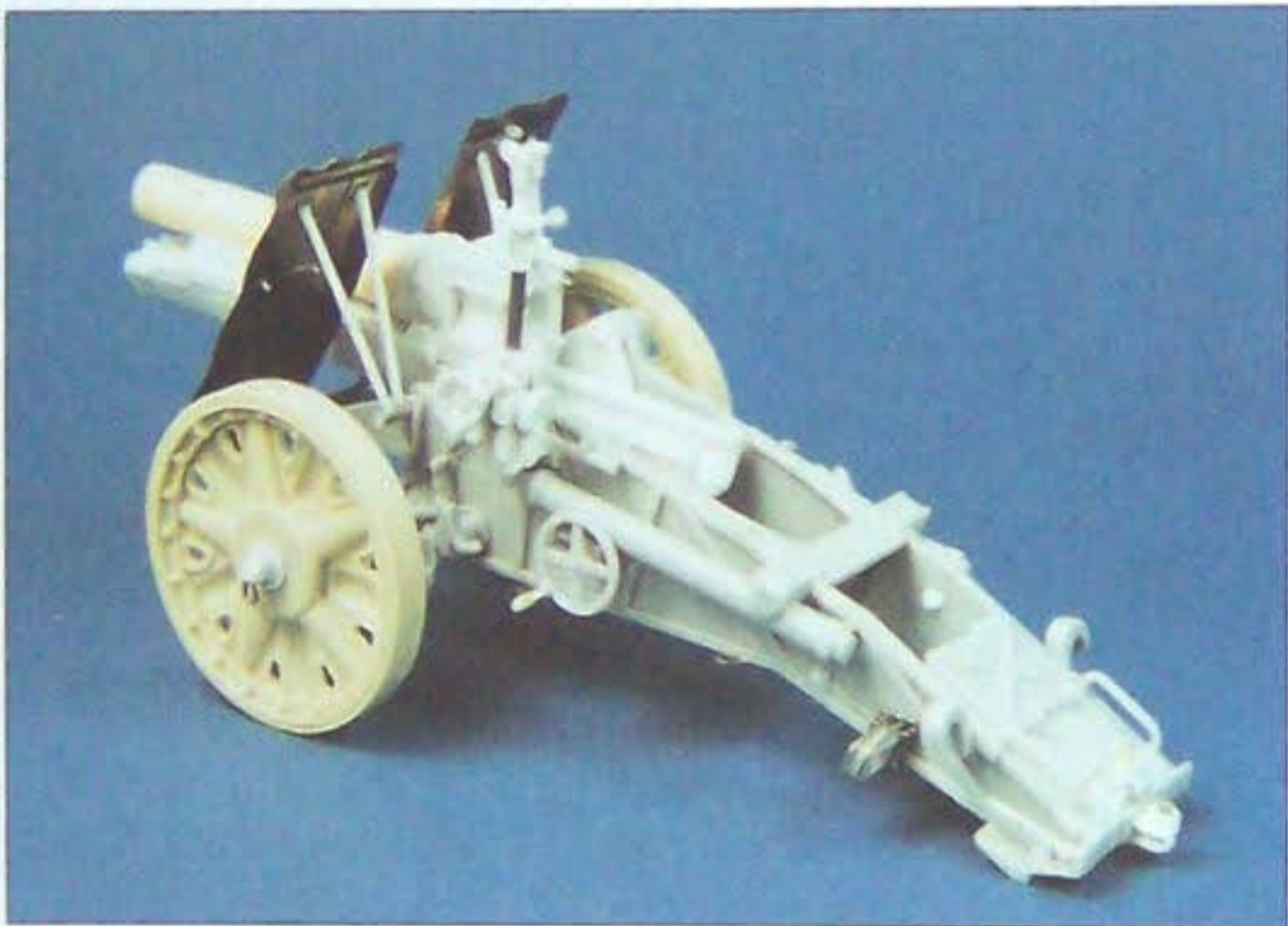
Italeri's running gear from their Panzerjäger I kit was used for the conversion, and needed a few small modifications. Aber's brass plate and Grandt Line No. 127 nuts covered the sinkhole in the centre of the drive sprocket. The front swing-arm shock absorber was improved by winding solder wire into a coil around styrene rod and positioning the arm correctly with the wheel axle level with the base of the floor plate. Grease nipples were added to each road wheel, the idler and the wheel assembly housings. A groove was made down the centre of the rear idler wheel by turning it in a Dremel motor tool and carefully applying an old No. 11 blade. Aber's various parts were also added to enhance the overall detail of the running gear, including the prominent piece of channel that joins the two roadwheel assemblies.



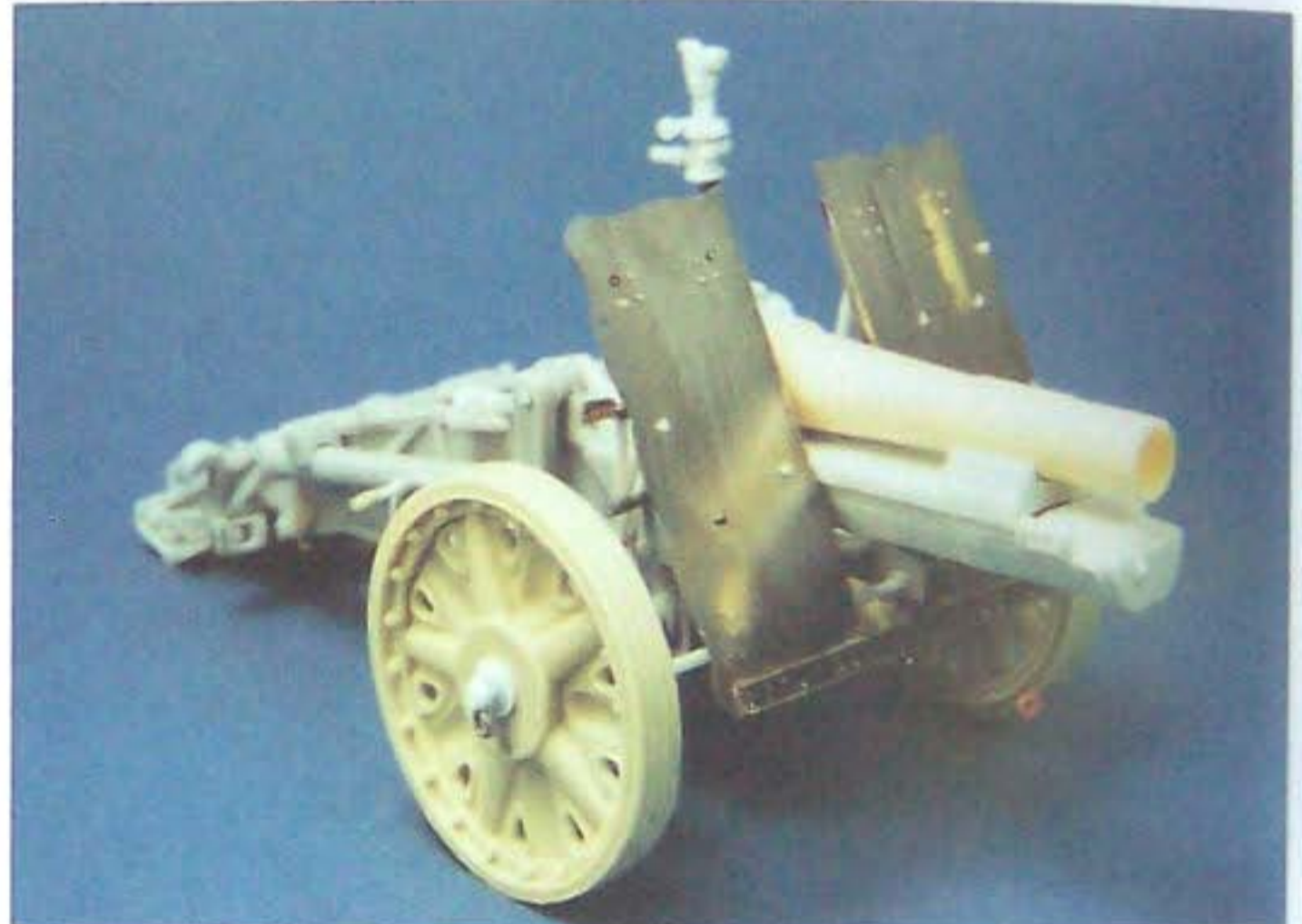
After clamping the parts together, heat was applied to the joint with the soldering tool to make a bond.



The gun carriage assembly and hull were test-fitted periodically to ensure all components aligned correctly.



R&J Enterprises resin pressed-steel wheels were used on the model since they were more detailed than the kit offering. TMD's resin gun was also used, with a height extension added to the gun sight.



Eduard's gun shield was detailed with small styrene rivets cut from spares in the parts box.



Aber's PzKpfw I fenders were 'tinned' to add the sections of tread plate to the frames.



With the tinned sections clamped together, heat was applied with the blowtorch attachment on the soldering tool. To protect previously soldered sections from the heat, wet tissue was wrapped around as a heat sink.



An extremely thin strip of styrene was glued to the completed fender to allow it to be positioned on the hull with liquid cement. When correctly positioned, it was secured with cyano glue.



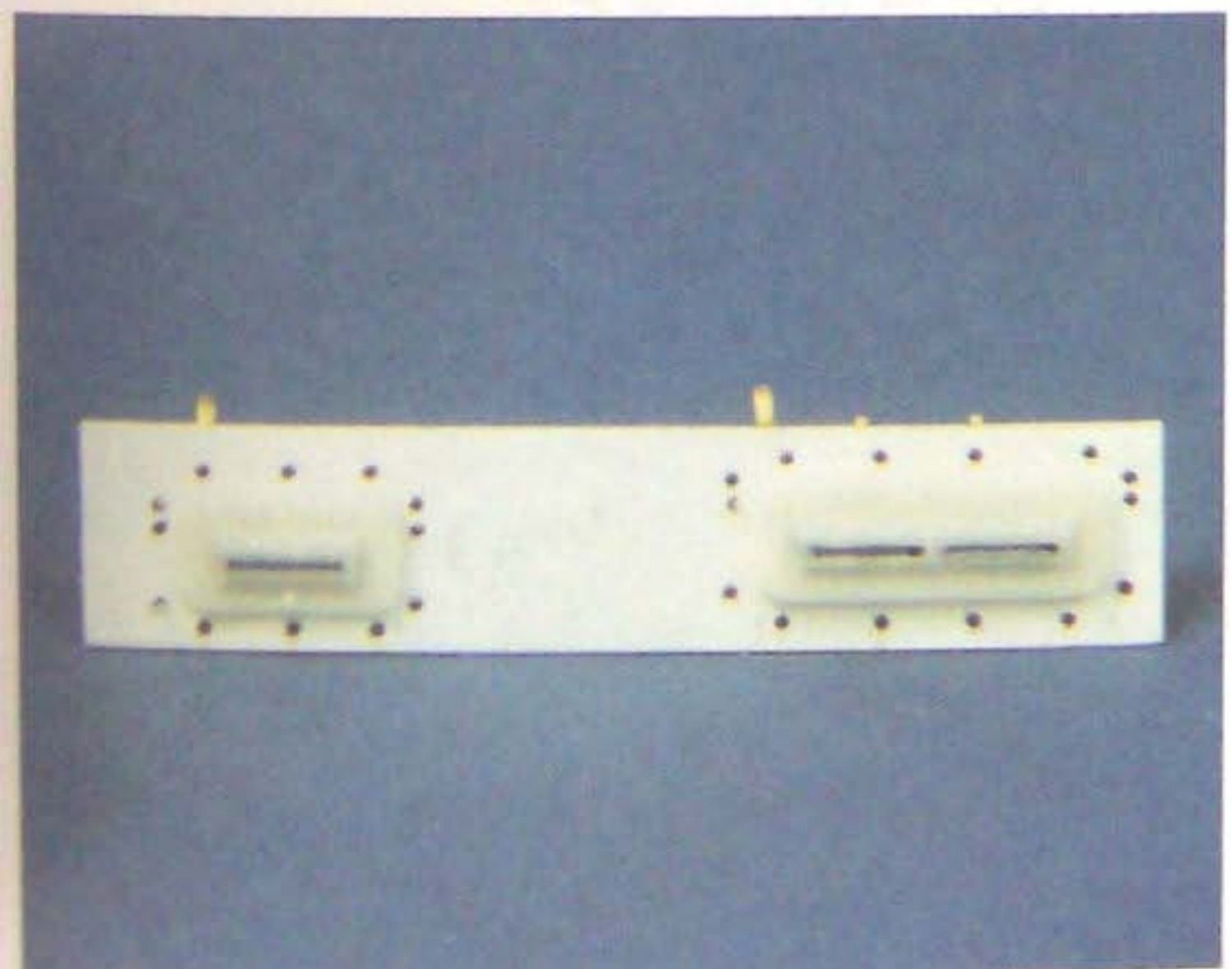
A spring was constructed from solder wire, and the axle for the roadwheel was positioned to align with the base of the hull.



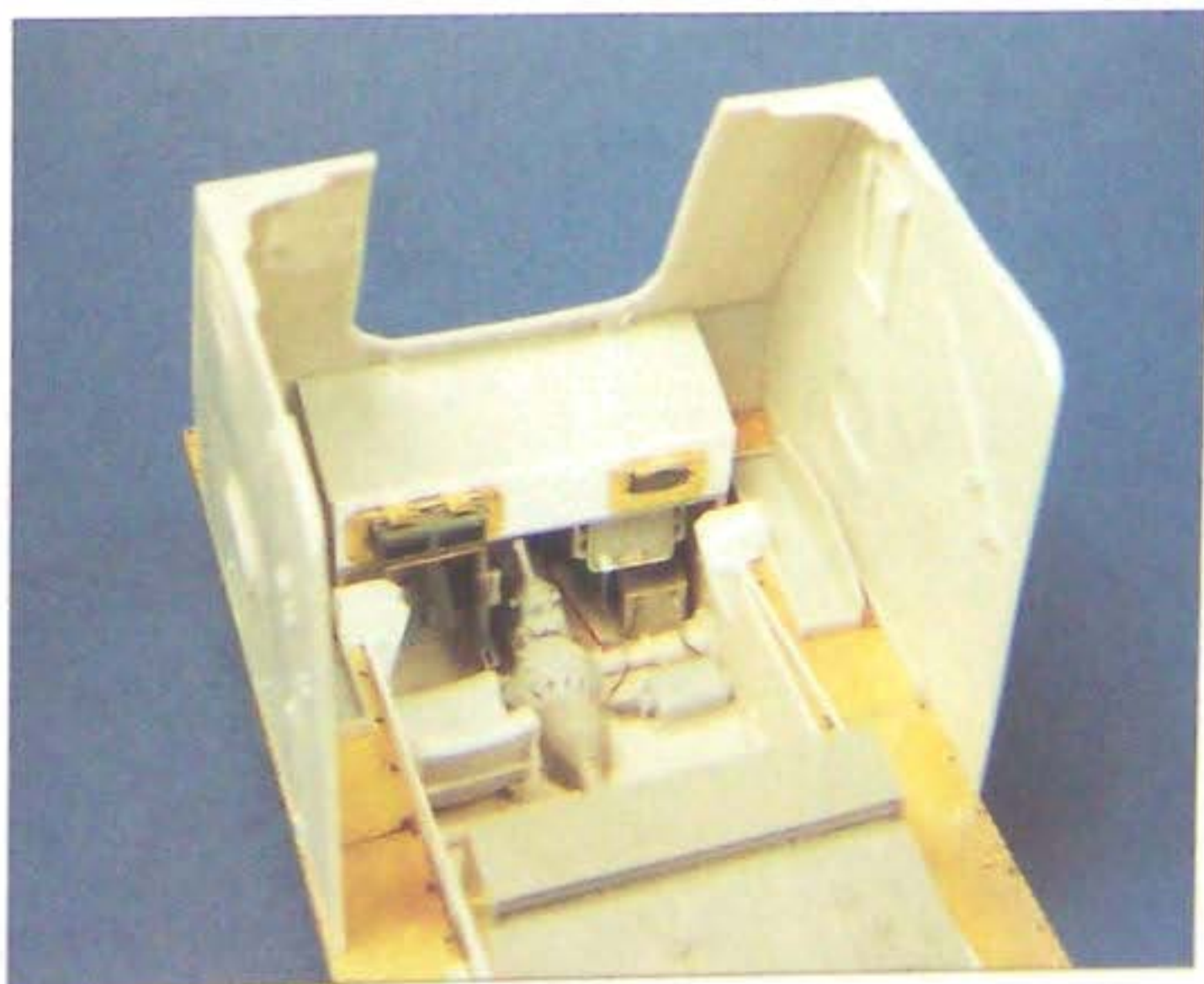
Bracing for the gun sloped downwards from the rear gun support and ran forward to the sIG33 wheel mounts. The brace attachment to the mounts was speculative.



A drill bit was placed backward into a pin vice and pushed into lead sheet supported on a pencil eraser, producing small rivets.



The driver's visor plate was detailed with parts from the Italeri Panzerjäger I kit and small lead rivets.



Aber's brass detail was used on the visors. Interior detail was added with a dynamotor for the radio and larger supports for the wheel mounts.



The armoured walls had to be modified to incorporate a sloped top, tapering at four degrees to the rear hinged section.

A support bar was added from styrene rod to the rear end, just behind the idler adjustment caps. The caps and the tow shackle pin were given small brass retaining chains.

ModelKasten's Panzer I track links SK-32 replaced the kit's vinyl type. These workable links have the detailed guide teeth and are quite an improvement over the earlier non-workable tracks. The links needed to be trimmed carefully before being pinned together since there was a noticeable bend to the track run if this was not done. One hundred and one links per side were made with enough spares for the 13 links on the front glacis.

## Interior

The N.C. resin interior provides some very detailed components including a transmission, brake and gear reduction assemblies for the final drive and driver's controls. The floor is also decorated with suspension and steering rods. Added to this was a dynamotor power supply for the radio, and thin solder wiring for it and the battery on the floor in front of it. The Aber detail set includes an instrument panel with printed dials on an acetate sheet, and this was added underneath the front glacis plate.

The armoured plate that mounted the driver's visor was rebuilt from styrene card, and a second visor was added on the right-hand side. Aber's brass sheet includes some intricate details for the visors, and this was built around acetate sheet so that they could be seen through. For the exterior detail on the visor area, Italeri's crisply moulded armoured vision ports were used. Small rivet detail from lead sheet was placed around these parts.

The suspended floor plate for the rear of the lower hull provided in the kit was not installed on the model. It is possible that it would have severely restricted crew access in an already cramped environment and the convenience it would have provided was minimal. It was also deleted since it would have obscured a fair amount of the inside detail.

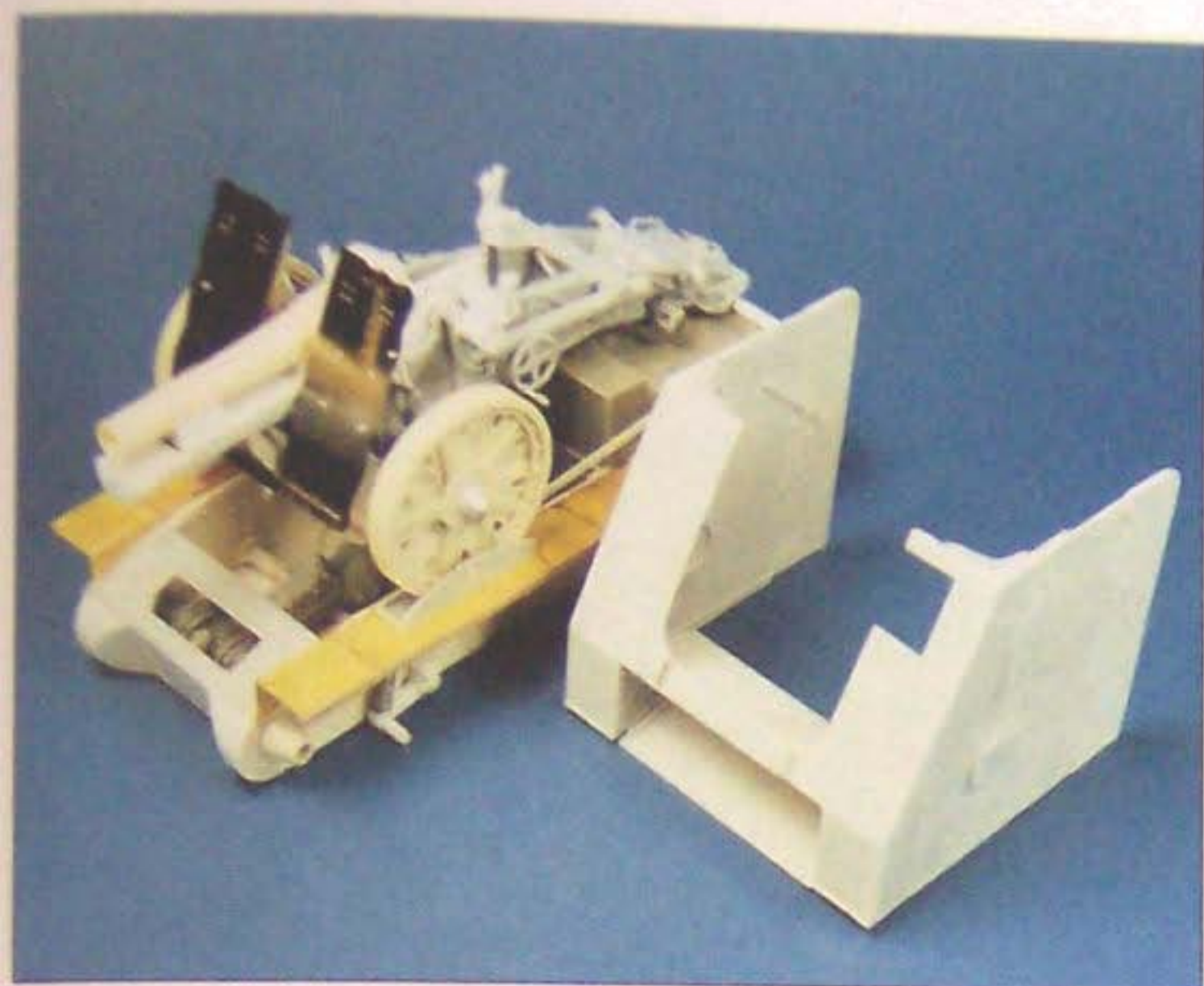
## Gun carriage support

The gun carriage support in the vehicle consisted of two wheel mounts on the fenders that were connected to a brace aft of the engine deck. The supports for the wheel mounts were bolted to the inside of the hull, and were scratch-built to a sturdier standard than those supplied by N.C. The rear brace was connected to the wheel mounts with two lengths of flat iron that ran down each side of the hull, and two smaller lengths that went down vertically and attached to the bar just forward of the idler adjustment points. The lengths of flat iron were made with a bendable .015in. plastic card. The brace itself was made with thicker .020in. plastic. To facilitate the fit of the exhaust assembly around the gun braces the muffler had to be moved 1.5mm to the right allowing it to clear the vertical braces at the rear.

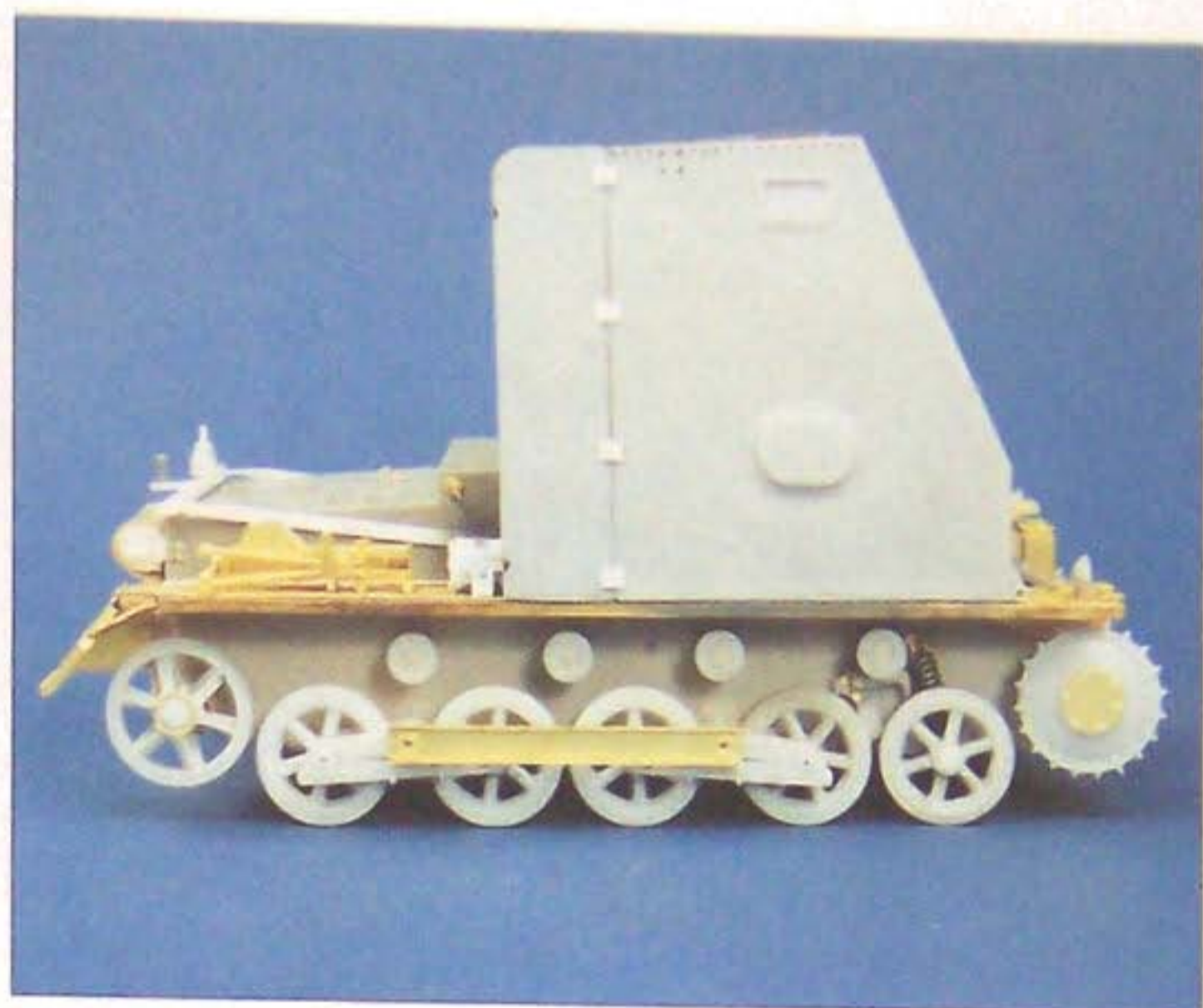
## Armoured walls

A significant detail to note is that the tops of the upper armoured walls on each side of the vehicle did not run parallel to the fenders. They actually sloped downward at approximately four degrees, then went horizontally where they met the swinging door section. This detail has so far not been picked up by any of the kit manufacturers. This fact was discovered through an Internet discussion forum during construction of this model, and the modification was done during the final stages of the build.

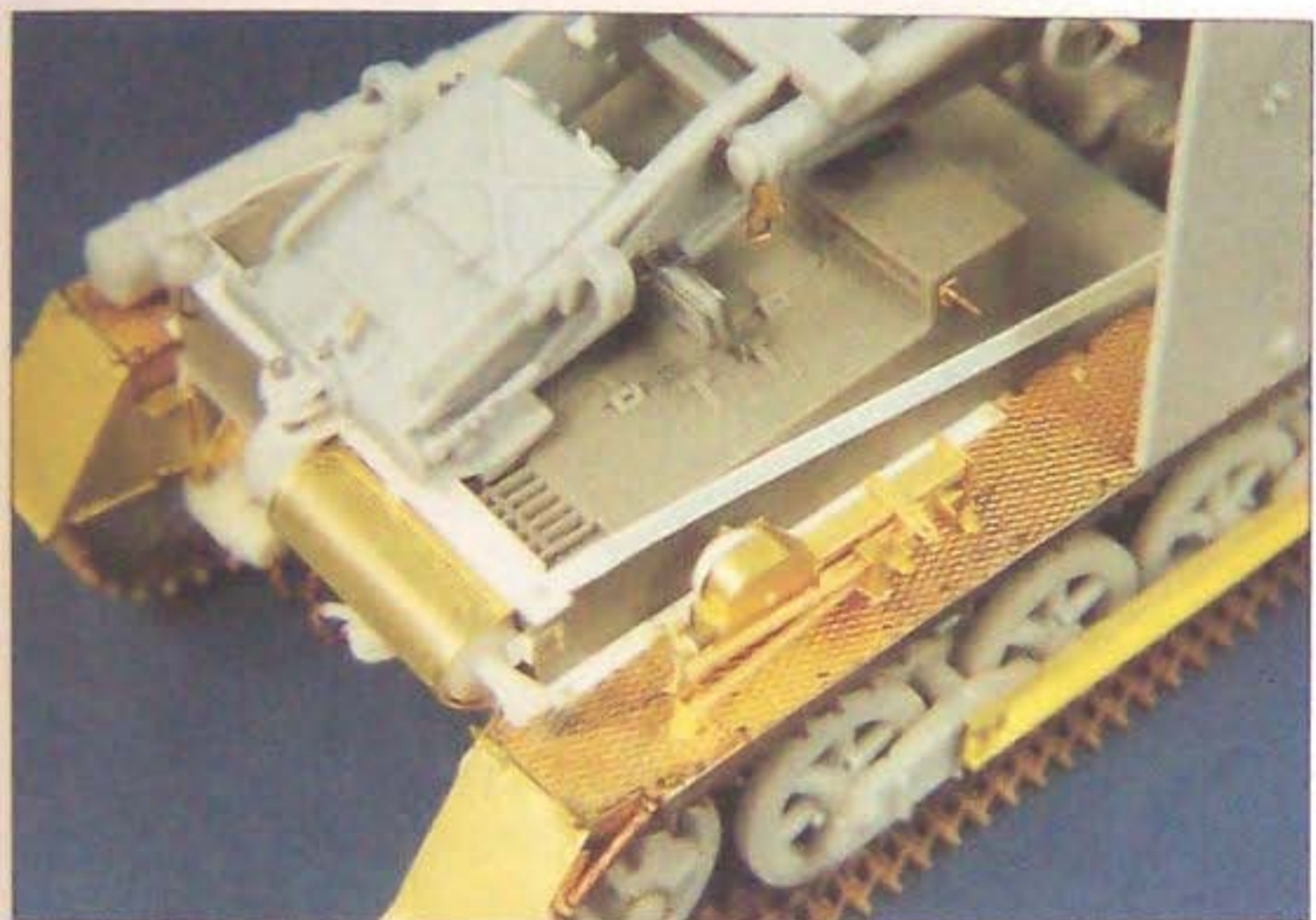
The door section of the left and right walls was carefully removed, and the tops of the walls marked with a line to cut and file. The drop in height of the door was 1.0mm. The walls had the slope cut, and the bottoms of the doors were trimmed off by 1.0mm. Re-assembly of the walls required new hinges to be added to the doors, and the large latches inside had to be modified. Small rivet detail was replaced at the top of the walls, adding the four more prominent rivets in a square pattern close to the rear.



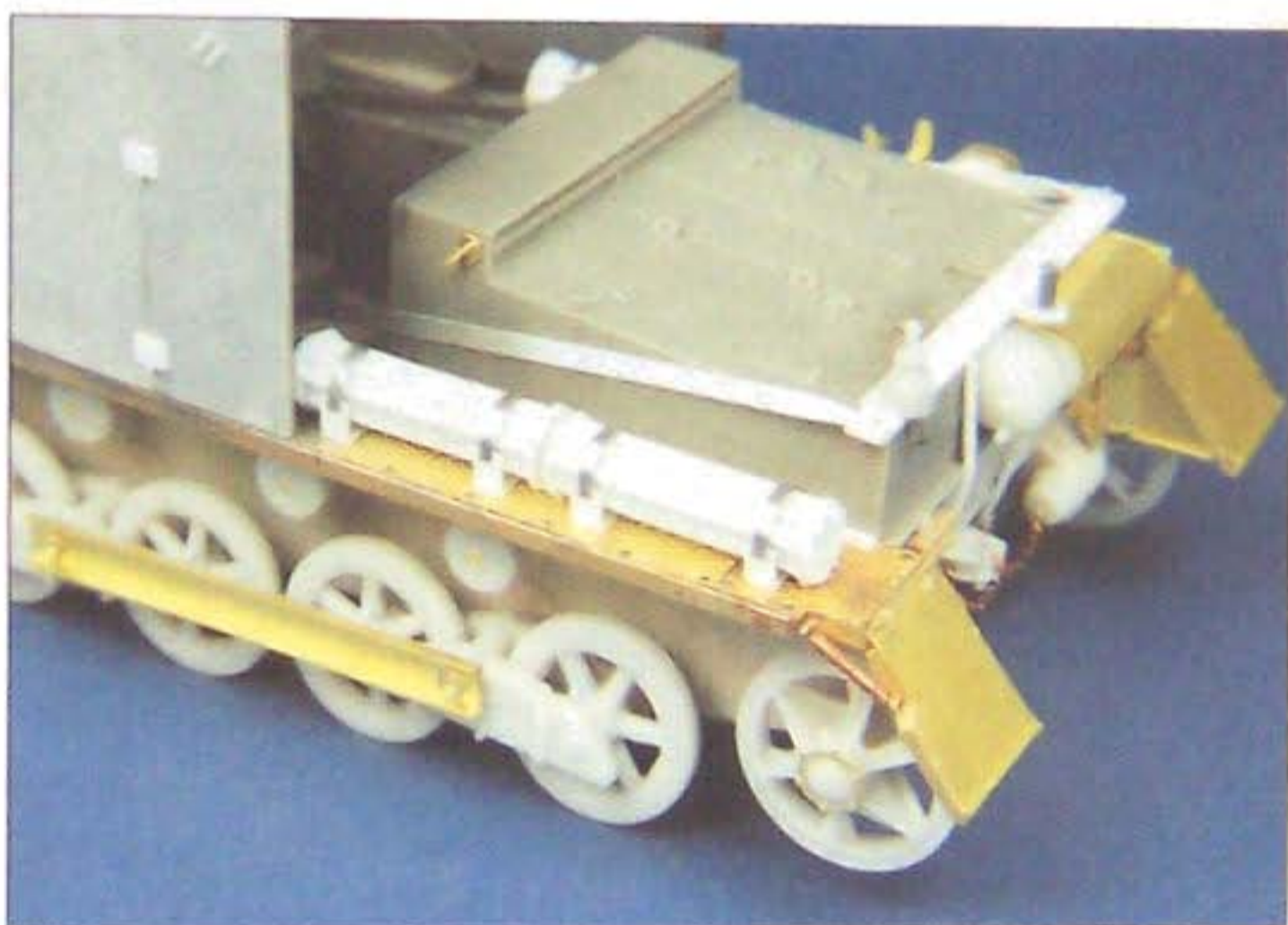
The various components were dry-fitted before painting the model's interior.



After modifying the walls, hinge detail was replaced with styrene parts.



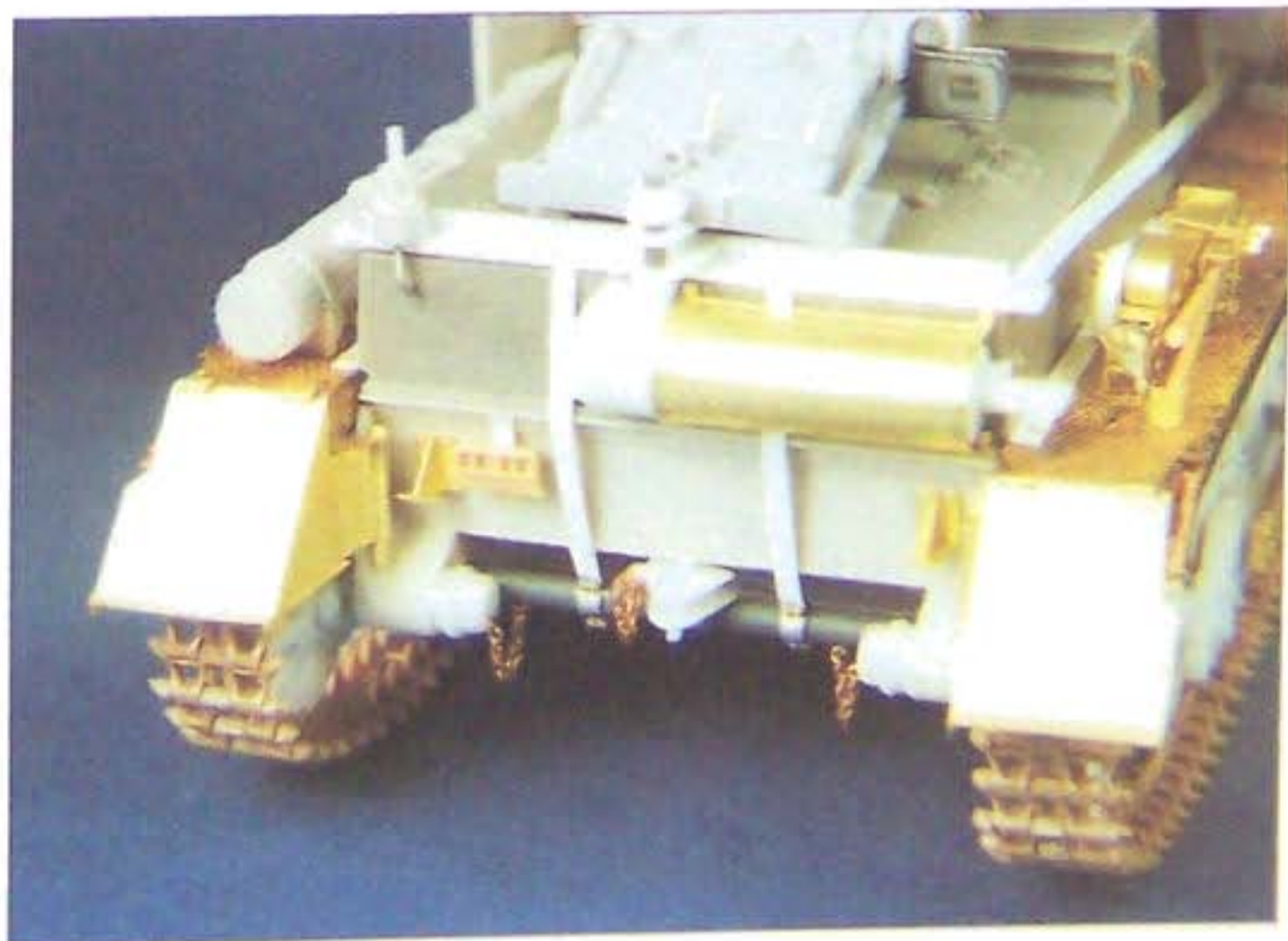
Aber's detail set for the Panzerjäger I included an early style jack that had an integral mount for the wire cutters. The rear mudflaps had a retaining spring fashioned from thin copper wire.



Detailed wicker ammunition holders from Tiger Model Designs were given styrene supports and lead straps.



The headlamp and horn configuration was an assortment of Royal Model, Tamiya and DML items. Thin lead solder wire was added for the conduits.



The bracing for the rear of the gun was made from styrene and a bendable plastic, with the exhaust moving slightly to the right to accommodate the fit.

ModelKasten's PzKpfw I workable track links have the detailed guide horns and enough are provided to allow a run of spares, carried on the glacis behind the headlamp.



## Rear hull

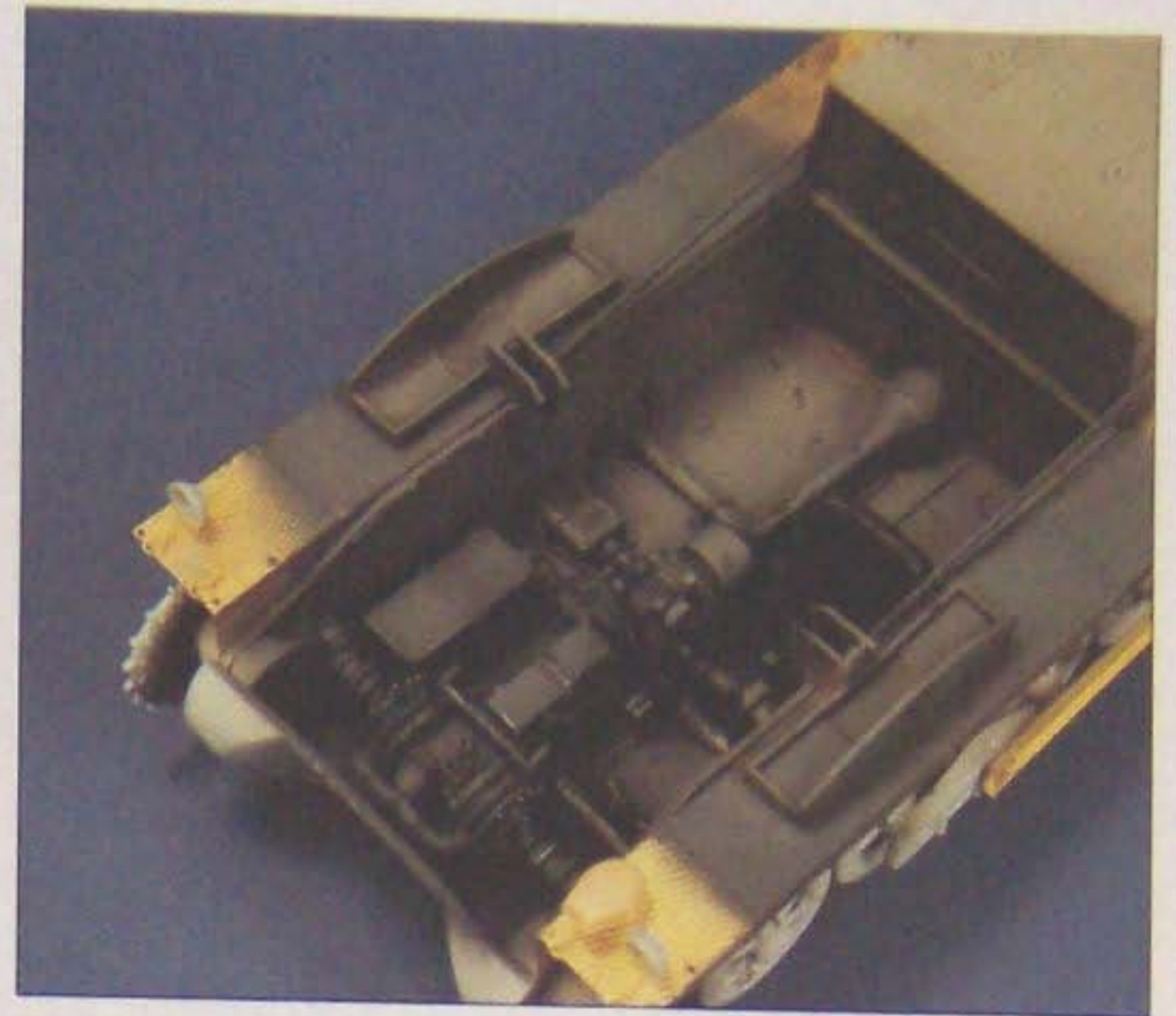
At the point at which the fenders meet the hull by the engine deck, a bolted flange was added from styrene strip and bolt heads scavenged from the underside of the hull of a Tamiya PzKpfw IVJ. Two lifting hooks from an On The Mark etched-metal detail set were positioned on either side of the rear hull. A third hook would have been located on top of the engine deck at the middle rear, but interfered with the placement of the gun carriage and was therefore deleted. Some vehicles showed antenna mounts, and when present were located on the left side of the rear brace for the gun. This was added from the Tamiya PzKpfw IV OVE set, with a solder wire electrical lead.

## Miscellaneous detail

The style of jack used on the early panzers is well represented in Aber's Panzerjäger I brass detail set, and its associated mounting bracket doubles as a mount for the wire cutters, which are a Tamiya PzKpfw IV OVE set addition. Also adorning the fenders are three spare rounds of ammunition in their wicker cases. Aftermarket resin producer Tiger Model Designs make a set of sIG33 ammunition, and included are some nicely detailed cases for the ammo. Mounts for these were made from styrene, with lead foil straps cemented in place.

The front glacis fit is a bit tricky, since everything has to line up with the armoured wall superstructure. Some styrene shimming and a small amount of putty were used to get all the components at the front to align correctly. Four very small rivets were glued onto the front armoured plate by each of the final drive bulges. The two front towing pintles were detailed with Aber's brass bits and some styrene strengtheners. The brake inspection plate on the front glacis was left off. This appeared to be occasional practice due to the heat generated by steering the vehicle, and also it allowed additional view of the interior.

Headlamp configuration used by the vehicles in France tended to be different from those used later in Russia, the latter usually adding the Notek 'German Helmet' style on the left front fender. Some companies mounted this light on the left front glacis. Lamps and a horn were taken from the parts box



After painting the interior of the upper fighting compartment the instrument panel was added, and positioned so as not to interfere with the driver's controls.

The interior of the hull was painted with Tamiya's XF-63 German Grey, with the details picked out in Vallejo watercolour paints before weathering.

and added with small solder wire leads. Different companies also had unique stowage of the spare road wheels and placement and type of their markings. sIG33(Sf) Kompanie 703, for instance, had personal names painted on the front armour plates such as 'Edith', 'Bismarck', and 'Alter Fritz'.

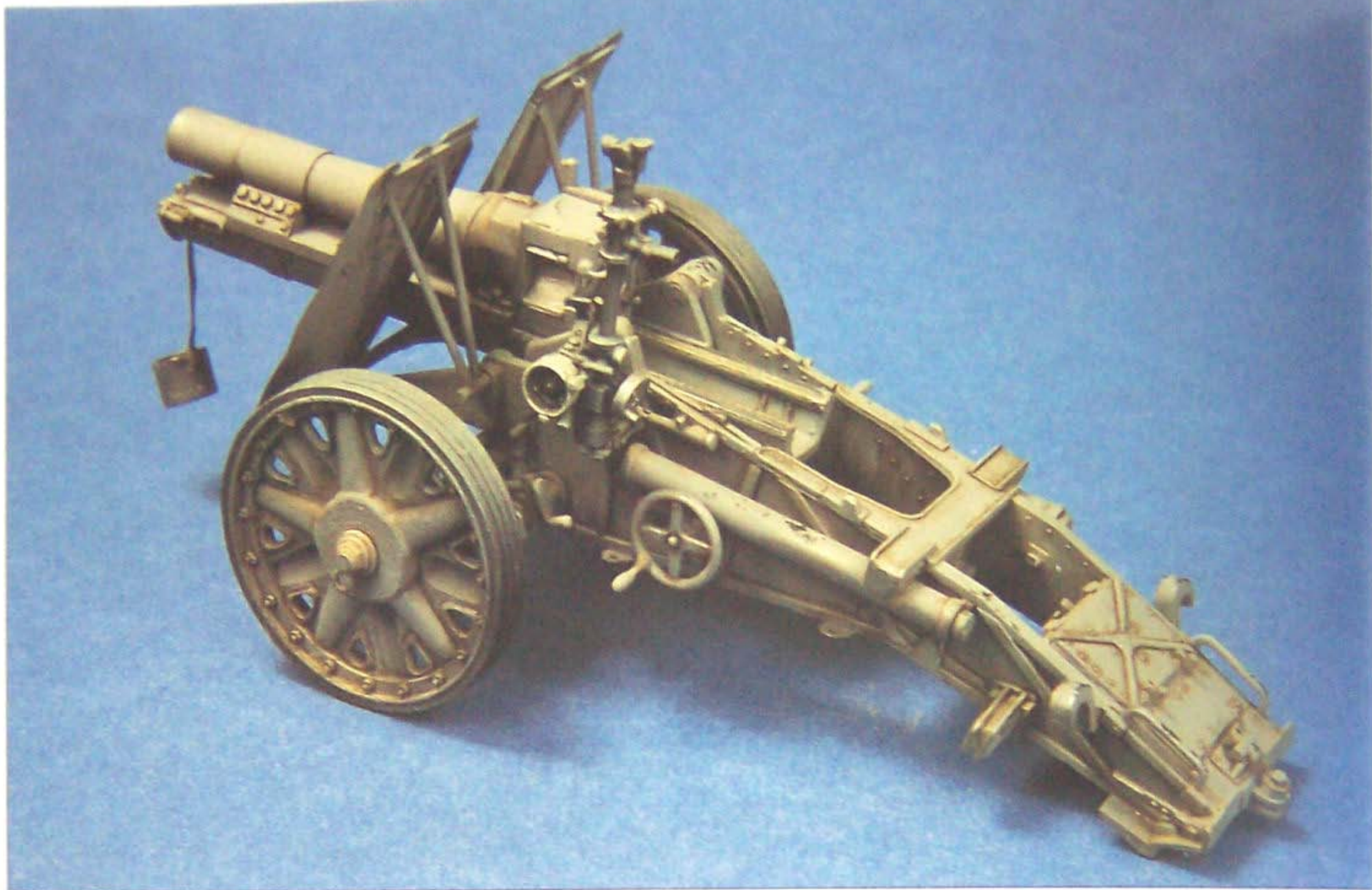
## Painting and weathering

The sIG33 gun and carriage was painted by airbrushing on Tamiya's XF-63 German Grey. After painting the gun sight and tires black, a very light airbrushing of diluted Tamiya XF-57 Buff was allowed to highlight the areas keeping the effect subtle. A wash of raw umber oil paint gave the finish a suitably filthy look, defining some of the detail and toning down the contrast of the various components.

The interior of the lower hull was painted prior to the addition of the armoured superstructure on the upper hull. After priming, the inside of both components was airbrushed with Tamiya's German Grey. The transmission and brake assembly was picked out in Floquil's Engine Black, along with the battery, driver's controls and viewing apertures. The dynamotor and radio were painted light green, with various details added in various Vallejo watercolours. After performing the weathering step as described for the gun, the two sub-assemblies were cemented together carefully with cyano glue.

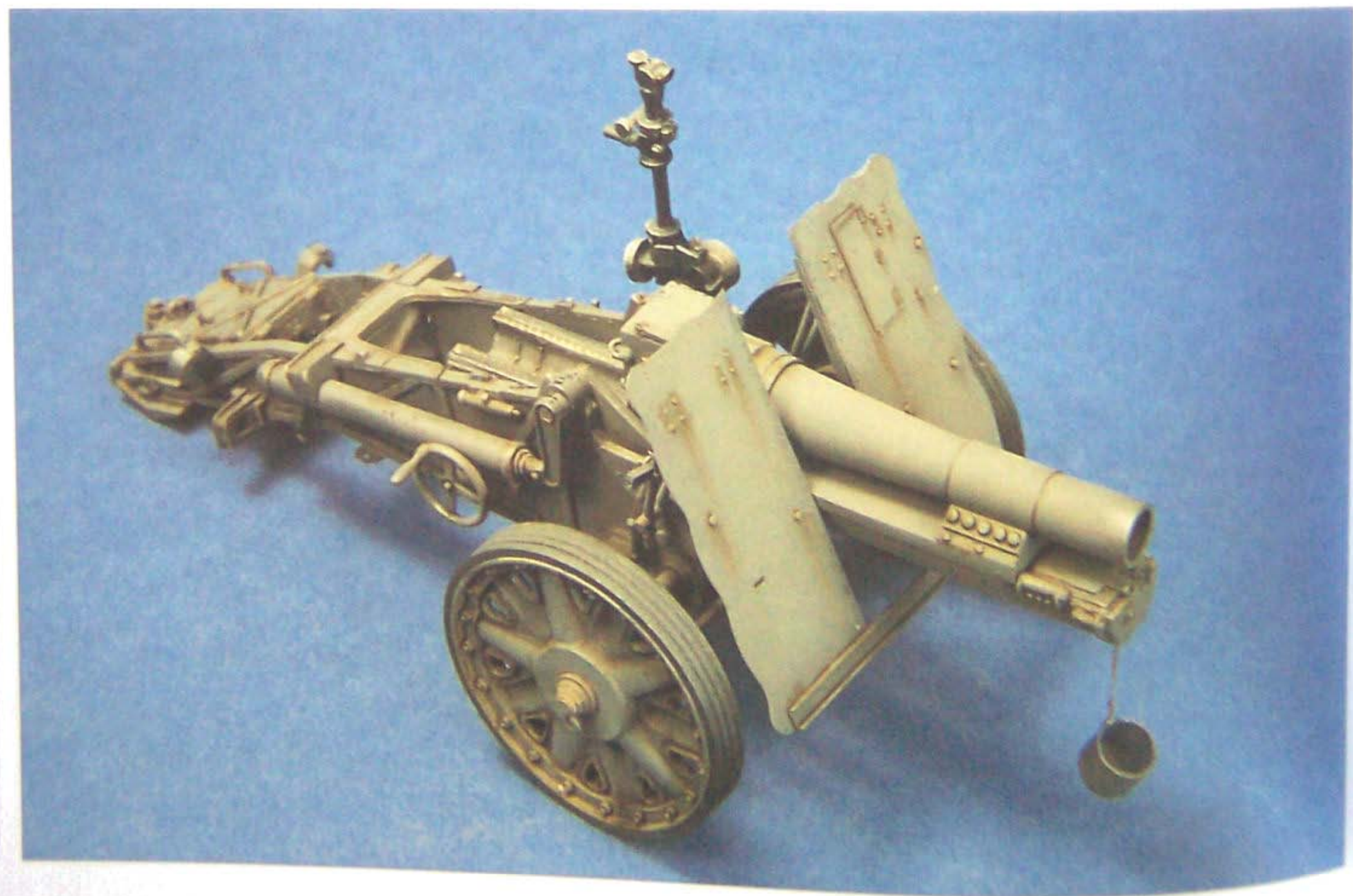
After the completed model had been painted, markings for the sIG33(Sf) Kompanie 702 were applied using Tamiya's World War II German decal sheet set 'A', and Archer Fine Transfers for the tactical symbols and divisional markings. As with some of the equipment differences previously mentioned, the various Kompanie occasionally showed unique ways of marking their vehicles with the national insignia, tactical and divisional symbols. Some vehicles had their Balkenkreuz below the protrusion on the sidewall, then later it was painted above. Also noteworthy are the large letters applied by some units.

The decals were sealed to the surface of the model with a coat of Model Master Flat Lacquer, after which thinned Tamiya acrylic 'earth' mixture was airbrushed on. A wash of dark oil paints was applied to the vehicle's details, with the paint streaked in a downward direction on the vertical areas to emulate rain marks. Both weathering powders and pastel chalks were dusted onto the running gear and horizontal surfaces of the model, with the rear plate and engine deck getting extra attention.



ABOVE The sIG33 artillery piece was given a base coat of dark grey, then weathered with a diluted spray of buff, followed by a wash of oil paints.

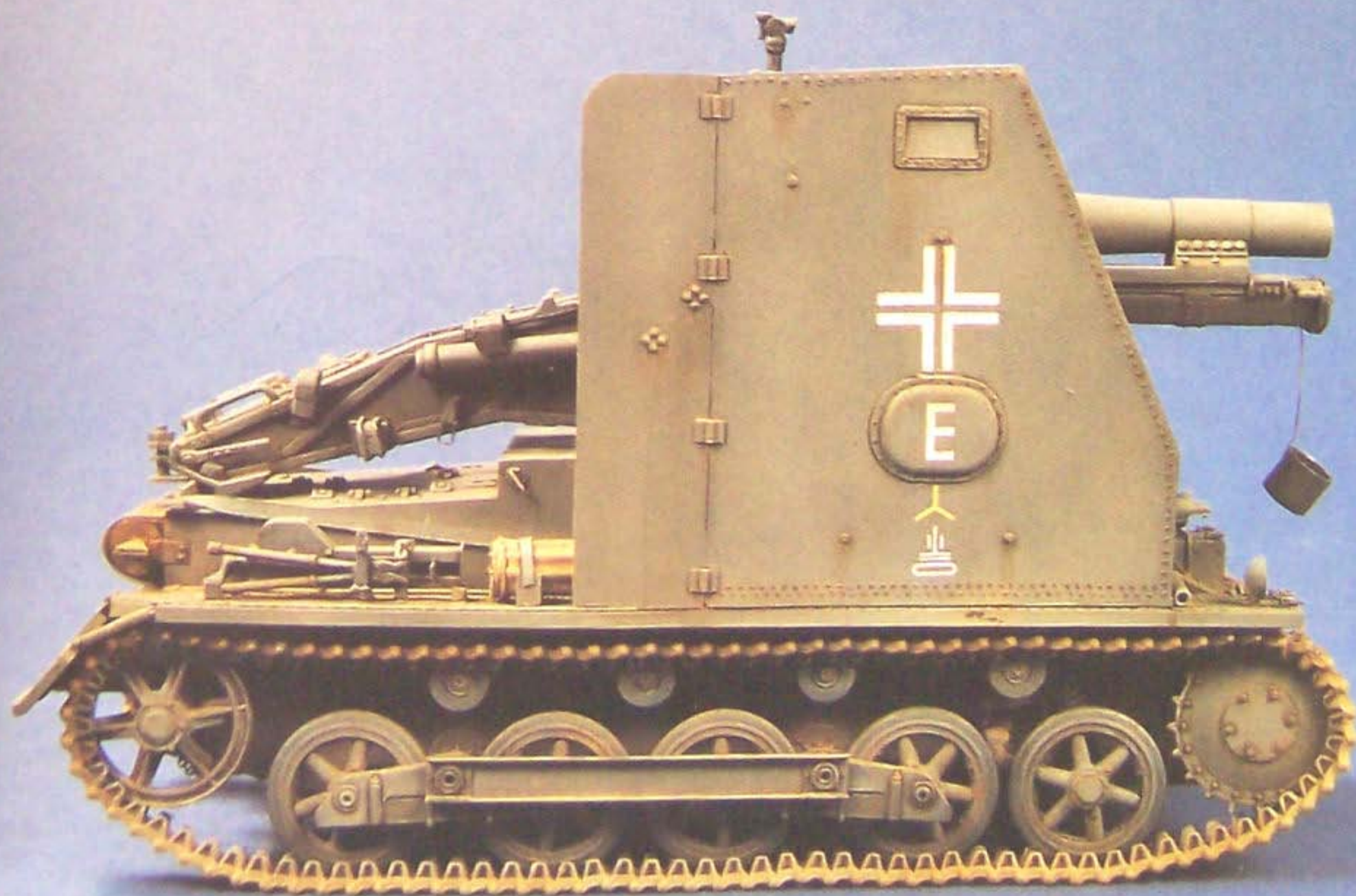
BELOW A cover for the muzzle of the gun was made from aluminium tubing with a styrene base. The leather strap is made from thin lead sheet.

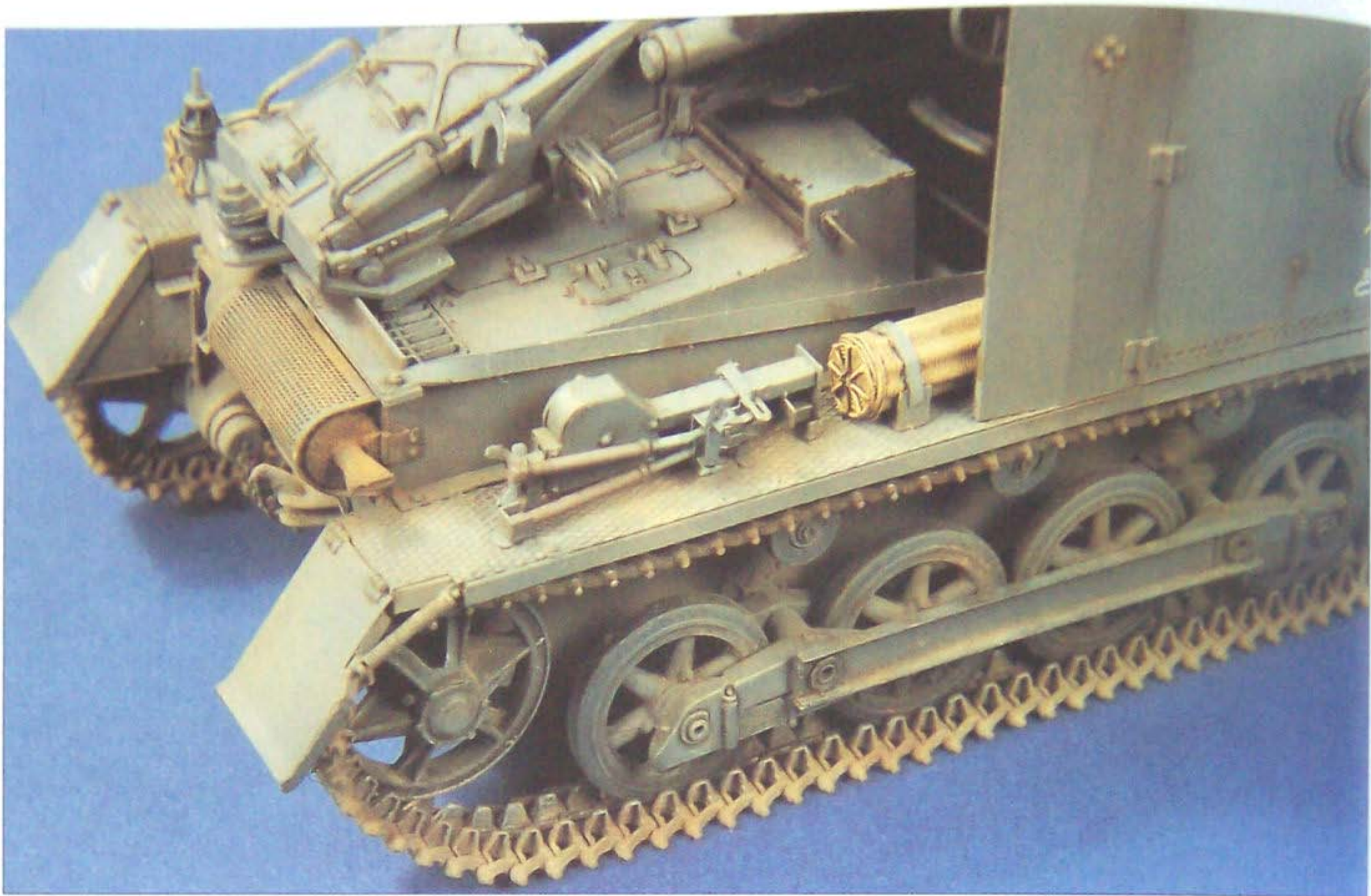




ABOVE Markings were a combination of Archer dry transfers and Tamiya's waterslide decals to show a vehicle from the sIG33(Sf) Kompanie 702 of I.Panzer-Division in Russia, 1941.

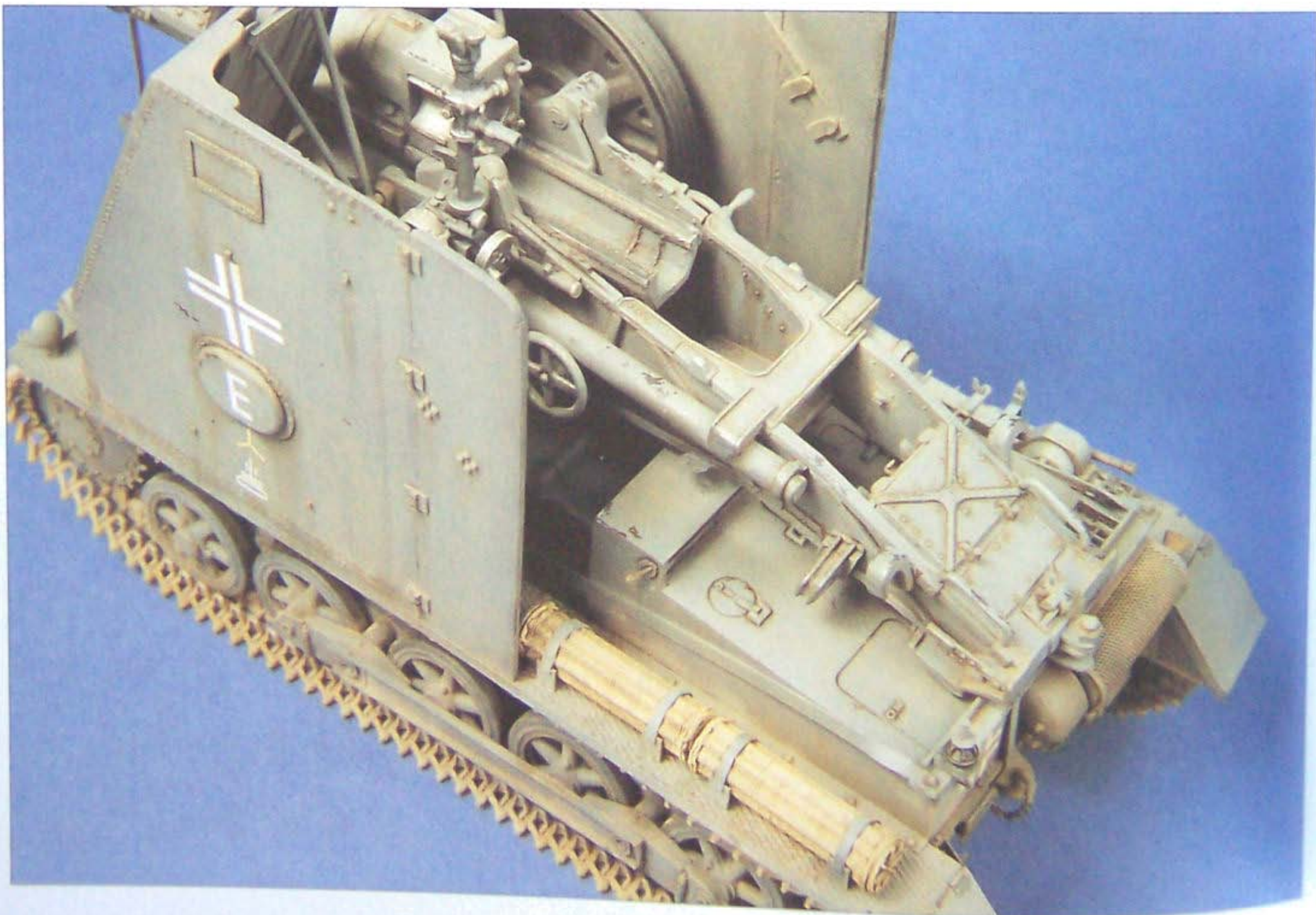
BELOW After all markings had been applied and the details painted, the entire vehicle was sprayed with a diluted acrylic earth colour.

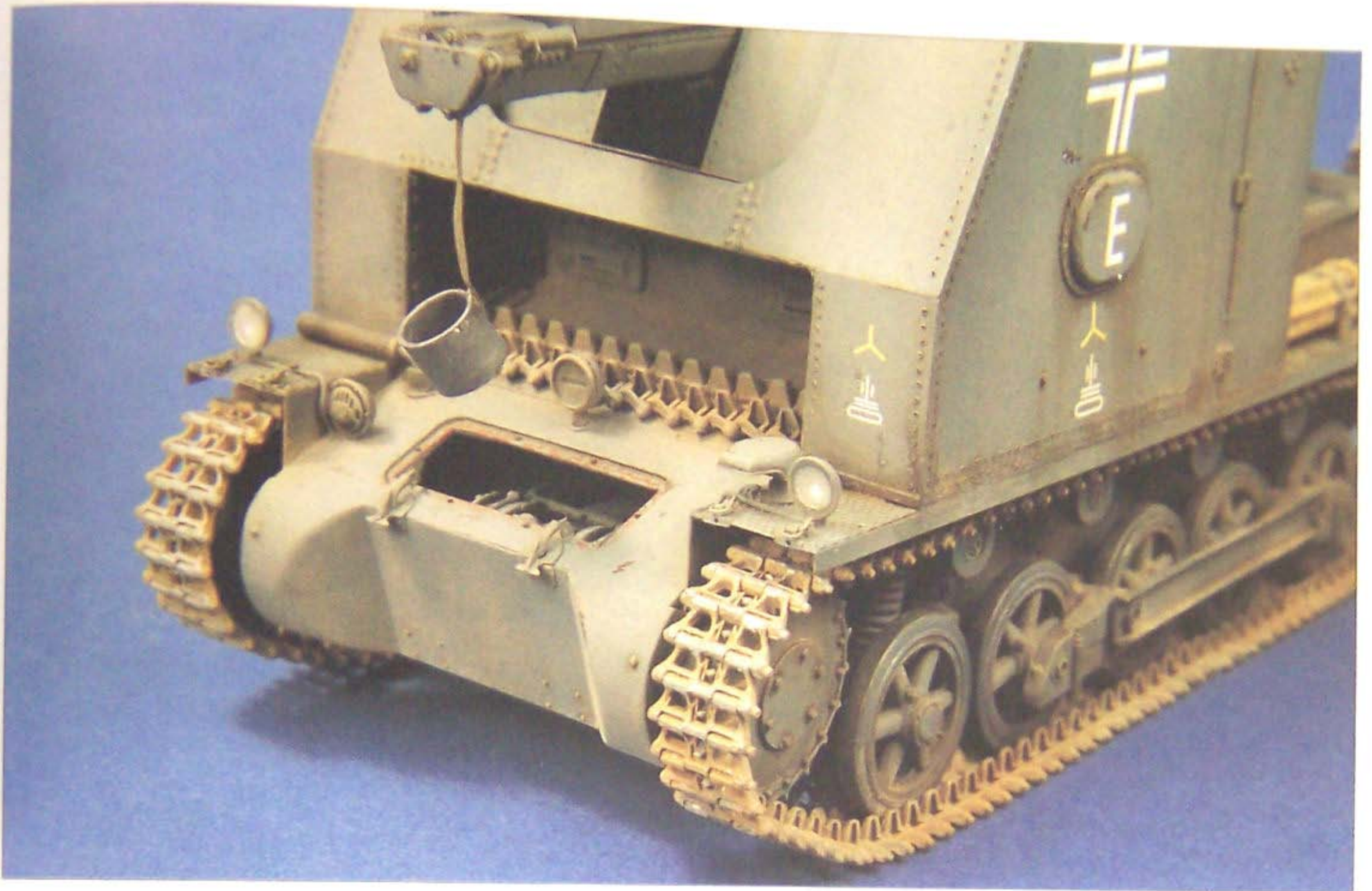




ABOVE An appreciable amount of pastel powders were used to weather the fenders and running gear.

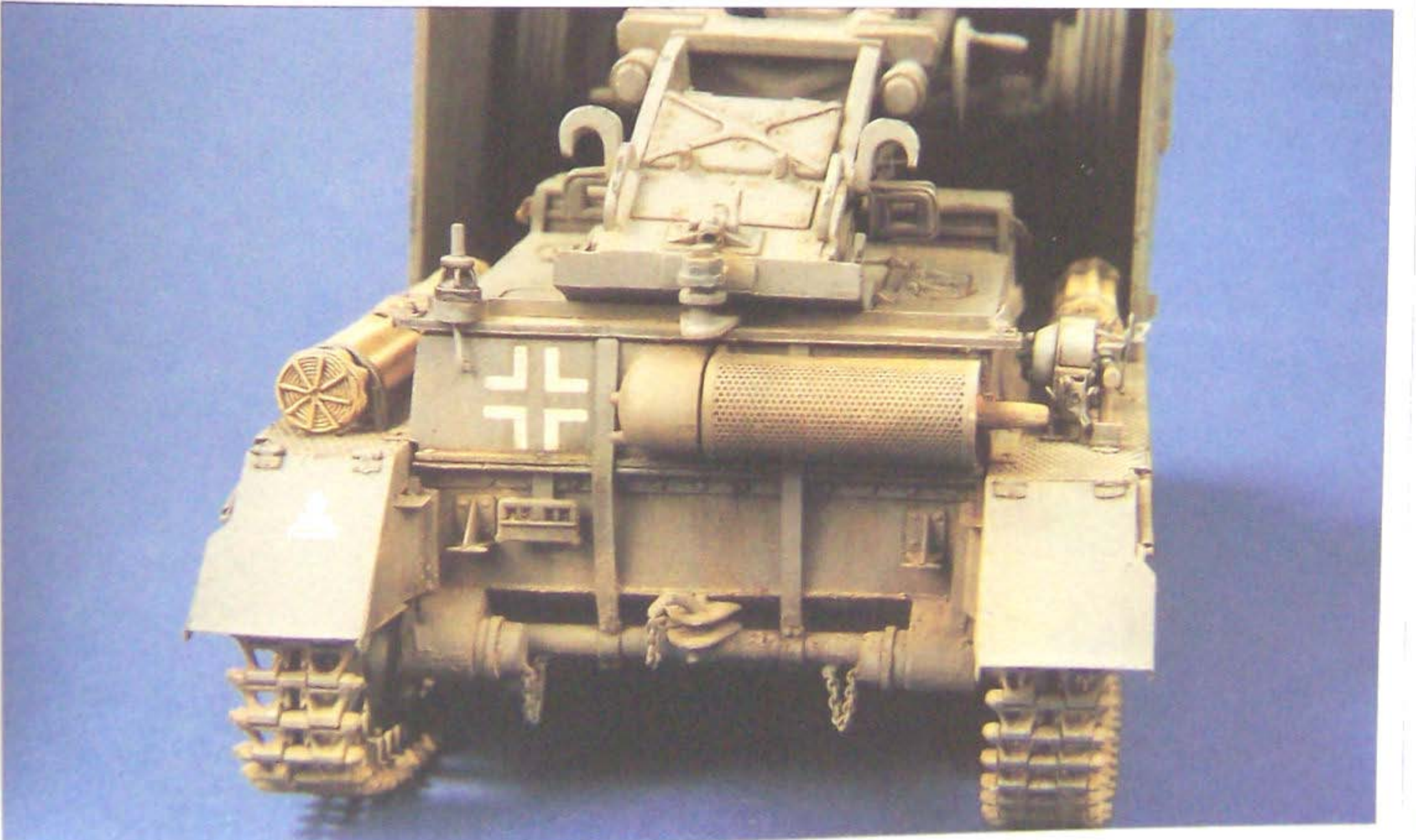
BELOW The wicker ammunition cases displayed their fine detail after a diluted oil paint wash. HB pencil graphite was used to show worn areas of bare metal.

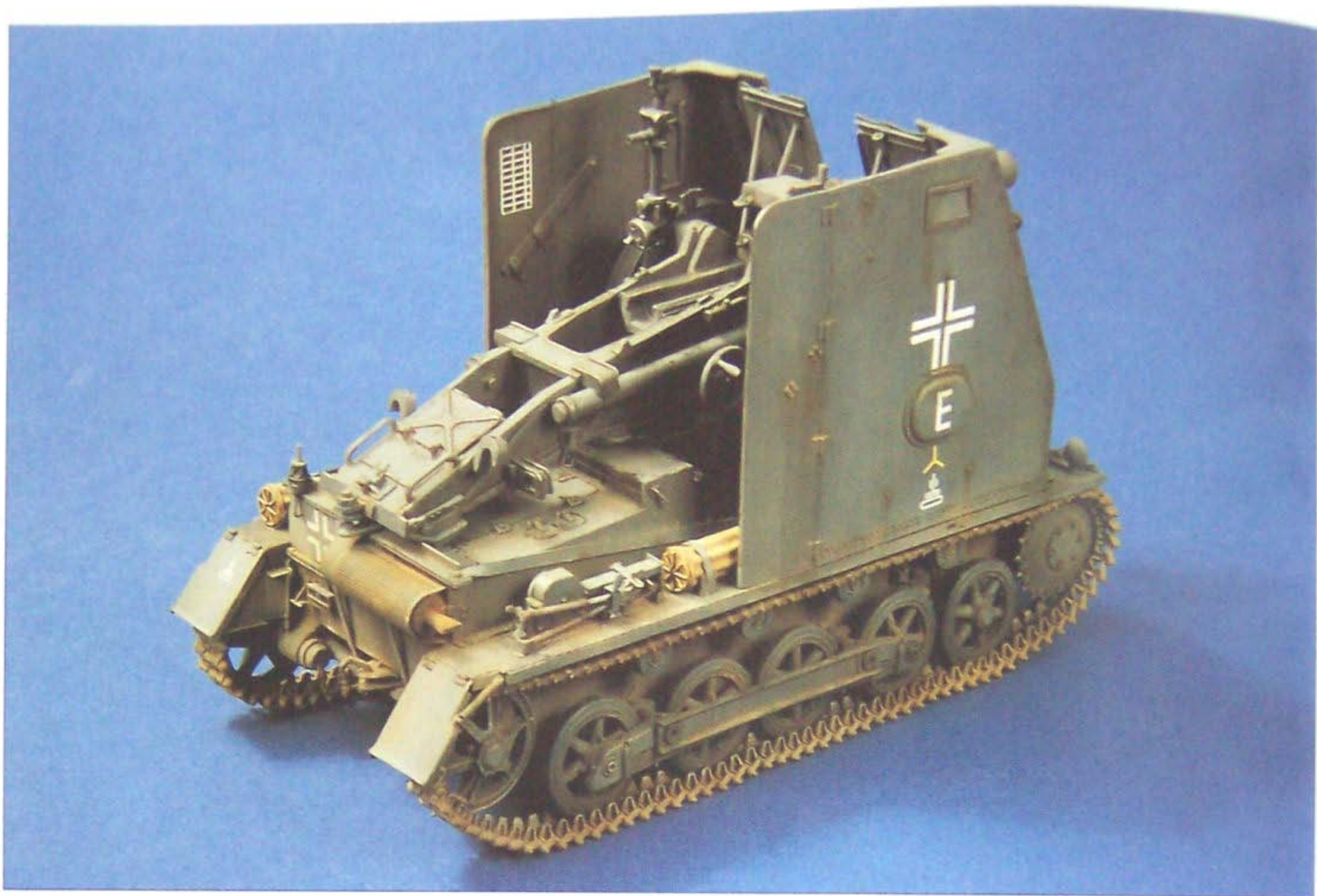




ABOVE The cover for the brake drums was often left off to help with cooling and ventilation. Red primer paint was dappled onto the edges of its opening.

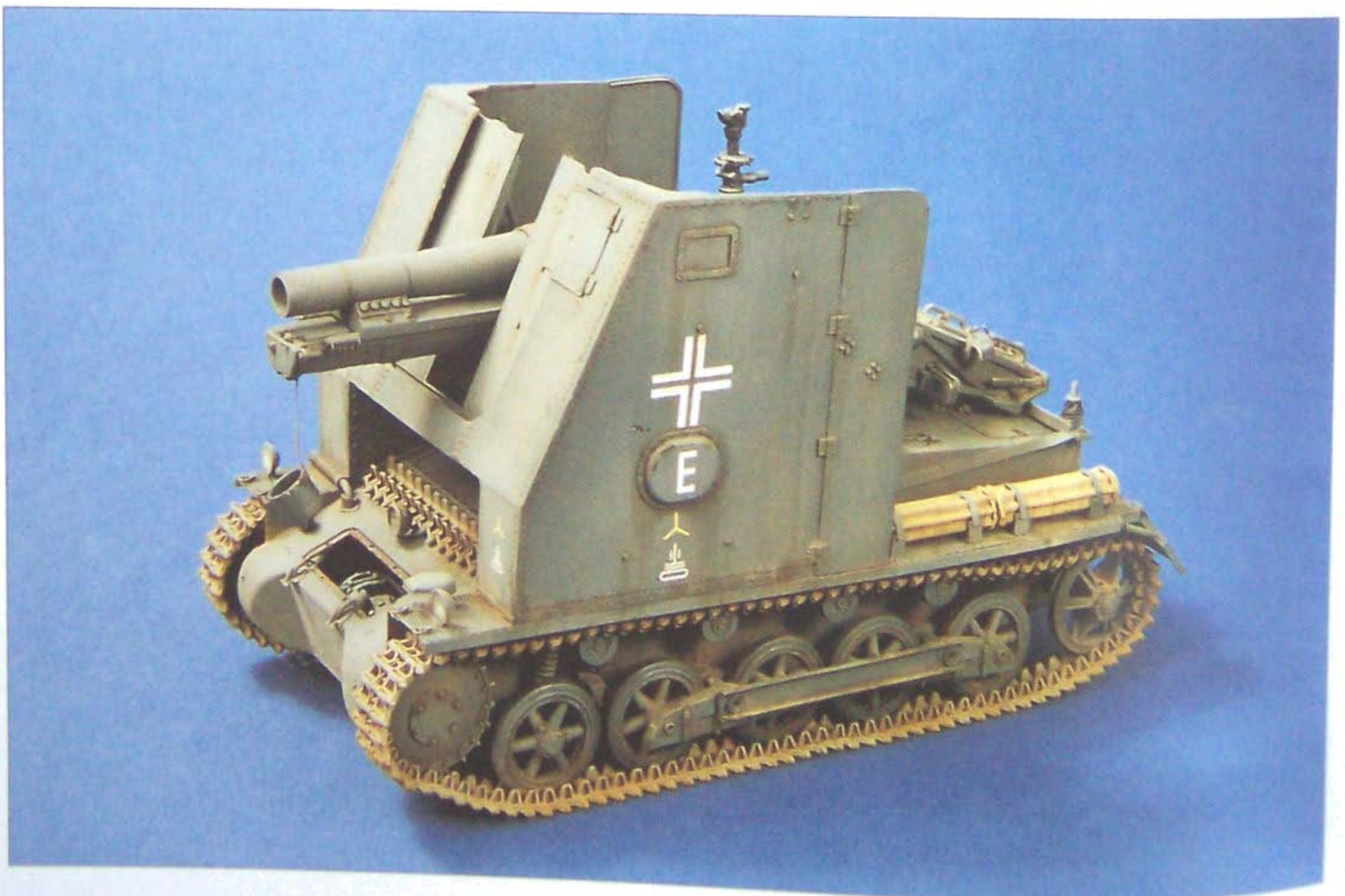
BELOW Later model vehicles in Russia sported the convoy light on the rear left. Retaining chains for the removable caps on the rear idler mounts and tow pintle pin were added using miniature chain from Tiger Model Designs.





ABOVE After the ModelKasten track links were painted, they were added to the model and had tension adjusted by pivoting the rear idler.

BELOW Thirty-eight Bison Is were built on converted Panzer IB chassis, and saw service from 1940 until 1943.



# 15cm schwere Infanteriegeschütz 33 (Sf) auf Panzerkampfwagen 38(t) Ausf. H (SdKfz 138/1)

<i>Subject:</i>	<i>15cm schwere Infanteriegeschütz 33 (Sf) auf Panzerkampfwagen 38(t) Ausf. H (SdKfz 138/1)</i>
<i>Skill level:</i>	<i>Master</i>
<i>Kits used:</i>	<i>Kirin 1/35-scale SdKfz 138/1 Ausf. H 'Grille' kit No. 28003 (Now DML No. 9004) Tamiya 1/35-scale Marder III kit No. 35248</i>
<i>Etched-metal detail sets:</i>	<i>Eduard etched-metal detail set for Grille H No. 35132 Aber etched-metal fenders for Tamiya Marder III No. 35101</i>
<i>Tracks and running gear:</i>	<i>ModelKasten Sprocket &amp; Idler set for PzKpfw 38t No. A-9 ModelKasten Workable track links for Praga 38(t) No. SK-30</i>
<i>Resin detail sets:</i>	<i>CMK Marder III interior set No. 3022 Tiger Model Designs sIG33 for Grille H No. 352082</i>

## Introduction

In 1993 DML/Kirin released an injection-moulded kit No. 28003 of the Grille H by combining some of Italeri's Panzer 38(t) parts with the necessary conversion additions. The result was an interesting offering at the time but suffered from some major inaccuracies. The kit was re-tooled when the model was re-released by Shanghai-Dragon, but it still needed a fair bit of work to make an accurate replica.

The model presented in this chapter will be based on the Kirin kit and also the hull of Tamiya's Marder III kit No. 35248, incorporating some scratch-built and aftermarket items. The vehicle was built to represent a Grille Ausf. H from 9.Kompanie, Panzer-Grenadier-Regiment 2, 2.Panzer-Division captured by the British in Normandy, 1944.

## Planning the build

A large part of modelling a subject consists of reviewing references, obtaining and measuring parts and planning the construction. Parts of the original Kirin kit were used as a guide to construct the armoured hull for the model, and resin components from CMK's Marder III detail set No. 3022 were incorporated in the interior. Also added into the build was Tiger Model Design's (TMD) resin sIG33 for Grille H No. 352082.

## Modifying Tamiya's hull

The hull sides from Tamiya's Marder III had to be cut down horizontally to the point just above where the fender meets the front of the fighting compartment. Enough room was left for the fender to ride on the moulded line on the hull,



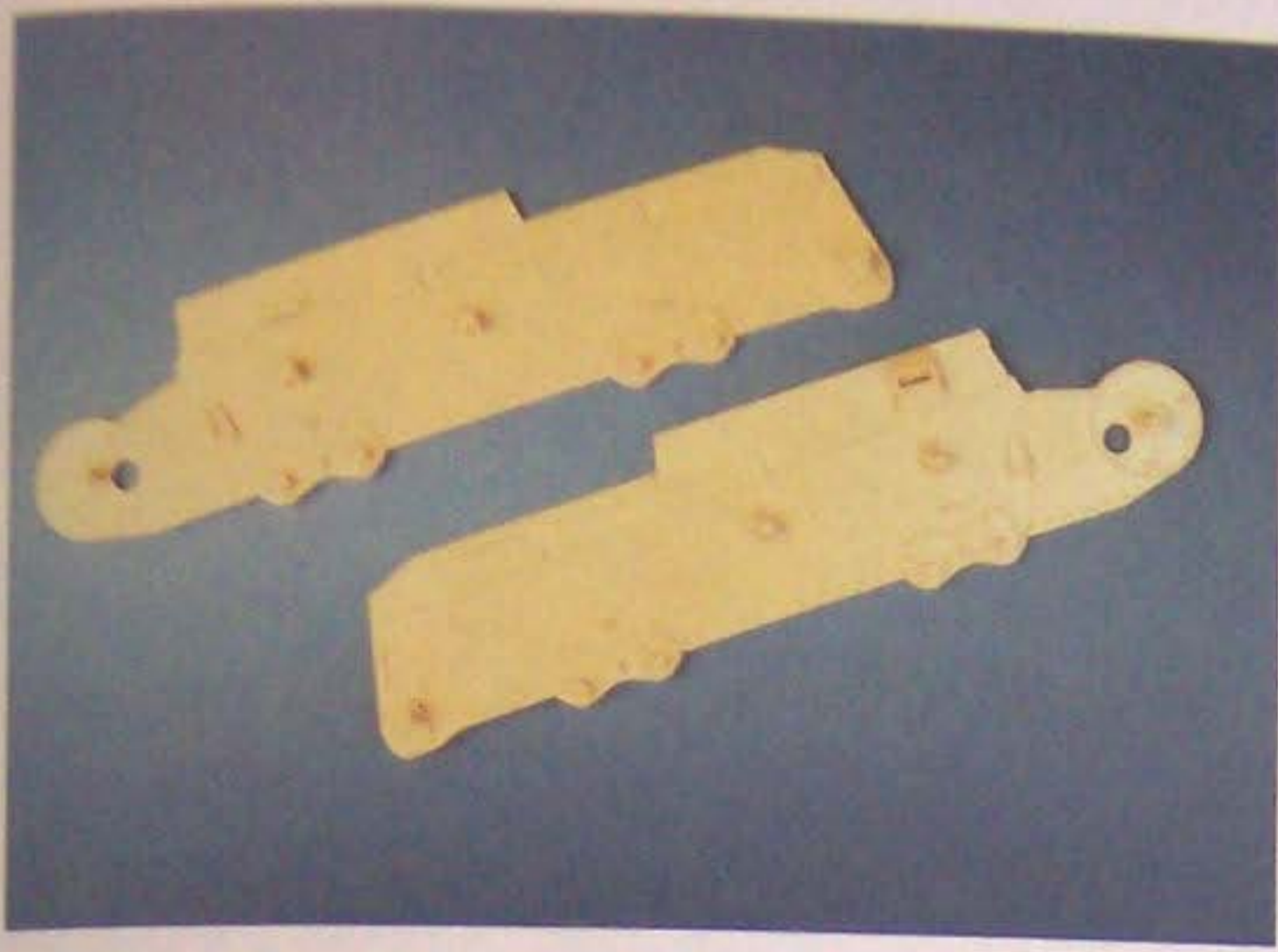
The SdKfz 138/I Ausf. H had a crew of five and a weight of 11.5 tons. Ninety vehicles were produced by the BMM factory in Prague, Czechoslovakia, from February to April 1943.

and sit below each sponson. The cutaway runs to where the engine hatch stops at the back, and the kit's side panels are scribed as a guide for that.

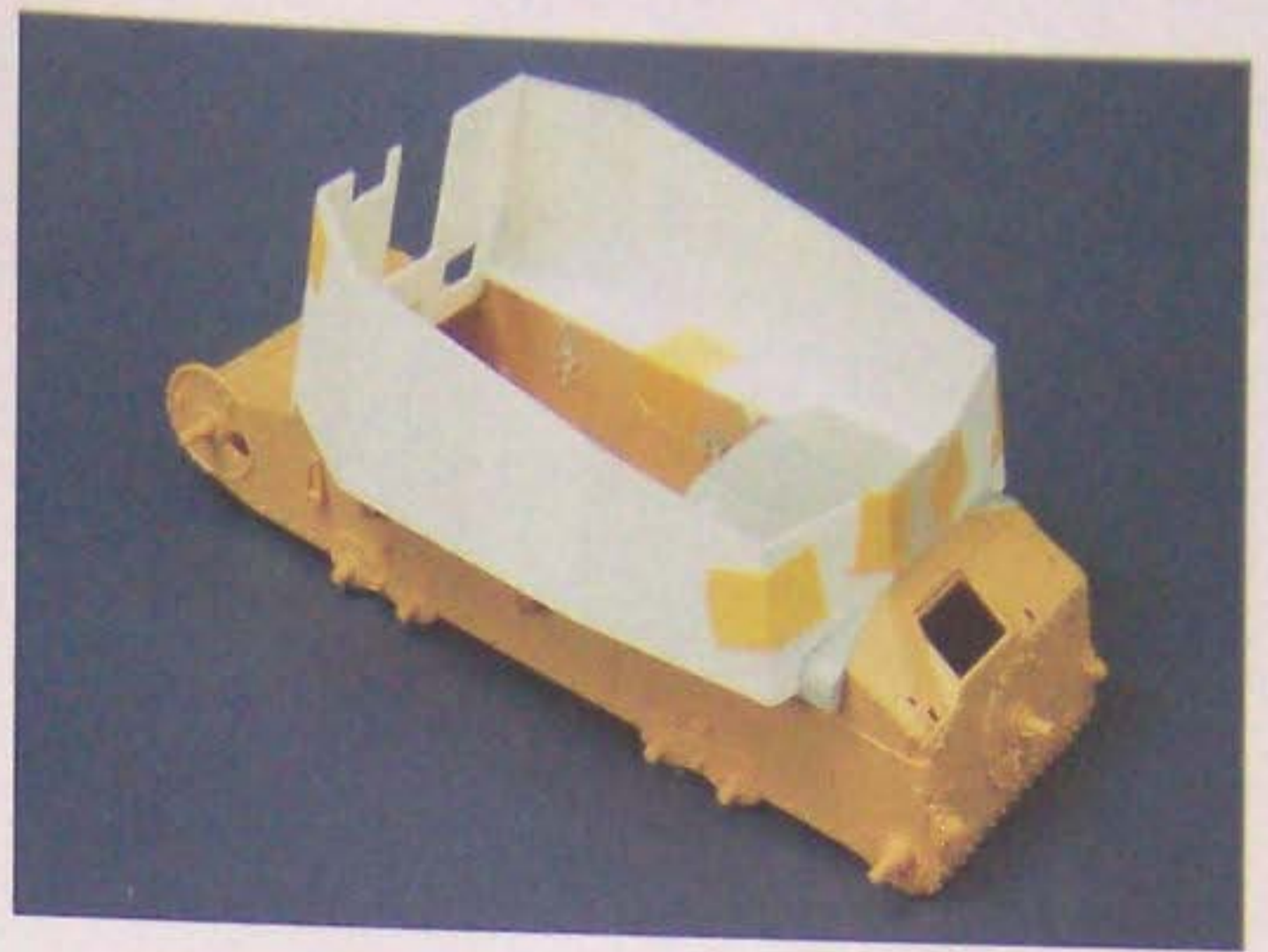
The Kirin (or Dragon Models Ltd.) engine hatch was mated with the rear of the Tamiya kit, which involved removing most of the Marder III upper hull (part B5). Inside of the hull the numerous injection pin marks and holes were filled, and bolt detail was added for the externally mounted equipment, such as return roller mounts and roadwheel assemblies.

Dragon Models re-tooled Kirin's erroneous parts that made up the walls of the fighting compartment. A more authentic representation was made by cutting .015in. styrene card using the kit parts as a guide. The front wall and sponsons were made from .020in. styrene card. When measuring and fitting this assembly, it was noted that the sidewalls joined the front plate from behind. The rear doors were the most challenging parts to make, since the lower edges have to follow the contour of the engine access hatches. The hinge detail from the Kirin kit was removed and transferred to the model's new scratch-built parts. To accommodate the TMD sIG33 the opening for the main gun in the front plate was made 1.5mm wider than the Kirin one. There was a corresponding width increase in the armoured plates that moved with the gun during elevation.

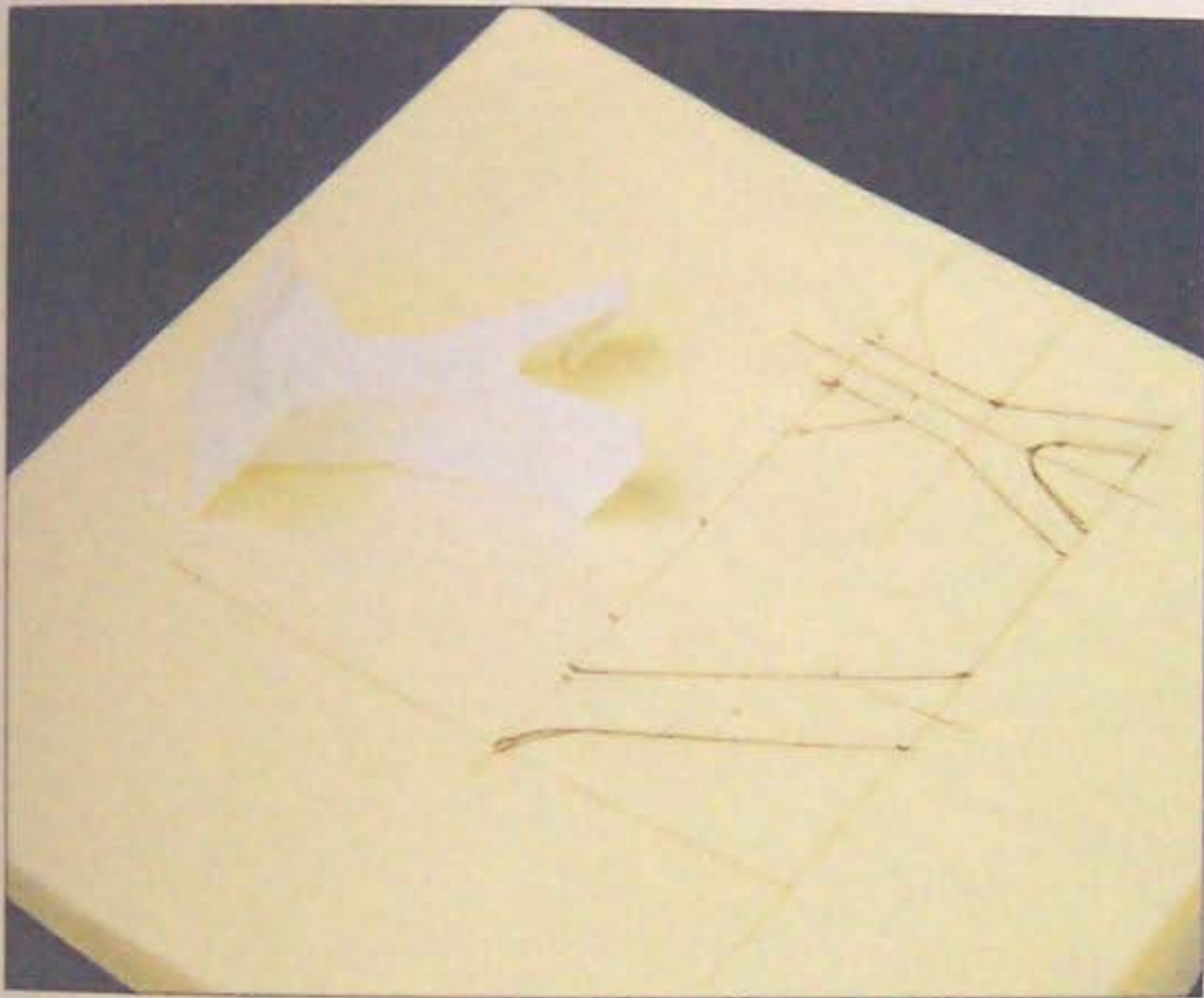
Internal flanges were added to the interior walls, and Grandt Line No. 127 bolts were positioned referring to photos for correct locations. Rivet detail



To accommodate the armoured walls of the fighting compartment, the lower hull sections of the Tamiya Marder III kit were marked and cut above the fender line.



With the DML/Kirin engine deck adapted to the hull, the walls of the fighting compartment were cut from styrene card and tested for fit.



A mount for the main gun was built based on reference photos and the position of the gun within the hull.



Tiger Model Design's resin sIG33 was used for this model.

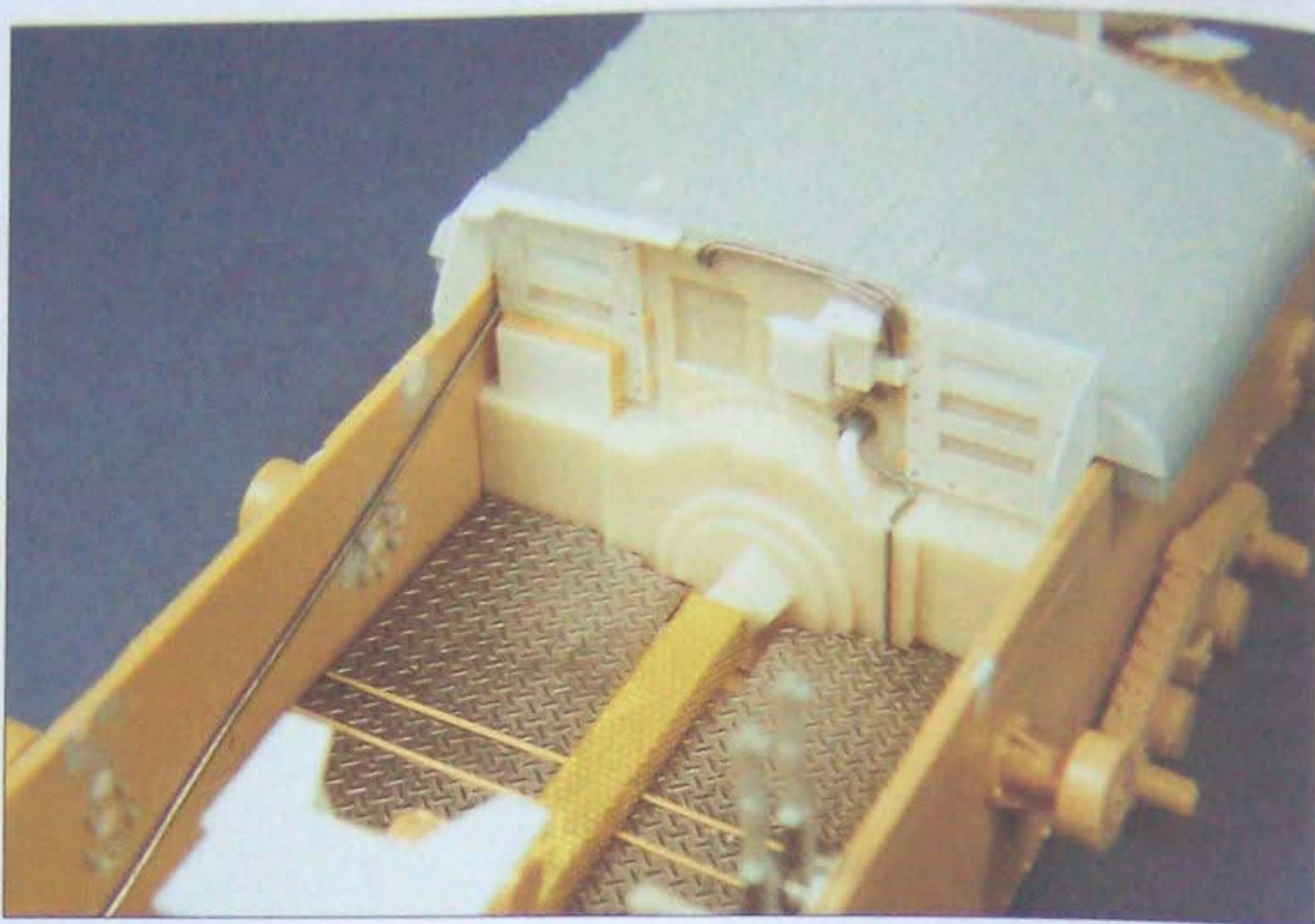
using Grandt Line's No. 153 was added to the exterior of the walls. The front plate had a combination of various sizes of bolts, nuts and rivets both on the inside and out.

## Internal detail – lower hull

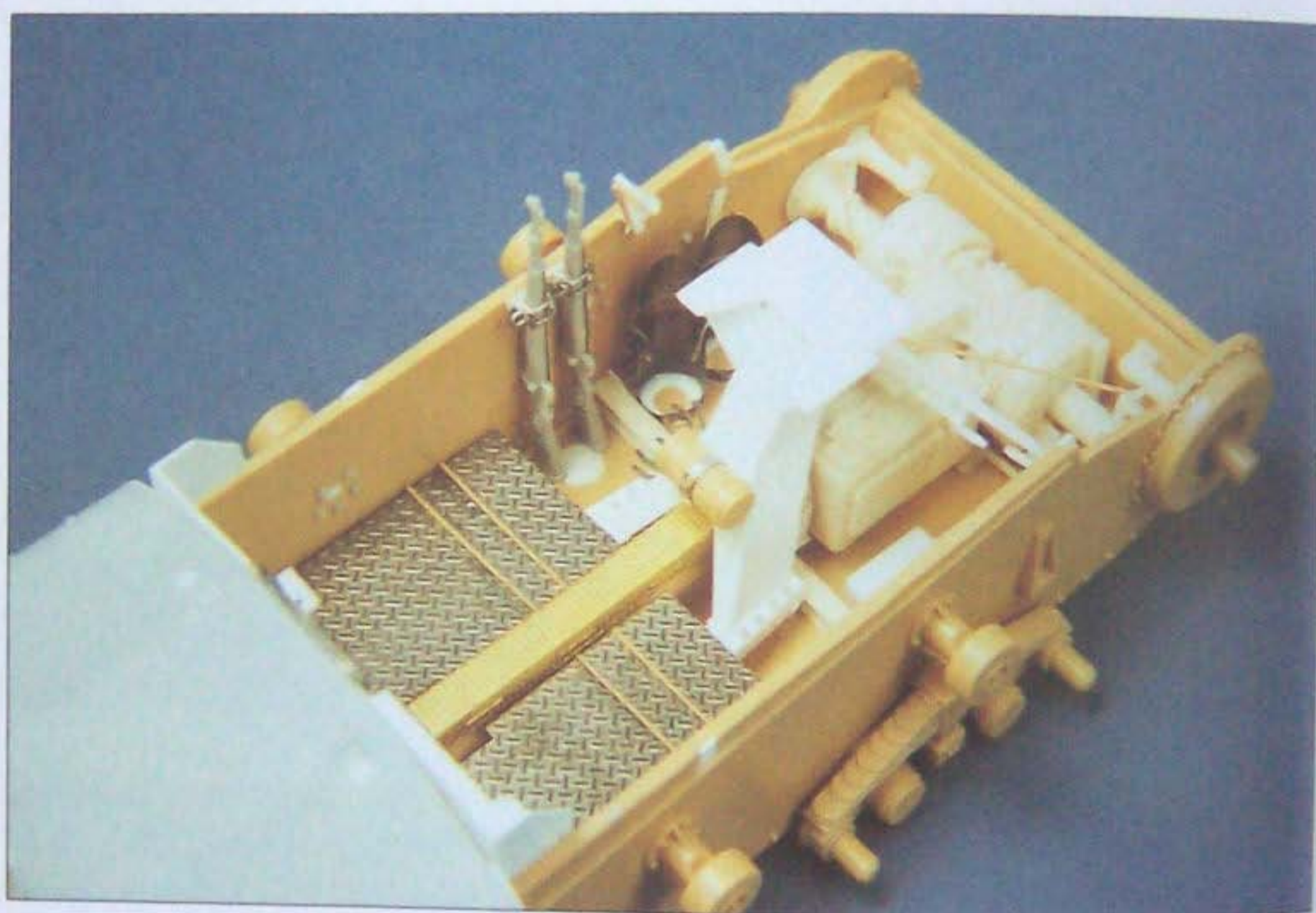
The CMK Marder III resin transmission, drive components and firewall were fitted into the lower hull. New access doors were added to the firewall, along with various detail to modify it to a Grille H configuration. The gun mount sat on two support beams that lay on each side of the drive shaft, tapering to the front. Based on photos of the Grille H recovered in the river Enns in Austria, and measurements taken of the model components, a gun mount was constructed from .015in. styrene. Test-fitting of the mount ensured the gun's proper position and height in the vehicle.

Tread plate from spare photo-etched detail (from an Aber FAMO set) was added to the drive shaft cover. An elevated floor with stowage below sat on either side of the drive shaft, and the detail from Eduard's Grille H etched-brass set was modified to fit. A number of conduits were added to the interior with detailing solder.

CMK's Marder III interior detail set was modified to represent that of the Grille H. Treadplate from Eduard's Grille H set was used for the floor, and scraps from Aber's Famo set were bent to cover the drive shaft.



Rifle stowage was placed behind the gun cradle release handle. The gun mount sat over CMK's resin transmission assembly.



The co-driver position in the Panzer 38(t) was not a crew location in the Grille H. This area was used to store ammunition rounds and, directly behind it (also behind the gun-crutch release handle), were two rifle stowage positions. Eduard's etched-metal stowage tubes were used to make the ammo positions, and a couple of DML K98 rifles were mounted with thin solder wire hasps. On the other side of the transmission, the driver's seat was detailed with copper wire formed into a spring pattern.

### Internal detail – upper hull

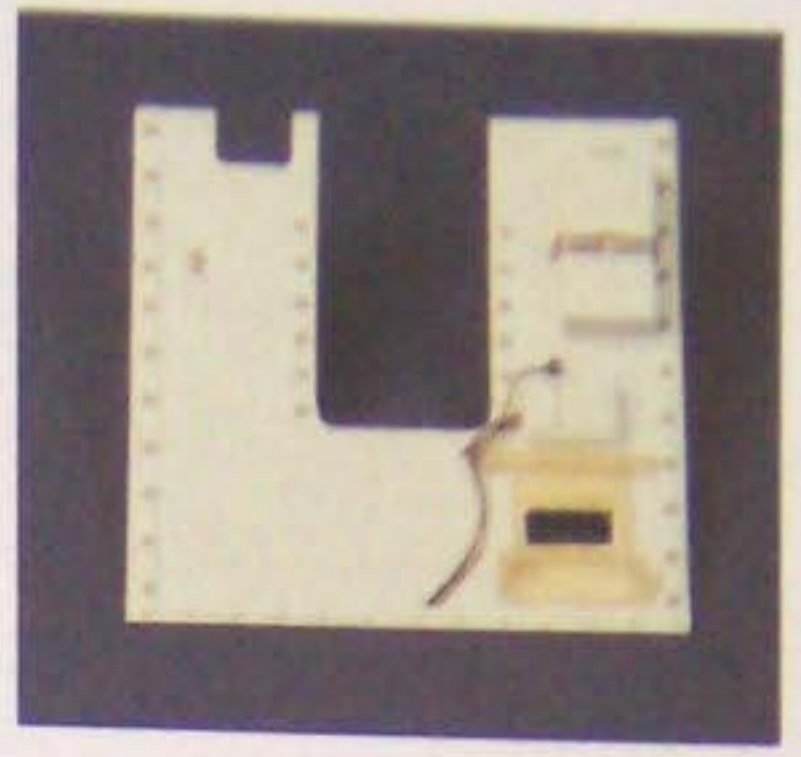
The numerous components that detail the interior walls were added to each face and painted before the walls were assembled together on the hull. The left rear door received a Czech fire extinguisher and stowage box from the Marder kit. On the left sidewall was mounted the standard Fu5 radio combination of a 10 W.S.c transmitter and a Uk.E.e receiver. These were scratch-built, cast in resin and given mounts standard to installations in most German AFVs of World War II. The dynamotor power supplies for each component were mounted just below the radio box, and these were made from laminated pieces

of .040in. and .020in. styrene to get the correct thickness. Just to the left of the radio rack was the intercom box. All radio components were wired with thin solder wire using the reference Achtung Panzer No. 7. To the left of the radio components were a stowage box and a pouch of 9mm magazines for an MP40 machine pistol. The gunner's seat was located just forward of the radio, and three horizontal ammunition stowage tubes were ahead of that. Two small stowage boxes were constructed from styrene and placed along with a gas mask canister above the etched brass ammo stowage tubes.

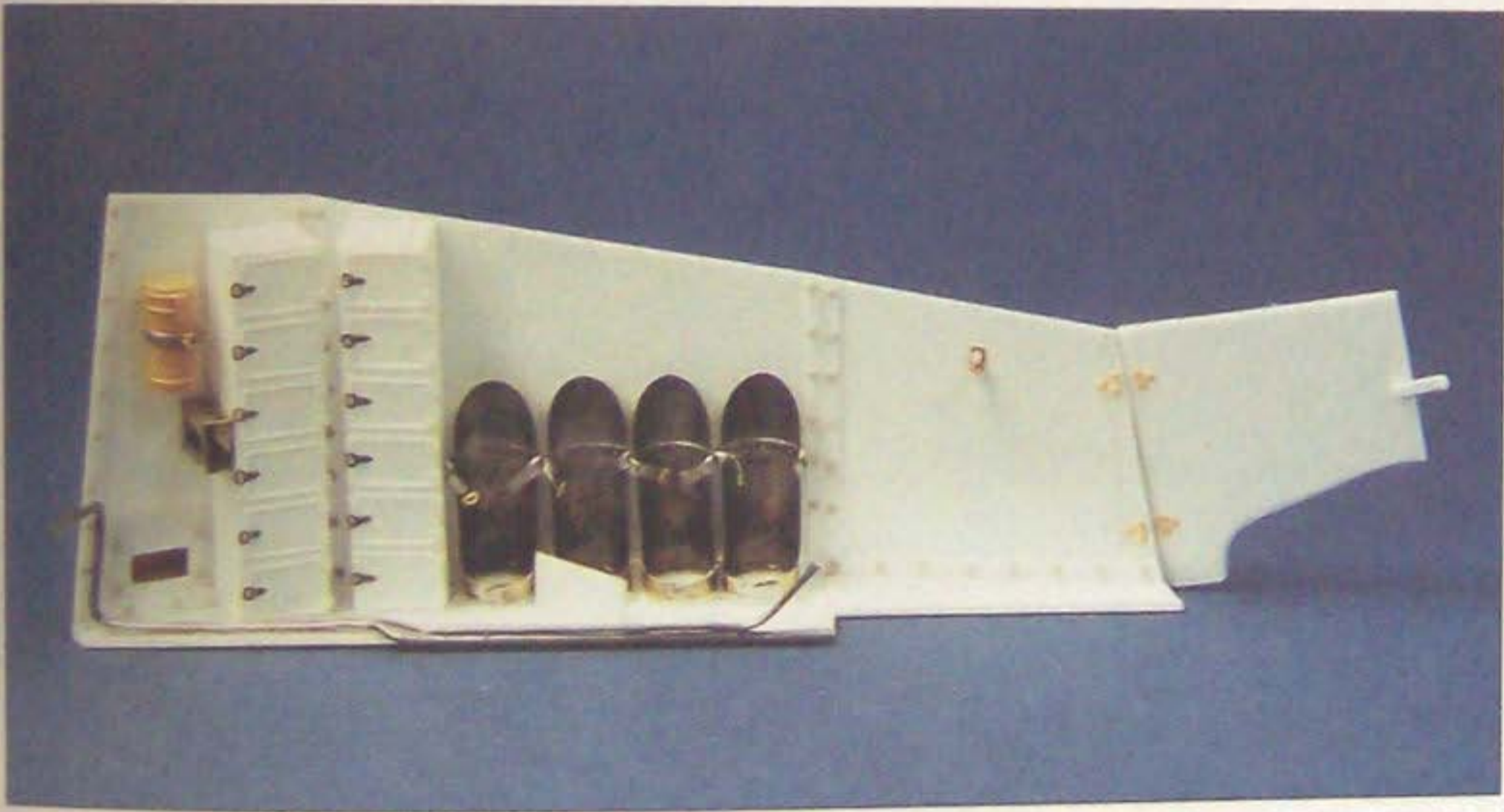
A driver's visor frame was separated from the CMK Marder III detail set and cemented onto the front plate. A small instrument panel and first-aid kit, made from styrene scraps, were also added.

On the right-hand wall, two stacks of shot boxes were made to replace the kit-supplied parts. The actual size of these boxes was 21.5cm wide x 19cm deep x 15cm tall. Mounted on the boxes on the forward side was a small, etched-brass box for storage of the driver's spare viewing glass. A row of four ammo stowage tubes sat behind the loader's seat. A second MP40 magazine pouch and a bracket to hang water canteens on was to the right of the ammo stowage.

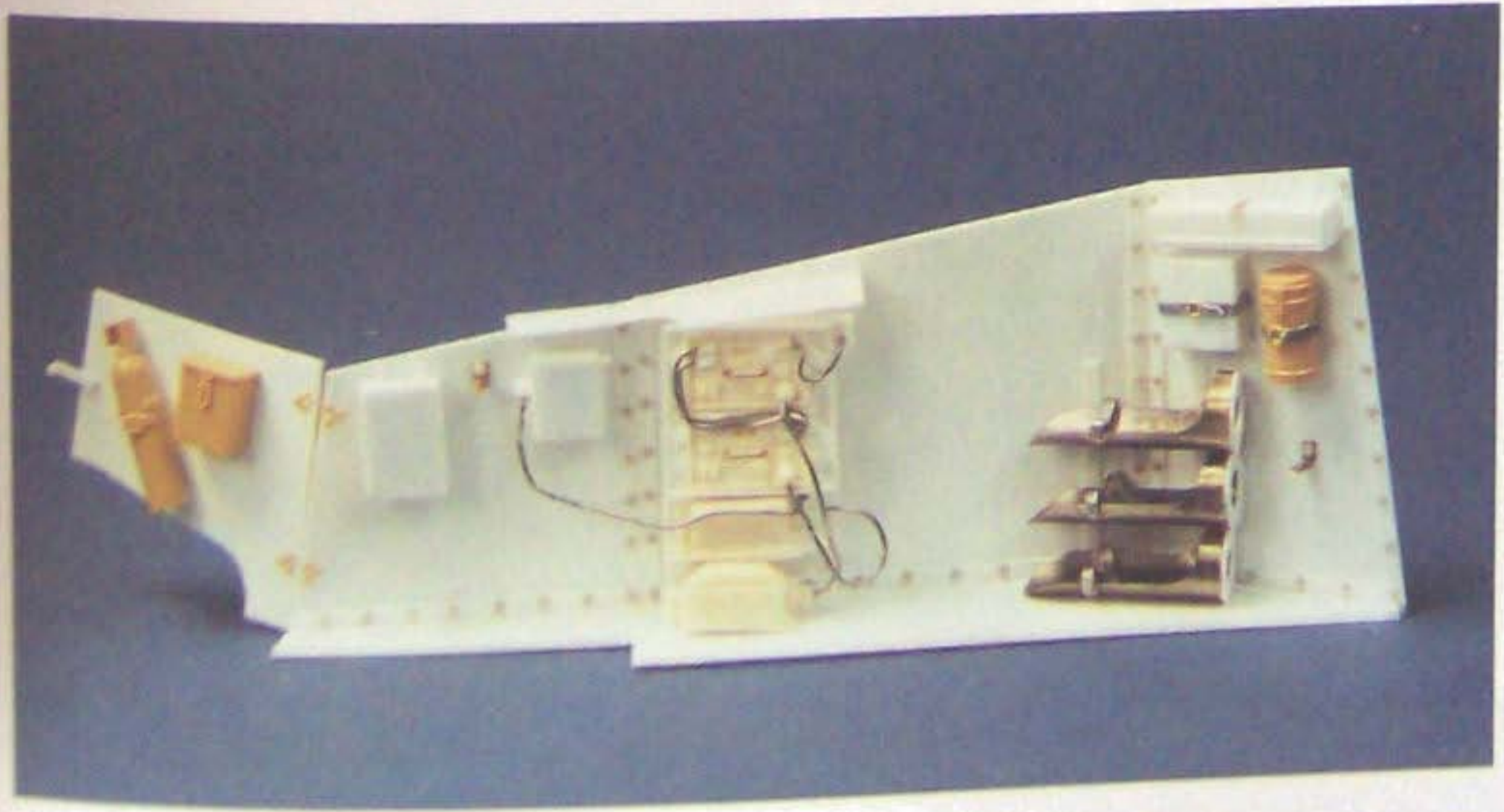
The large ammunition box on the rear deck came from the Kirin kit, and was detailed with hinges, hasps and handles, and given supports to get the right sit. The large ammunition round preparation tray to the right was made with thick lead sheet, using the rather thin Eduard etched-metal part as a template to drill the holes. The lead, gleaned from an old stick of ski wax, was also used to fabricate the spring-loaded armoured cover that sat under the gun cradle. Kirin's commander's seat was positioned to the left of the box with added spring and mounting detail.



Inside the front armoured wall, an instrument panel was located above the driver's aperture.

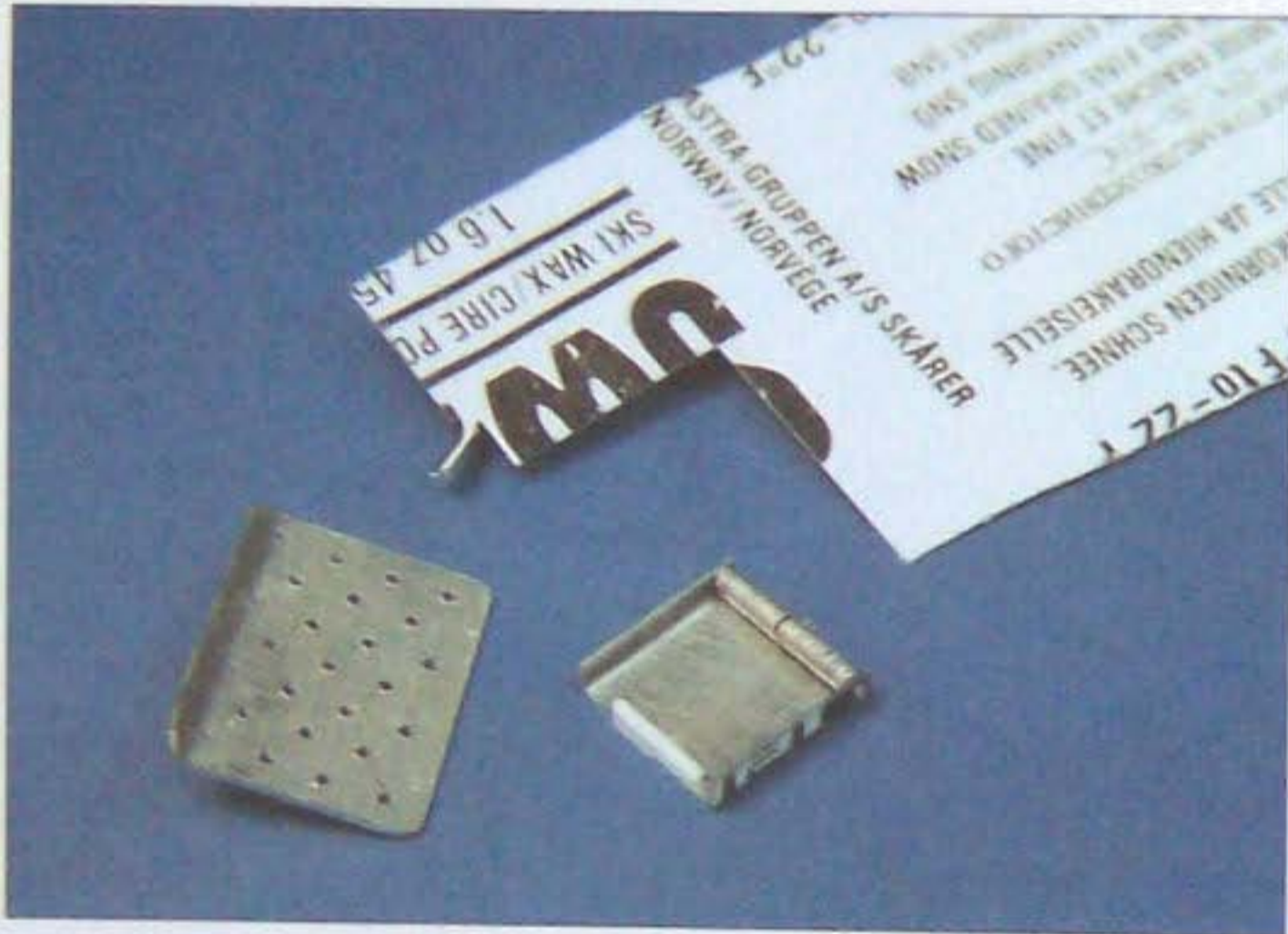


Shot boxes were made from styrene, and ammo stowage was taken from the Eduard etched-metal detail set.



Various Tamiya Marder III kit details along with some scratch-built radio components were added to the left-hand wall. Equipment was strapped in place using thin lead sheet along with Aber's photo-etched brass hasps and buckles.

Frequent test fitting of the walls ensured proper alignment and minimized component interference.



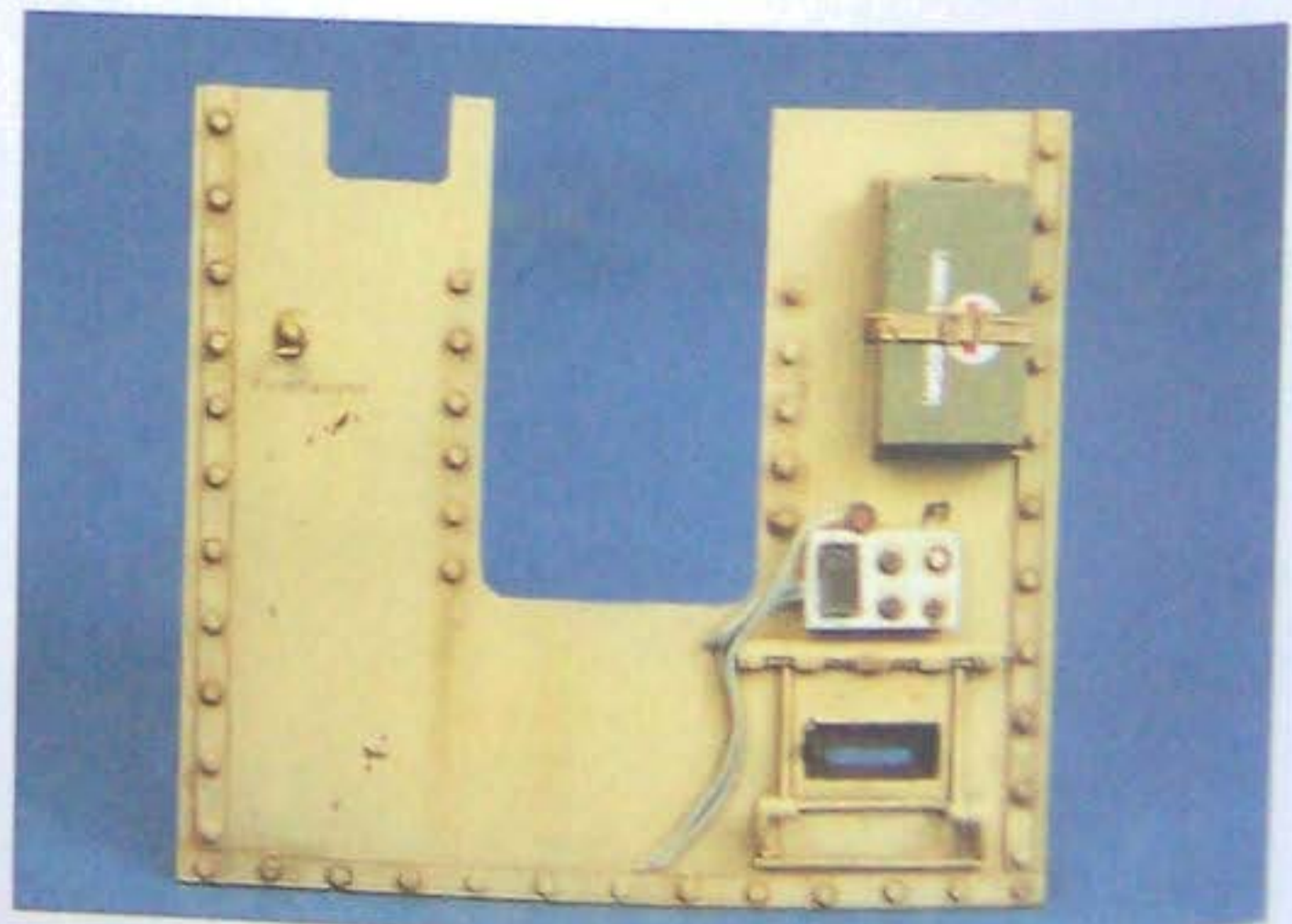
Two of the items made from thick lead sheet were the ammo preparation tray and the spring-loaded front gun shield. The sheet came from a container of ski wax.



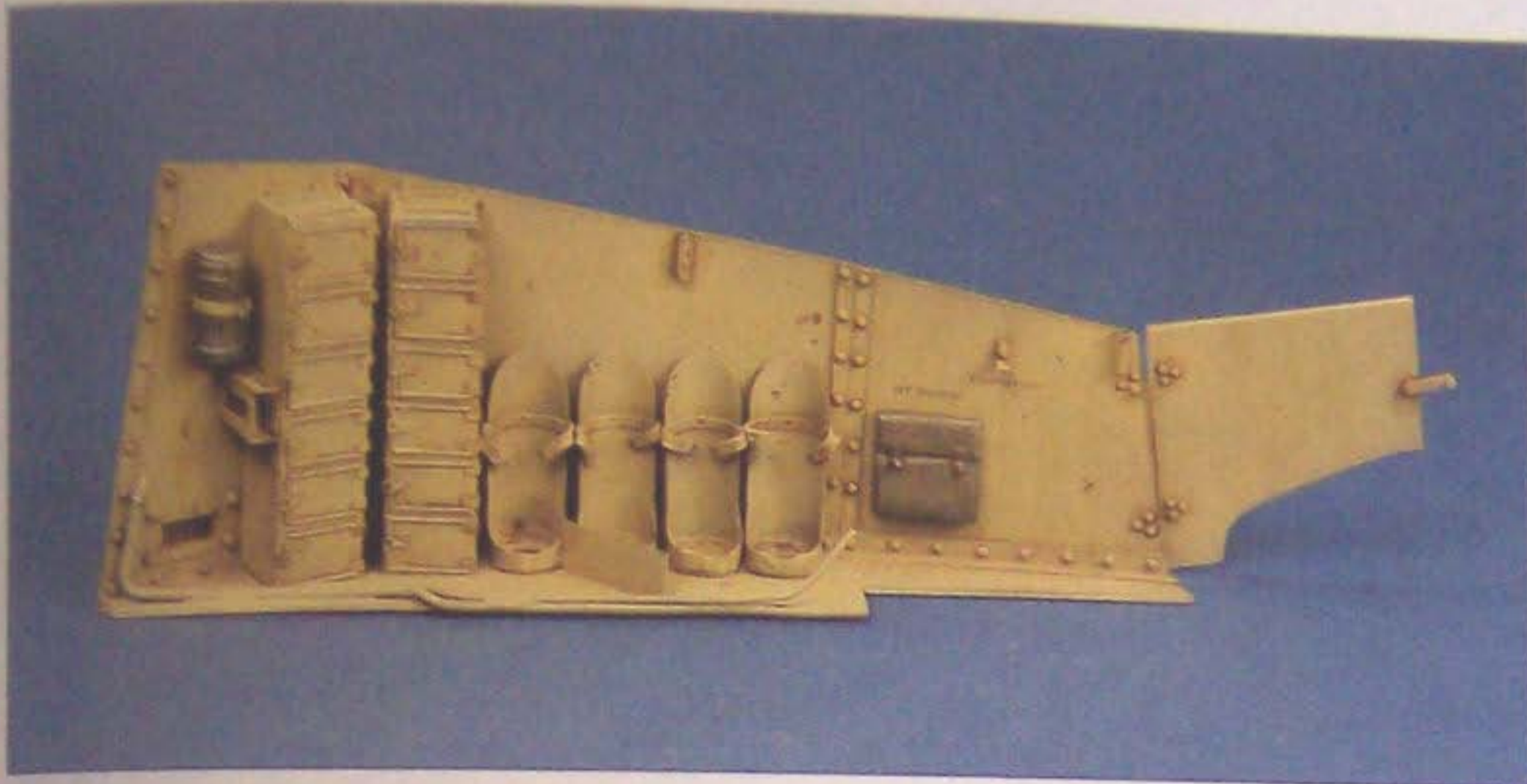
The ammo stowage box was detailed with brass handles and etched-metal hasps. The prolific hinges on top were fashioned from styrene.



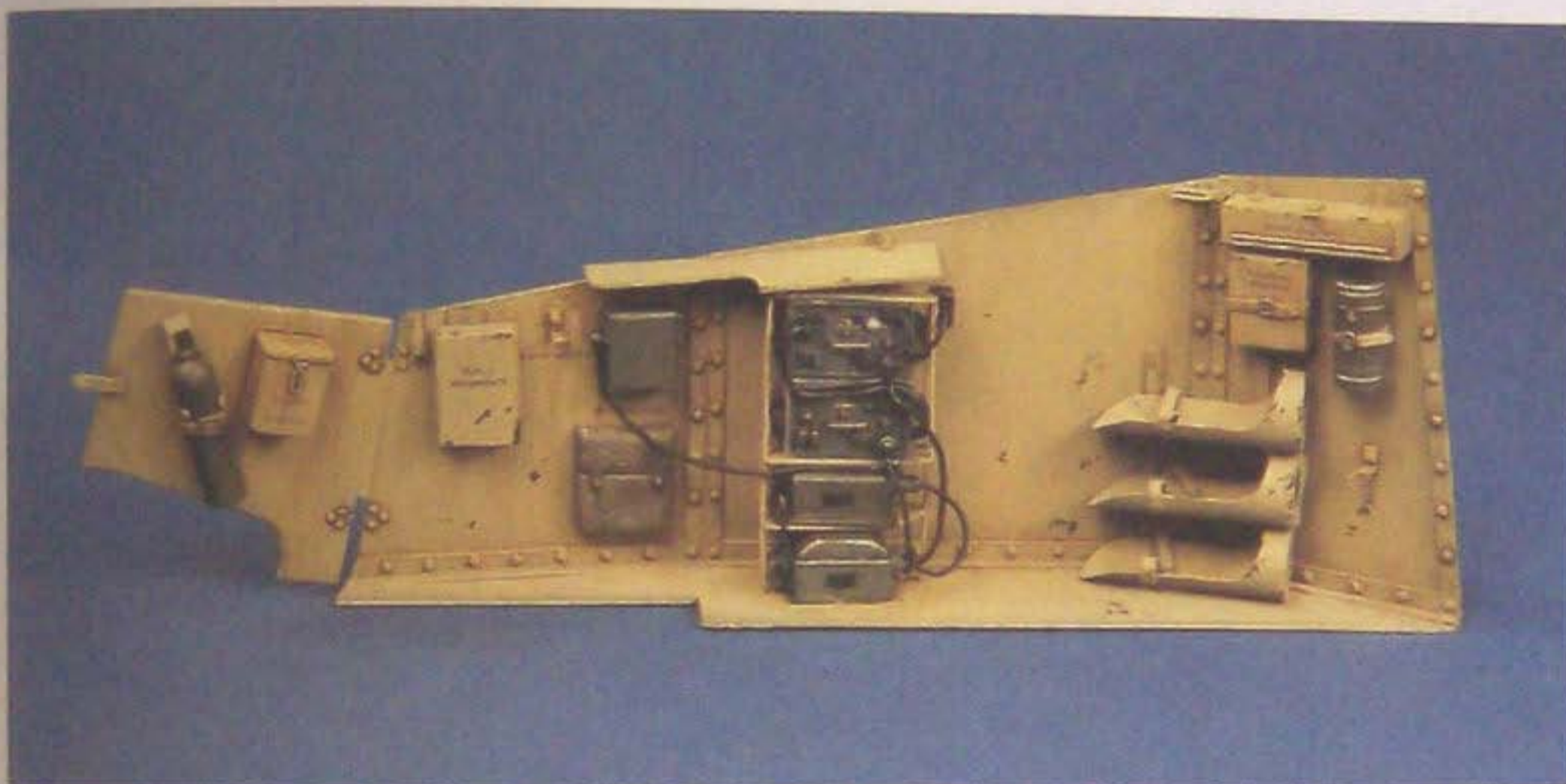
The lower hull's interior was painted and weathered prior to the addition of the walls.



Before weathering the interior walls, decals were applied to the equipment stowage locations and the first-aid kit.



To the left of the shot boxes was a stowage area for the driver's spare periscope. To the right of the main round stowage was an ammunition bag for MP40 magazines.



The radios were wired together using fine solder. Radio faces were painted dark grey, and the dynamotor power supplies were painted 'equipment green' using Vallejo's Olive Grey.

After all of the interior and wall sections were painted and weathered, the sub-assemblies were cemented together. There were two braces that supported the left and right walls from the firewall. Styrene .040in. rod was cut at the correct length and angle for each of these legs, and an additional conduit added for a radio connection on the left side. The gun cradle release rod was also installed at this point using solder wire with styrene reinforcement fillets at the 90-degree bends. These parts were painted and weathered to match the interior after installation.

Later in the build, supports for the tarpaulin were mounted at each of the five points on the walls with a brass rod bent for the middle arched support. These delicate additions tend to get broken off as the model is handled, and were left until the final stages of construction.

## Running gear

Drive sprockets and idlers from ModelKasten's A-9 set replaced the parts from the Tamiya kit, and the track links were ModelKasten's No. SK-30. The idlers were made to be adjustable, allowing the track tension to be set after installation.

## Exterior detailing

Aber's brass fenders for the Marder III had the supports soldered in place, then were modified to fit under the sponsons of the fighting compartment. There is a small bend in the length of the fender section that was placed to match the corresponding ridge on the Tamiya kit's hull.

ModelKasten's track set included enough spares for the three locations: aft of the fighting compartment, the front of the lower hull, and the right front fender. The links on the fender were held in place with two soft metal strips



Joining the walls to the lower hull involved adding supports at the firewall, and attaching the actuator for the gun's travel lock release. These items were painted and weathered to match the rest of the interior.



Extensive wear was added to the round preparation tray using dark brown Floquil lacquer. Latches were added to the rear loading doors.

that were bolted to the fender below, which was commonly seen on Czech-built vehicles.

The Kirin kit's main gun travel lock and release linkage were modified with bits and pieces of styrene and lead strip to match references. The travel lock had to be shortened by 1.0mm to allow the gun barrel to sit at the correct position.

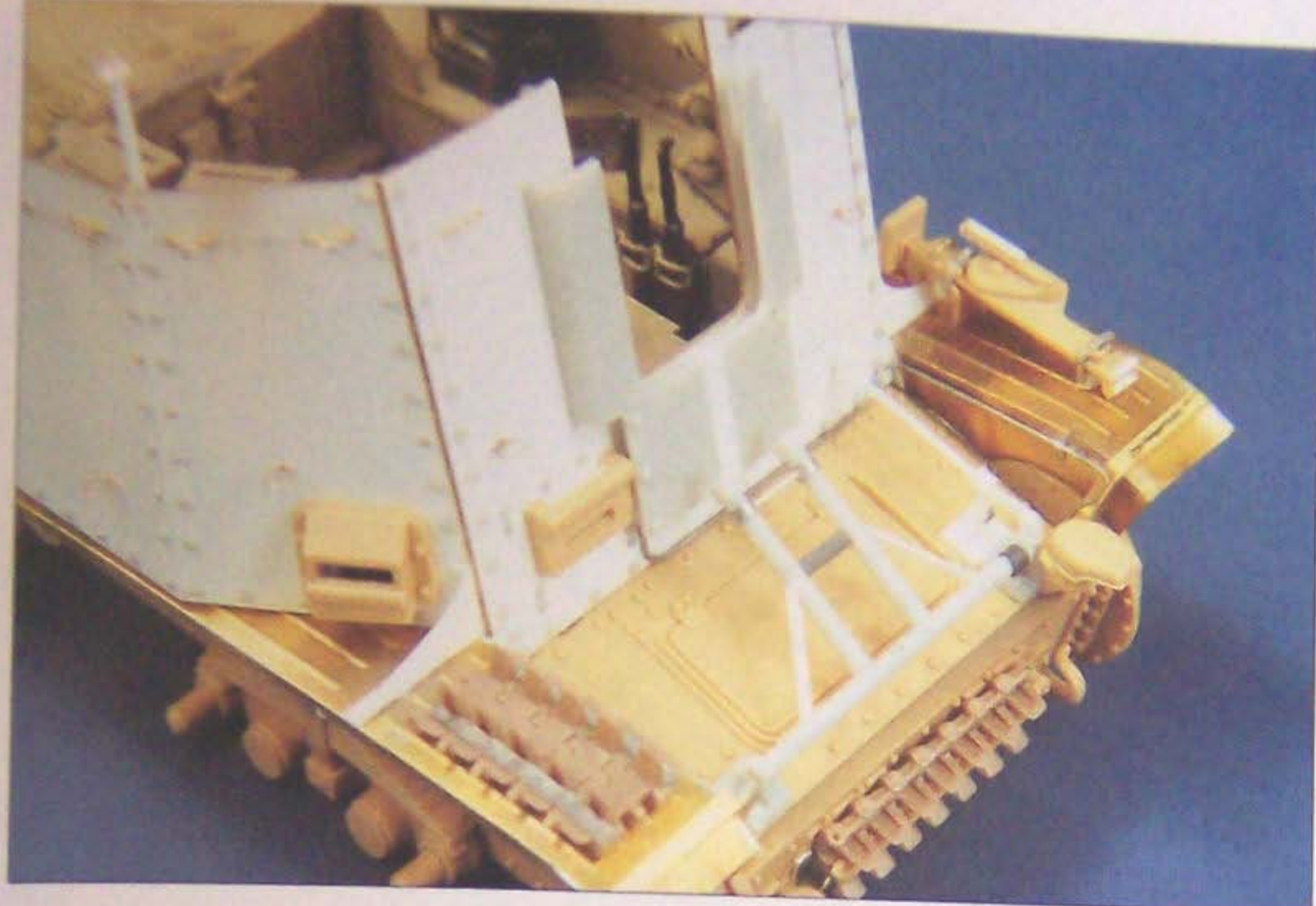
At the rear of the vehicle, Eduard's brass screen was used for the air outlet, placed over a styrene damper. There was a second, smaller screen placed on top of this and a taller frame was scratch-built from styrene to house it. Although an aftermarket Moskit engine exhaust was obtained for this build, it couldn't be used since the tailpipe pointed vertically. All references showed that the Grille H's exhaust pipe sat at a 45-degree angle to the rear, and the kit part was adequate after drilling out the hole. The pattern of rivets was altered to a proper configuration on the fan access plate, which is the large circular part on the rear of the vehicle. A cover was made for one of the rear idler adjustment points with styrene, and the other left exposed. The tow cables for the vehicle were carried on the rear plate using three straps, and these were replicated using brass brackets and lead strip with Aber buckles. Stowage straps were also added to the rear doors of the fighting compartment. The rear towing pintles were noted to both point to the left. Although this is the case with the specific vehicle that was being modelled, it was also noted on photos of other Grille Hs as well.

Tamiya's Marder III kit provided all of the tools needed for stowage on the fenders. A couple of brass handles were added to the jack, and it was mounted at an angle with lead straps and buckles. The pry bar, shovel and axe were strapped together on the rear left fender, and the sledgehammer and jack block on the right.

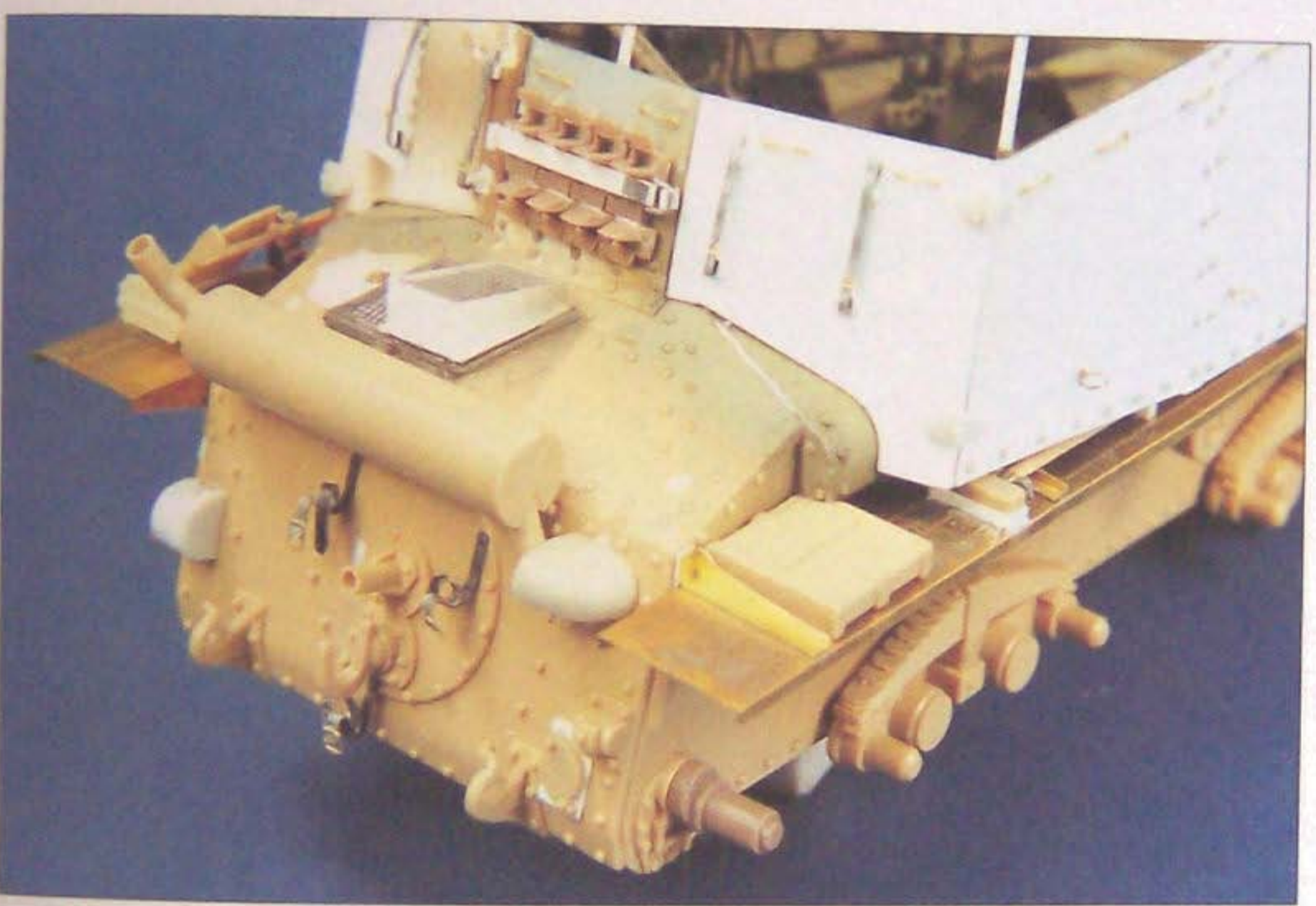
## Painting and weathering the interior

As mentioned previously, the interior of the vehicle and armoured walls of the fighting compartment were painted as separate sub-assemblies, as was the main gun. Before weathering with a dark oil paint wash, all details were painted with acrylic paints, since they are less vulnerable to the mineral spirit used in the wash stage. Fingerprint Designs' German stencilling decals were applied to the interior walls. They indicated the purpose of the various boxes and stowage areas.

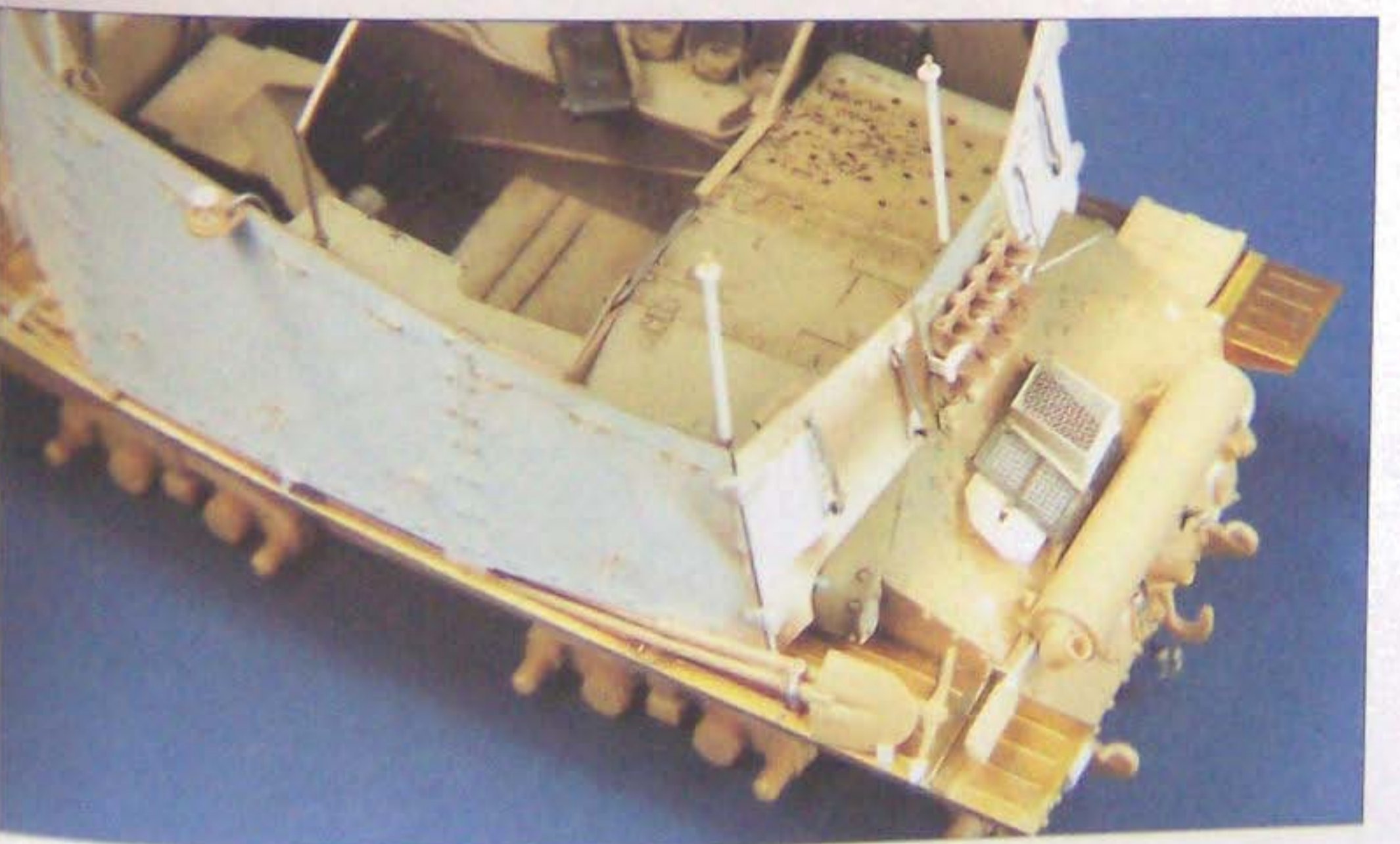
After priming with Floquil dark brown lacquer, the interior was airbrushed with Tamiya acrylic XF-60 and XF-59 in a 4:1 ratio. The transmission was finished in a factory olive green with black brake drums, and the dynamotor, intercom box, gas mask canisters and first-aid kit were painted with Vallejo's



Driver's visor components were taken from the Marder III kit and located on the Grille's walls. Strips of lead foil with Grandt Line nut and bolt detail secured the spare track links.

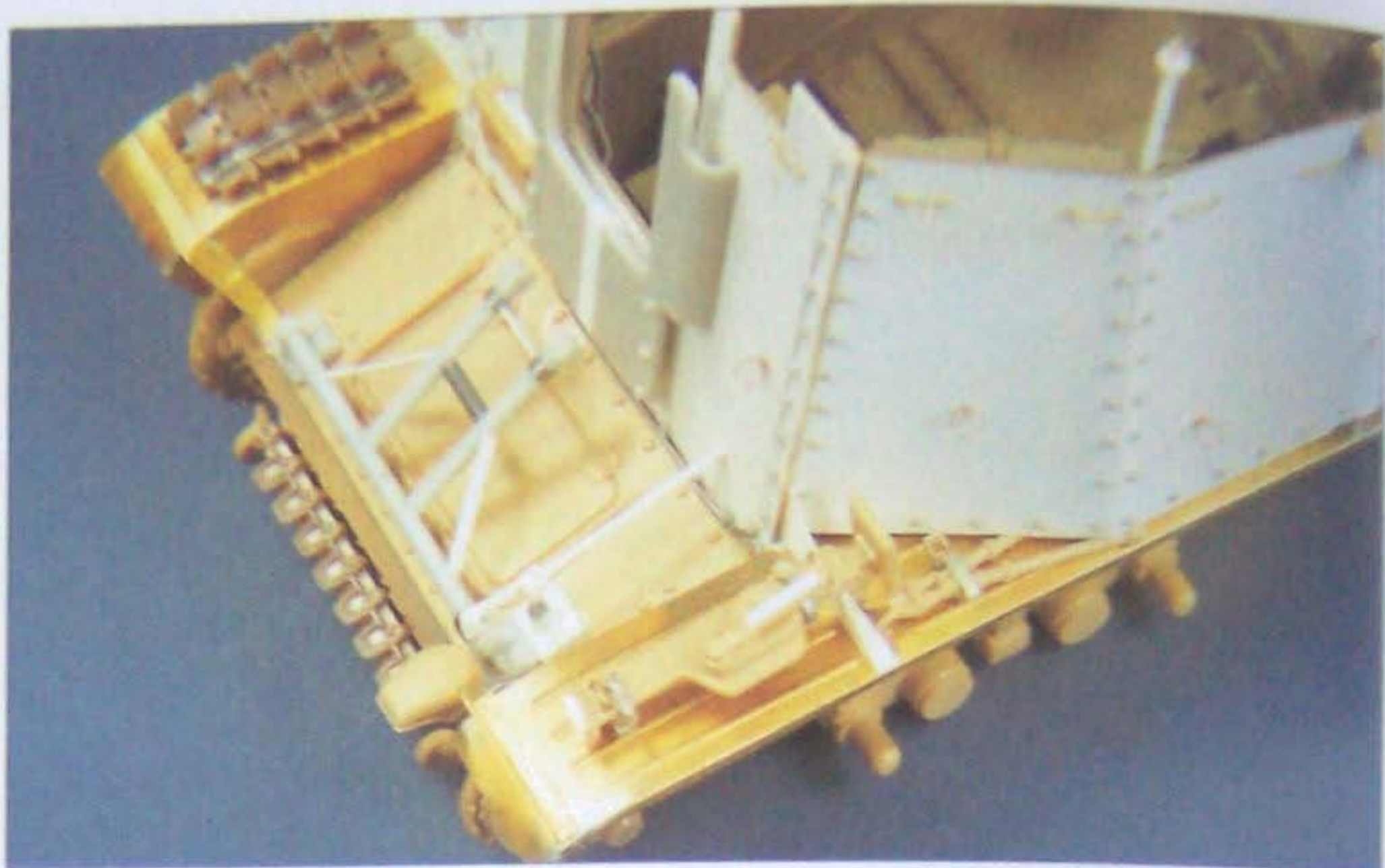


The rear doors for the model required the most 'trial and error' test-fitting to conform to the contours of the engine deck. The rear towing pintles both pointed to the left on several vehicle examples.



The secondary air outlet screen housing and damper plate were fashioned from thin styrene. Tool stowage on the Czech-built vehicles was often secured by straps, which were made with thin lead sheet and Aber buckles.

The main gun's travel lock and actuating mechanism were upgraded with scratch-built styrene parts. Aber's fender brackets were soldered together for added strength.



The tension on ModelKasten's track runs was adjusted by allowing the rear idler mount to pivot.

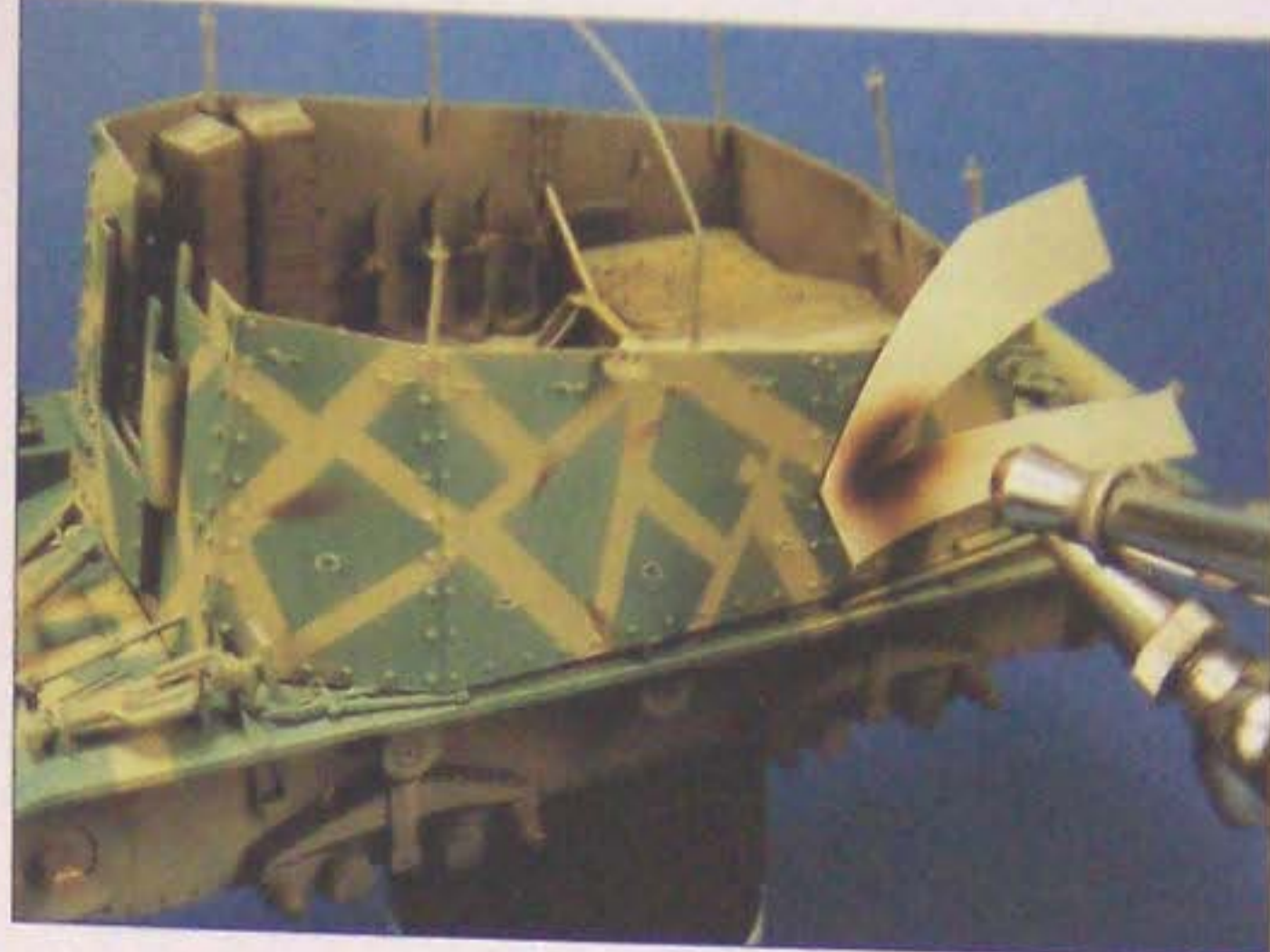


New supports for the weather cover were added using brass and styrene rod. Aber's tie-down cleats were shaped using a jig, and positioned along the top edge of the walls with liquid cement, securing the part with cyano glue afterward.





The camouflage pattern was obtained by placing strips of masking tape over the model's base coat of dark yellow, and spraying on olive green.



To achieve the effect of small, wedge-shaped markings, a triangular mask was made with a 3M-note pad, and red brown acrylic was airbrushed at the apex.

Olive Grey, which is actually green. The radios were painted with dark grey faces, and had the details picked out in black and white Vallejo watercolours. The hull interior and other details then received a touch of thinned raw umber oil paint to bring out the detail. Scratches to the paintwork were added by mixing Vallejo's Hull Red with some black, and applying randomly with a 000 brush.

## Painting and weathering the exterior

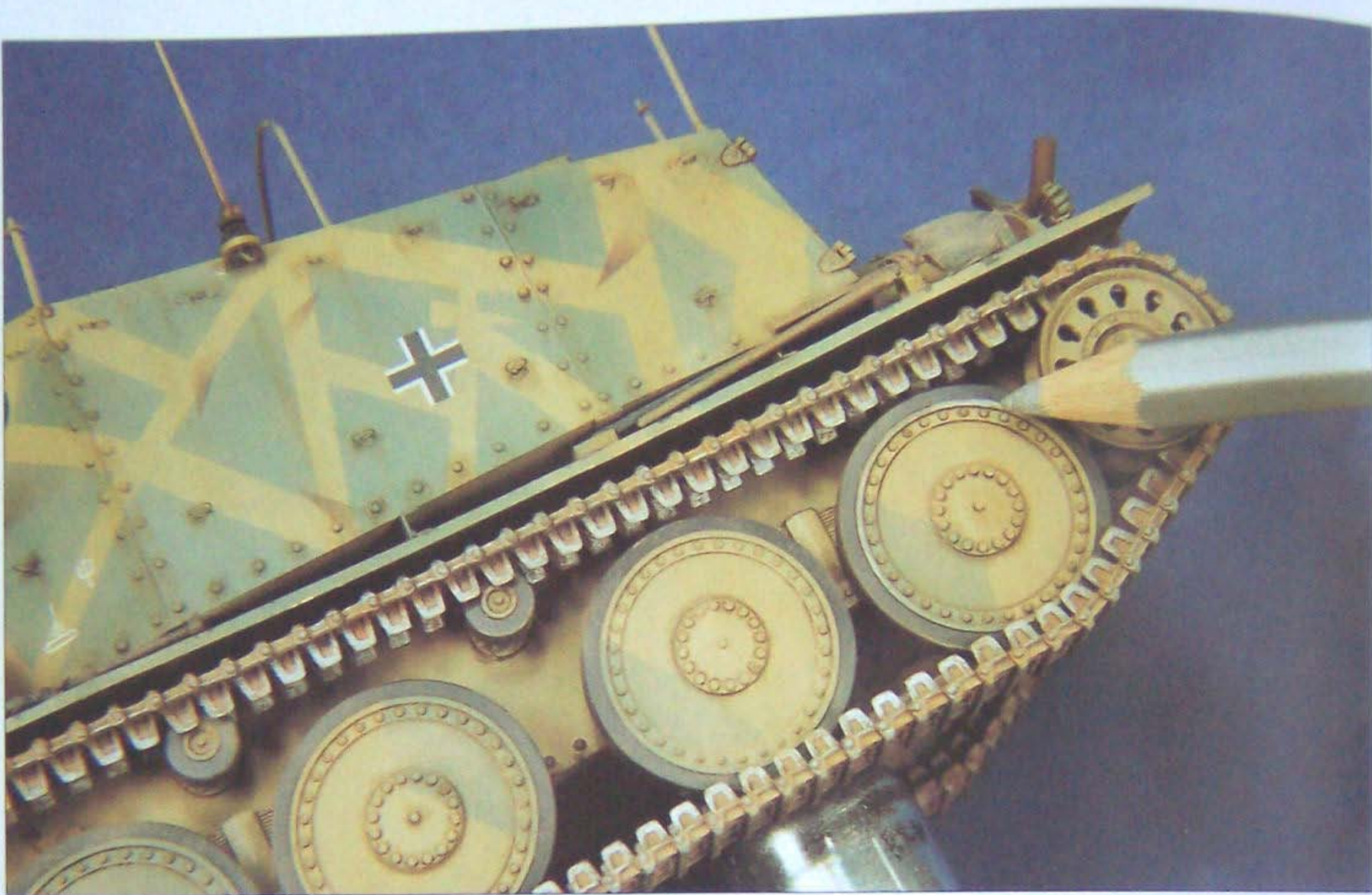
The particular vehicle modelled sported a rather elaborate scheme of green patches over a dark yellow base, with a number of randomly placed small darker triangles, feathered at the back. After spraying on the dark yellow base coat the model received numerous strips of Tamiya masking tape in a crosshatch pattern using photos of the actual vehicle as a guide. Model Master acrylic Panzer Olivgrün 1943 was airbrushed on, and the masks removed. A small rectangular mask was placed at various positions on the hull sides, and a light spray of Tamiya XF-54 Red Brown was applied, concentrated at the apex of the mask and creating the desired effect of the small, darker camouflage markings.

Archer Fine Transfers had the divisional markings needed in a rub-on form of decal. The heavy infantry gun and 2.Panzer-Division markings were carefully taped into place and rubbed onto the surface with a ball point pen. National insignia from Tamiya's aftermarket sheet No. D were applied. A letter 'D' was marked in black to the left and right of the upper front plate. An appropriate transfer couldn't be found so rather than use paint and brush and trust this job to a quivering hand, some scrap decal material was cut to the right size and manoeuvred into position.

The entire vehicle received a very dilute spray of Tamiya earth-coloured acrylics, after which an oil paint wash was applied. The wash consisted mostly of raw umber with a touch of black added to the wheel hubs. The wash mixture on the hubs was dragged out towards the wheel perimeter to replicate the grease stains typical of these vehicles' roadwheels. A silver pencil was run around the lip at the base of the tires to show a worn metal look at the point of contact with the track guide teeth.

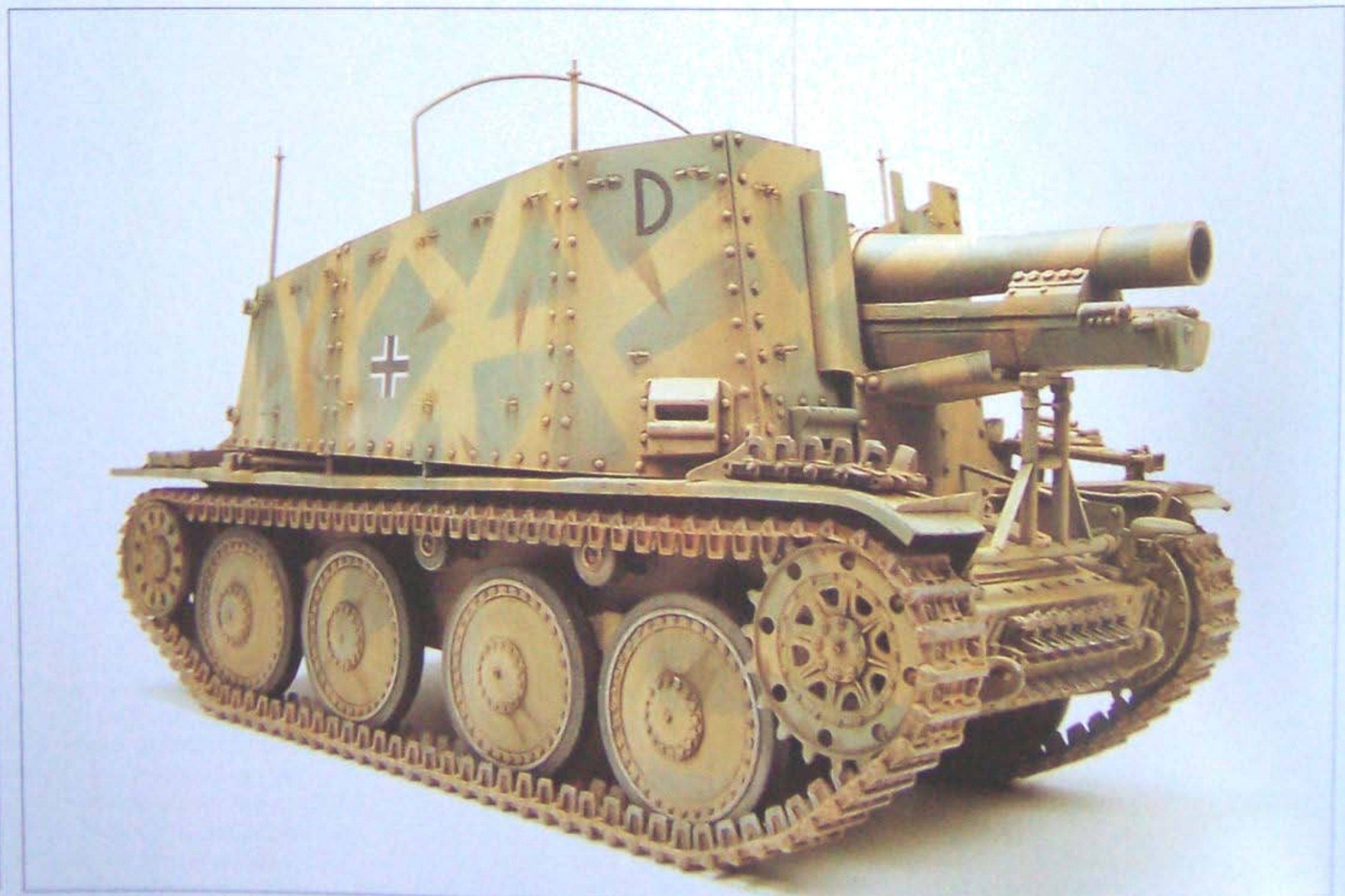
The muffler was given a partially rusted look by taking dark brown paint and 'dotting' it onto the surface with the tip of a 000 brush, similar to how the worn effect was achieved on the ammo preparation tray. By randomly painting small dots of colour, the area develops a worn or rusted look with a controlled level of intensity.

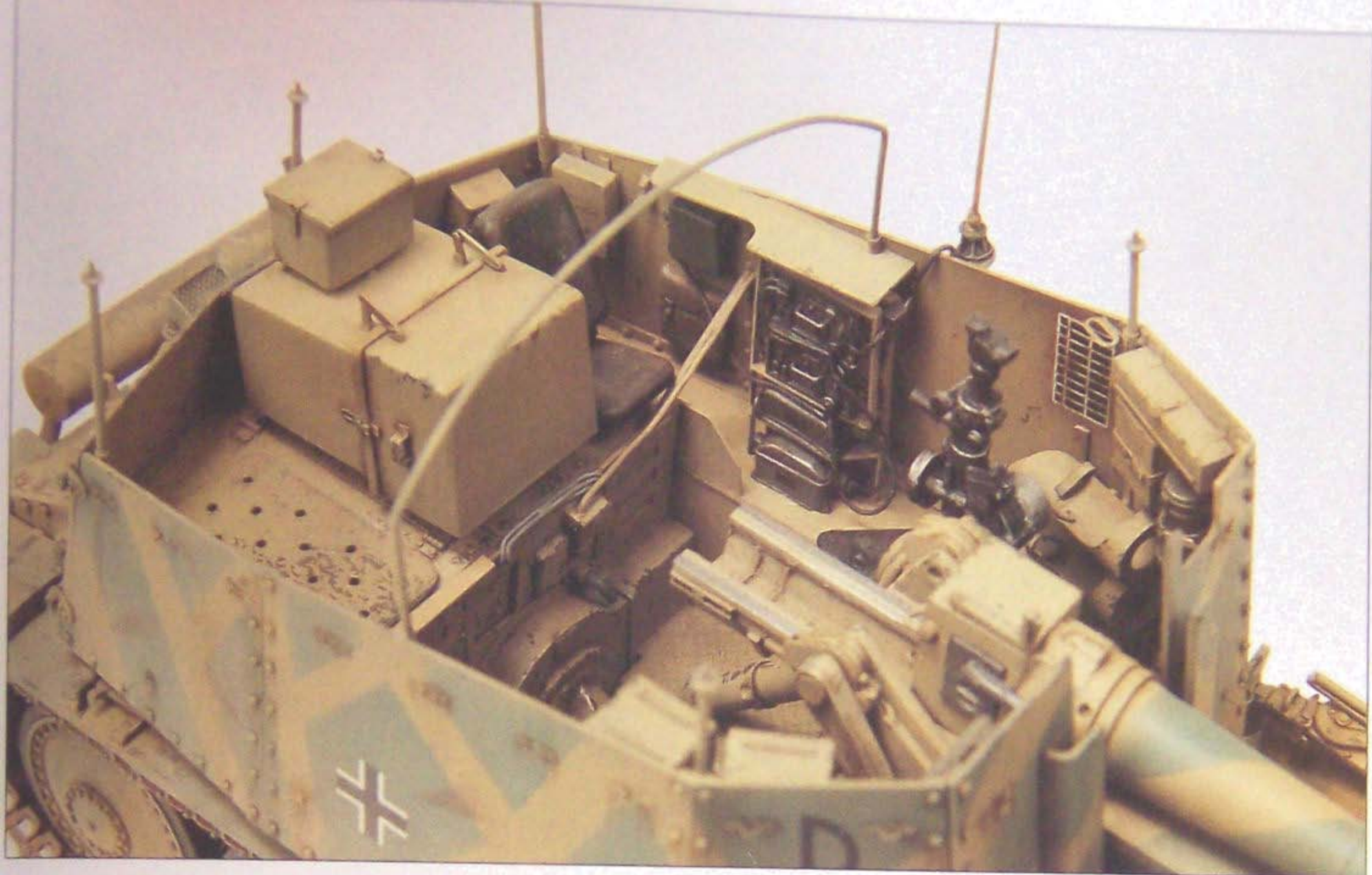
Pastel chalks were also dusted onto the entire external surfaces, with more attention given to the running gear and rear portions of the model.



ABOVE A silver pencil was used to highlight areas on the wheels that contacted the track's guide teeth.

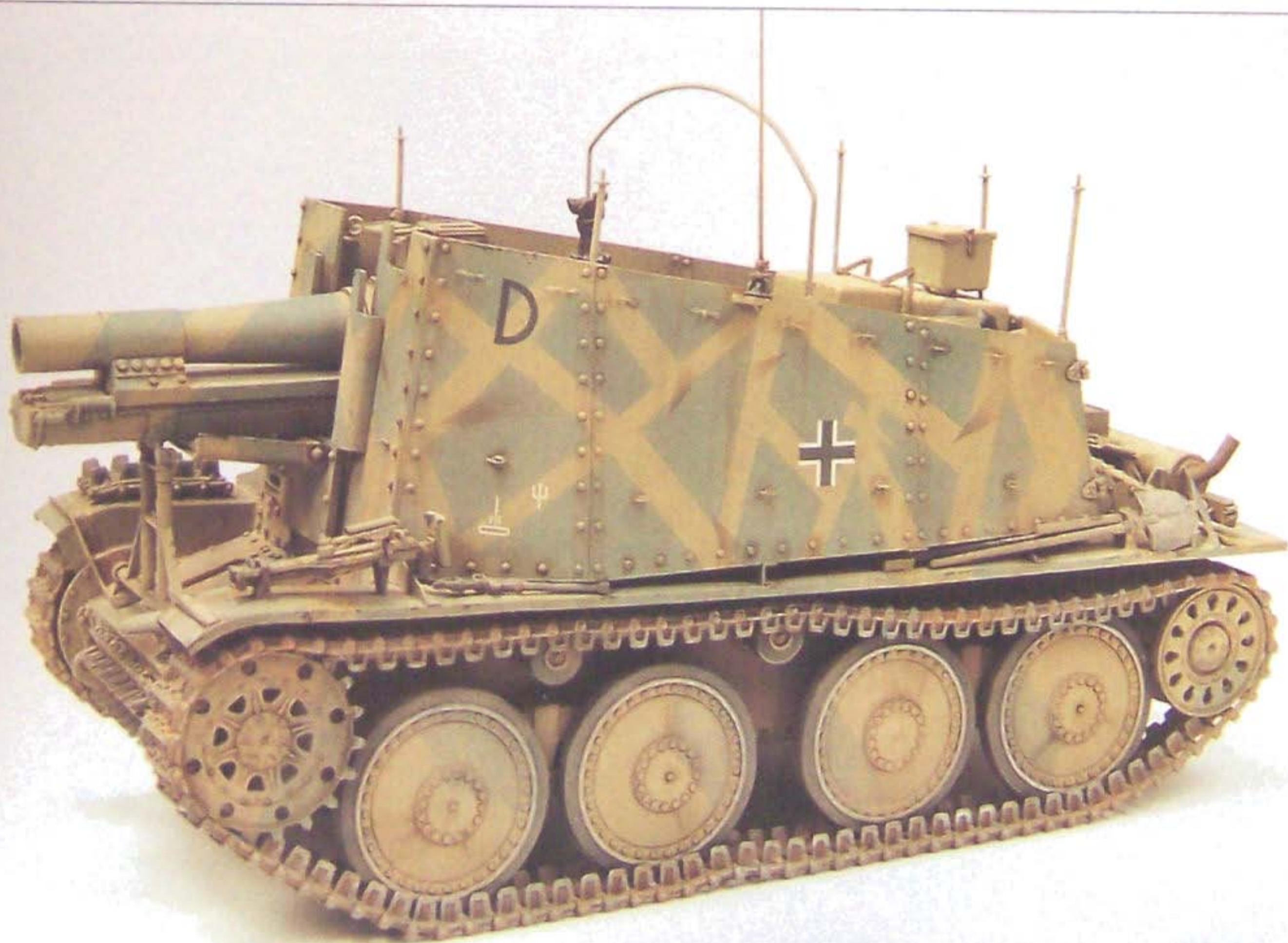
BELOW Before washing with thinned oil paints, the model was given an overall airbrushing with light earth acrylics, concentrating on the lower and rear areas.

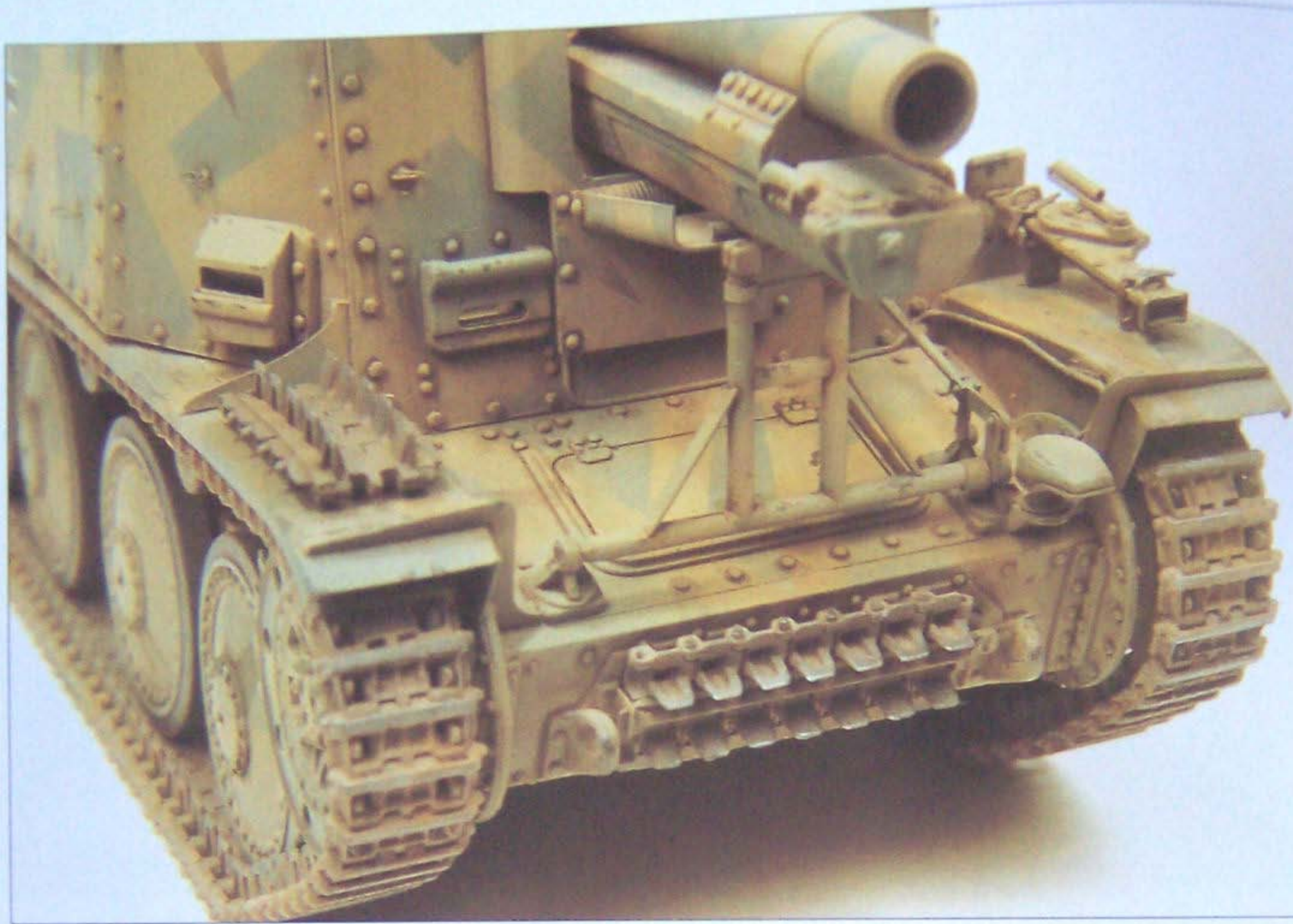




ABOVE After the addition of the remaining interior components such as the crew seats and ammo boxes, touch-ups and weathering were added to the finish to create a homogenous appearance.

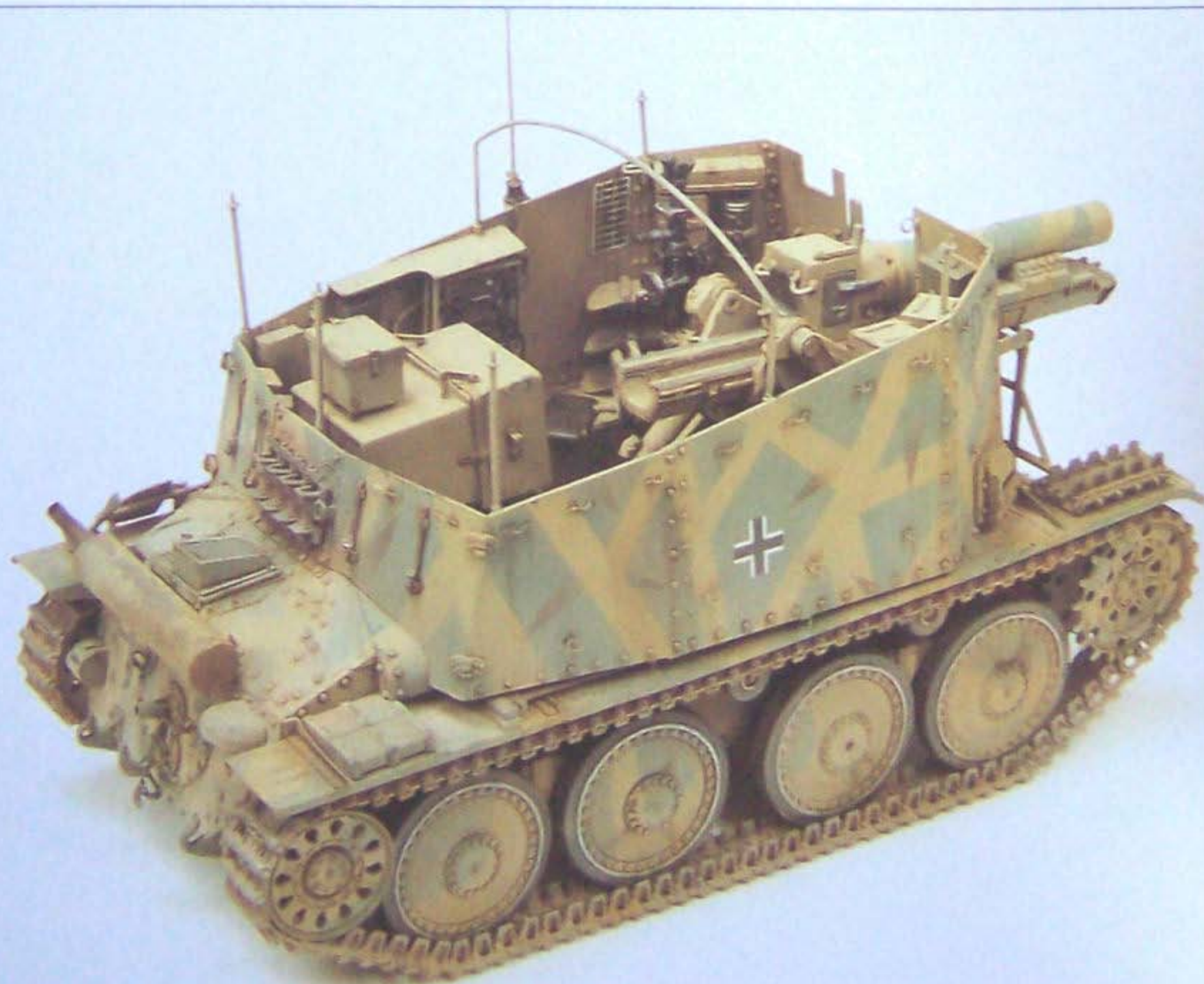
BELOW The wheel hubs received an extra touch of dark wash, which was dragged out to the perimeter to emulate the streaked look typical of the wartime vehicles.

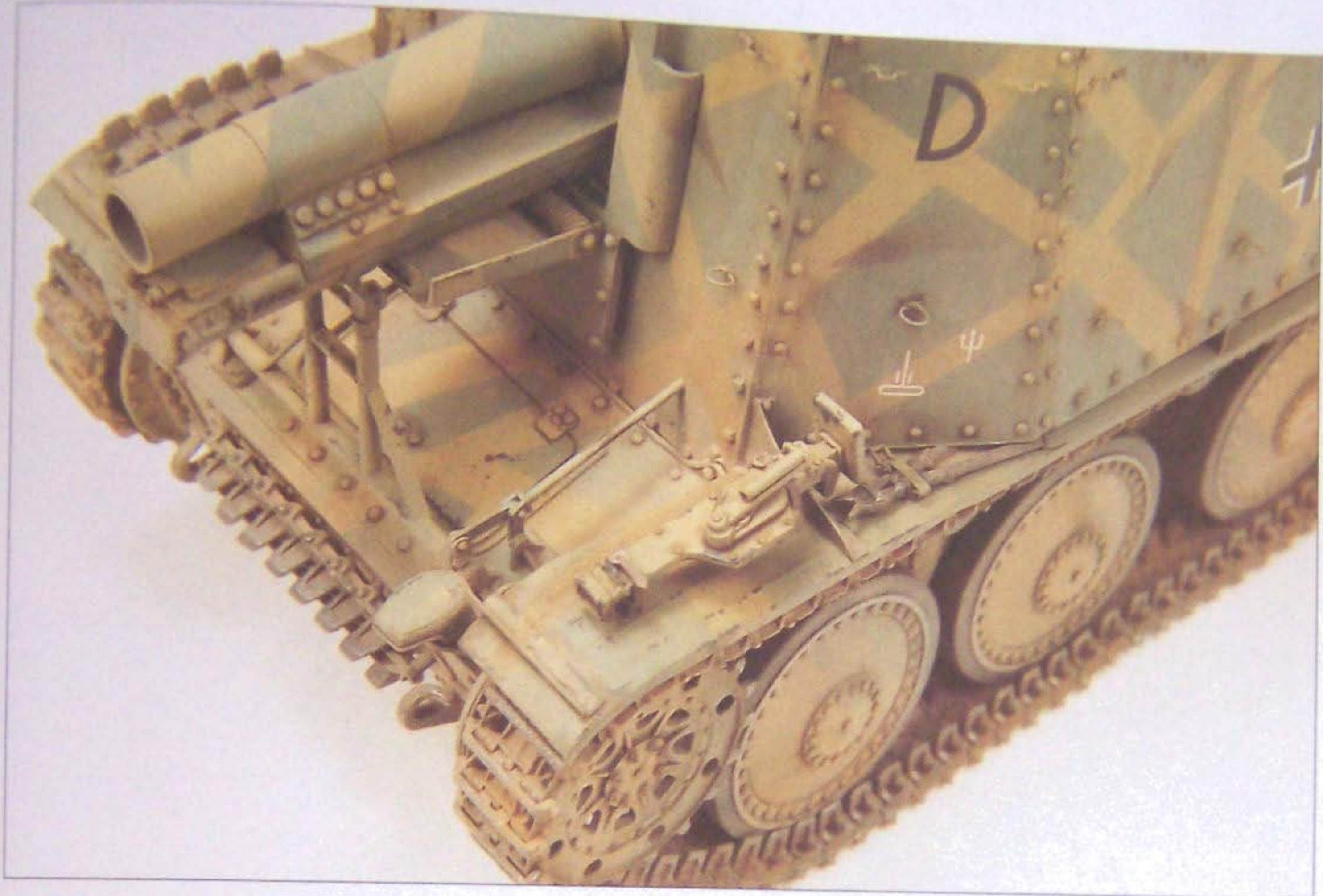




ABOVE The final component to be added to the model was the spring-loaded armored plate below the gun.

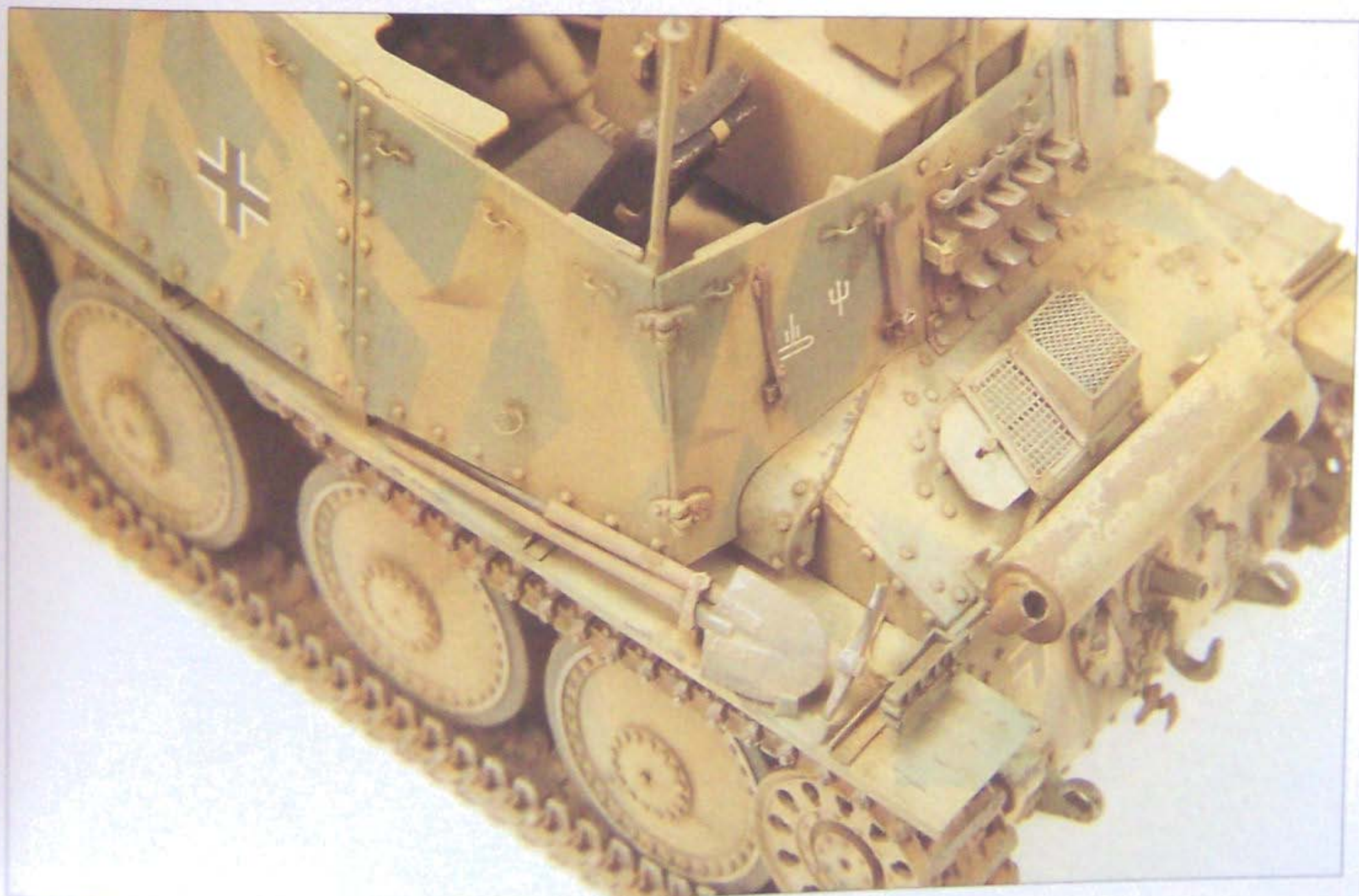
BELOW Pastel chalk and MIG Productions pigment powders were added to the surface of the hull and running gear to add to the dusty appearance.

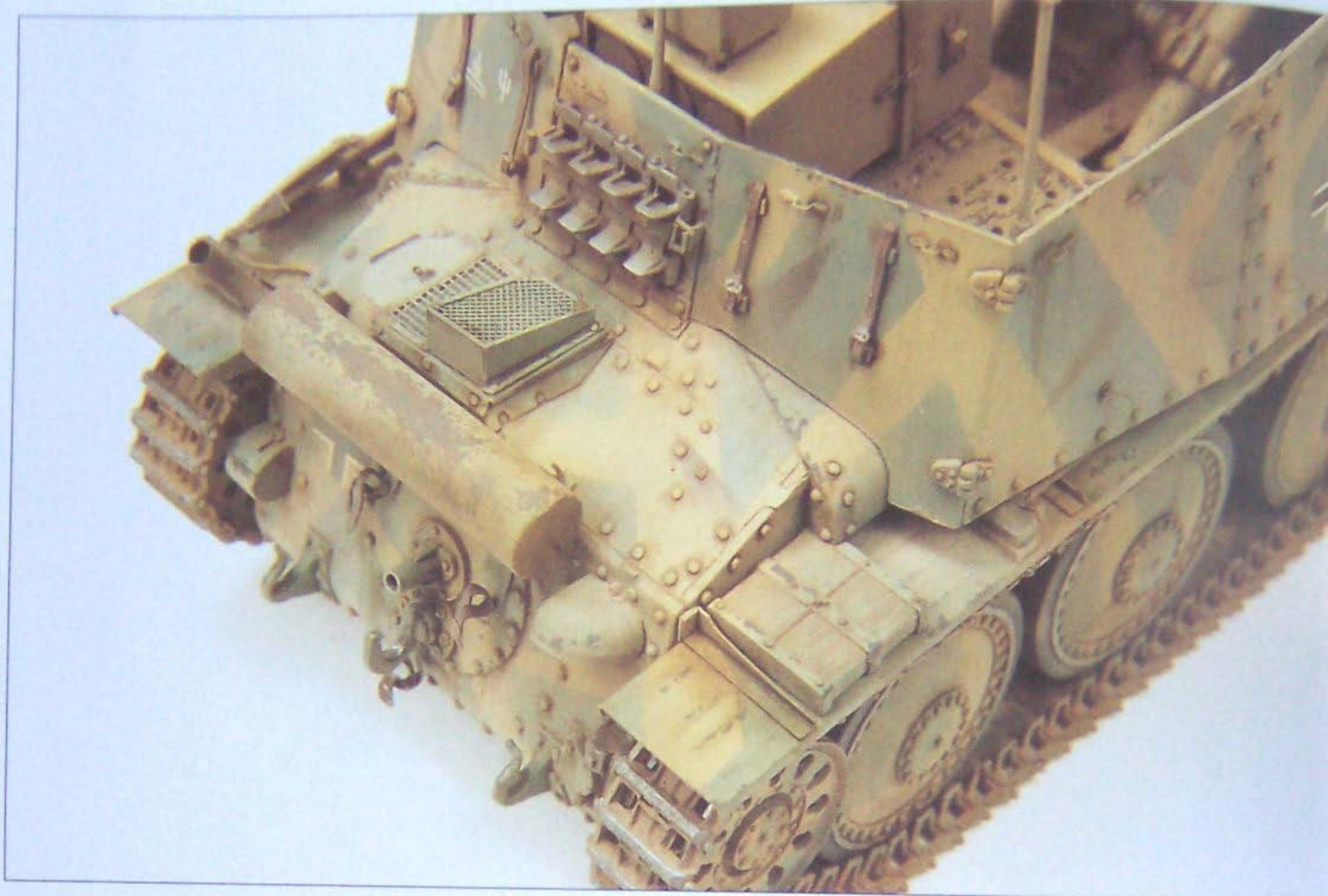




ABOVE Markings on the model consisted of Archer's Fine Transfers, Tamiya's aftermarket sheets, and the resourceful use of old aircraft decals from the spares box.

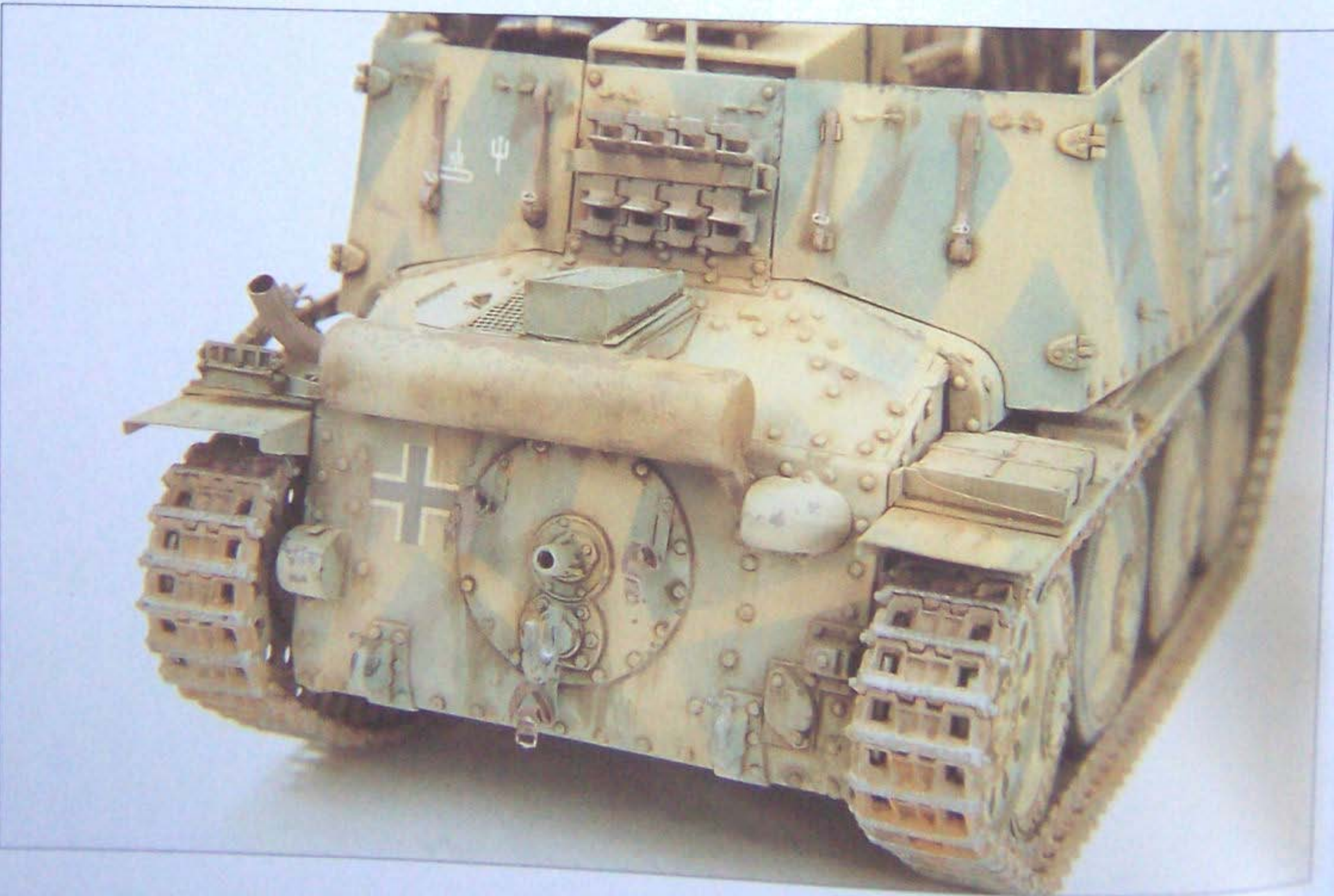
BELOW After initially painting the metal part of the tools black, they were weathered with diluted earth acrylic spray and pastel chalk. HB pencil lead was rubbed on to give them a metallic look.





ABOVE The muffer and exhaust received a patchy rusted effect with randomly 'dotted' dark brown paint, followed by the application of pastel chalk powders.

BELOW The straps for tow cable stowage were painted with Humbrol 62 Leather. The rear of the vehicle received a heavy application of washes and pastel weathering.



# Special feature (I) 15cm sIG33 auf Fahrgestell Panzerkampfwagen II (Sf) (Bison II)

*Kits used:* Alan Hobby Bison II kit No. 35012  
Tamiya sprue 'A' from Wespe kit No. 35200  
DML figure set Afrika Korps Infantry No. 6138

*Tracks:* ModelKasten workable track for Pz II/Wespe No. SK-25

*Etched-metal detail sets:* Eduard etched-metal detail set for Bison II No. 35345

*Resin detail sets:* Tiger Model Designs sIG33 for Grille H No. 352082  
Royal Model Panzer II transmission No. 189

Alan's Bison II kit was combined with Dragon Models' Afrika Korps Infantry in a small vignette.



## Introduction

First available in resin from Cri.El and Airmodel, the Bison II was finally released by Alan Hobby in injection-moulded styrene. The previous resin kits suffered from some significant detail and accuracy problems. The Alan kit, released in 2000, can be built into a fair representation of this vehicle with some modification. There is not a great deal of available reference on this vehicle, and some speculative detail is present in the kit's interior.

## Lower hull detailing

The kit transmission was replaced with Royal Model's resin version. Included with the resin set are the brake components, which push the transmission housing and associated drive shaft to the left. To compensate for the shift, the right side of the rear bulkhead had to be widened with styrene to allow the drive shaft to avoid the opening for the gun carriage.

The driver's seat from Italeri's Panzerjager I, a spare part from the Bison I project, replaced the kit's offering. Some of the Aber brass details left from the same project were utilized to create the controls in the driver's position, along with filaments from a snow brush.

A Fu5 radio rack with the two associated dynamotors and an intercom box were built and located near the rear bulkhead. Wiring made from thin solder was glued in place, and was connected after the lower and upper hulls were joined. The positioning of the radio equipment was entirely speculative.

## Running gear and tracks

To improve the overall look of the running gear, three No. A sprues from Tamiya's Wespe kit were purchased. The leaf-spring assemblies, drive sprockets and return rollers were used. The drive sprockets needed to have bolt hole detail added with a small drill, since they differed from the Wespe type in that regard. Friulmodellismo have white-metal replacement sprockets available as well. The Tamiya roadwheels unfortunately did not have the proper Panzer II type 'look', but sprue No. C from the DML Panzer IIC kit No. 9026, which is originally an Alan kit sprue, has accurate-looking roadwheels. Duplicate wheels were resin cast from the DML kit, since six per side were needed for the lengthened chassis of the Bison II.

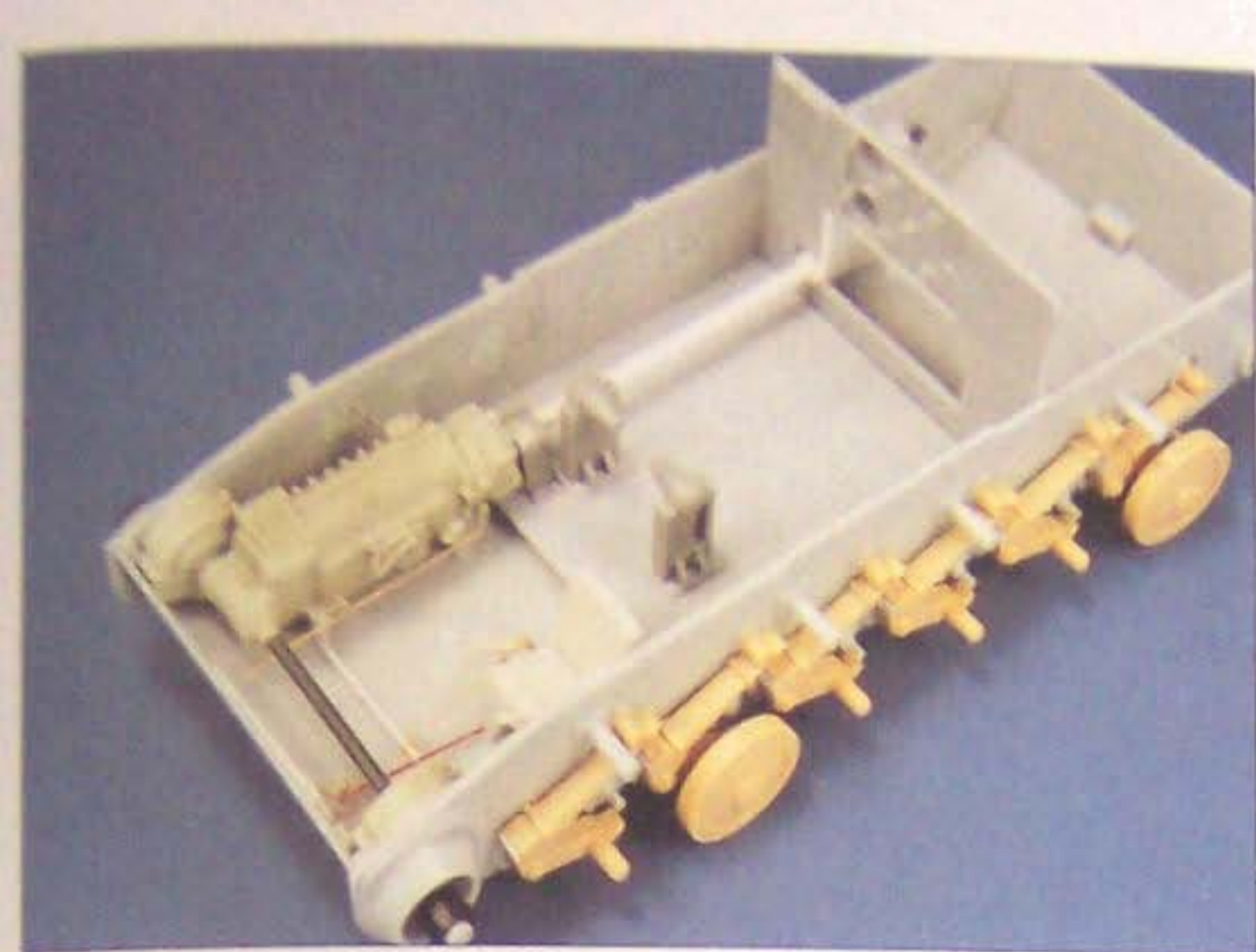
ModelKasten's SK-25 workable track for the Wespe/Panzer II replaced the kit tracks. Rather than having pins to glue into both sides of each link, this track snaps together. The joints do tend to come apart more often than on the pinned style.

## sIG33 gun and shields

Tiger Model Design's kit No. 352082 replaced the kit's gun and cradle. Alan's gun shields were incorrectly shaped, and replacements were made from .015in. styrene card. A trial and error method using paper cutouts eventually produced parts that were more representative. The shields also needed to have new mounting posts made from .040in. styrene rod. One of the advantages of the Evergreen rod used was that it could be coaxed to bend a fairly tight radius without breaking. The carriage had to be extended with .040in. styrene to hold the modified gun shields in place.

## Upper hull modifications

The openings on the engine deck were covered with Eduard's etched-metal screen, placed on top of the deck and not from below as the instruction sheet suggests. Since there is no motor provided, the openings were also boxed off from below with styrene and painted flat black inside. To accommodate the repositioned screens, larger covers were added in the open position. Vehicles typically had them open to allow maximum cooling air to the over-worked engine.



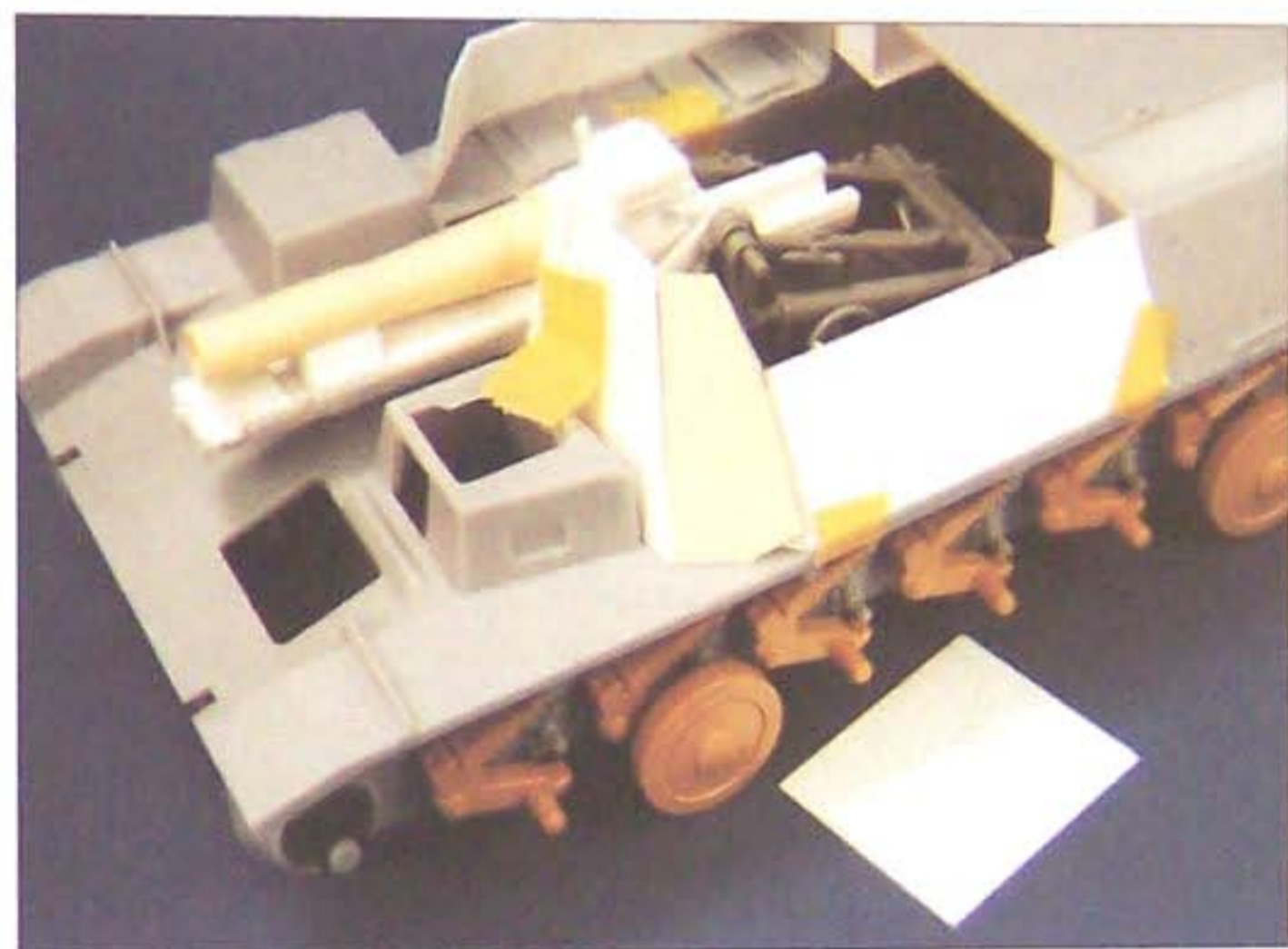
The model was upgraded by replacing the kit's transmission with Royal Model's resin part, and suspension components from Tamiya's Wespe kit.



The suspension arms were detailed with squares of scribed styrene to represent the ends of the leaf-spring elements.



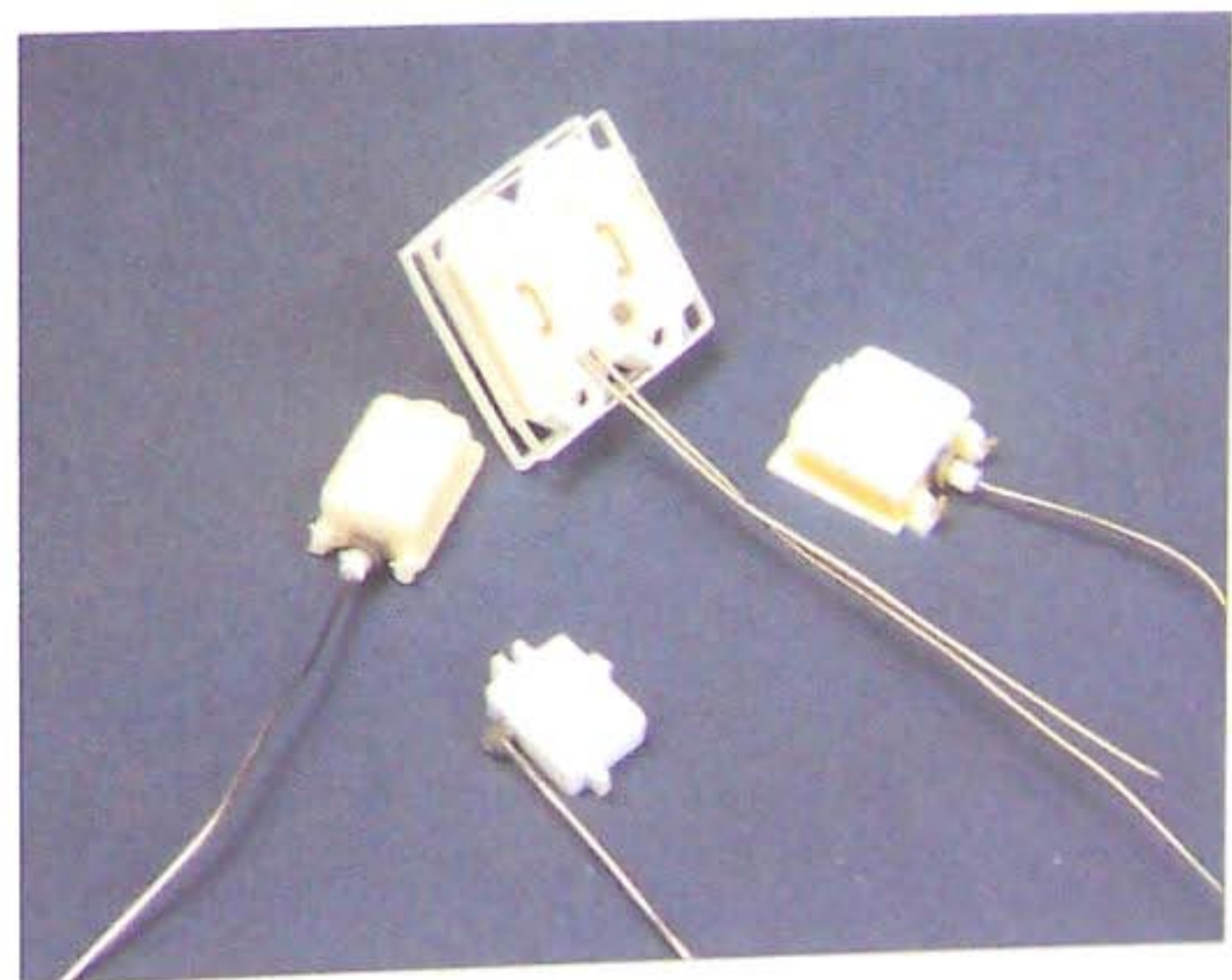
The kit's side walls were replaced with .015in. styrene card, and the gun mount was modified to accept newly crafted front shields.



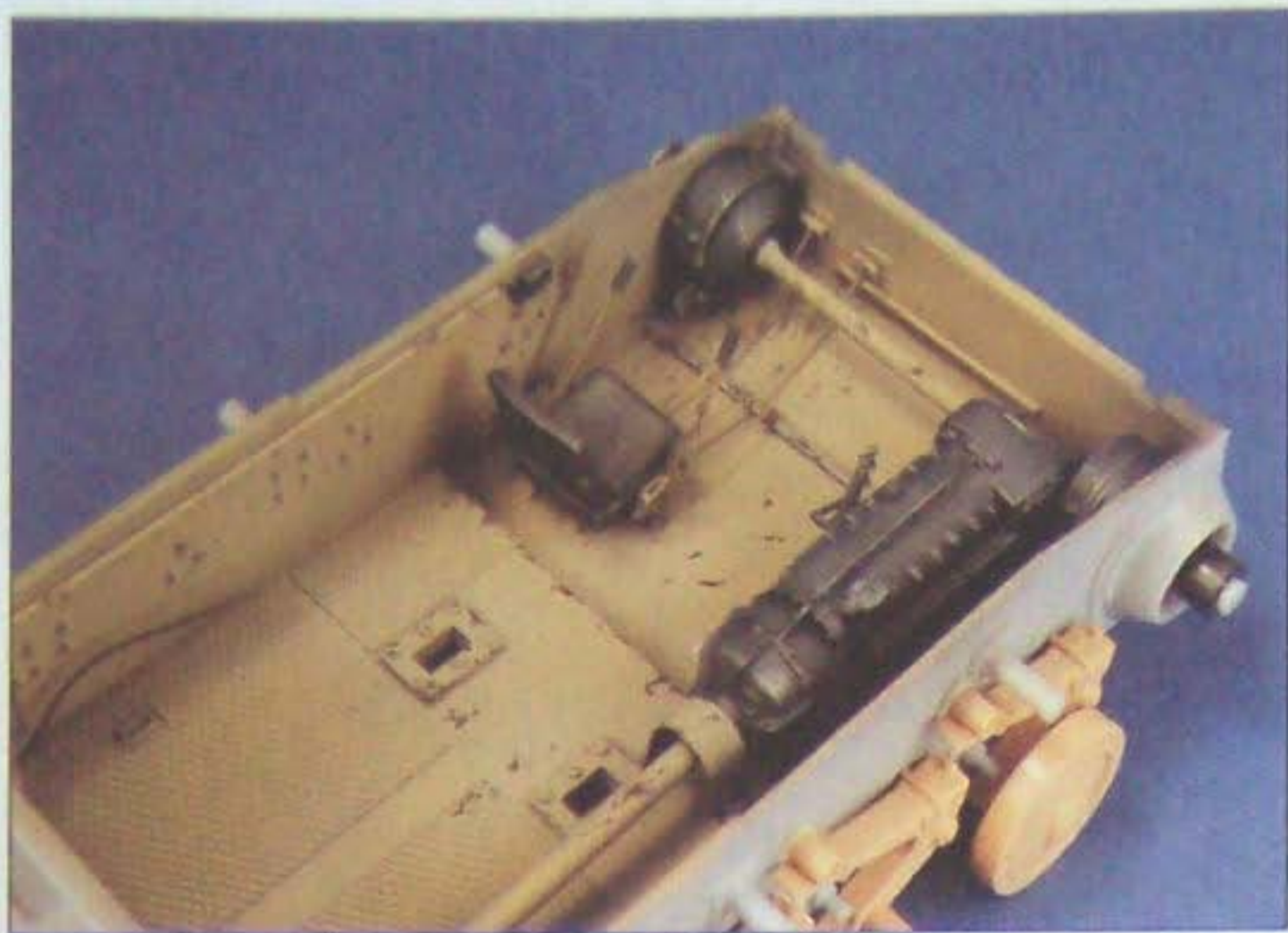
Notepaper was used as a template to determine the proper shape of the gun shields, since the ones provided in the kit are inaccurate.



The gun shields were supported by .040in. styrene rod. The various attachment points were detailed with Grandt Line rivet heads.



An Fu5 radio set with power supply dynamotors and intercom box were made from scratch using various references. Wiring was run with thin solder wire.



The driver's area was painted and weathered prior to adding the upper hull. Grandt Line No. 127 nut and bolt heads were added inside, indicating where the exterior suspension components were bolted.

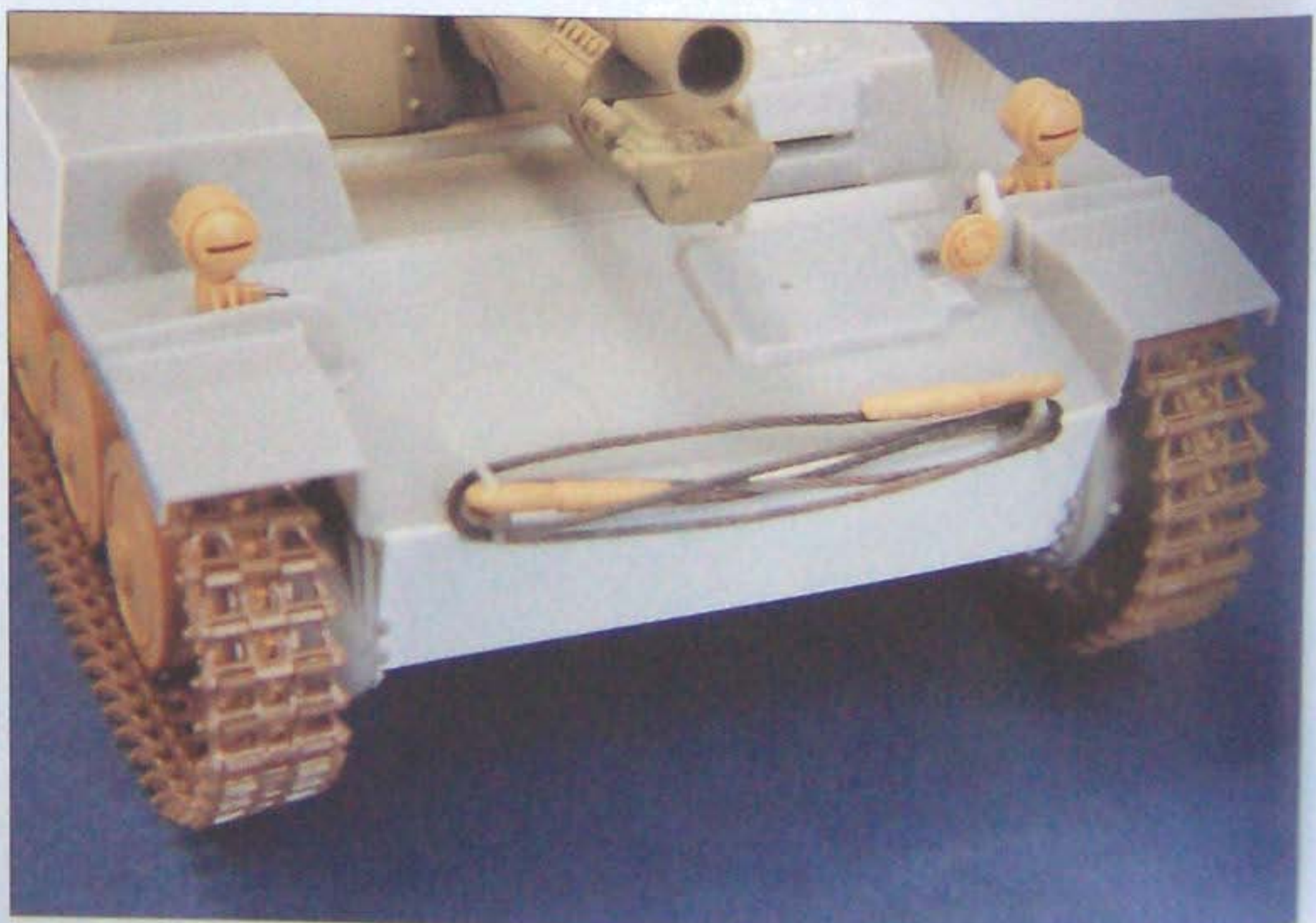


The stowage box arrangement was scratch-built to replicate that seen in photo references. The original kit part is shown on the left. The item located on the front of the box appeared to be a round preparation tray.

The kit's stowage box arrangement on top of the engine deck did not resemble references, so two new ones were constructed. The lower one had a 3.4cm wide x 2.4cm long base, tapering to 2.5cm wide x 0.8cm high. The box that sat on top was 2.6cm wide x 2.1cm long x 0.6cm high. A device that appears to be an ammo preparation tray was built from styrene and solder wire, and positioned just ahead of the upper stowage box.

The left and right hand armour plates of the upper hull were replaced with .015in. styrene since the kit parts are thick. Because the kit's vehicle tools were rather crude in detail, they were replaced with those from Tamiya's PzKpfw IV OVE set, held in place with Aber's workable tool clamps. Since these clamps are actually bigger than 1/35 scale, some tricky re-arranging had to be done to get all of the parts to fit in position.

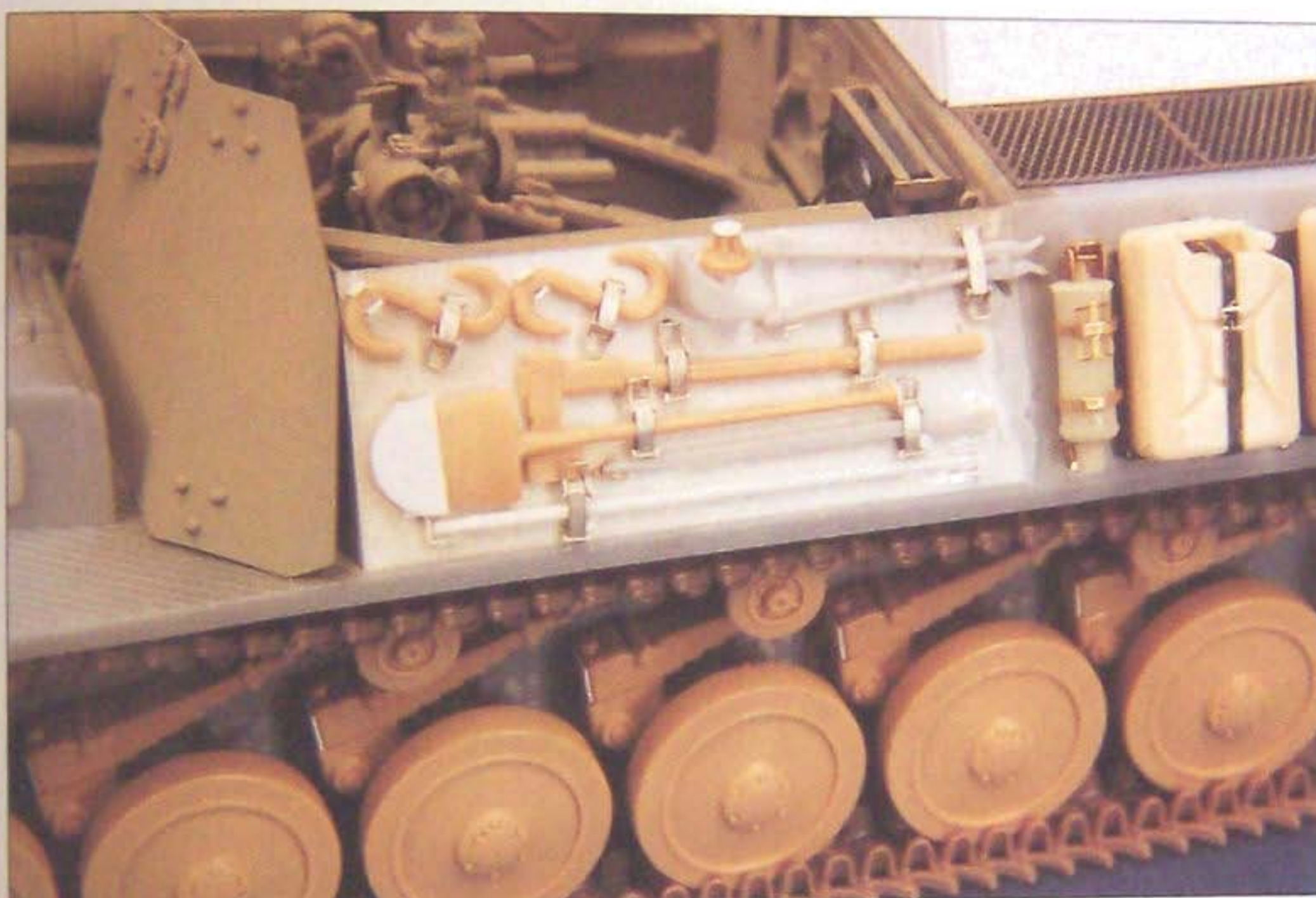
When the upper and lower hull halves were joined there was a ghastly overlap where the glacis met the front plate. To correct this, .015in. styrene card was added to form a new front plate with the joint properly just ahead of the glacis.



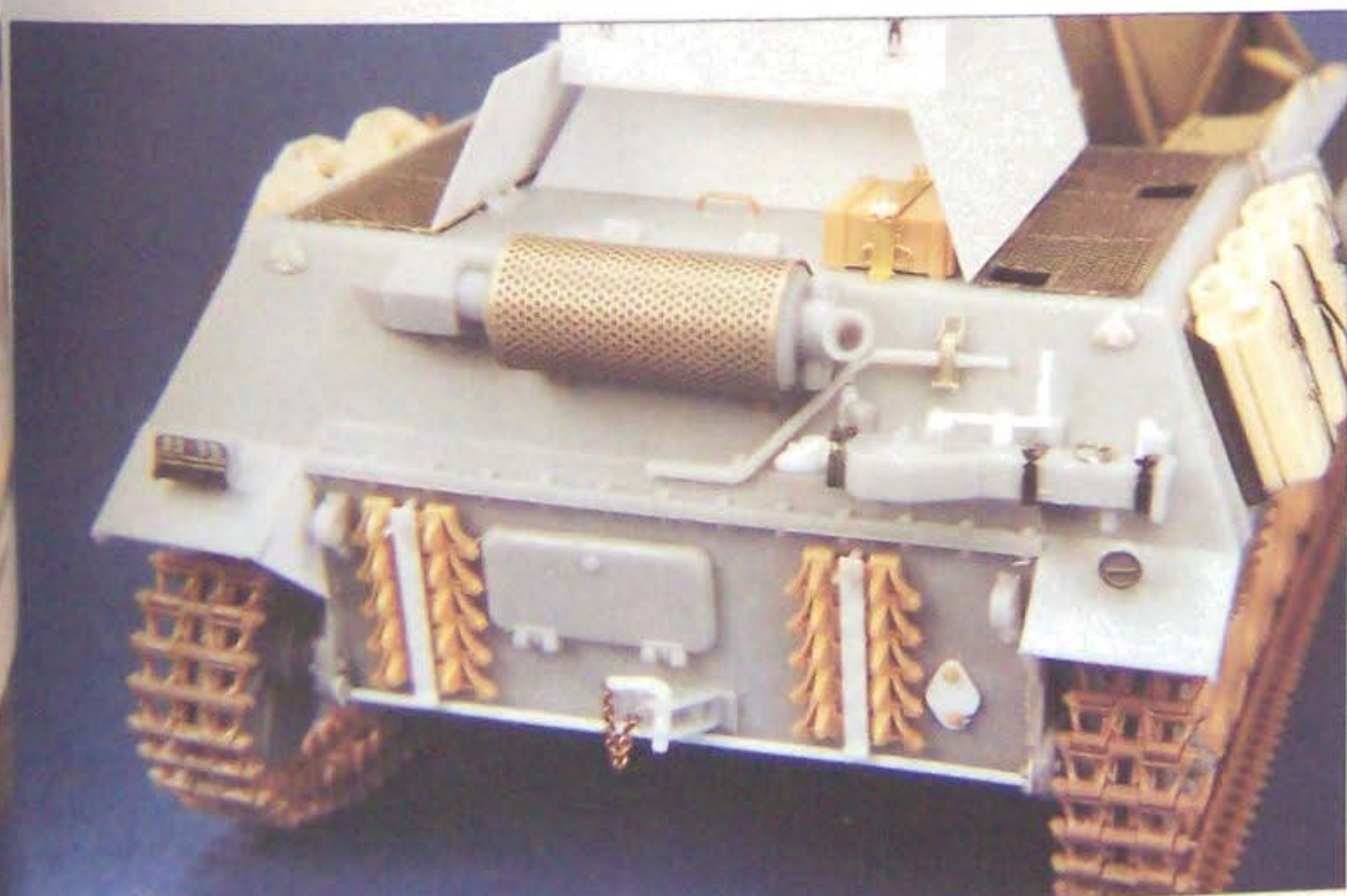
The very front of the vehicle needed to be modified by adding a front armour plate, overlapping the glacis. The tow cable ends, horn and headlamps are Tamiya parts.



Larger covers for the engine air vents were added since the screens were placed above the deck. The jerry cans were given thin lead straps with Aber buckles.



Tamiya's PzKpfw IV OVE tools were positioned on the vehicle's left side with Aber's etched-metal clamps. The fire extinguisher is from Royal Model.



Tamiya's spare track links were used for the stowed sections at the rear. All of the links of the ModelKasten Wespe set were used for the track runs due to the lengthened hull of the Bison II.

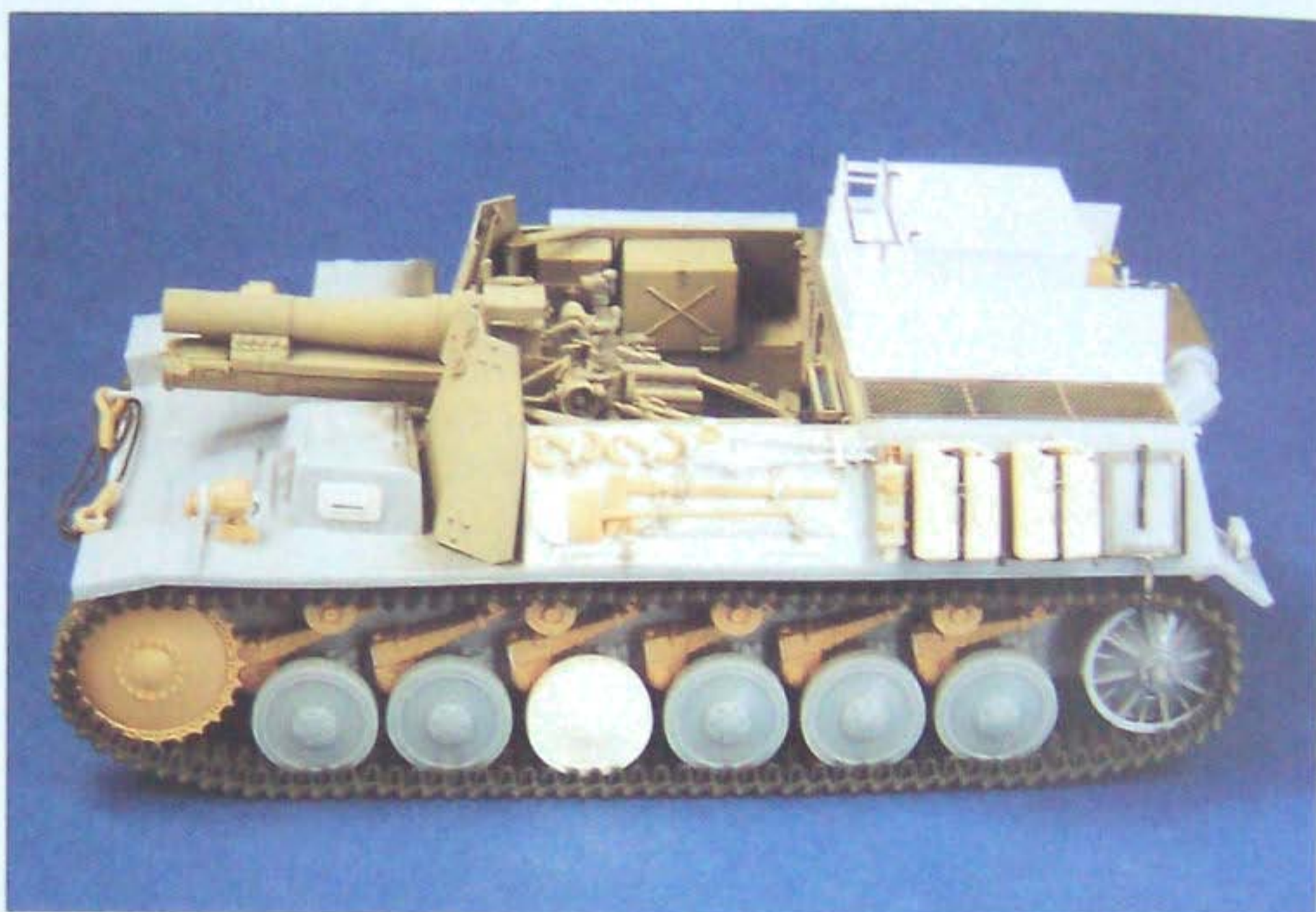


DML's PzKpfw IIC roadwheels, shown in the middle, were a more accurate representation than the kit's (on the left) and the Tamiya Wespe's (on the right).

## Painting and markings

The vehicle was finished in a two-tone camouflage pattern of RAL 8000 Gelbbraun and RAL 7008 Graugrün, referencing Thomas Jentz *Panzer Tracts* No. 1-2. These colours were available from Testors' Model Master in enamel. Since a Tamiya acrylic finish was preferred, a mixture of XF-59 Desert Yellow and XF-60 Dark Yellow were mixed in a 1:1 ratio for the RAL 8000, and XF-49 Khaki was used as a good match for the RAL 7008.

Markings on the Bison II consisted of the Balkenkreuz on each side of the gun shields, and on the top of the stowage box on the engine deck. Crosses were either black with white outline, or just the white outline. Vehicle numbers were painted either on the vehicle sides (in the absence of tools and other stowage), or on one side of the gun shields. The vehicle depicted here has spare track stowed on the rear plate, but on another vehicle example the DAK palm and swastika symbol was located on the lower right-hand side of the rear plate.



The replacement roadwheels were adapted to the kit by casting additional ones in resin.

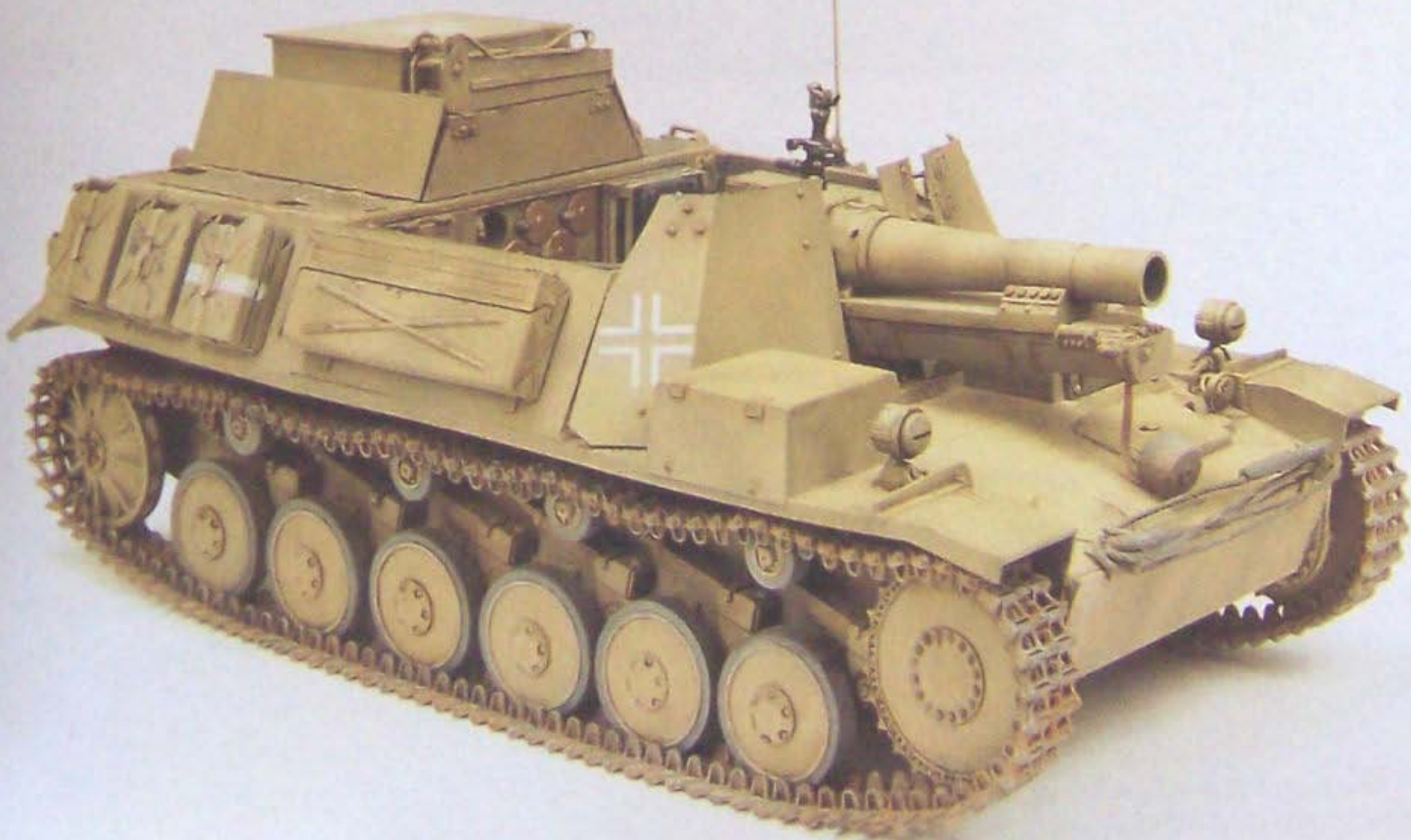


The SIG33 gun and shield assembly was painted and weathered before mounting inside the model. A decal for the gun's range chart was added to the inside left shield.



ABOVE Only 12 examples of this vehicle were built, with all of them serving in the North African campaign.

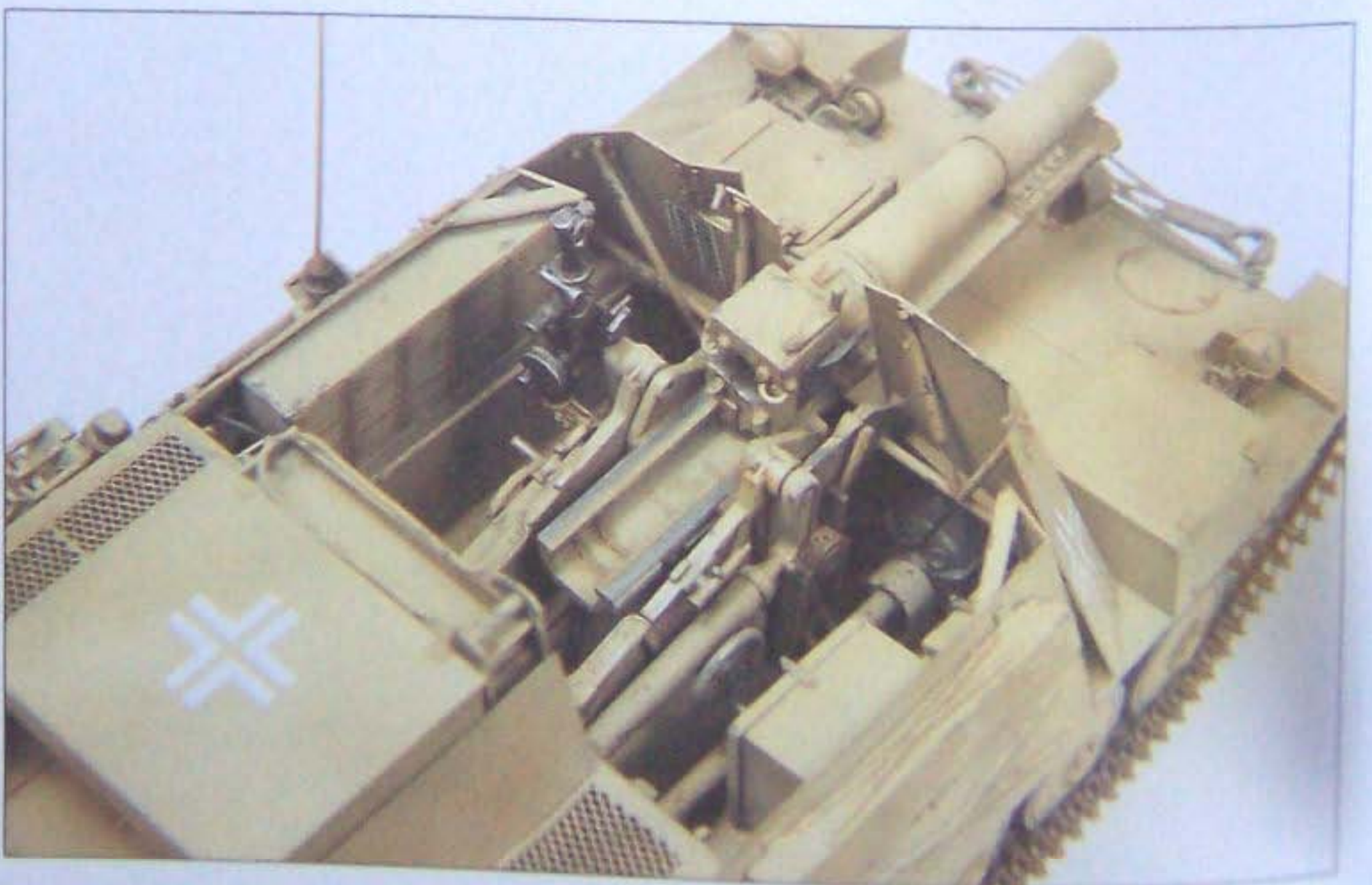
BELOW The model was finished in Tamiya acrylics after priming the model with dark brown Floquil lacquer. The two-tone camouflage pattern consisted of RAL 8000 Gelbbraun and RAL 7008 Graugruen. Tamiya's XF-59 and XF-60 were mixed 1:1 for RAL 8000, and XF-49 was a good match for RAL 7008.



The radio equipment was mounted near the back of the fighting compartment, behind the shot boxes. Because photos of the vehicle's interior are scarce most of the details are speculative.



The model was given a wash with thinned raw umber oil paint, and then pastel chalk powders were liberally applied to the running gear and horizontal surfaces.



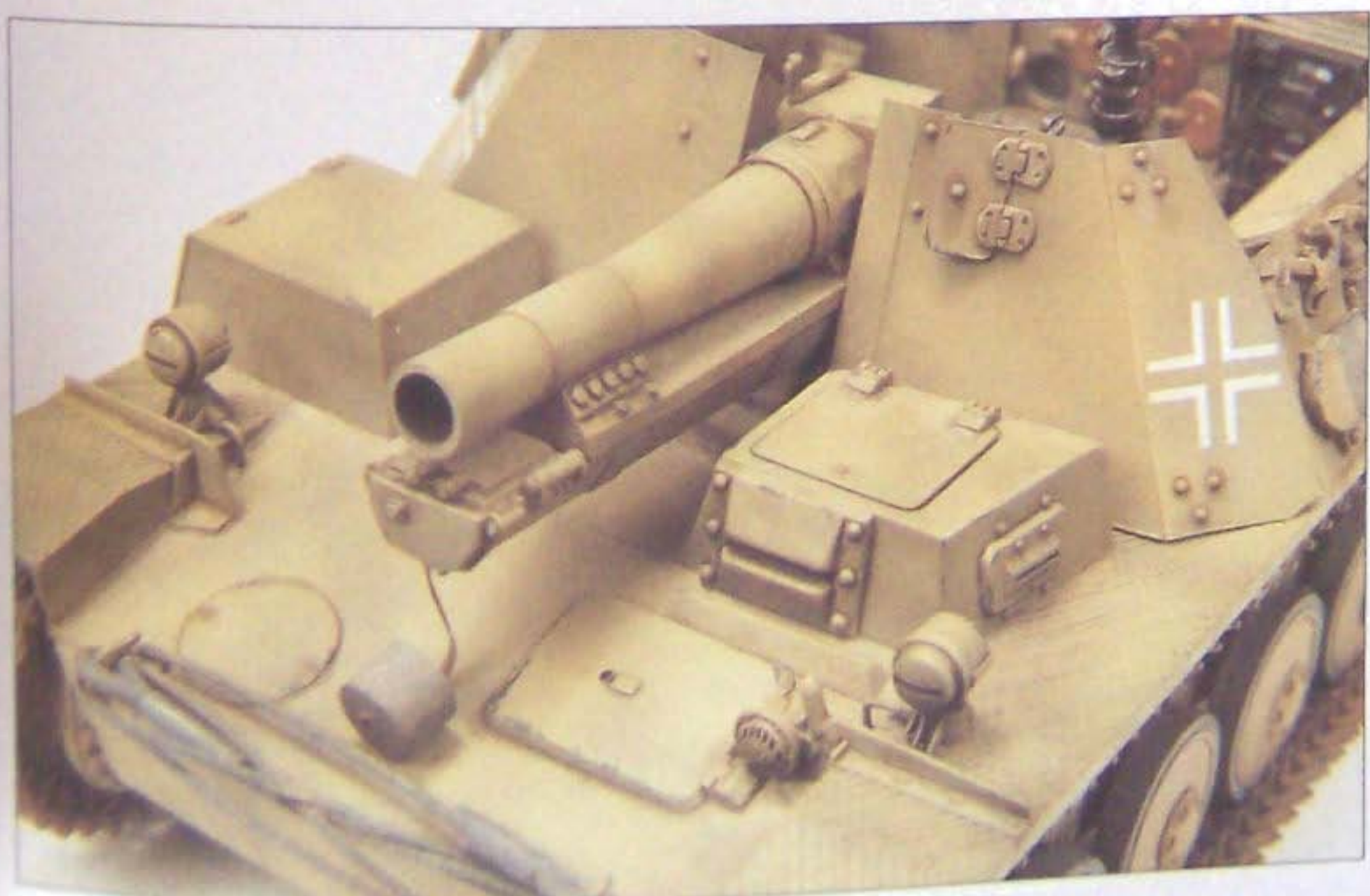
The gun assembly was positioned into the model as a last step, requiring some tricky fitting.



The white crosses on the jerry cans indicated water content. The model's chipped paint effect was added by random application of dark grey paint with a fine-tipped 000 paint brush.



Pastel chalk powders were used extensively for the weathering of the model's rear details and finishing off the track runs.

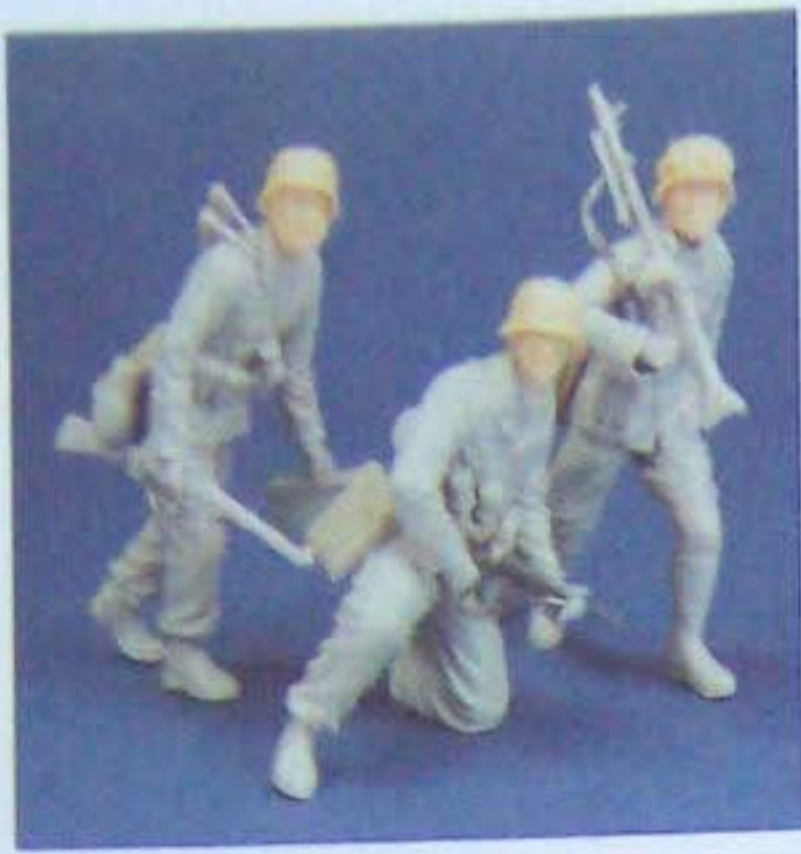


The cover for the gun muzzle was made from aluminium tube capped with styrene held in place with a thin lead strap.

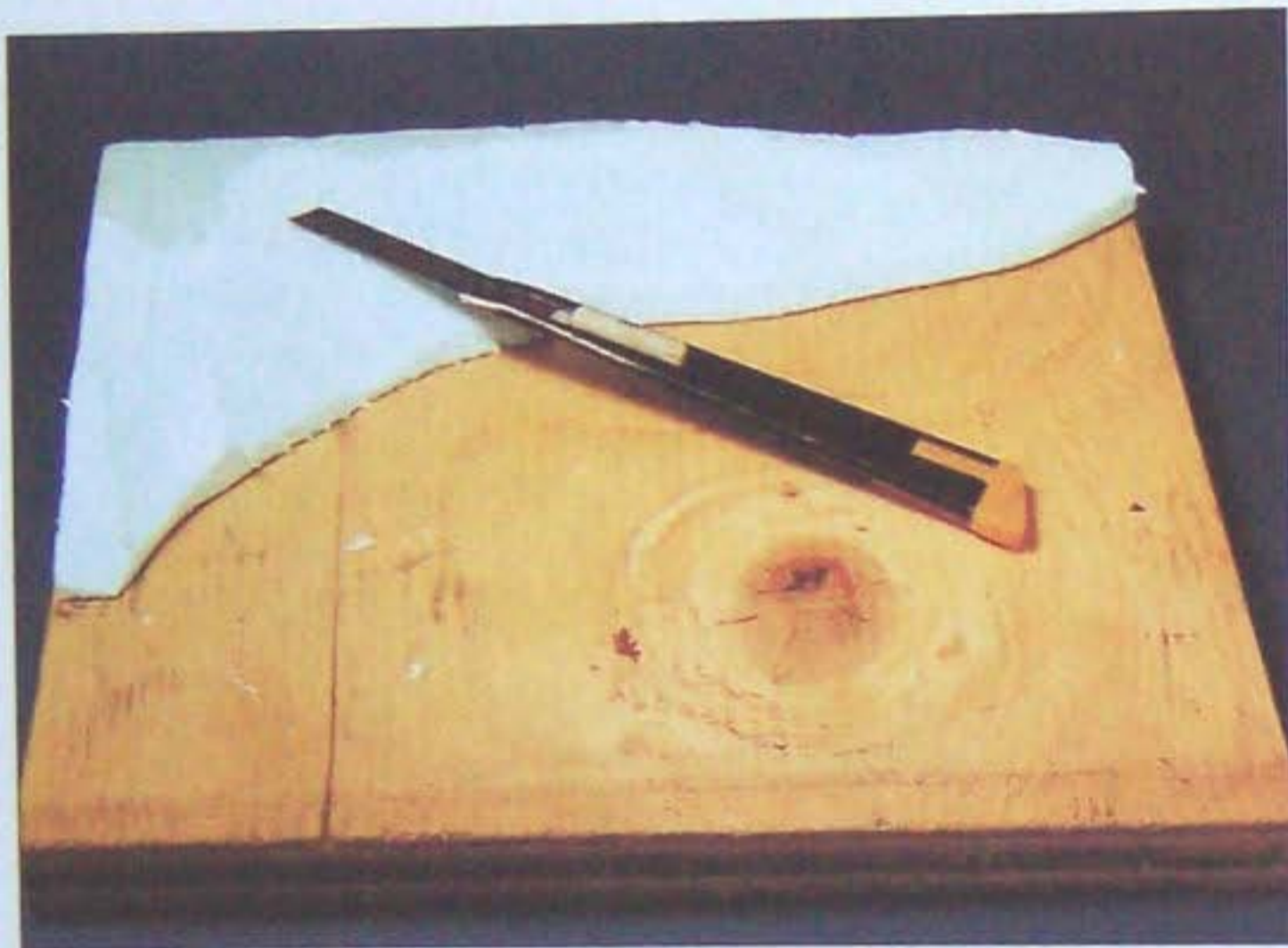
## Vignette with figures

To display the model with figures, a base was cut from  $\frac{1}{4}$ in. plywood and three Afrika Korps Infantry figurines were added from DML's kit No. 6138. The DML heads and helmets were replaced with more realistic resin castings from Warriors.

A small section of polystyrene was cut and shaped to raise the background. This was screwed into the plywood, since the drying groundwork can warp and lift the polystyrene from the base. A mixture of Celluclay, white glue and Hydrostone plaster, water and paint pigment were stirred into a thick paste and spread thinly onto the surface. Since the terrain seen in period photos suggested a barren, rocky desert, sand and grit were spread onto the surface. Faded static grass was sprinkled on randomly, and a small amount of taller grass clumps were added for interest. The vehicle was positioned in the wet base, and the figures were anchored in position by gluing a length of paperclip metal up into their feet, and into a pre-drilled hole in the base. Sections of black matte board were cut from a sheet and glued into position on the edges to complete the base.



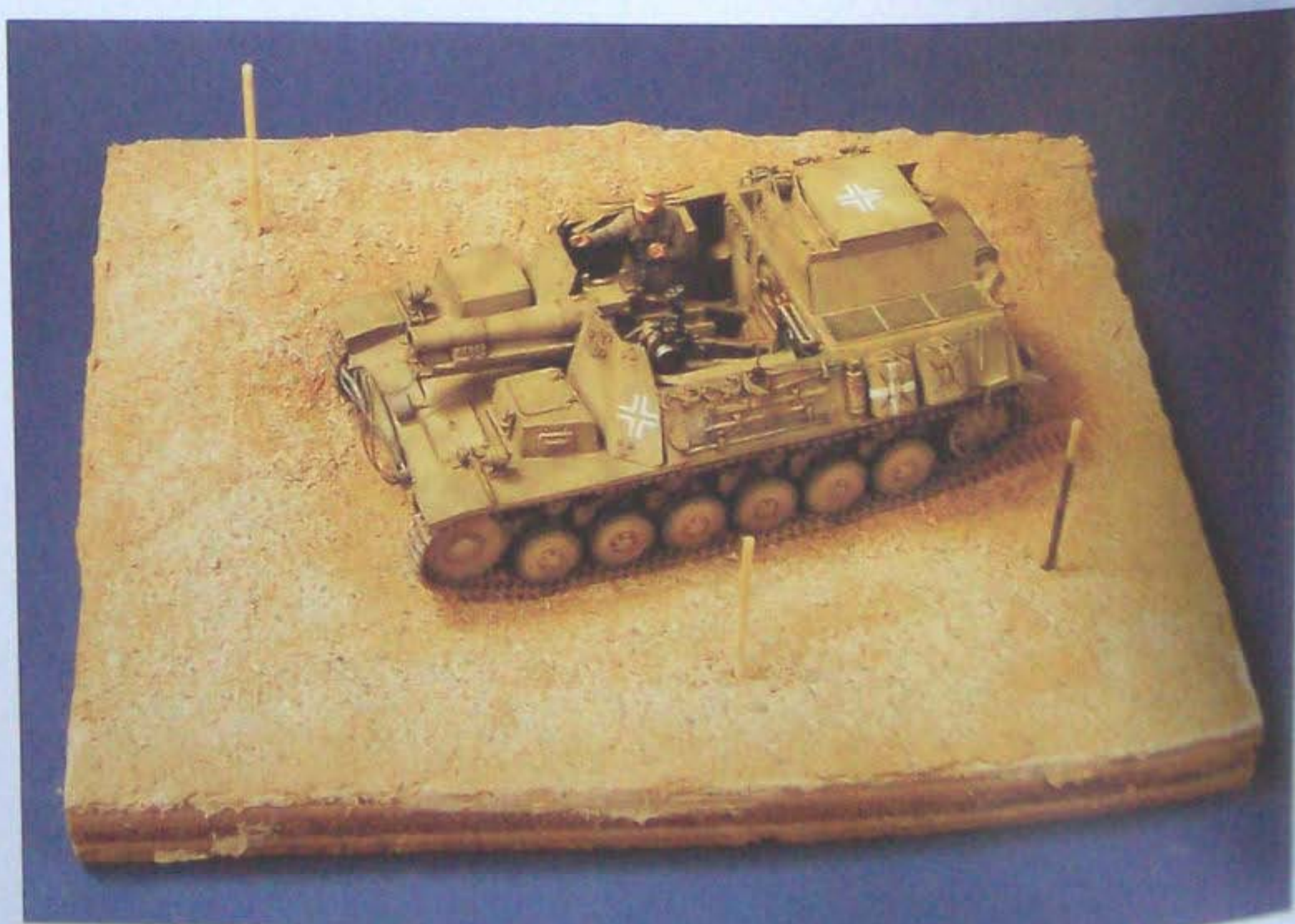
Dragon Models Afrika Korps Infantry figures were modified by adding Warrior's resin heads. The resin heads have added detail, and the helmets have a more correct shape.



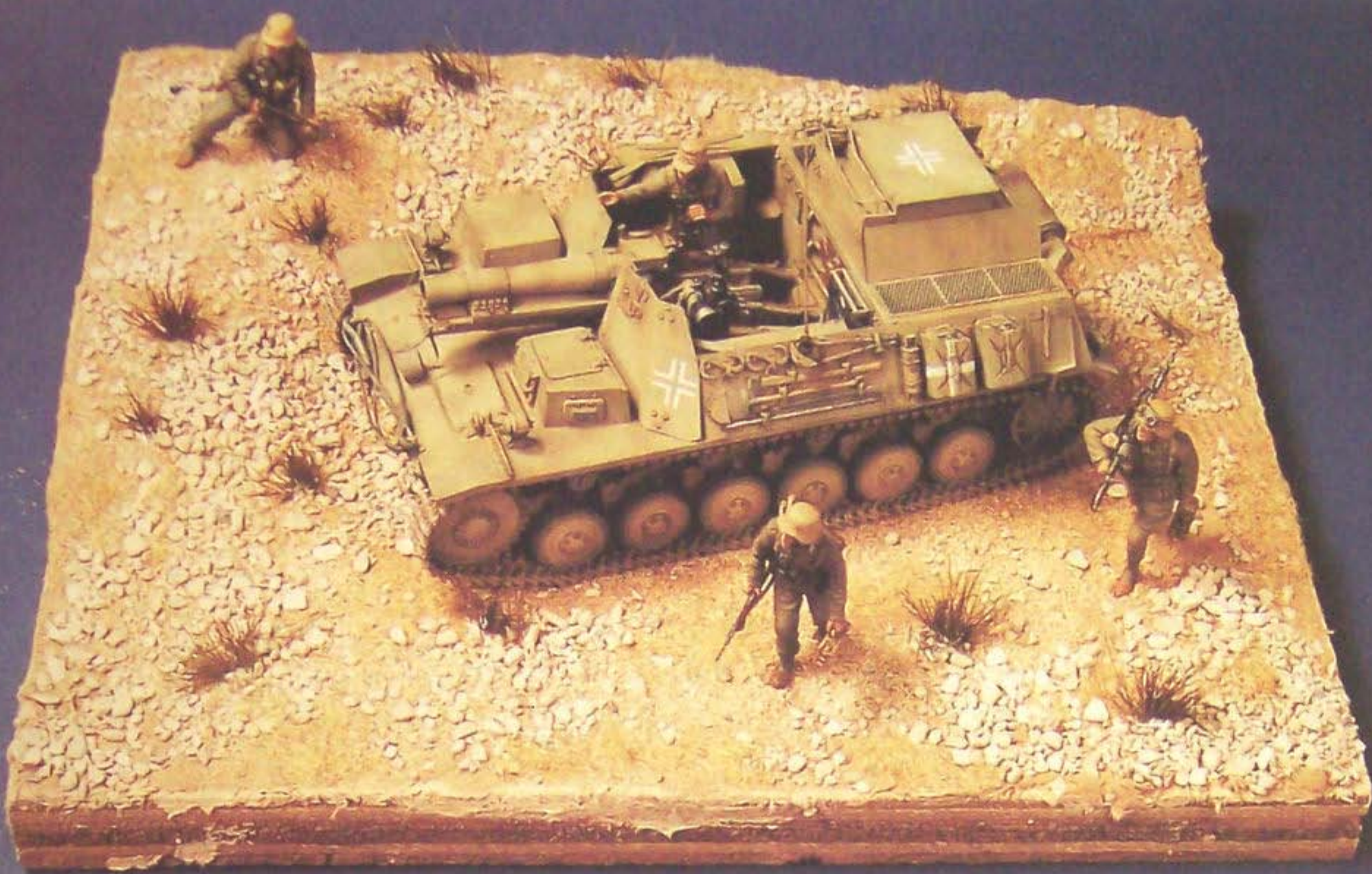
To form a base for the vignette, an 8x10in. piece of  $\frac{3}{4}$ in. plywood was cut, and some polystyrene board was formed with a utility knife to elevate one of the corners.



After screwing the polystyrene down, a mixture of Celluclay, Hydrostone plaster, white glue, paint pigment and water was spread onto the base.



Fine sand was spread onto the base, and holes were drilled to mount the figures and marked with toothpicks.



ABOVE Fine grit, small rocks and some pale static grass were sprinkled and pressed into the wet base, followed by small tufts of dyed deer hair. The vehicle and figures were also added at this point, with the figures being anchored with lengths of paper-clip metal glued into holes in their feet.

BELOW To complete the base, matte board was cut and glued to the sides with white PVA glue.



# Special feature (II) 15cm schwere Infanteriegeschütz 33/1 auf Selbstfahrlafette 38(t) (Sf) Ausf. K

*Kits Used:* Alan Hobby Grille M kit No. 35015  
ModelKasten sprocket and idler set for Pz 38t No. A-9  
ModelKasten workable track links for Praga 38(t) No. SK-30  
Tamiya sprue 'A' from Marder III kit No. 35248

## Introduction

Previously offered in vacu-form and resin conversion sets from Schmidt and AEF Designs respectively, and in complete resin kit form by Cri.El in the early 1990s, Alan's 'Grille M' came as a welcome addition in injection-moulded form early in 2002. Alan named the kit 'Grille M', but according to updated references, the official designation for this vehicle was 15cm schwere Infanteriegeschütz 33/1 auf Selbstfahrlafette 38(t) (Sf) Ausf. K, or 'Grille K'.

Alan's 'Grille M' kit was placed in a more elaborate scene featuring the capture of the vehicle in Normandy, and the surrender of two associated SS Grenadiers.





To improve the appearance of the running gear, Tamiya's Marder III suspension components were used, along with ModelKasten's drive sprockets, idlers and track links.



Detail on the components of the kit's interior was enhanced with styrene strip, etched metal and lead strip.

This kit was constructed soon after it was released with some modifications, mainly to the running gear and ammo stowage area. It was built to represent a vehicle serving with 1.SS-Panzer-Division 'Leibstandarte' in Normandy 1944, later captured by the British.

## Lower hull and running gear

ModelKasten's track set SK-30 was used in conjunction with the roadwheels from the Tamiya Marder III to enhance the accuracy of the model. Two runs of 93 links were constructed, leaving just enough to make the required sets of spare links that adorned the front of the vehicle in two stowage locations. Tamiya's wheel mount and leaf-spring assemblies were adapted to the kit, along with the ModelKasten drive sprockets and idlers (set A-9).

The locating slots where the sides meet the bottom plate were trimmed allowing proper fit of the lower hull. The rear plate was not cemented in place until the fit of the interior parts could be sorted out. There was a fair amount of modifications to the fit of the main gun mount and the ammo stowage tubes later on. Putty was required on the joint between the top plate and the sides.

## Exterior hull details

Alan's rivet and bolt detail is somewhat small, so it was improved by replacing bolt heads from hexagonal styrene rod. Most of the rivets, including those on the armoured walls of the fighting compartment, were replaced with Grant Line No. 153 rivet heads.

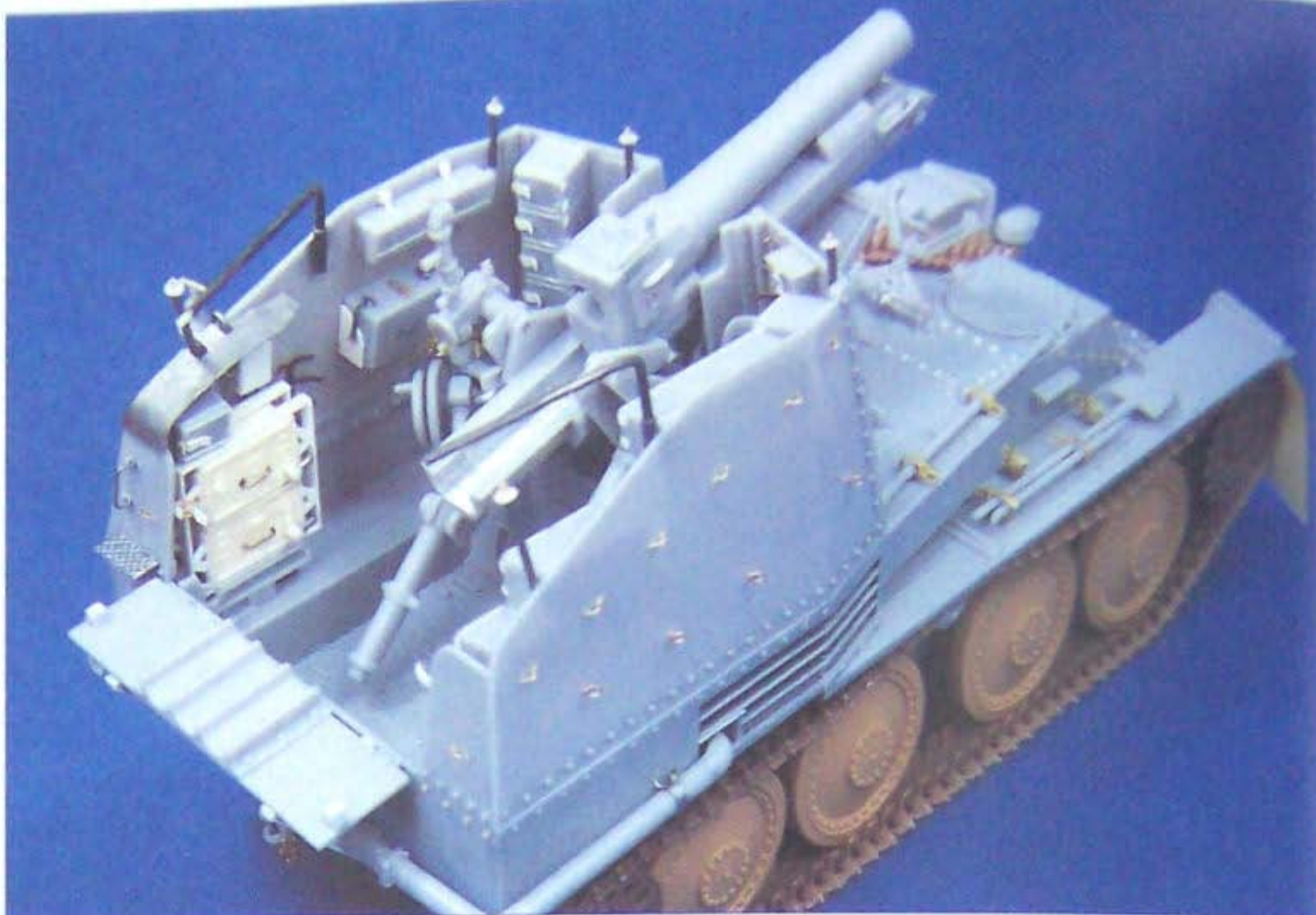
The linkage attached to the gun travel lock was built from etched-brass spare parts. The kit has a lump moulded on the top plate that had to be removed, and the subsequent hole filled, leaving a slot for the linkage to come through. The linkage was moved using a handle located in the fighting compartment, which was made from small scraps of styrene and etched brass.

Alan provided a perforated toolbox and a cover for the muffler in etched metal. Two minor shortcomings of these parts are that the muffler cover doesn't have the correct number of holes, and the folded corners of the box feature perforated slots that are to aid in bending the angles. Two large triangular brackets support the rear door when open, and the kit supplied ones were too thick. Thinner ones were made from styrene strip. The folding step was deliberately left off on the lower left, as if it had been broken off in action.

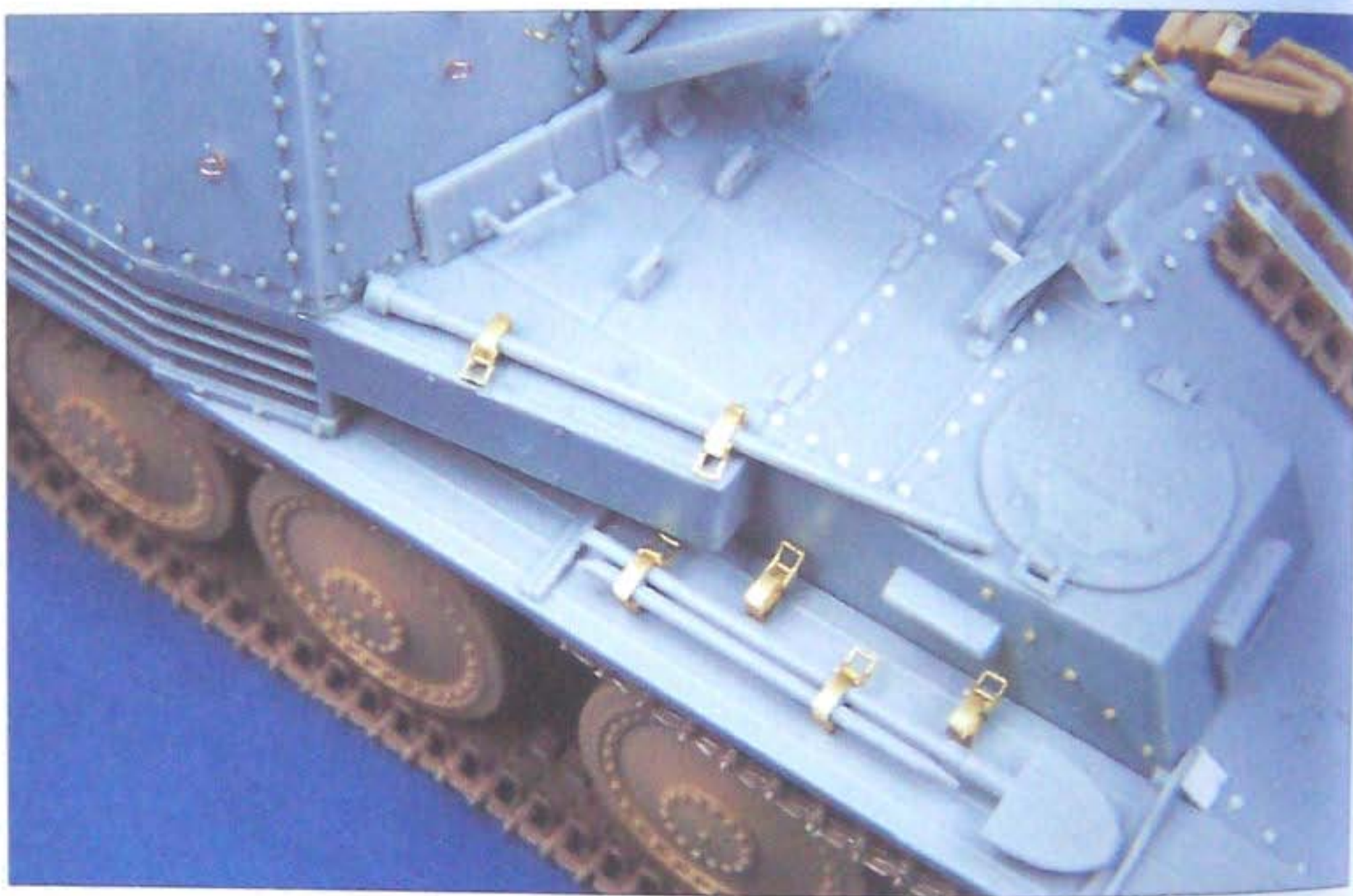
## Upper hull and fighting compartment

The kit's main gun assembly doesn't easily fit the space given, and the walls interfere with the ammunition stowage racks. The plate on which the gun assembly sits was not glued into place until the interior components of the fighting compartment were fitted. The forward angled section of the right and

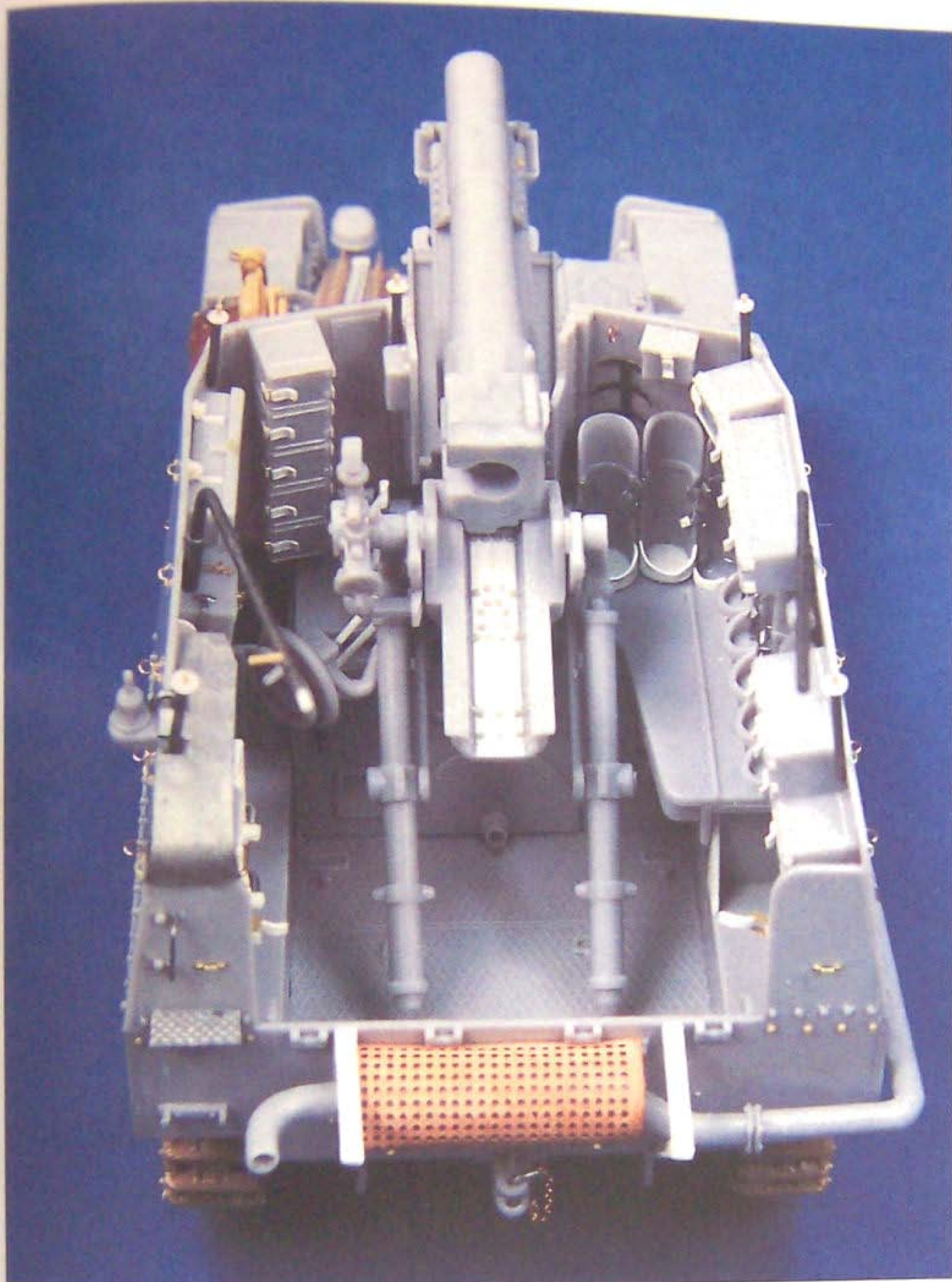
Scratch-built radios were added along with a weather cover made from thin lead sheet.



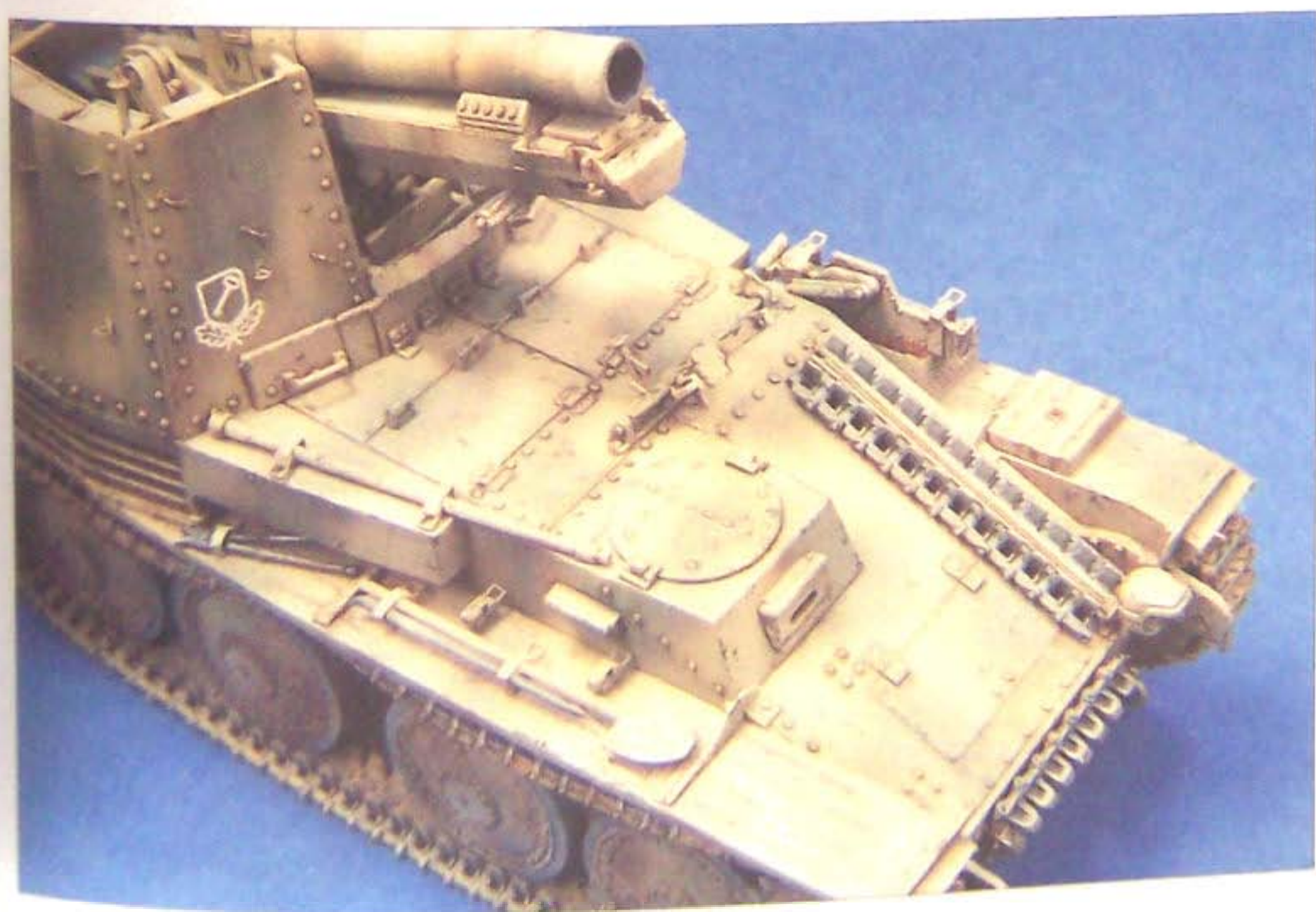
Aber's brass tool clamps were the workable type. Thin copper wire was looped around a drill bit and then glued into shallow pre-drilled holes on the armoured walls forming camouflage attachment loops.



Grandt Line No. 153 rivet heads replaced the kit's to further improve the look of the model.

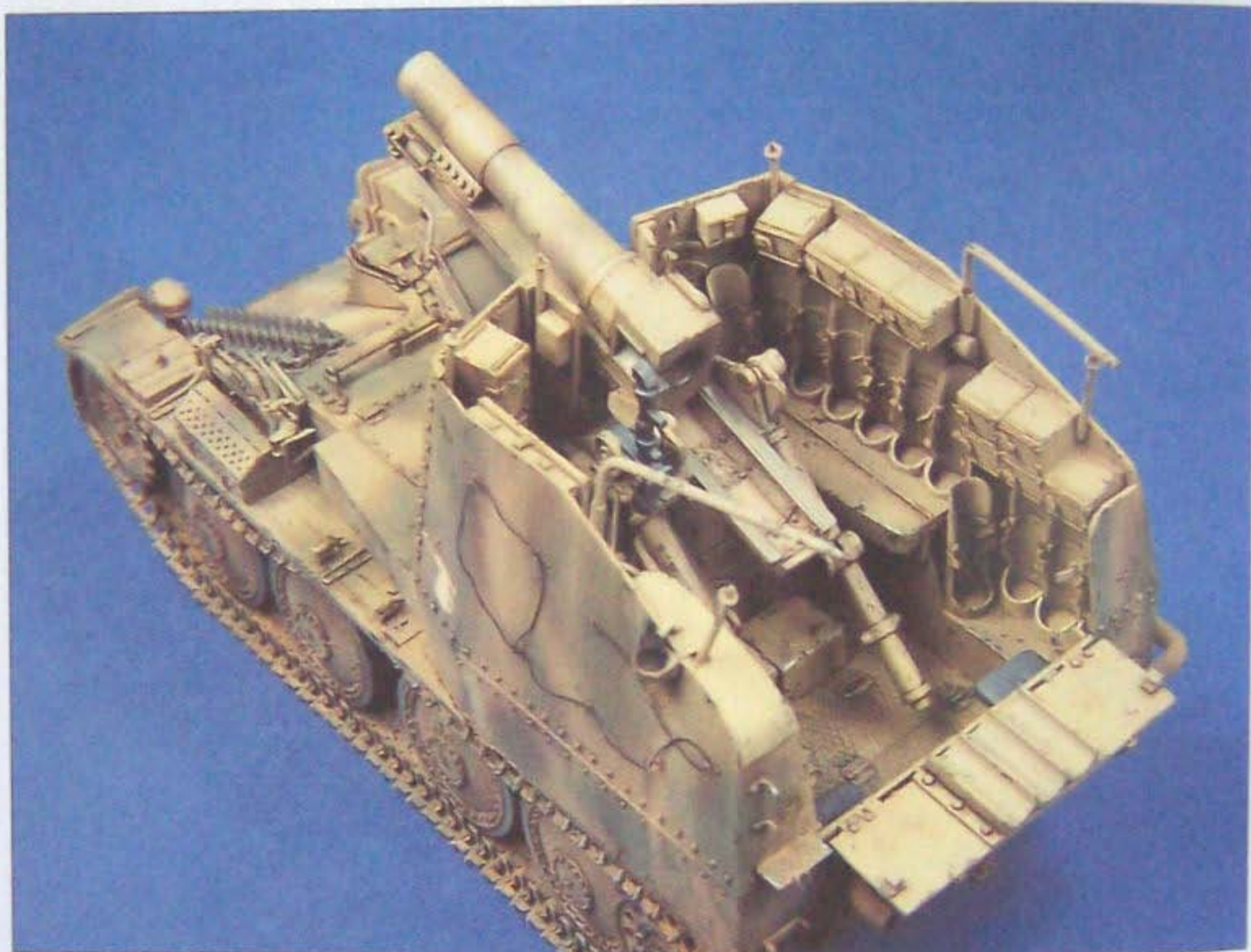
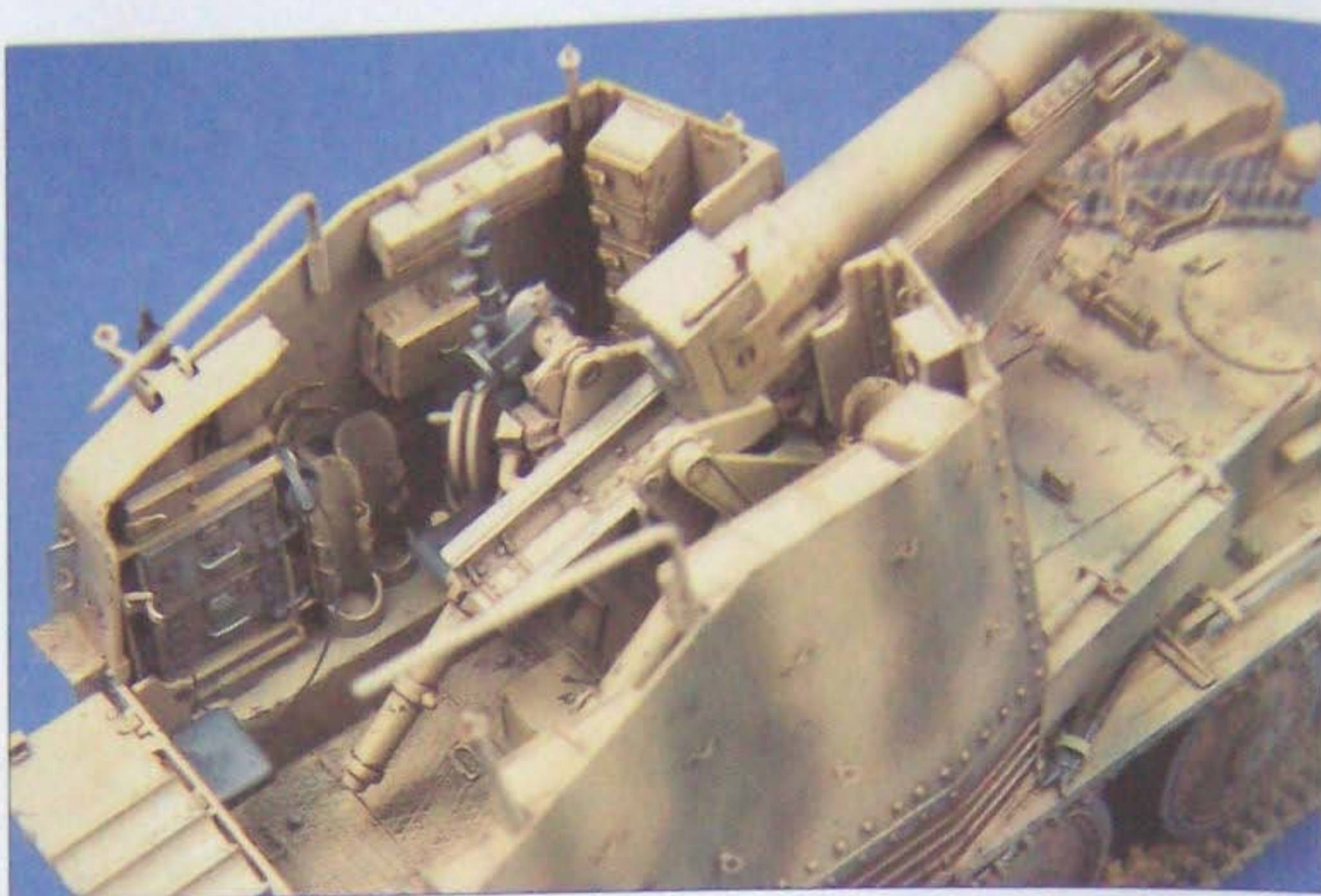


Styrene sheet and rivet heads detailed the interior of the gun cradle. Tarp supports were made from styrene rod, including a fifth one located just to the left of the gun, which is missing in the kit.



The metal on the tools and spare track links were painted with Humbrol 53 Gunmetal, and then received a heavy coating of dust paint along with the rest of the model. Metallic highlights were added with a HB pencil.

Aber's etched-metal tie-down cleats were formed on a jig and then glued onto the outside walls.

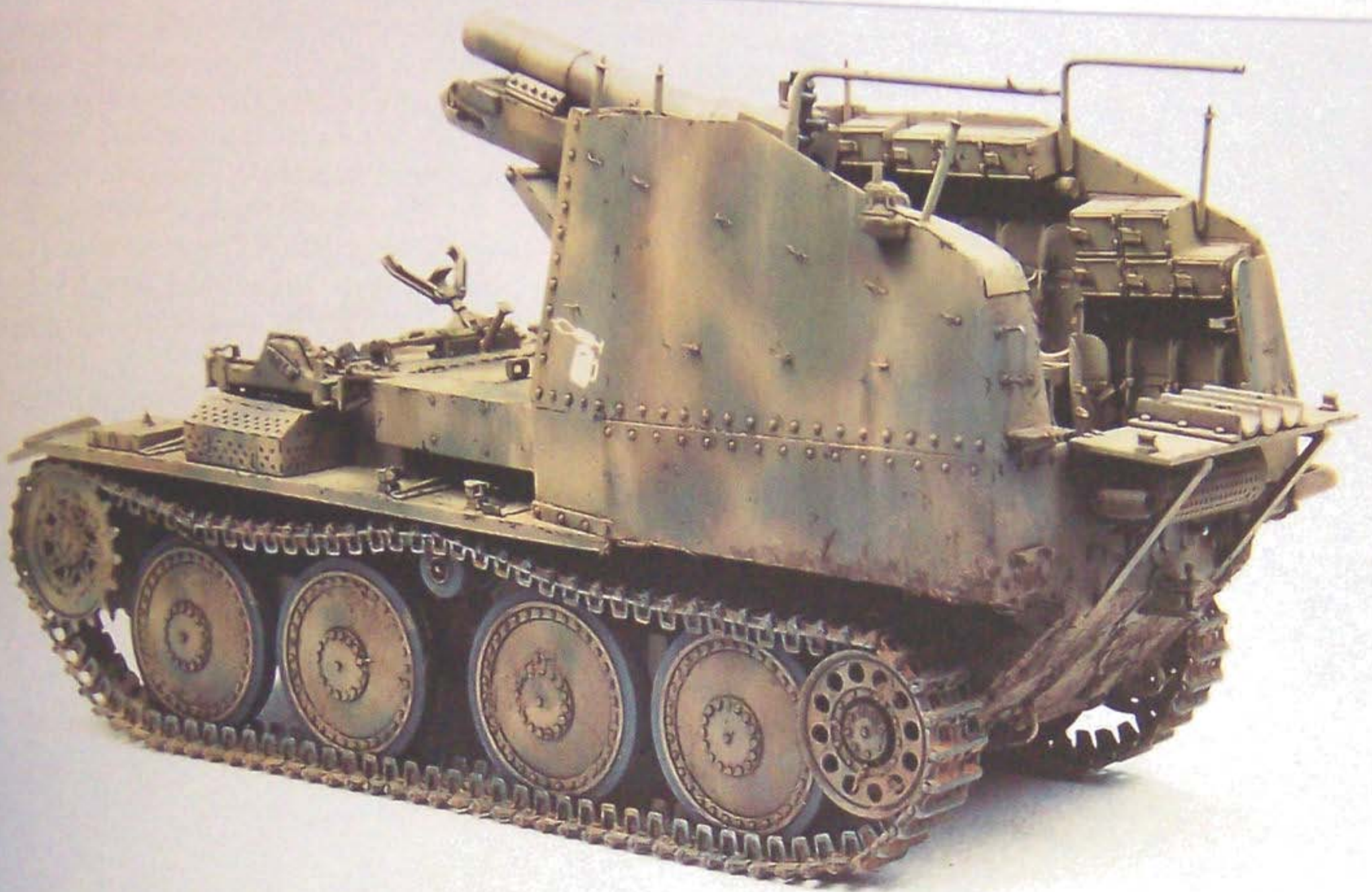


The stowage racks for the 15cm rounds had two sets of straps added using thin metal strip and etched-metal buckles.

left walls is narrow and doesn't allow much room for the forward ammo stowage, and also interferes with the gun position.

To get all of the ammo stowage racks to fit in the allotted space at the front (to the right of the gun) they were moved to the right corner by trimming their sides. The detail had to be removed on the right of the gun support (C116). The gun mount had the locating hole enlarged so that the gun could be positioned properly when all the other items had been fixed. The gun mounting platform was re-located backward 1.5mm so that the ammo stowage racks didn't interfere with the fighting compartment walls. After arranging these racks, each one was given four small ammo securing straps using extremely thin lead foil.

Detail of the various items mounted on the interior of the walls was enhanced with strip styrene and lead foil. Stretched sprue was glued onto the little square ammo boxes for stiffening ribs. Etched-metal hasps from Aber and plastic latch handles were also added to these boxes. Near the lower left front corner is a three-position rifle stowage bracket, which was made from Aber tool clamps and brass strip.



ABOVE The model was finished in a 'cloud pattern' of dark yellow base with green patches surrounded by thin red-brown lines.

BELOW Markings were water slide decals depicting a vehicle belonging to the I.SS-Panzer-Division 'Leibstandarte', with a blowtorch on the left and divisional shield emblem on the right of the upper hull.





Mud was applied to the lower hull and running gear by mixing Hudson and Allen Mud, pastel chalk dust and static grass with some water and white PVA glue.

Support posts for the weather cover were made, adding an additional post by the left-hand side of the gun. The collapsible support bar was built in two parts using some steel wire of an appropriate diameter with detail added to show the spring-loaded connector. This is the bar that sits midway across the top of the fighting compartment and is separated and swung to the rear on the model.

The kit's gun was used on this project. The front end of the gun cradle differs from the earlier sIG33 type, having a pointed cover on the end. The later K version of the Grille had a very plain breach block (as opposed to the Ausf. H) so the appropriate holes and other details were filled and sanded. The elevation and traverse control rods (behind the hand-wheels) didn't quite line up, so replacements were made from styrene rod.

## Painting, decals and weathering

Following the finishing method outlined in the previous chapters, the model was painted in the standard dark yellow finish with a camouflage pattern of olive green patches outlined in red brown. After brush painting the details, a decal for the 1. SS-Panzer-Division 'Leibstandarte' was positioned on the upper hull. A tactical marking was applied to the left hand side, brush painted in black using a white Tamiya decal as a guide.

The model then received a 'dusty' thinned-down coat of earth colour Tamiya acrylics. After coating small areas at a time, thinner was applied to the model, and then thinned down raw umber oil paint was added to the kit's detail. Black was also used for darker shadows and stains where appropriate, such as the wheel hubs and engine access plates.

Hudson and Allen Mud was stirred up with some pastel pigment and water. A pinch of static grass was also added, then the mixture applied to the lower regions of the vehicle. The rear end of the chassis received a more generous portion, building up where the tracks would have thrown it.

## Creating a rocky vignette

To display the model, a more elaborate base was constructed showing captured troops being led away from the Grille, which was being inspected by a couple of British officers.

To elevate the base, thick sections of polystyrene were laminated together then carved into shape with a retractable utility knife. Oak plywood veneer was traced out and cut with a coping saw to give the base a professionally finished look. Two-part resin was poured into rock moulds, which are available in model railway shops and used for miniature landscaping. By varying the amount of resin used, a number of castings were created and were cemented into place on the base with PVA glue.

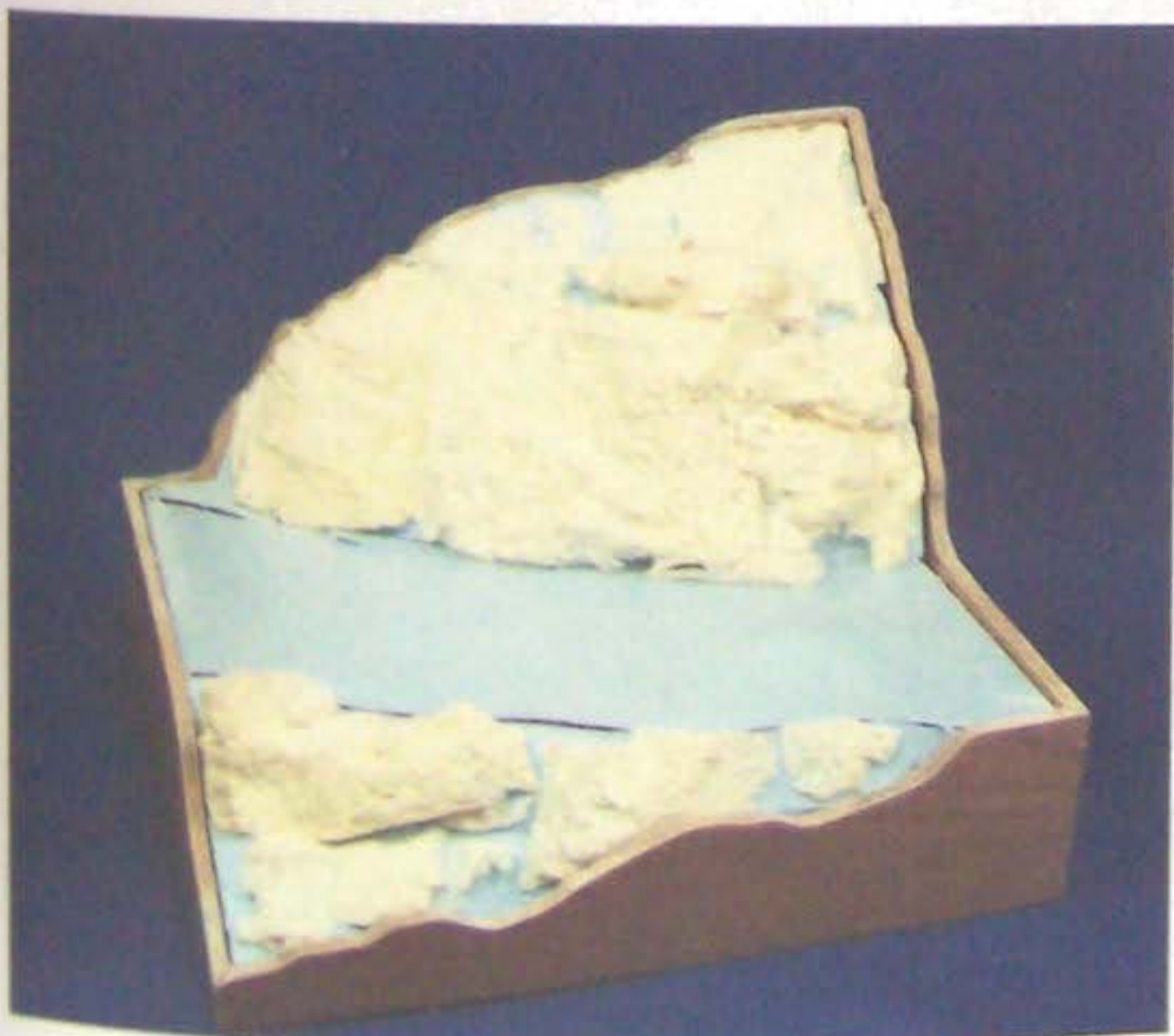
After adding the Celluclay mixture to the roadway and areas between the resin, sand, grit, and static grass were added to the wet surface. The rock surface was airbrushed a greyish tan, and then drybrushed heavily with several sessions of successively lighter shades.

Verlinden's Artillery and Tank Officers along with Jaguar's Surrendering Germans and a Tamiya British Infantry figure were positioned around the Grille to complete the scene.



By pouring two-part resin into rubber moulds, sections of rock surface were made by coating the surface and allowing the liquid to spread thinly before hardening.

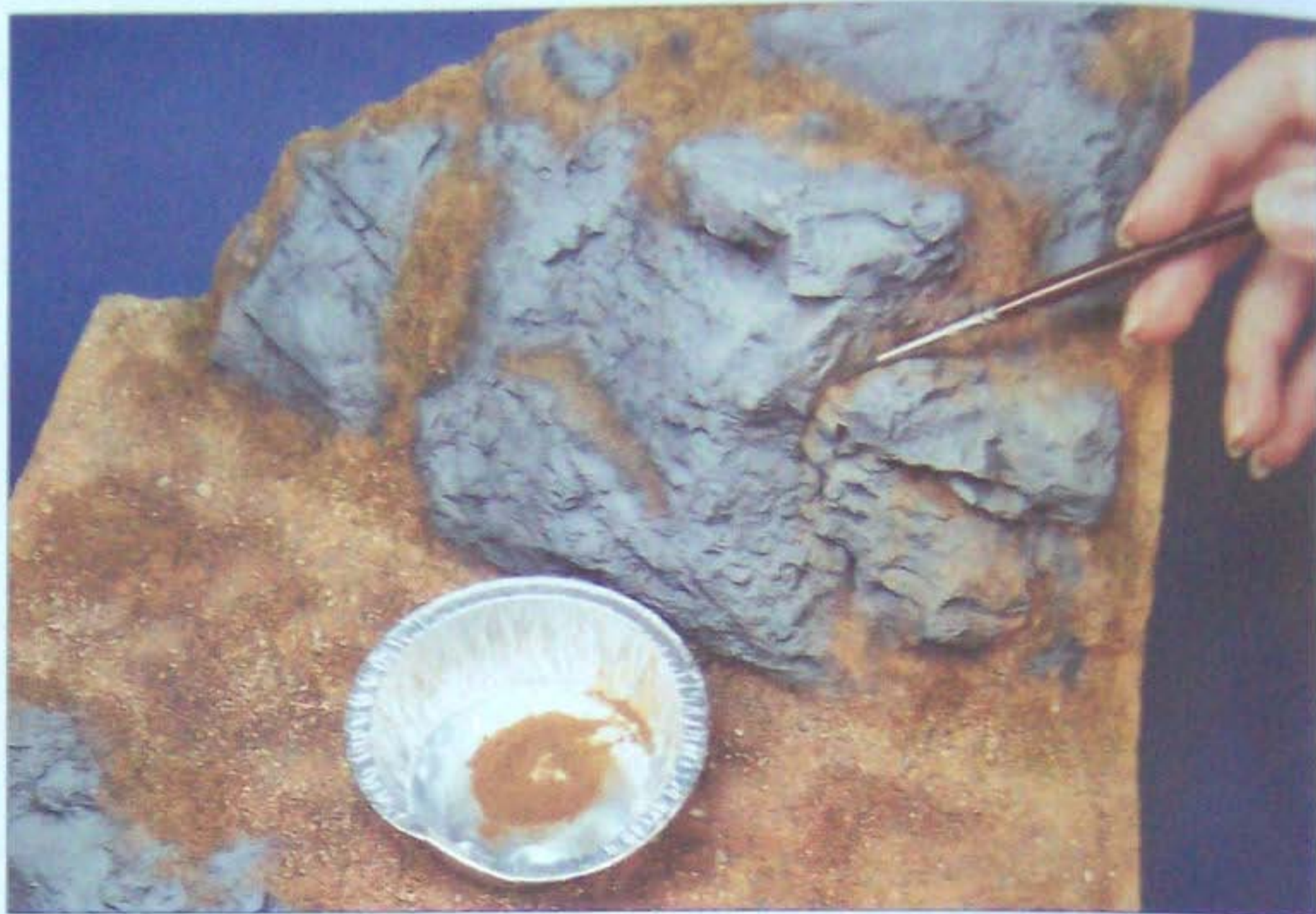
Pieces of the resin rock surface were arranged onto a laminated section of formed polystyrene, and adhered with PVA glue.



Thin oak veneer was traced out and cut with a coping saw, and fixed to the sides of the base.

A Celluclay mixture was spread onto the surface, allowing the rock surface to protrude. Sand, grit and various shades of static grass were pressed into the wet base.

RIGHT After airbrushing the rocky surface a greyish tan, the paintwork received several applications of drybrushing, with each successively lighter in colour. Pastel chalk dust was applied (by my daughter!) to blend the overall look.



BELOW After the addition of some grass tufts, the vehicle and figures were added to the base, completing the scene.





ABOVE Verlinden Productions British Tank Officer and Artillery Officer were finished in Vallejo paints for the uniforms, and oil paints for the heads and faces.

BELOW Being marched into captivity by one of Tamiya's British Infantry are Jaguar's resin Surrendering Germans. To maintain proper symmetry, figures of similar size were used in the vignette.



# Kits available

## Maquette 1/35-scale sIG33 auf Panzer IB kit No. 3508

This multimedia kit from the Russian company Maquette incorporates the Italeri Panzer IB and resin and white-metal parts in the package. Advertized as a model for experienced modellers only, this limited-edition kit requires a fair amount of work and patience to complete.

## Dragon 1/35-scale SdKfz 138/1 'Grille' Ausf. H Self-Propelled Gun with Crew kit No. 9004

Originally released in 1990 by Dragon Models affiliate Kirin, this kit included parts from the Italeri Panzer 38(t). Also contained with the kit were individual link tracks and some etched-metal parts, which was a novel approach at that time. The kit suffered from some oversimplified detail and inaccuracies in the interior. When Dragon Models re-released the kit, corrections were made to the sponsons and crew seats, and a set of Self-Propelled Gun Crew figurines were included in the package.

## Dragon 1/35-scale Sturmpanzer IV Sturminfanteriegeschütz 33B kit No. 6042

Produced around the mid 1990s when DML were releasing a large number of Panzer III variants, this detailed kit included the standard individual track links and etched-metal intake screens. Featured in this book's Intermediate build section, the model needs to have the engine deck stowage box configuration modified.

## Alan Hobby 1/35-scale Bison II kit No. 35012

One of their earlier releases, Alan's Bison II came on the market in 1999. As with some of their kits, the details tend to be a little crude, and there are some significant difficulties with the fit. The subject of one of two vignettes in the Special feature section of this book, the kit requires some modification to produce an accurate model.



DML's Sturmpanzer IV Sturminfanteriegeschütz 33B kit No. 6042 was released in 1995 with technical assistance from Thomas Anderson and Hirohisa Takada.



Dragon Models' kit of the Grille H was originally released by Kirin in 1993. The kit was later re-tooled and packaged by DML to include their German Self-Propelled Gun Crew figure set.

## **1/35-scale accessories**

Armo 15cm s.I.G.33 Gun Barrel No. 35716  
Armo 15cm s.I.G.33 Ammo Set No. 35724  
Brach Models Grille Ausf. M SdKfz 138/1 interior set No. BM23  
Brach Models Bison I interior set No. BM30  
Jordi Rubio (TG 11) German 15cm sIG33 L/11 gun set  
Jordi Rubio (TG 57) German 15cm sIG33 L/11 barrel  
Eduard sIG33 detail set No. 35368  
Eduard Grille H detail set No. 35132  
Eduard Bison II detail set No. 35345  
Eduard Grille M detail set No. 35475  
Eduard Grille M fenders set No. 35480  
New Connections Metal Barrel for sIG33 No. 35045  
New Connections Ammo for sIG33 No. 35016  
R&J Enterprises Cast wheels for sIG33 field gun No. 35268  
Tiger Model Designs sIG33 for Grille M No. 352081  
Tiger Model Designs sIG33 for Grille H No. 352082  
Tiger Model Designs Grille M Update Set No. 352051  
Tiger Model Designs Sig.33 Ammo No. 302071  
Tiger Model Designs German Wicker Ammo Cases No. 352073

## **1/72- and 1/76-scale kits and accessories**

Attack 1/72-scale PzKpfw 38(t) Grille Ausf. H No. 72801  
Armo 1/72-scale 150mm sIG33 gun barrel for Grille No. 72719  
Extratech 1/72-scale etched-metal details for PzKpfw 38(t) Grille Ausf. H No. V72026  
Henk, of Holland 1/76-scale Sturmpanzer 38B resin kit.  
Milicast 1/76-scale PzKpfw 38(t) with 15cm sIG33, Ausf. H, SdKfz 138/1 No. G86  
MMS 1/76-scale PzKpfw 38(t) with 15cm sIG33, Ausf. K, SdKfz 138/1 Grille No. 931  
Part 1/72-scale etched-metal details for Attack's PzKpfw 38(t) Grille Ausf. H 150mm sIG33 No. P72036

# Museums and Collections

There are few surviving examples of the Bison and Grille vehicles left today. There are none of the Bison 1 or Bison II, and the only known Grille H was raised from the bottom of the river Enns in Austria, and is in the process of a museum restoration.

## Armour Proving Ground, Aberdeen, Maryland, USA

A large collection of vehicles at the United States Armor Proving Ground in Aberdeen includes a Grille Ausf. K on outdoor display.

## Patton Museum of Cavalry and Armor, Ft. Knox, Kentucky USA

Previously on outdoor display, a Munitions PzKpfw 38(t) (Sf) Ausf. M is now in storage at the Patton Museum in Kentucky USA. The vehicle is an ammo-carrying version of the Grille K with its gun removed and allocation for 45 rounds of ammunition.

## Kubinka, Russia

One of the world's best collections of military vehicles is housed at Kubinka in Russia. The only surviving example of a Sturmpanzer IV Ferdinand is on display in the German AFV pavillion.

## Koblenz, Germany

The Collection of Military Equipment of the Federal Office of Military Technology and Procurement contains a field artillery version of the sIG33.

Aberdeen Proving Ground in Maryland, USA, has a Grille K in its outdoor display of armoured vehicles.



# Further reading, media and websites

## Books

*Nuts & Bolts Vol.19, 15cm sIG33 (Sf) auf Pz.Kpfw. I Ausf. B and 15cm sIG33 towed gun* by Jürgen Wilhelm, Published by Heiner F. Duske, Nikolaus-Otto Str. 10, 24536 Neumünster, Germany, 2005

This definitive work on the Bison I includes 380 photos, of these 205 are historical shots of the self-propelled gun and 76 historical shots of the 15cm sIG33 as towed gun in b/w, most of them previously unpublished. There are 93 coloured photos of existing examples of the 15cm sIG33 gun from different collections, and eight coloured photos of the conversion on the Italeri kit by modeller Tony Greenland.

*Ground Power No. 97*, Delta Publishing Company Ltd., Tokyo, Japan, 2002

The Bison and Grille vehicles are profiled in this excellent publication, which includes a large number of photographs of the Bison IB, Bison II, Grille H and Grille K.

*Allied-Axis Issue 2*, by P. Stansel, Ampersand Publishing Co. Inc. Delray Beach, Florida, USA, 2000

This publication features an in-depth comprehensive look at the Grille H. Numerous photos are included of the recent recovery of a Grille H from the river Enns in Austria, and this was a primary source of reference for the Master build section of this book.

*Marder III and Grille* by Francev and Kliment, MBI Publishing, Praha, Czech Republic, 1999

This book covers Czechoslovakian-built self-propelled anti-tank, flak and artillery guns built by the BMM factory. The sections on the Grille H and K are very comprehensive and include very valuable information and photos for the modeller.

*Sturmgeschütz and Its Variants* by Walter J. Spielberger, Schiffer Publishing Ltd. Atglen, Pennsylvania, USA 1993

Rather expensive in comparison to some of the soft cover references, this hard-bound volume from Spielberger's German Armour and Military Vehicles Series contains a very good summary of the self-propelled sIG33 program, and includes some good quality rare photos and a drawing of the Sturminfanteriegeschütz 33B.

*Achtung Panzer No. 5 and No. 7* by Mitsuru Bitoh and various contributors. Dai Nippon Kaiga Publishing, Tokyo, Japan 1992

These two books from the Achtung Panzer series include detail drawings and informative photos of a very high standard. The Sturmgeschütz series in A.P. No. 5 has a full section devoted to the Sturminfanteriegeschütz 33B with photos of a captured vehicle in the Kubinka museum. The PzKpfw I section of A.P. No. 7 has detailed drawings of the sIG33 auf PzKpfw IB, and the sIG33 gun and trailer itself.

*15cm sIG33 auf Fgst PzKpfw 38(t) 'Grille'* by Janusz Ledwoch, Wydawnictwo 'Militaria', Warsaw, 2000

This volume, in a series of well-illustrated books, is specifically focused on the Grille H and K variants. Technical drawings, colour profiles, and numerous photographs proliferate the pages to make this work a key reference for modelling the vehicles.

*German Self-Propelled Artillery in World War II 'Bison' And Other 150mm Self Propelled Guns* by Joachim Engelmann, Schiffer Publishing, Atglen, Pennsylvania, USA, 1992

One in a series of excellent military vehicle publications, this title covers all of the variants of the Bison and Grille in a condensed, affordable format. *Rommel's Funnies* by Thomas Jentz, Darlington Productions Inc. Darlington, Maryland, USA, 1997  
A good selection of photos of the Bison II is shown in this publication.

## Magazines

- 'Green Grille' by Jean Baptiste-Verlac, *AFV Modeller* issue 11, July/August 2003. Detailed build on the Alan Hobby Grille M kit.
- 'Hetzer Scheme for the Grille Ausf. K' by Gray Creager, *AFV Modeller* issue 11, July/August 2003. Research on colour schemes of the late war Grille Ausf. K.
- 'Grille'd to Order' by Gary Edmundson, *Military In Scale*, April 2003. Review of the Alan Hobby Grille M kit.
- 'Desert Bison' by Jon Feenstra, *Military In Scale*, July 2001. Detailed build of the Alan Hobby Bison II kit.

## Websites

<http://www.missing-lynx.com/>  
<http://www.track-link.net/>  
<http://www.ww2modelmaker.com/>

These websites are devoted to AFV modelling. Galleries contain photos of modellers' work to a high standard. Several forums provide a question and answer ability for modellers and other enthusiasts to obtain and share information.

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## 5. Gelbbraun

Vehicles in the Afrika Korps were finished in a base colour of RAL 8000 Gelbbraun, and given a camouflage pattern of RAL 7008 Graugrün over a third of the surface. In March 1942 this was changed to two new colours of RAL 8020 Braun and RAL 7027 Grau, which were both lighter in tone. Since the Bison II was delivered before March 1942, the first combination was used to paint the vehicle. Tamiya's XF-59 and XF-60 were mixed 50:50 to obtain an acrylic match to Testors' Model Master enamel RAL 8000.

## 6. Graugrün

The camouflage colour added to the base of RAL 8000 on the Bison II model was Graugrün RAL 7008. Tamiya's XF-49 Khaki was a good match for Testors' Model Master enamel 7008.

## 7. Red primer

Red oxide primer, painted on as a preservative undercoat, became part of the three-colour scheme and a base colour for German AFVs late in the war. Vallejo Cavalry Brown, Hull Red and Flat Red were combined to match a primer example from a piece of Zimmerit. Although not used for any of the colour schemes for the models shown in this book, it is a useful colour for showing wear and tear on both interior and exterior surfaces.

## 8. German equipment green

Not an official RAL number, but this is the colour used for some of the equipment such as German helmets, stick grenade heads, mess tins, radio components, etc. Referencing the preserved colour of the inside of a war time gas mask canister, a match was made with Vallejo's 888 Olive Grey.

## 1. Dunkelgelb

As of February of 1943, German AFVs left the factory in a Dunkelgelb base paint, RAL 7028. Sturmpanzerabteilung 338 vehicles serving with Panzer-Regiment 201 of 23. Panzer Division were repainted in dark yellow over their original Dunkelgrau base, and Olivgrün and Rotbraun camouflage was applied after. The Dunkelgelb colour used on the models is a combination of Tamiya's XF-60 Dark Yellow and XF-59 Desert Yellow, mixed with a 4:1 ratio. This ratio was determined with reference to an original piece of equipment. There is variation in tone when applied to different base colours on the models.

## 2. Olivgrün

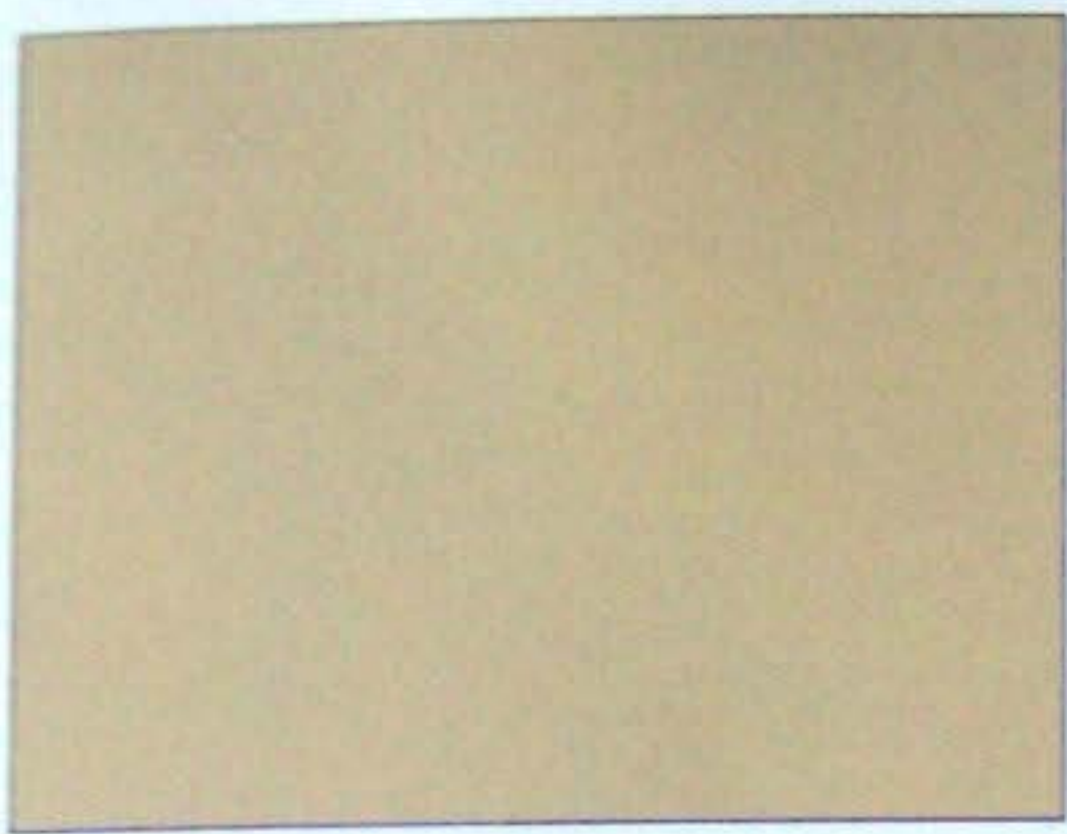
Applied to German AFVs as part of the three-colour camouflage, this colour later became a base colour for a short period late in 1944. Testors' Model Master Acrylic Panzer Olivgrün paint was used on the Sturmpanzerabteilung 338, Grille H and Grille K models.

## 3. Rotbraun

In combination with the Olivgrün, Rotbraun (RAL 8017) was applied in spray and brush form on the vehicles as part of the three-colour scheme after February of 1943. Tamiya's Red Brown XF-64 was mixed with their Black XF-1 in a 6:1 ratio to obtain an acrylic match to Model Master's Schokoladenbraun enamel.

## 4. Dunkelgrau

The Bison I vehicles were all painted in Dunkelgrau RAL 7021 from 1940 to 1942. This was the colour of German AFVs from July 1940 until February of 1943 according to documented orders, with the exception of vehicles scheduled for shipment to North Africa. Tamiya's XF-63 German Grey was used for this colour which was heavily weathered thereafter.



1.



5.



2.



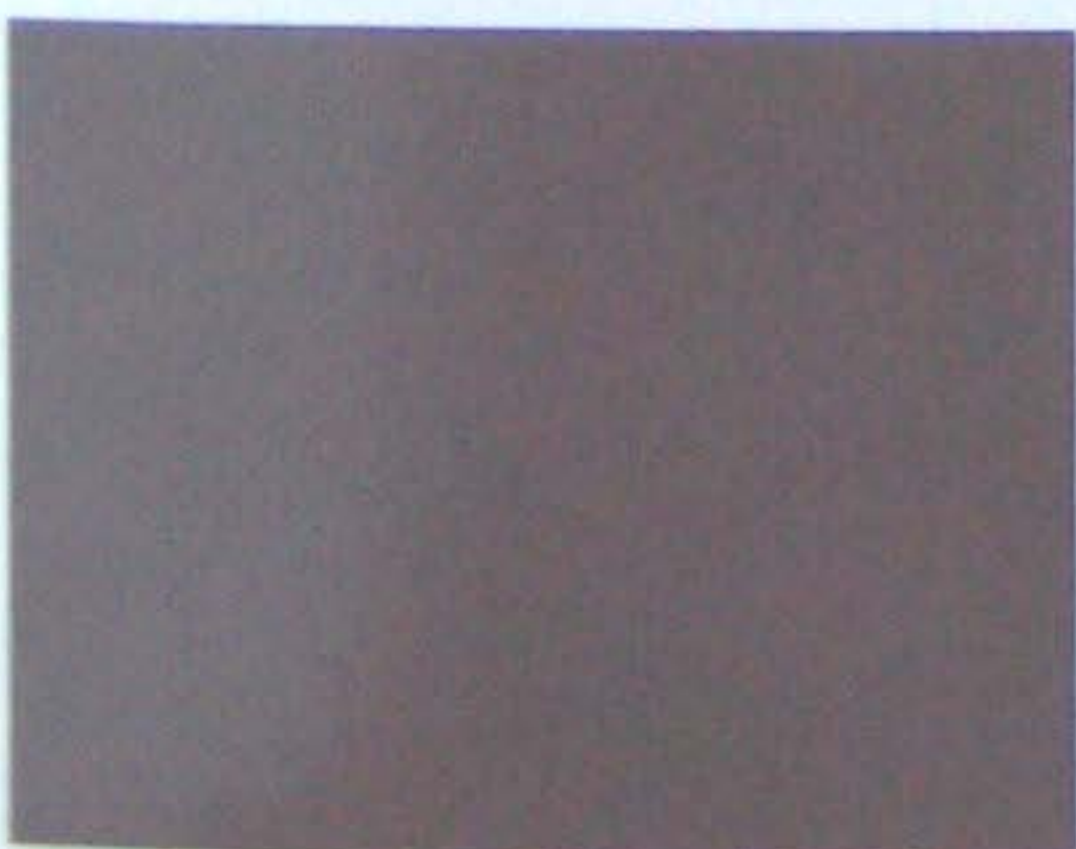
6.



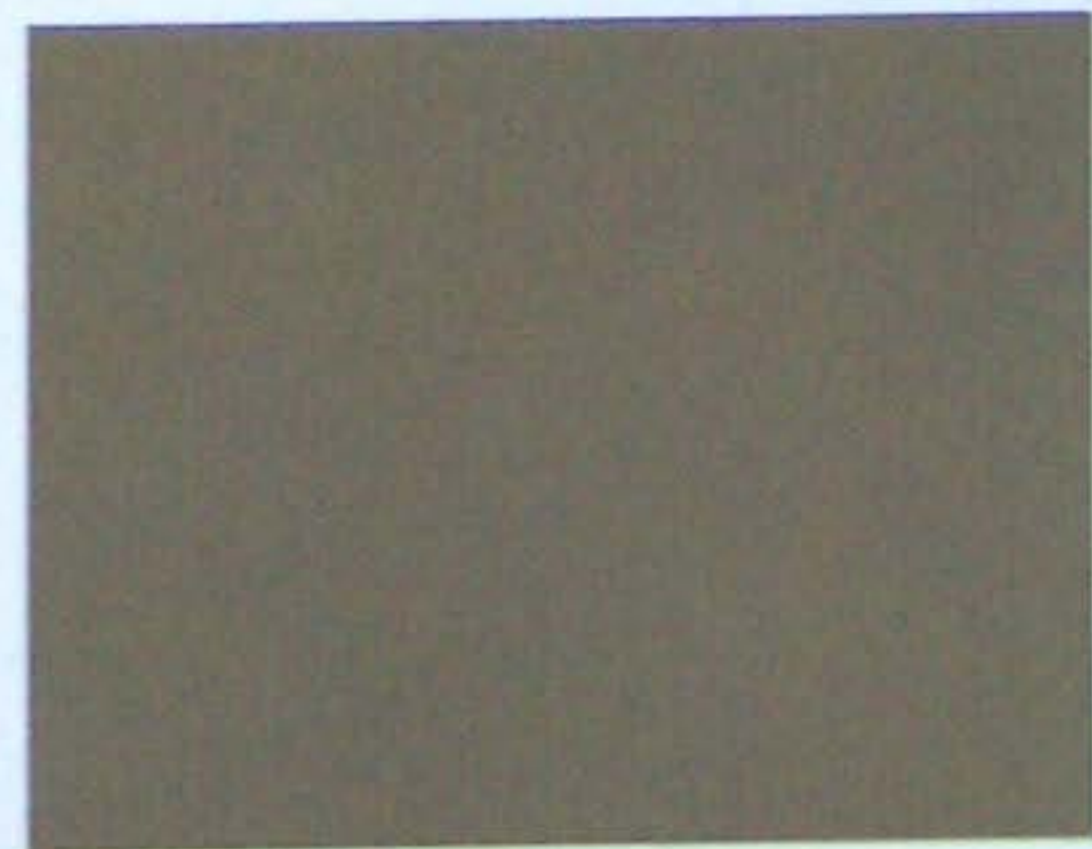
3.



7.



4.



8.

# Special feature (II) 15cm schwere Infanteriegeschütz 33/1 auf Selbstfahrlafette 38(t) (Sf) Ausf. K

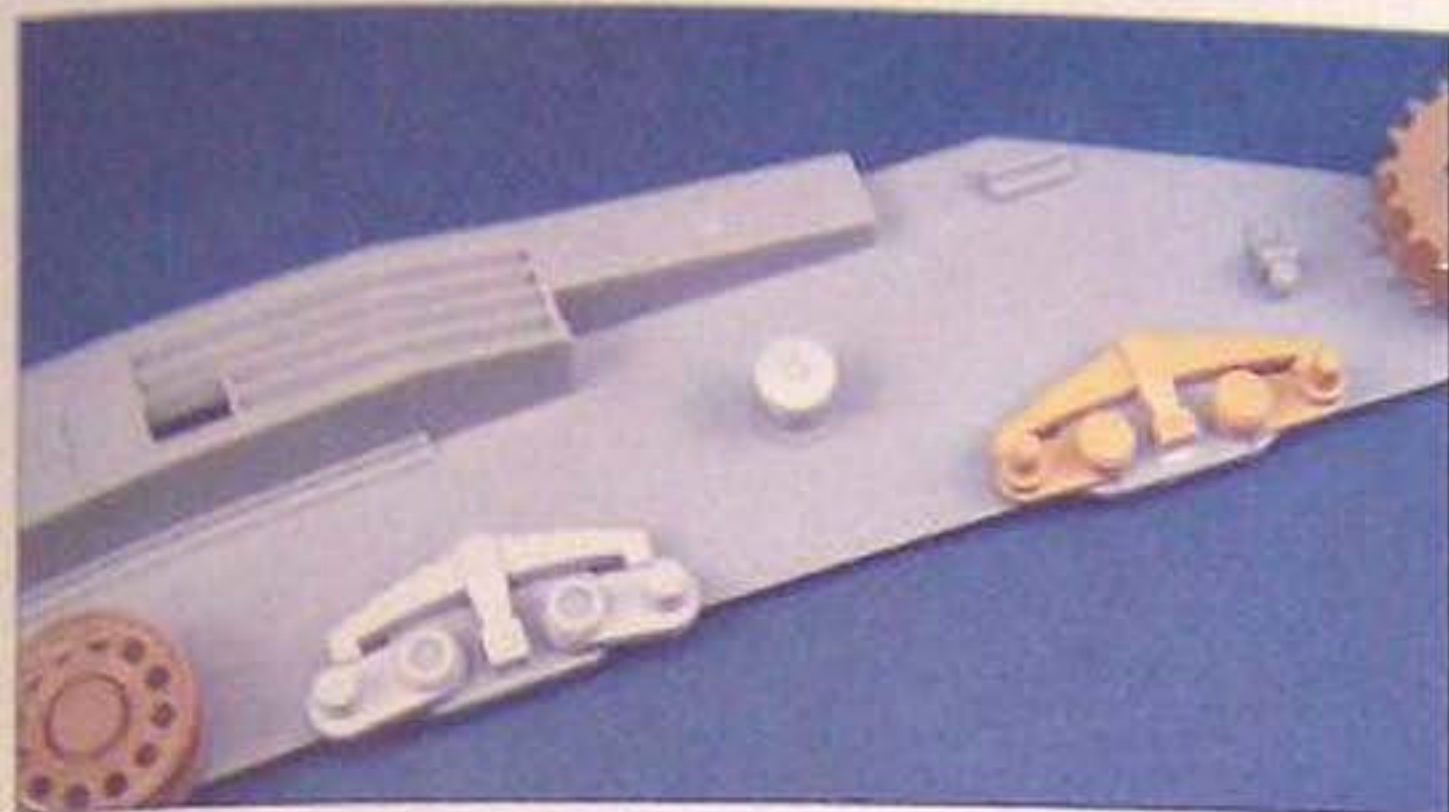
*Kits Used:* Alan Hobby Grille M kit No. 35015  
ModelKasten sprocket and idler set for Pz 38t No. A-9  
ModelKasten workable track links for Praga 38(t) No. SK-30  
Tamiya sprue 'A' from Marder III kit No. 35248

## Introduction

Previously offered in vacu-form and resin conversion sets from Schmidt and AEF Designs respectively, and in complete resin kit form by Cri.El in the early 1990s, Alan's 'Grille M' came as a welcome addition in injection-moulded form early in 2002. Alan named the kit 'Grille M', but according to updated references, the official designation for this vehicle was 15cm schwere Infanteriegeschütz 33/1 auf Selbstfahrlafette 38(t) (Sf) Ausf. K, or 'Grille K'.

Alan's 'Grille M' kit was placed in a more elaborate scene featuring the capture of the vehicle in Normandy, and the surrender of two associated SS Grenadiers.





To improve the appearance of the running gear, Tamiya's Marder III suspension components were used, along with ModelKasten's drive sprockets, idlers and track links.



Detail on the components of the kit's interior was enhanced with styrene strip, etched metal and lead strip.

This kit was constructed soon after it was released with some modifications, mainly to the running gear and ammo stowage area. It was built to represent a vehicle serving with 1.SS-Panzer-Division 'Leibstandarte' in Normandy 1944, later captured by the British.

## Lower hull and running gear

ModelKasten's track set SK-30 was used in conjunction with the roadwheels from the Tamiya Marder III to enhance the accuracy of the model. Two runs of 93 links were constructed, leaving just enough to make the required sets of spare links that adorned the front of the vehicle in two stowage locations. Tamiya's wheel mount and leaf-spring assemblies were adapted to the kit, along with the ModelKasten drive sprockets and idlers (set A-9).

The locating slots where the sides meet the bottom plate were trimmed allowing proper fit of the lower hull. The rear plate was not cemented in place until the fit of the interior parts could be sorted out. There was a fair amount of modifications to the fit of the main gun mount and the ammo stowage tubes later on. Putty was required on the joint between the top plate and the sides.

## Exterior hull details

Alan's rivet and bolt detail is somewhat small, so it was improved by replacing bolt heads from hexagonal styrene rod. Most of the rivets, including those on the armoured walls of the fighting compartment, were replaced with Grant Line No. 153 rivet heads.

The linkage attached to the gun travel lock was built from etched-brass spare parts. The kit has a lump moulded on the top plate that had to be removed, and the subsequent hole filled, leaving a slot for the linkage to come through. The linkage was moved using a handle located in the fighting compartment, which was made from small scraps of styrene and etched brass.

Alan provided a perforated toolbox and a cover for the muffler in etched metal. Two minor shortcomings of these parts are that the muffler cover doesn't have the correct number of holes, and the folded corners of the box feature perforated slots that are to aid in bending the angles. Two large triangular brackets support the rear door when open, and the kit supplied ones were too thick. Thinner ones were made from styrene strip. The folding step was deliberately left off on the lower left, as if it had been broken off in action.

## Upper hull and fighting compartment

The kit's main gun assembly doesn't easily fit the space given, and the walls interfere with the ammunition stowage racks. The plate on which the gun assembly sits was not glued into place until the interior components of the fighting compartment were fitted. The forward angled section of the right and

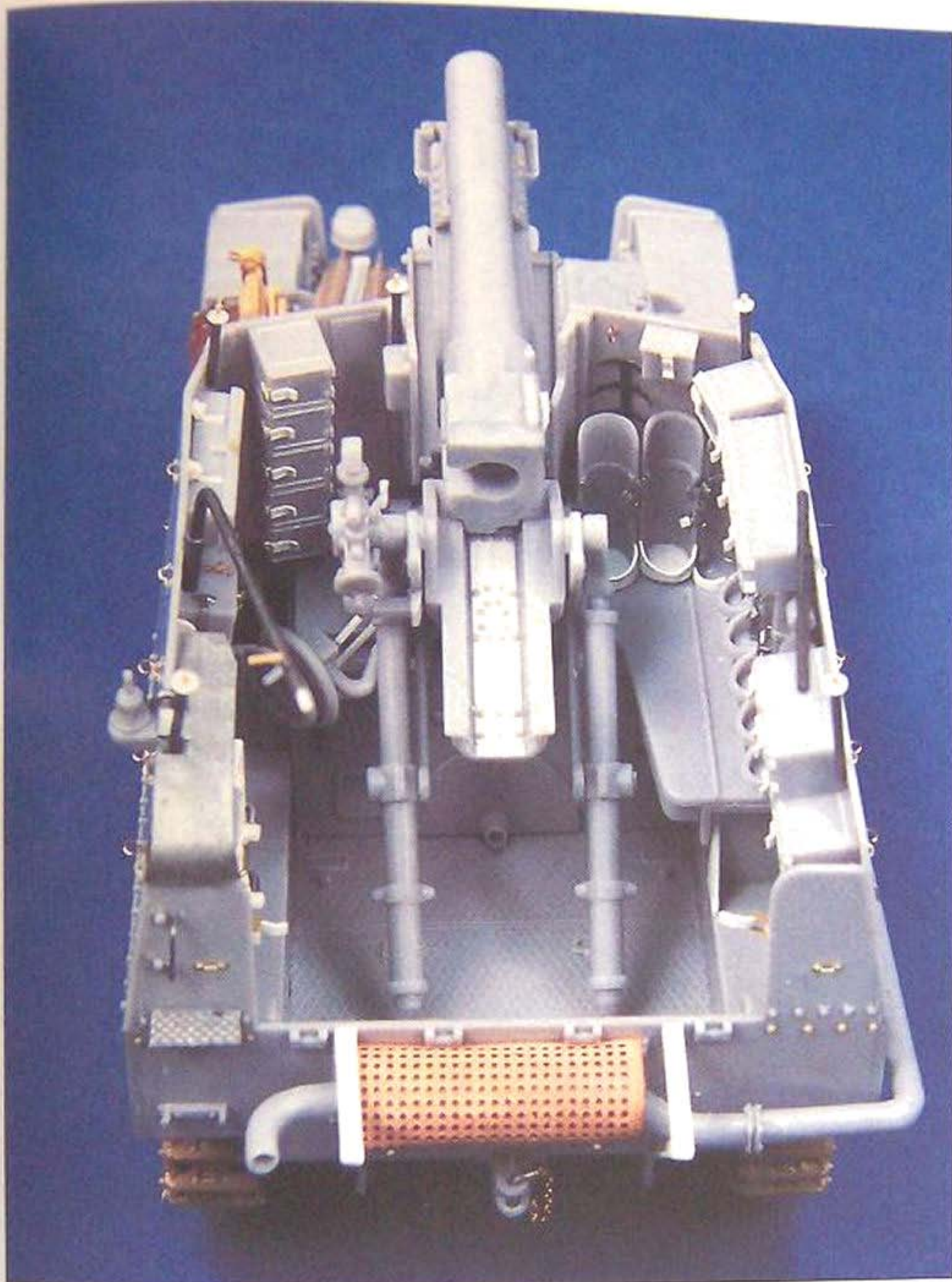
Scratch-built radios were added along with a weather cover made from thin lead sheet.



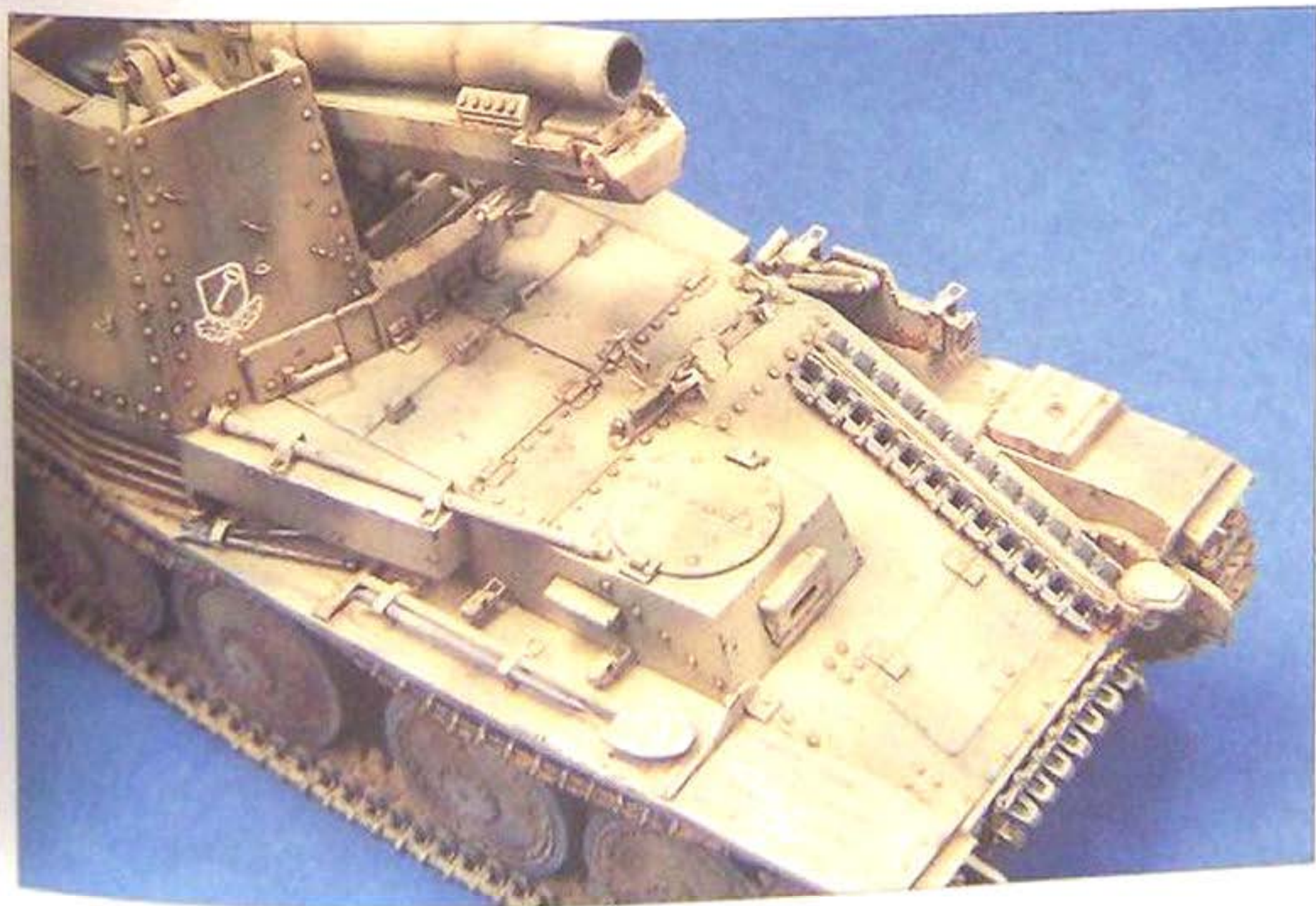
Aber's brass tool clamps were the workable type. Thin copper wire was looped around a drill bit and then glued into shallow pre-drilled holes on the armoured walls forming camouflage attachment loops.



Grandt Line No. 153 rivet heads replaced the kit's to further improve the look of the model.



Styrene sheet and rivet heads detailed the interior of the gun cradle. Tarp supports were made from styrene rod, including a fifth one located just to the left of the gun, which is missing in the kit.

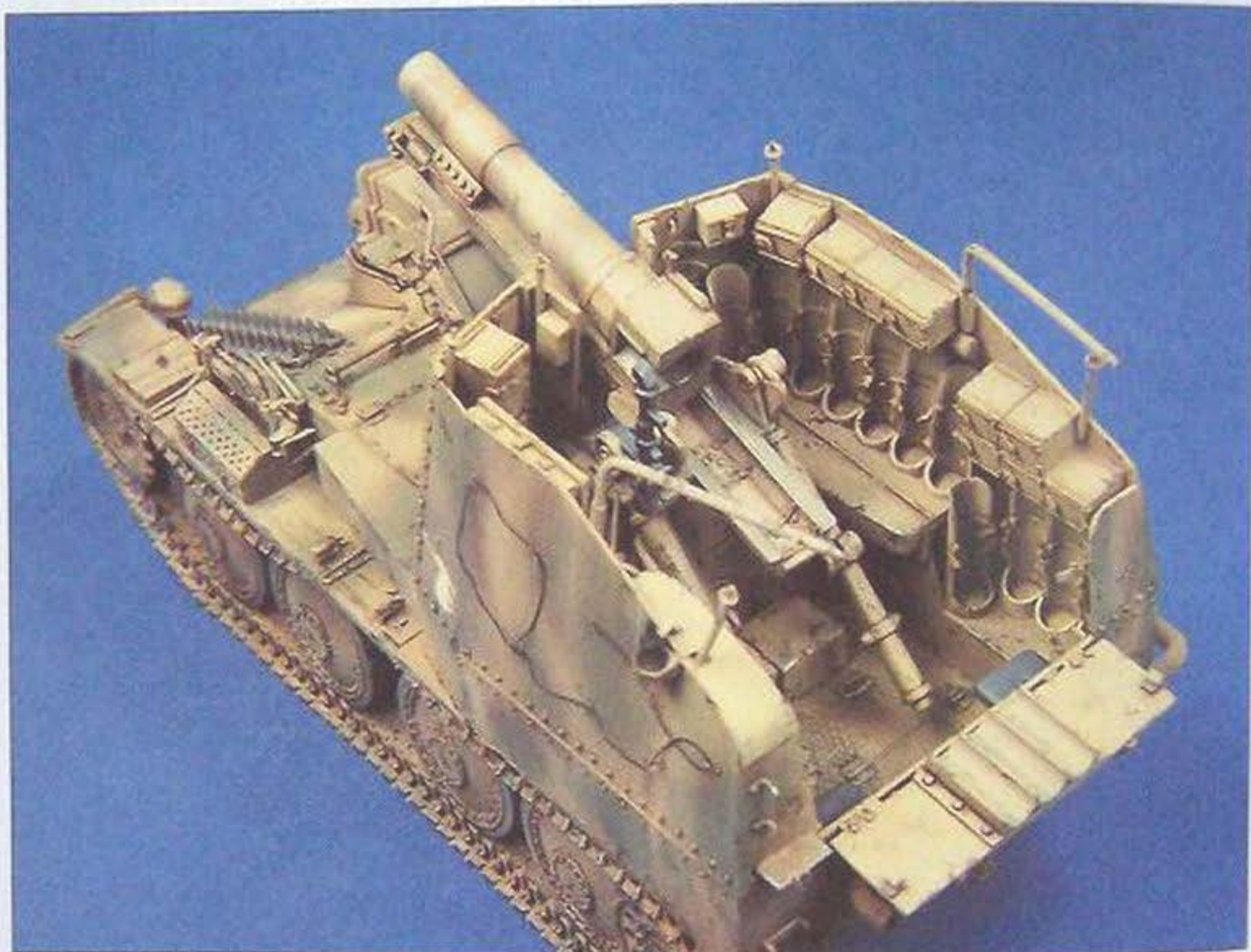


The metal on the tools and spare track links were painted with Humbrol 53 Gunmetal, and then received a heavy coating of dust paint along with the rest of the model. Metallic highlights were added with a HB pencil.

Aber's etched-metal tie-down cleats were formed on a jig and then glued onto the outside walls.



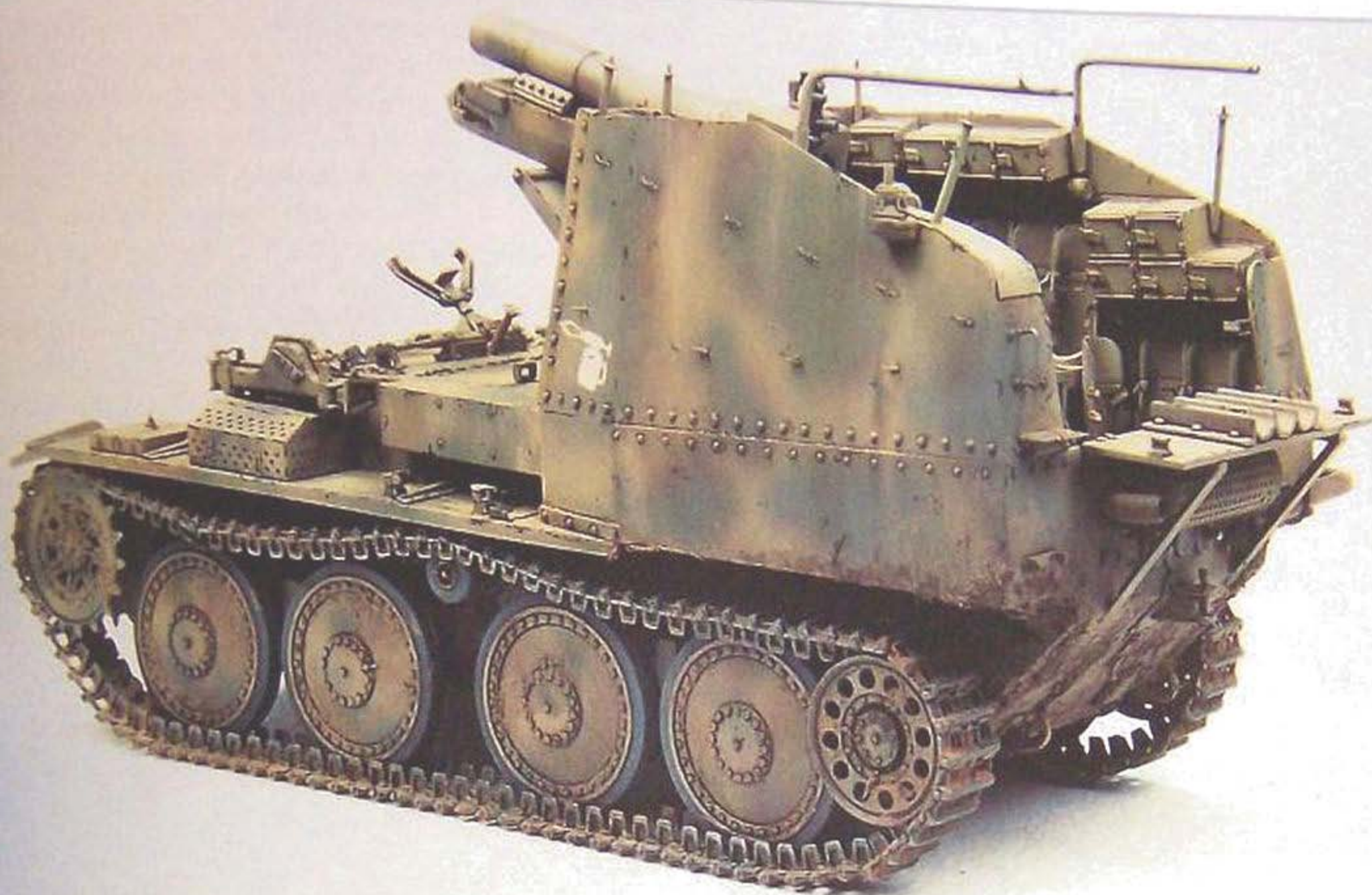
The stowage racks for the 15cm rounds had two sets of straps added using thin metal strip and etched-metal buckles.



left walls is narrow and doesn't allow much room for the forward ammo stowage, and also interferes with the gun position.

To get all of the ammo stowage racks to fit in the allotted space at the front (to the right of the gun) they were moved to the right corner by trimming their sides. The detail had to be removed on the right of the gun support (C116). The gun mount had the locating hole enlarged so that the gun could be positioned properly when all the other items had been fixed. The gun mounting platform was re-located backward 1.5mm so that the ammo stowage racks didn't interfere with the fighting compartment walls. After arranging these racks, each one was given four small ammo securing straps using extremely thin lead foil.

Detail of the various items mounted on the interior of the walls was enhanced with strip styrene and lead foil. Stretched sprue was glued onto the little square ammo boxes for stiffening ribs. Etched-metal hasps from Aber and plastic latch handles were also added to these boxes. Near the lower left front corner is a three-position rifle stowage bracket, which was made from Aber tool clamps and brass strip.



ABOVE The model was finished in a 'cloud pattern' of dark yellow base with green patches surrounded by thin red-brown lines.

BELOW Markings were water slide decals depicting a vehicle belonging to the I.SS-Panzer-Division 'Leibstandarte', with a blowtorch on the left and divisional shield emblem on the right of the upper hull.





Mud was applied to the lower hull and running gear by mixing Hudson and Allen Mud, pastel chalk dust and static grass with some water and white PVA glue.

Support posts for the weather cover were made, adding an additional post by the left-hand side of the gun. The collapsible support bar was built in two parts using some steel wire of an appropriate diameter with detail added to show the spring-loaded connector. This is the bar that sits midway across the top of the fighting compartment and is separated and swung to the rear on the model.

The kit's gun was used on this project. The front end of the gun cradle differs from the earlier sIG33 type, having a pointed cover on the end. The later K version of the Grille had a very plain breach block (as opposed to the Ausf. H) so the appropriate holes and other details were filled and sanded. The elevation and traverse control rods (behind the hand-wheels) didn't quite line up, so replacements were made from styrene rod.

## Painting, decals and weathering

Following the finishing method outlined in the previous chapters, the model was painted in the standard dark yellow finish with a camouflage pattern of olive green patches outlined in red brown. After brush painting the details, a decal for the 1. SS-Panzer-Division 'Leibstandarte' was positioned on the upper hull. A tactical marking was applied to the left hand side, brush painted in black using a white Tamiya decal as a guide.

The model then received a 'dusty' thinned-down coat of earth colour Tamiya acrylics. After coating small areas at a time, thinner was applied to the model, and then thinned down raw umber oil paint was added to the kit's detail. Black was also used for darker shadows and stains where appropriate, such as the wheel hubs and engine access plates.

Hudson and Allen Mud was stirred up with some pastel pigment and water. A pinch of static grass was also added, then the mixture applied to the lower regions of the vehicle. The rear end of the chassis received a more generous portion, building up where the tracks would have thrown it.

## Creating a rocky vignette

To display the model, a more elaborate base was constructed showing captured troops being led away from the Grille, which was being inspected by a couple of British officers.

Expert advice on how to get the most from your modelling



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## Modelling the German 15cm sIG33 Bison and Grille

The 'Bison' and 'Grille' are today's commonly used names for the German self-propelled 15cm schwere Infanteriegeschütz 33 (sIG33) vehicles of World War II. The sIG33 was the most powerful support weapon for the German infantry at the beginning of the war, and from 1940 it was mounted on a range of tracked vehicles. This book demonstrates the construction of five 1/35-scale models of specific examples of the various self-propelled sIG33 vehicles. The modeller is led through the various skill levels of construction by combining existing kits with some aftermarket accessories and scratch-built items.

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