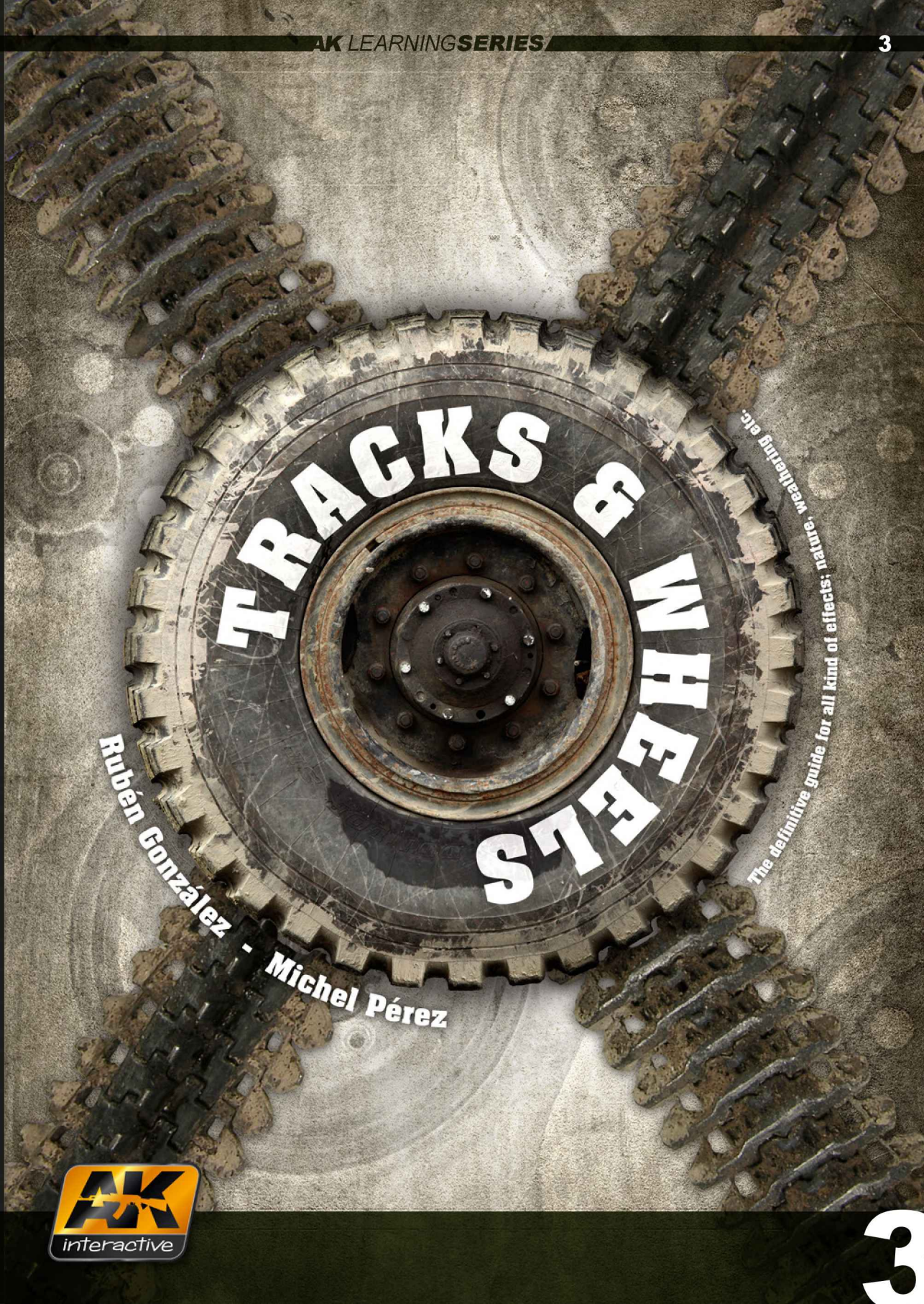
TRACKS & WHEELS
The definitive guide for all kind of effects: nature, weathering etc.
Rubén González - Michel Pérez
AK interactive
3

TRACKS & WHEELS COLORS

With the AK Interactive's tracks and wheels colors the modeler will be able to simulate all the materials wheels and tracks are made of and the colors of environment effects such as dust, mud etc. getting the model ready for some weathering with AK's special effects.

AK 557

TRACKS AND WHEELS ACRYLIC SET

The six new colors included in this paint set are specially designed to aid the modeler in creating a realistic appearance for all types of wheels and tracks. The set includes a Darker Black color with a satin finish to represent new tires while the wear of older tires is represented by a Dark Grey color. Also included are two new shades of track colors; a Light Rust color to represent fresh rust as might be observed on the tracks of an abandoned AFV, and a Dark Tracks color that accurately creates the appearance of operational treads. Finally, we provide two tones of Dry Mud and Light Dust which will allow you to dirty and dust up your wheels and tracks easily for a natural appearance. These acrylic colors are designed for use with both a brush and an airbrush and are water soluble for odorless painting and require no aggressive solvents for clean-up. Our acrylic paints are manufactured by AK Interactive and made with a formula that prevents clogging in your airbrush.

AK 083

TRACK WASH

The perfect colour to apply on tank tracks, however it can used to do any type of rusting metal effects.

AK 185

TRACKS PRIMER

A water based polymeric brown paint, perfect for all types of tracks.Its adhesion capacity, coupled with its vinyl-satin matte surface,makes it perfect for preparing tracks for painting. Despite that highcovering power, it only leaves a thin layer on your surface, so as notto obliterate any fine detail you may be working with.

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TRACKS & WHEELS

Rubén González
Michel Pérez

Welcome to this new release of the AK Learning Series. This time we will deal with everything related to the tracks and wheels, from the assembly to the weathering of these parts of the AFVs and other vehicles, and help you to understand many different techniques used to achieve realistic results.

Rubén González, an experienced professional modeller, drives us through tons of tips and methods of work to make your vehicle kit look real. This book is meant for all who love this great hobby.

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INTRODUCTION

If you stop and think about it, and you look at what goes through your mind when we see a completed vehicle, we realize that, in general, our thoughts are aimed in two directions.

On one hand, we are struck by purely physical issues such as size, shape, or color, which, when translated into modeling language, would mean something such as 'this is a light or heavy vehicle', and then whether it is a car, tank destroyer, assault gun, or an anti-aircraft vehicle, etc. That is of course sub-divided into whether or not it is camouflaged or operated in a desert area, or perhaps hidden by its natural environment such as in the bushes or in a forest.

On the other hand, and in my personal opinion, we are attracted by a number of issues relating to the character and personality of each modeler. This is what permeates every aspect of that modeler's work, including their building style and in terms of aesthetics, how the modeler approaches the weathering of their project.

When it comes to finishing our own model in our particular style, in accordance with the conditions in which the vehicle operated, our aim is to make the viewers believe that they

are indeed looking at that actual vehicle which has just driven on muddy roads or through ice and snow.

To integrate a vehicle into its operational environment, we need to look at how that environment acts upon both the lower and upper areas of that vehicle, and although you should be consistent in your overall approach, you should not treat the differing areas with the same techniques. Parts of your vehicle will be open to the climate itself, whilst others will be in direct contact with the environment, for example, the road wheels and tracks.

If I try to elaborate a little here, then it will become clearer. If your vehicle is crossing muddy roads, there may well be little mud itself strewn over the upper surfaces, unless it is there as a result of other vehicles that have spattered it, or indeed from the crew as they climb into the vehicle. Conversely, if the vehicle is operating on a regular road in the rain, the horizontal surfaces won't see too much in the way of dirt, whilst the vertical surfaces will be streaked with it, causing runs and smears which may appear grey due to the dirt, dust, and grease that accumulated on the ground and which the wheels then throw up against the vehicle sides.

Throughout this guide we will provide you with a full, step by step photographic guide of how to recreate the weathering effects on the wheels and tracks used under different environmental conditions, trying to cover all of the climatic spectrum and geographic conditions which will determine how we approach the weathering of our models.We know you find it helpful.

CHAP 1

Preparation and assembly of the wheels

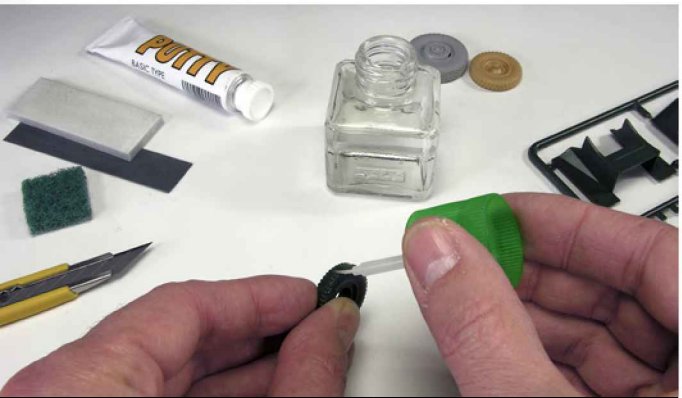
The products that many manufacturers provide us with today are of the highest quality, and so varied that you will always find a specific product to achieve the exact finish you require for your model. Rarely do these products disappoint, and this can be seen in the levels of ultra-realistic detail that they bring to our attention.

Previously, modelers have had to put up with results that barely resembled the real thing. One such area is the tracks which adorn most armored vehicles. Previously, we have had to use rubber-band tracks that are joined together by melting the rubber pins pins with a hot screwdriver. Now we have multi-part tracks with amazing detail. Assembling some of these individual track sets will drive you crazy, but the results are nothing short of total realism and totally worth it. With regard to tires, we can find three types of materials that are used to recreate them (plastic, rubber and resin), and of course each material requires a different approach and the correct tools should be used in order to ensure that these look realistic when it comes to the painting phase. In the pictures below, from left to right, we can see four plastic wheels, three black rubber wheels, and four wheels cast in resin.

1.1 Plastic wheels

The most common tools and modelling products used for preparing and assembling plastic wheels are sandpaper, sanding sponges, wire sponges (steel wool) and putty. Of course, you also need a hobby knife, pliers and liquid cement.

Using small pliers, we cut the wheel parts off the sprues. We do this carefully to avoid damaging the representation of the tire tread pattern near the sprue gates. It is highly recommended to use the sprue-cutting pliers only for this particular task, in order to keep them sharp for a long time.



Once we removed all parts of the wheels from the sprues, we glue them together with liquid cement. We should pay special attention to this phase, because this type of adhesive melts the plastic, so it is very easy to leave our finger prints on the part we are manipulating.

Once the glue has fully cured, we carefully remove flash and molding seams with a sharp blade and examine the joint areas of the tire halves.

We then fill all gaps and molding imperfections with a slightly diluted putty (mixed with water or acetone, depending on the type of the filler used), applied with a fine brush

If we want to recreate a worn tire, we have to sand the tire tread more heavily, until its pattern becomes barely visible.

Next, we gently sand the tire tread until there's no sign of the protruded joint line. During this process we progressively switch from using fine sandpaper or fine grade sanding sponge, to wire sponge. The advantage of using the sponges is that they easily adapt to the curved surfaces of the wheel.

With a piece of wire sponge, which is commonly used for household cleaning, we polish both the tread and sides of the tires, in order to clean these surfaces and reduce the lugs of the tire tread, giving it a slightly worn appearance.

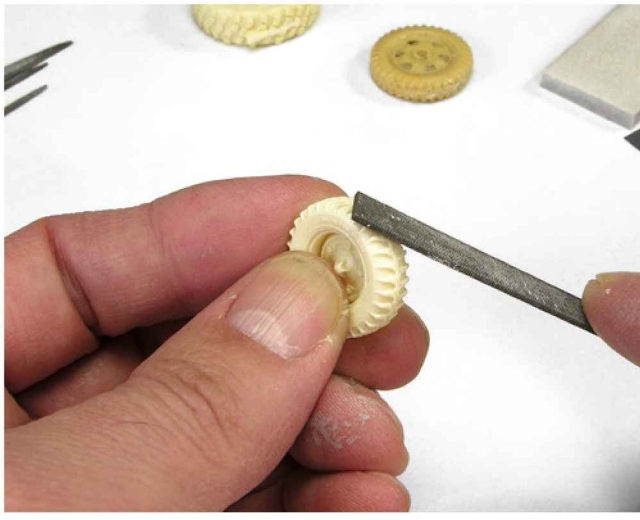
Even if the wire sponge does not seem to be strongly abrasive, we need to be careful when using it, as we can scratch the surface easily. Therefore, we must control the pressure applied to the surface during sanding.

The wheels are finished, and ready for painting.

1.2 Resin wheels

The most common tools used for the preparation and assembly of the resin wheels are metal files, sandpaper, fine grade sanding sponges, wire sponges and pliers. The resin is a brittle material, thus we must pay special attention when using the pliers. Resin wheels usually come as one piece, so we will not need any adhesive to prepare them. However, if gluing them is required, using a cyanoacrylate adhesive (Super Glue) will be the best solution for this purpose.

With the pliers, we carefully cut off the casting blocks. The latter are the most distinctive remnants of the casting process.



With metal files, we remove the molding seams and remnants of the casting blocks.

Next, we sand the tire tread with fine grade sanding sponge to rid of the scratches left by the metal file. This way we get a smooth and homogeneous surface.

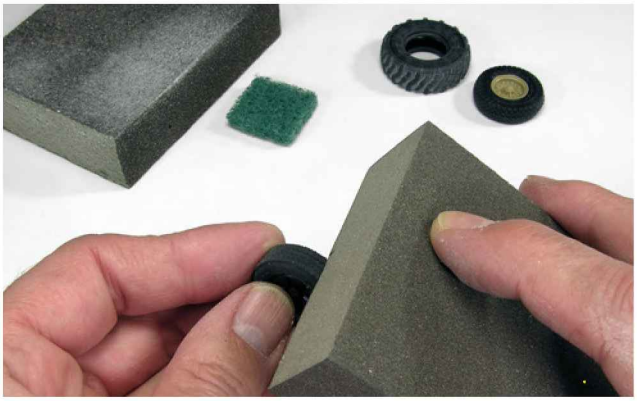
With a piece of wire sponge, which is commonly used for household cleaning, we polish both the tread and sides of the tires, in order to clean these surfaces and reduce the lugs of the tire tread, giving it a slightly worn appearance.

If the wheel rim has holes, we must use a round or triangular file to remove any visible burrs or molding seams.

A view of the wheels, ready for painting.

1.3 Rubber wheels

The most common tools used for the preparation and assembly of the rubber wheels are sanding blocks of various grits, fine grade sanding sponges, and cleaning pads. Rubber is a very unique material which is not as easy to work with as plastic or resin. It requires longer and more careful sanding process, which sometimes proves quite difficult.



The manufacturing process of the rubber wheels is similar to that of resin casting, and the molds used for it often produce unwanted burrs and seams. We can get rid of them with sanding blocks. They come in various thicknesses, and it is convenient to start sanding with a coarse grade to remove the burrs, and move through the grades during the process, finishing with a very fine grade to unify the surface.

For better results, sand in the direction of the axis of the wheel.

With a piece of wire sponge, we smooth both the tread and sides of the tires in order to clean these surfaces and reduce the lugs of the tire tread, giving it a slightly worn appearance.

A view of the wheels, prepared for further treatment. The advantage of the rubber wheels is that, after the sanding process, their colour and general appearance often closely resemble the real wheels, allowing us to omit the painting stage, and achieve convincing results only with pigments.

1.4 Tracked vehicle wheels with damaged rubber rims

Looking at the wheels of a tracked vehicle, we can easily notice the multitude of effects that are present due to their use. From the small marks and scratches, caused by the soil and gravel that are trapped between the tracks and wheels, to cracks that big stones can produce in the rubber rims, these are all interesting features which, if accurately reproduced, will certainly add more realism to our model.

To recreate these effects on plastic or resin wheels, we only need some simple tools such as sandpaper of different grits, cleaning pads, metal files and a hobby knife or scalpel.

We start working on the wheel with a square or triangular metal file, moving it across the wheel, in order to produce some random cuts in the rubber rim.

When using this tool, pay special attention not to cut your fingers.

Using a knife, we can reproduce some distinctive cracks that can be noticed on the edges of rubber rims.

With a cleaning pad, we smooth the cuts made with the file and knife, and also remove the remnants of the material.

By rubbing the wheel against a piece of coarse sandpaper in the driving direction, we can replicate another type of damage, which is affected by the erosion of small stones and gravel on the rubber rims.

Depending on the pressure applied to the surface and the grit of the sandpaper used, we can reproduce various degrees of wear and tear.

Next, we switch to a cleaning pad, and rub the wheel in a similar way as with the sandpaper. This way we recreate subtle abrasion on the rubber rim, which is caused by the dirt and gravel on the real wheel.

Here, we can see the result of the process described in this subchapter.

CHAP 2
Painting wheels with tires

The best way to achieve good results is to choose the most effective materials for a given application. Since most of the weathering products are enamel-based, it's better to use water-based acrylic paints for base painting, because the latter give a strong layer which shouldn't be affected by the subsequent treatments with enamels. Together with quality synthetic brushes, all the aforementioned products will help us to achieve the desired effects.

2.1 Base colours

The selection of the base colour for the tires is a very important step. When choosing it, we should have in mind that the colour of real tires depends on where and how extensively used they are. Whilst a brand new tire is usually very dark gray, under certain conditions it can turn brown, light gray or even whitish.

2.1.1 COMMON WHEEL COLOUR

Perhaps the most commonly seen appearance of the tires is when their initial gray colour turns brownish due to the contact with the ground during the typical use. This can be reproduced by using a mixture of AK720 Rubber / Tyres (70%) and AK721 Rusty Tracks (30%) as the base colour.

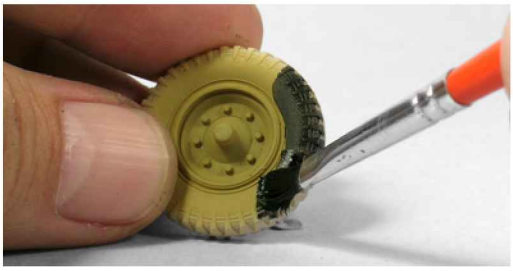
2.1.2 DESERT ENVIRONMENT

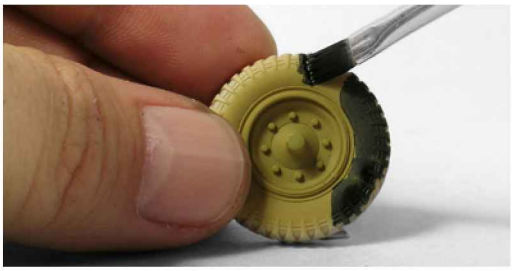
If you look at the wheels of the vehicles that serve in the desert areas, and travel over either paved roads or directly on the sand, you can notice that their tires soon turn very dark gray or almost black. This is affected by the abrasion, caused by the grains of sand that wear away the rubber. To recreate this, we need a very dark, matte base colour. We get it by mixing AK720 Rubber / Tyres (25%) and AK735 Flat black (75%).

2.1.3 DERELICT WHEEL

When we want to paint a derelict wheel, which was exposed to sunlight for a long time, we go for a medium gray base colour. This will give us a bright base, and become an optimal starting point for subsequent treatments. For this purpose we mix AK720 Rubber / Tyres (60%) with AK723 Dust (40%).

2.2 Brush painting





We can use various types of brushes for painting the tires. During this step, try to avoid overpainting the wheel rims.

The paint dilution is a very important factor. Don't use dense paint, and do not try to cover the surface with the first layer. It is better to prepare a strongly diluted mixture, and apply it in several thin layers, in order to avoid streaks and brush strokes.

The final appearance of a wheel with the tire painted using a brush and AK735 Flat Black paint.

2.3 Painting with airbrush and masks

Although painting a wheel is not complicated, it still requires at least basic skills. This process may become a bit tedious, when instead of only the tire, we have to paint the entire wheel assembly of a vehicle. In this case, we can help ourselves by using masks or templates.

These templates are made of foam and are very compact. When properly used, they can save us a lot of time, and allow to achieve clean, quality results. Their use is very simple, so even the most novice of modellers can learn this easily.

The first step is to apply the base colour of the tire. We airbrush AK735 Flat Black over the whole wheel, without bothering about overspraying the wheel rims.

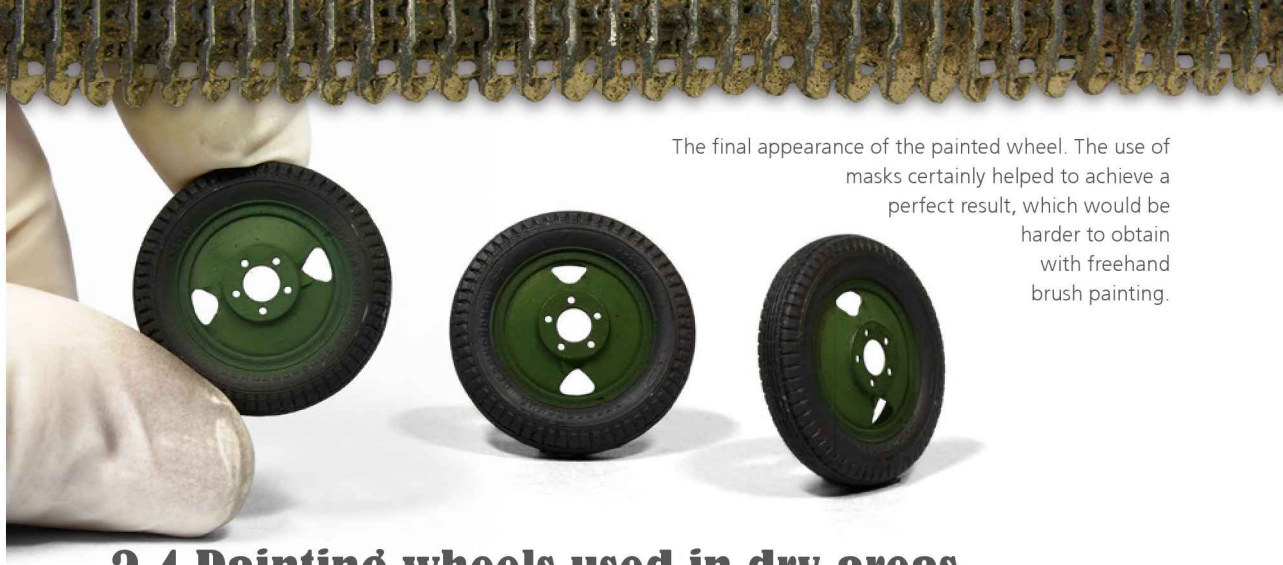
Once the wheel fully dried, we select a proper template for our wheel type, and put the wheel in the template, ensuring that it fits perfectly. The template must fully cover the tread or tire, to prevent overspraying the latter during painting the wheel rim.

The wheel is properly positioned in the template.

Before we start airbrushing the rim, we check again whether its edges are fully exposed, and if the template properly covers the previously painted tire.

We then spray the rim with the chosen colour. In this case it's AK746 4BO Russian Green from AK561 Soviet Camouflage paint set.

Next, we turn the wheel to the other side, and repeat the process.



The final appearance of the painted wheel. The use of masks certainly helped to achieve a perfect result, which would be harder to obtain with freehand brush painting.

2.4 Painting wheels used in dry areas

2.4.1 ON PAVED ROADS

Whilst studying photos of the vehicles that have travelled over paved roads, we notice that although the tread is quite clean and dark, the dust and dirt mainly accumulate in the voids and on the tire shoulder.

We begin by painting the wheel in the common base colour of gray-brown, mixed from AK720 Rubber / Tyres (70%) and AK721 Rusty Tracks (30%). This step is followed by the application of a sort of a wash. For this purpose, we mix AK040 Light Dust and AK041 North Africa Dust pigments with water.

Once the wash dried, we remove its excess with a clean flat brush, leaving the pigment mainly in the voids and on the inner edges of the lugs. We then dry brush the tire sides with the base tire colour.

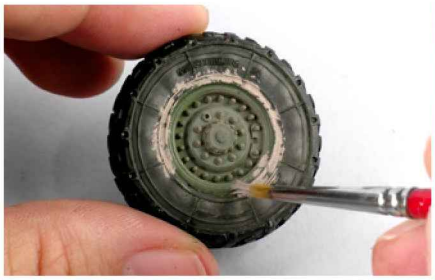
Next, we darken the tread lugs by dry brushing them with a mixture of AK720 Rubber / Tyres (25%) and AK735 Flat Black (75%).

The final appearance of the wheel, ready to be attached to the kit.

2.4.2 ON DIRT ROADS

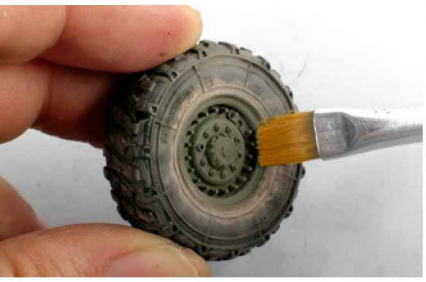
The tires of the vehicles extensively used on dirt roads take on the colour of earth. This effect is most noticeable on the lugs, as well on the side areas of the tire, but mainly around the wheel rim.

We start by applying the base colours. In this case, the side surfaces of the tire are painted with AK720 Rubber / Tyres, whilst AK735 Flat Black is used for the tread.



To recreate a dusty appearance of the area around the rim, we use a mixture composed of AK040 Light Dust and AK042 European Earth pigments, and water. We distribute it with a medium round brush.

Next, we dilute the mixture more heavily, and apply it onto the tire tread with a large flat brush.



Once the mixture dried, we blur it over the surface and remove the excess with a flat brush. The resulting effect of dusty surface looks very convincing.

To accentuate the details and slightly clean up these side areas of the tire that are more distant from the wheel rim, we dry brush them with AK735 Flat Black. If we overdo this step, we can always retouch the surfaces with AK720 Rubber / Tyres.

Finally, we dry brush the tread using AK723 Dust paint and a flat brush in order to reproduce some dust stuck to the tread lugs.

The final appearance of painted and dusted wheel.

2.4.3 ON SAND IN THE DESERT ENVIRONMENT

The extreme desert conditions significantly affect on the appearance of the wheels. The highly abrasive sand gives them an extremely dull and dark look.

Our first step is to paint the tires with a very dark, matte base colour, using a mixture of AK720 Rubber / Tyres (25%) and AK735 Flat Black (75%). Next, we draw a line on the tire, around the wheel rim, with a mixture of AK041 North Africa Dust pigment and water.

A more heavily diluted mixture is used to wash the tread. We ensure that it fills all recesses.

Once the wash dried, we blur the pigment over the surface and remove the excess with a flat brush. This treatment is applied to both the tread and tire sides.

Finally, we dry brush the tire with AK735 Flat Black, focusing on the tread.

The final appearance of the tire.

2.5 Painting wheels used in wet areas

2.5.1 ON WET ASPHALT ROADS

When we travel over a paved road in wet conditions, the tire tread turns darker and wet, whilst the tire shoulder is collecting moist dirt, which forms a satin layer of gray or brown colour.

To replicate this distinctive finish, we begin by painting the sides of the tire with AK720 Rubber / Tyres.

Without waiting until the previously applied layer dries, we paint the tread with AK719 Satin Black.

Next, we splash the tire sides and area around the rim with AK017 Earth Effects. For this purpose, we collect a little enamel with a round brush (no. 1 or 2) and speckle it over the surface with the help of a toothpick. Too big, or redundant drops of the enamel fluid can be retouched or removed with a brush, dampened with AK011 White Spirit.

Try the speckling technique on a piece of styrene sheet, or an old model kit, before you use it to weather your latest modelling project. This technique isn't hard to learn, but requires a little training. To control the volume of the effect, apply the drops of enamel progressively, in subsequent layers.

With AK017 Earth Effects, we wash the voids in the tread pattern.

Finally, we apply AK719 Satin Black and AK079 Wet Effects into the lugs and tire shoulder to emphasize the wet effect.

We can also apply some random dots of diluted AK079 Wet Effects around the wheel rim and on the sides of the wheel.

The appearance of finished tire.

2.5.2 ON PAVED ROADS AFTER TRAVELLING OVER MUDDY ROADS

In this case, small amounts of mud are accumulated on the rim, beads and sidewalls. Some areas of the wheel should look dry, whilst the others should still appear to be wet. Most of the mud from the tread is rubbed away in contact with asphalt, but the tread should not look completely dry.

We begin by painting the entire tire with AK720 Rubber / Tyres.

To recreate the mud, we mix AK017 Earth Effects with a little plaster, which will provide the necessary texture. This mixture is randomly distributed over the rim, with a larger amount accumulated in the area around it.

Small amounts of the mixture also applied onto the tread and tire shoulder.

Before it dries, we remove the excess mixture with a flat brush.

Next, we mix AK016 Fresh Mud and plaster and repeat the previous process, although this time we cover a smaller area than during the previous stage. With the first mixture we have reproduced a layer of dried mud, whilst this time we replicate wet mud.

The final step is to add a number of wet stains around the rim, on the sides, and inside the recesses of the tread, using AK079 Wet Effects enamel.

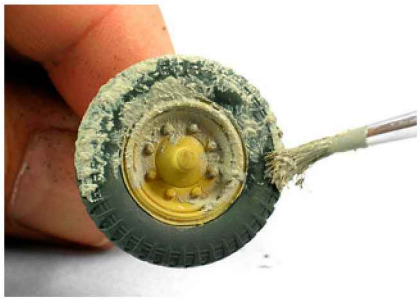
Although this process is more complex than the previously described ones, with a little more work we can achieve satisfying results.

2.5.3 ON MUDDY ROADS

Even travelling a short distance on a muddy dirt road significantly affects the appearance of the wheels. Large amounts of mud cover all surfaces of the wheel. In the process described below we will try to replicate its complex visual appearance, keeping in mind that the mud accumulated in the recesses of the tire tread remains wet due to the continuous contact with damp soil, whilst the tire sides and wheel rim dry faster, resulting in a realistic mix.

We start by painting the tire with AK720 Rubber / Tyres.

By applying a quite dense mixture of AK015 Dust Effects and plaster over the wheel rim, tire sides and tread, we reproduce some dried mud.



Next, we build up the wet mud layer, using a dense mixture of AK016 Fresh Mud and plaster. This time we cover a smaller area.

To emphasize the wet appearance of some certain areas, we apply AK079 Wet Effects here and there.

To add more volume to the effect, we can use additional enamel products or pigments of different tones, in order to prepare various wet mud mixtures. This will certainly help to produce a more attractive, rich finish. If you're going to display your vehicle on a diorama or vignette, make sure that your colour choices for the vehicle will fit the groundwork.

2.6 Painting wheels used in snowy areas

2.6.1 ON ASPHALT ROADS WITH SLUSH

The vehicles passing through a moderately snowed paved road usually flatten and melt snow. As a result, the road becomes covered with a grayish, muddy mixture of snow and asphalt dirt. This substance settles in the voids of the tread,whilst the lugs are washed by the wet surface, thus they look dark, rich black, and slightly shiny. In addition, both sides of the wheels accumulate some snow and moisture.

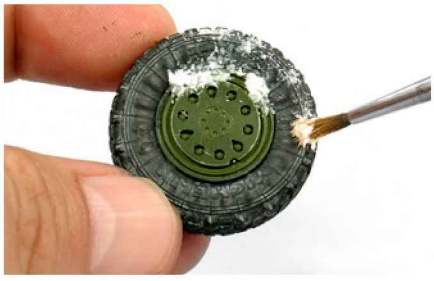
We start by painting the whole tire with AK720 Rubber / Tyres.

This step will be much easier to perform with a flat brush, because we should avoid overpainting the voids.

To darken the lugs, we use AK719 Satin Black.

A simple and cheap method of replicating snow is to mix sodium bicarbonate, which can be bought in any supermarket, with white glue (25%), and dissolve them with water (75%).

We accentuate the voids by applying a pin wash of AK015 Dust Effects, using a fine brush. To remove the excess enamel, or do some retouches, we use a clean brush, dampened with AK011 White Spirit.



It's time to add some snow. There are many techniques of reproducing it, but we can also choose from a number of ready-made products which can be applied straight from the bottle.

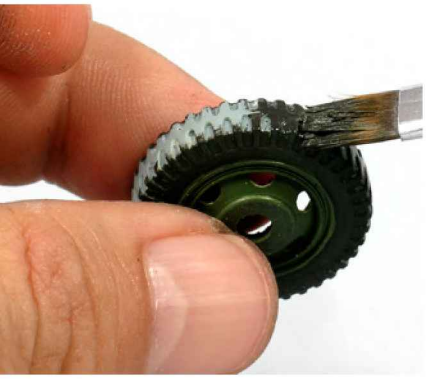
The final touch is to give some areas of the tread a wet look, using AK079 Wet Effects Fluid.

In the finished wheel, the snow should accumulate near the rim area.

In this view you can notice how we kept the contact patch clean and a little more shiny than the rest of the tire.

2.6.2 ON DIRT ROADS WITH SLUSH

When a lot of vehicles travel over a dirt road after a snowfall, the melted snow mixes with soil, and makes them very muddy. Whilst the mud accumulates in the tread and on the tire edge, the sides and wheel rims sometimes get covered with snow, which gives them a really funny look.



We use AK720 Rubber / Tyres to paint the whole tire.

Next, we mix AK083 Track Wash enamel, AK081 Dark Earth and AK040 Light Dust pigments, and AK617 Weathering Plaster. The resulting dense mixture is distributed over the tire tread

We then add some snow, focusing on a certain area near the wheel rim.

Some areas of the tread are treated with AK079 Wet Effects Fluid, in order to give them a wet look.

Remember that snow does not always shine.

The appearance of the finished tire. Note that snow is mostly accumulated in a certain area near the wheel rim.

In this view you can see how the mud accumulates on the contact patch of the tire, making the tread pattern almost indiscernible.

2.6.3 ON SNOW-COVERED ROADS

When the road has been covered with a thick blanket of snow by a heavy snowfall, the vehicles travelling over it initially only flatten the snow, which adheres to the tire and wheel rim. Until the snow begins to melt, the wheels won't become muddy.

We paint the whole tire with AK720 Rubber / Tyres...

...and darken the tread with AK719 Satin Black.

Next, we apply the representation of snow over the tire tread...

...and try to embed it into the voids with our fingertips. The latter are perfect "tools" for some certain purposes.

We then add more snow to the tire sides and wheel rim. The amount of snow accumulated there depends on how long our vehicle has been travelling. Sometimes it may even cover the entire rim.

As the surface should be damp, we apply AK079 Wet Effects Fluid here and there.

The finished wheel.

Note how the snow was embedded into the recesses of the tread pattern.

2.7 Complete painting process

To recapitulate this chapter, let's go through a complete process of painting a resin wheel, designed for a 1/48 scale Jackal kit. Since this vehicle operates in the desert environment, we will try to reproduce a dusty wheel.

We start by priming the wheel with AK175 Gray Primer. Gray is a neutral colour which always work well, but you can also use other colours, like black or white.

Once we airbrushed the wheel rim with sand-yellow, we brush paint the tire with AK720 Rubber / Tyres.

To bring out the details, we apply AK121 Wash for OIF & OEF vehicles. This wash perfectly suits sand-yellow surfaces.

In this case, there's no need to remove the excess enamel.

Now it's time to dust the tire using a mixture of AK015 Dust Effects, AK017 Earth Effects and AK074 Rainmarks for NATO Tanks. We apply it to the edge of the rim, as well as to the tire tread, including the lugs.

We remove the excess mixture and blur it over the surface with a brush, dampened with AK011 White Spirit.

In this picture we can see the already achieved effect.

The next step involves using pigments. AK040 Light Dust and AK042 European Earth are dry applied into the tread and around the wheel rim.

We wipe off the excess powder with our fingertips.

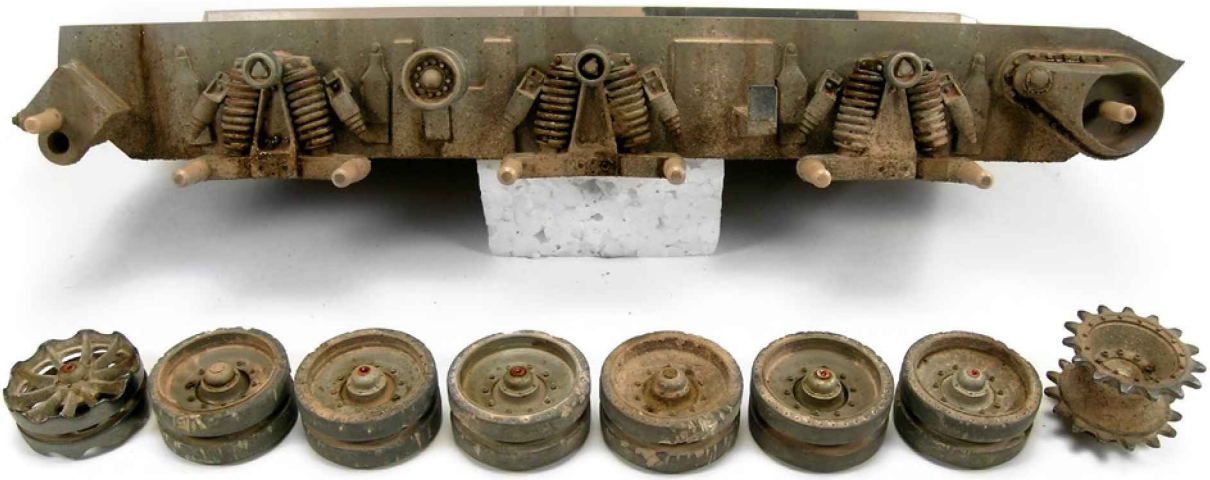
The result is quite convincing, but requires some retouches.

Finally, we slightly blur the previously applied enamel and unify all effects with a brush, dampened with AK011 White Spirit.

The final appearance of the wheels, ready for placement in a dry and dirty environment.

To add more volume to the effect, we recreate some dark stains with AK084 Engine Oil.

CHAP 3
Painting wheels of tracked vehicles



The wheels of tracked vehicles, even though they are not the same as of vehicles using wheels with tires, get the same treatment when weathering time comes. Instead of a tire, they have a metal part or rim and in some cases have a rubber tread similar to a tire. The only ones to be treated different are those which do not have the rubber tread and are completely made of metal.

Although we can use the same techniques and try to get a similar finish, we must remember that the contact patches of these wheels are in contact with the tracks instead of the ground. This results in a worn and peculiar finish that is different than in the case of wheels with tires, which are in direct contact with the ground.

3.1 Wheels with rubber rims

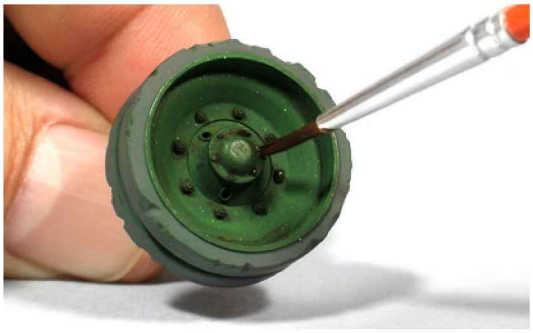
3.1.1 USING TEMPLATES

In order to save time and achieve the perfect result, it's convenient to use templates for painting wheels with rubber rims. The entire process of painting is essentially the same as in the case of conventional wheels and has been already explained in Section 2.3 of the previous chapter. We only have to choose a template suitable for our tracked vehicle kit.

3.1.2 WHEELS OF AN ABANDONED VEHICLE

To represent a wheel of an abandoned vehicle we will try to paint the rim with a dull color, perhaps with some old chipped, dark and rusty colour. To emphasize this point we can include in the tread old bites and cuts where dust and dirt will be deposited, making its overall colour light gray and with a matte finish.

For the rim we use the same base colour that we have used for the rest of the vehicle. The rubber tread is painted with AK720 Rubber / Tyres.



The weathering process begins by applying AK045 Dark Brown Wash to all recesses and corners, in order to bring out the details and create shadows.

To highlight the details and edges, we dry brush them using a flat brush and brightened base colour.

With the same mixture of the base colour, we add some paint chips on the rim, placing them in the areas which can be affected by abrasion, and trying not to overdo the effect.

The trick for replicating a progressive chip in the paint is to use a thin and sharp brush, and increase the dilution of the paint.

To represent the deepest scratches and paint chips, we use AK711 Chipping Color, filling some of the previously applied paint chips with it.

To achieve the effect of wear and discolouration, we apply a filter made from AK500 Light Gray oil paint, which can be mixed with a little white.

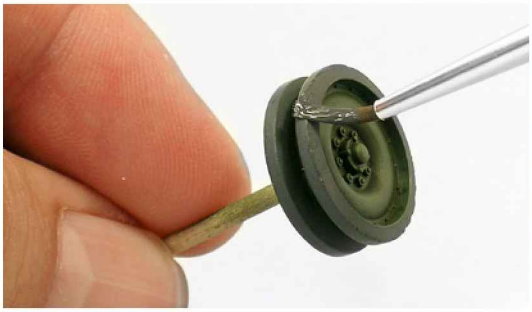
Next, we prepare a heavily diluted mixture (70% water and 30% paint) of AK723 Dust and AK724 Dry Light Mud, and apply it randomly over the rubber rim.

Finally, we dry brush the rubber surfaces with AK3002 Black Uniform Base.

The appearance of the finished wheel on which the friction oxidized and the accumulated dust can be seen.

3.1.3 WHEELS OF A VEHICLE IN USE

Although the look of the undercarriage, and generally around the vehicle, always depends on the conditions of use, in general, we are going to try to represent how the dust and dirt accumulates in areas with a dry environment. In this case the appearance of the wheels will be determined by the accumulation of dirt crimped into the deepest corners and a general dusty appearance.



Once the wheels basecoat is dry, use a small paintbrush to apply AK720 Rubber / Tyres on to the outer band of rubber on the wheel.

Apply a wash of AK045 Dark Brown with a brush to highlight every detail of the wheel and give it depth.

Use the dry brush technique to pick out and clarify all the little raised details and edges. For this we use a flat brush and a slight variation of the base color.

A thick cloth or piece of cardboard is ideal for removing excess paint before dry brushing any surface.

In order to imitate the most common dust and dirt we apply generous amounts of pigment to the wheel and then blow off any excess pigments.

With a medium brush we blend the pigment around the wheel.

Here we see the appearance of the wheel after blending the pigment. Although it may seem somewhat bleak we're not done yet.

With pigment applied, rub your finger over the wheel removing pigment only from the raised surfaces leaving excess pigment in only the nooks and crannies of the wheel

Be as random as possible with each wheel allowing for maximum realism.

To imitate the accumulation of clumped earth that stays in the crevices, we place pigment again but this time controlling the amount and location of it.

Remember, the fixative darkens the pigments a little.

Then to fix the pigments we apply AK048 Pigment Fixer. It is important not to touch the brush to highlight certain areas. The fixative must act by capillarity.

It's time to recover some of the dark aspect of the rubber without losing the dust that has been accumulated in the tiny corners and small scratches or crevices. To achieve this we use the dry brush technique using AK3002 Black Uniform Base belonging to the set AK3001 Panzer Crew Black Uniforms.

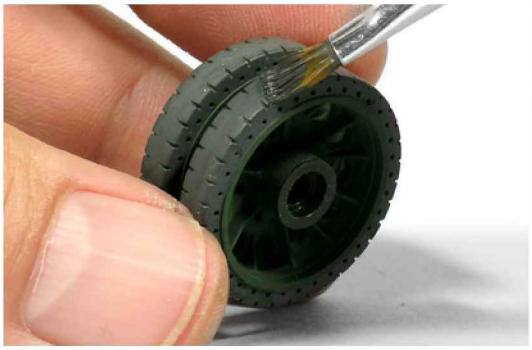
The AK3001 set contains different shades of black that can be very useful to represent different tones without making rubber mixtures.

In this picture we can see the final appearance of the wheel and the volume obtained by this process.

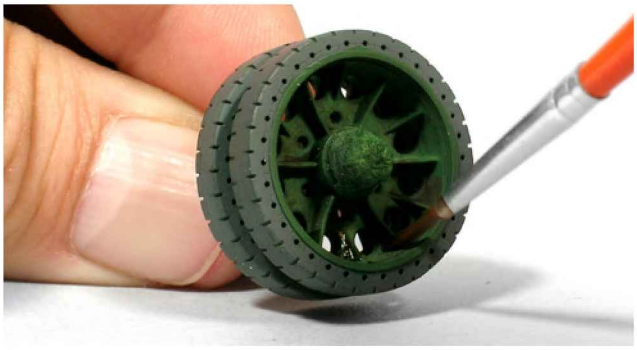
Appearance of the rubber rim after treatment with dry brush.

3.1.4 WHEELS WITH DRIED MUD

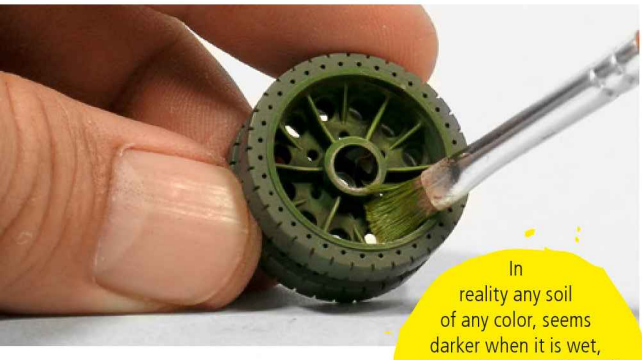
In this case our main deal is going to be the dried mud, in a splattered form or in larger accumulations that are attached to the rim after driving on muddy terrain. As time passes by the mud has dried and gives a very particular look to the vehicles.



This time we have applied with the airbrush AK750 Protective green color to the rim from the Soviets set colors AK561.

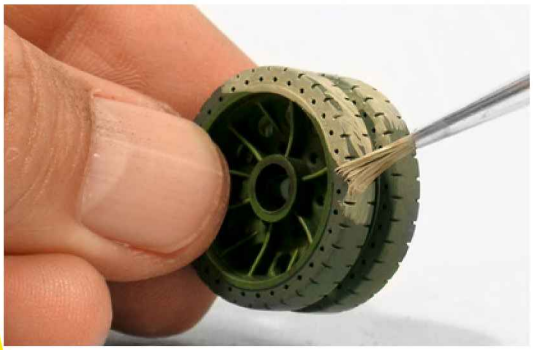


As in the previous case, we apply a AK045 Dark brown wash applied with a brush to bring out the details and give depth.



We follow with AK715 resedagrün with some dry brush to clarify details and edges.

In reality any soil of any color, seems darker when it is wet, so to achieve an effect of dried mud is better to use light shades of pigment.



To imitate the dry mud we mix water with pigment AK040 Light Dust until it has some consistency and we apply it with a brush around all the rubber rim. It is important that the pigment color is light enough to strengthen the feeling of dryness.

Once the mixture has dried, remove it with the finger tip so that it only remains in the recesses.

Now is the time to apply mud on the rim. To do this, we use the splatter technique with a mixture of pigments and water. Load the brush with the mixture and flick the brush over a toothpick so that droplets are projected against the wheel creating the effect of splashed mud.

Then do some further accumulation of mud in the corners or recessed areas for a little variety. Place some of the "mud" we have created with the pigment with a round brush that allows us to control how we properly place the paste.

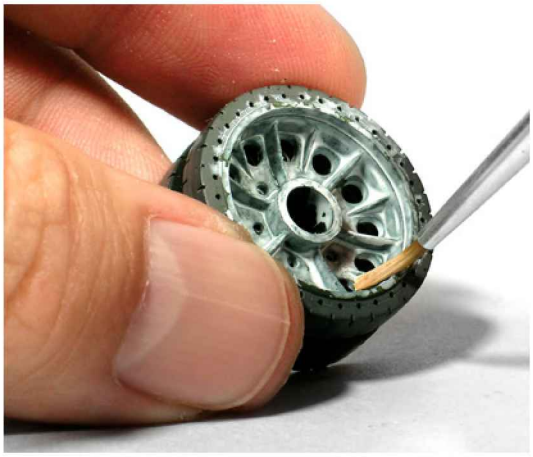
In this photo we can see the final look of the wheel with dried mud and its various forms.

Note that the rubber tread is clean of mud, which would be wiped off by the track.

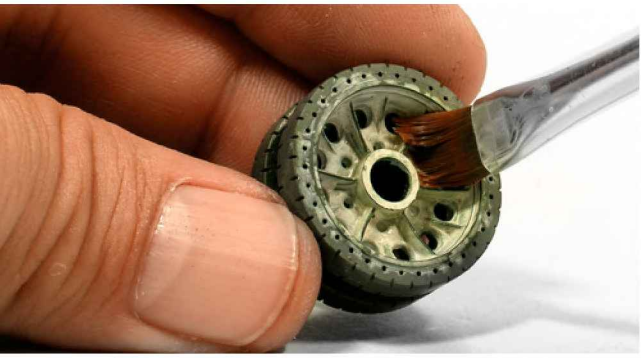
3.1.5 WHEELS WITH WET MUD

Although the main effect here will still be mud, this time we try to represent wet mud which is darker than dry mud.

We airbrush AK746 4BO Russian Green colour on the rim, from the AK561 Soviet Colors set. The rubber rim is brushed with the usual AK720 Rubber / Tyres.



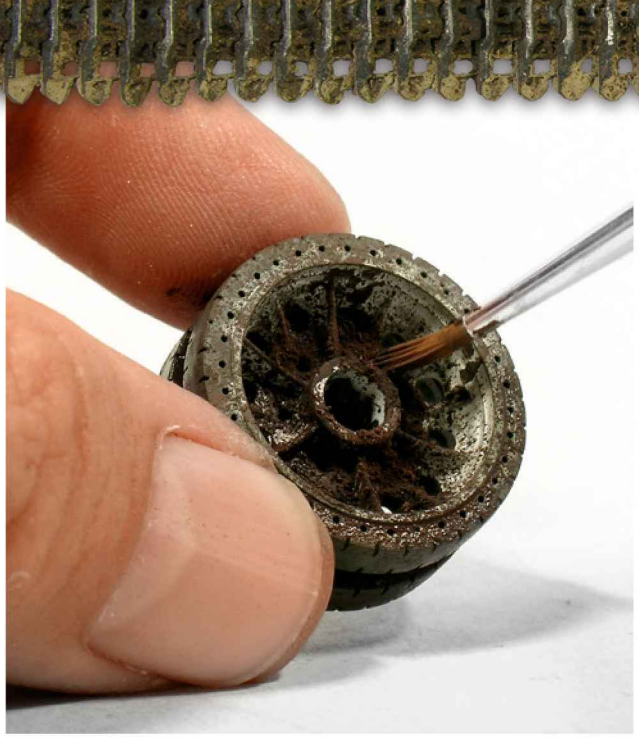
For the winter camouflage we use reference AK751 Washable White, applied with a brush without worrying about the coverage or brush strokes.



This painting method has the peculiarity that can be removed or chipped easily once dried, as if we were using chipping liquids. So proceed to make chips in the white layer rubbing with a simple brush and water.

At the time of using AK751 Washable White, we should bear in mind two important factors; the thickness of the layer applied and the drying time because they both impact the final result. As always with little practice amazing results are achieved.

Now begins the process of making mud, in two stages with different techniques. First we splash with an acrylic AK722 Dark Tracks. To achieve certain texture like little drops, it is convenient to use thick paint.



Secondly, we use the AK081 Dark earth pigment which has a perfect darkish brown to mimic the wet mud. Simply place small amounts of it randomly over the rim with the help of a round brush.

We then apply AK079 Wet Effects or AK048 Pigment Fixer to the dry pigments we have just placed. Try to do it by capillary action, without touching the pigment to retain its rough texture. This product gives us moisture effect and it is useful to fix the pigments.

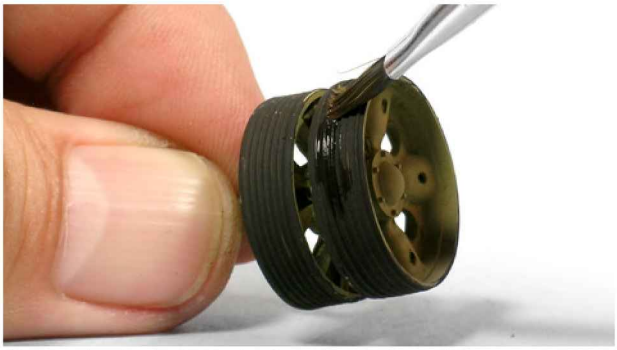
In this photo we can see the final look of the wheel with wet mud.

As in the previous case, the rubber tread must be free of mud because it would have been wiped off by the tracks.

3.1.6 BURNT WHEELS

Painting a burnt wheel, although it is not a complicated process, does contain some added difficulties such as getting the characteristic shade of metal that has been burnt down as we see in reference photos, with different ochres, browns, and reds which are common colors in rust. If we complete the work we can try to reproduce the characteristic metal rings containing the rubber band which are revealed once the wheel is devoid of rubber.

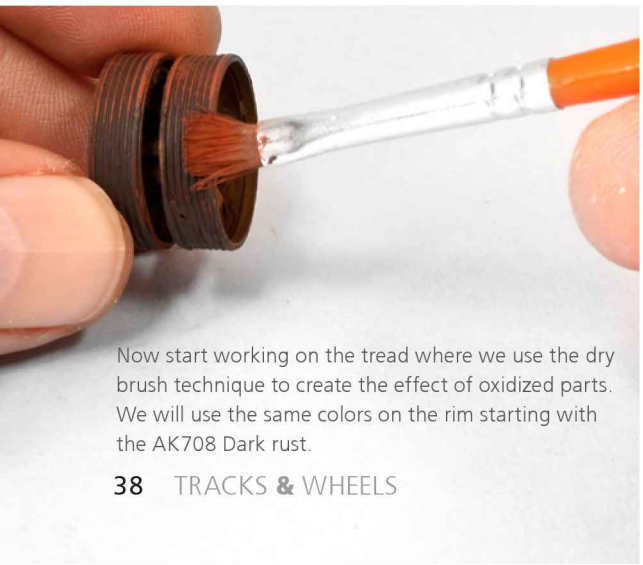
We start this time with any sand-yellow color applied by airbrush. The color applied is AK007 Light Base from the set AK552 German Dunkelgelb set color.



Next, paint the horizontal stripped part where the rubber rim is stuck, which in this case has completely disappeared. Paint with a very dark brown, AK710 Shadow Rust, on which we will be working later with lighter colors becoming more orange.

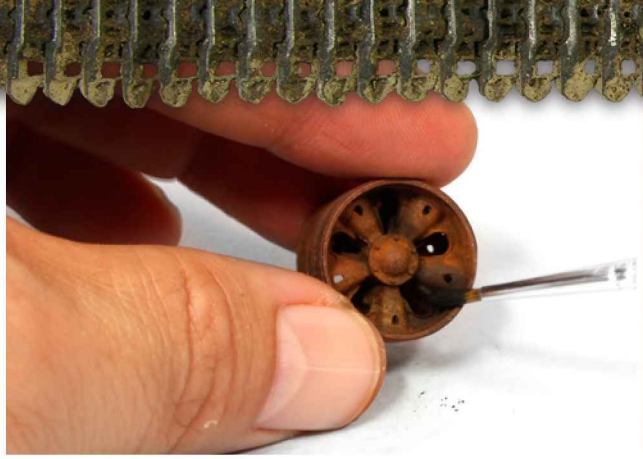
To achieve the effect of oxidation by fire we will come back to the splash technique with acrylics. We begin by applying AK708 Dark rust which covers most of the surface.

Use AK707 Medium Rust to cover the surface of the wheel where the rubber once was but leave part of our previous dark rust layer visible.

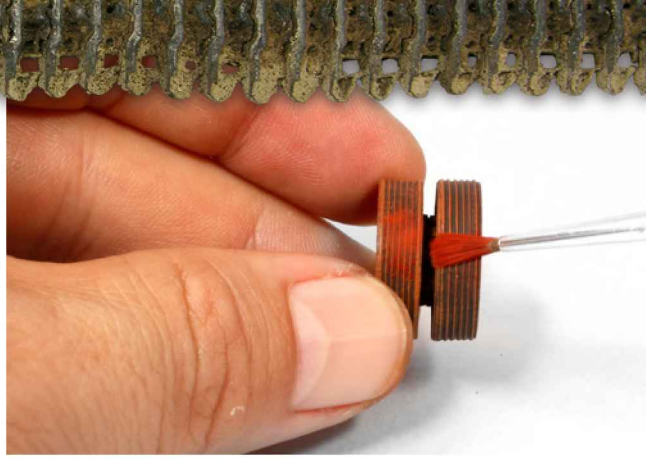


Now start working on the tread where we use the dry brush technique to create the effect of oxidized parts. We will use the same colors on the rim starting with the AK708 Dark rust.

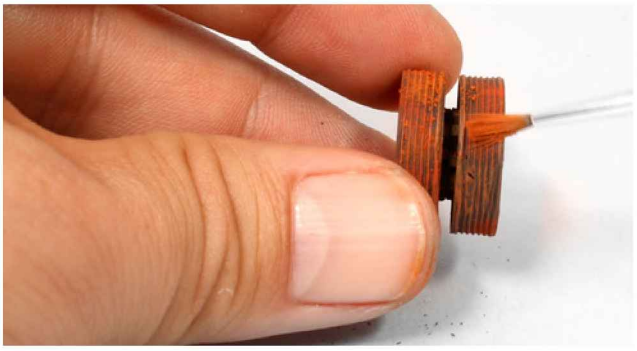
We then apply AK707 Medium Rust, using the dry brush technique again.



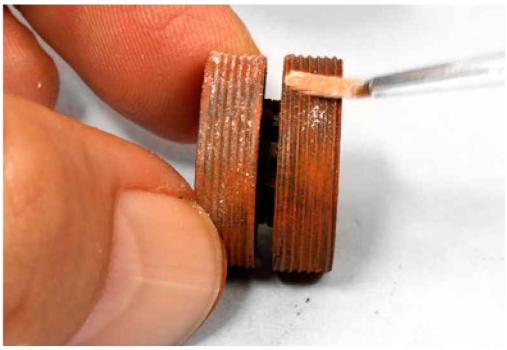
We return to the rim to recreate black shadows for a smoke effect. To do this, nothing is more effective than black pigment rubbed in with a brush. We can use AK039 Black or AK2038 Smoke. Place it carefully because if we use too much we will ruin all the previous work.



To get a bigger variety of oranges and a more matte finish, as rusted metal is, we apply pigment AK043 Medium Rust on the tread, randomly and without covering the entire surface.



Repeat the previous process using AK044 Light Rust pigment.



Finally, we need to imitate the ash remains from the combustion of the rubber tread and the ribbed rim. For this apply white pigment. Again, the secret is to not use too much. To represent this kind of effects it is best to rely on actual references.

In this picture we can see the final look of the wheel and some smoked areas due to the combustion of the rubber.

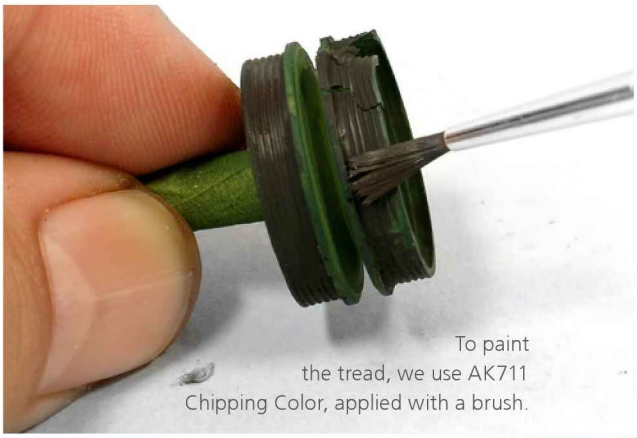
It is in the horizontal band of the rim where the ash remains appear from the missing rubber tread. Also we can see the metal rings that were part of the rubber.

3.2 Wheels without rubber rims

3.2.1 RUSTY WHEELS

Let's paint a wheel that has lost its tread rim because of an impact, but it has been kept in use. In this situation it can have different signs of rust and wear.

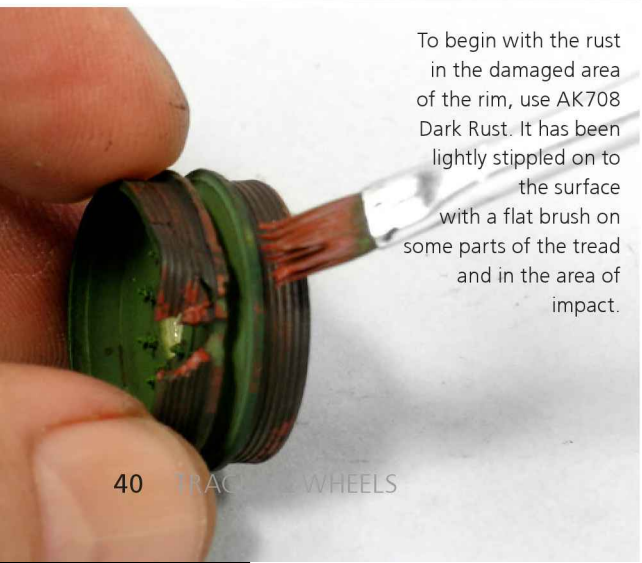
The rim is airbrushed with AK746 4BO Russian Green.



To paint the tread, we use AK711 Chipping Color, applied with a brush.

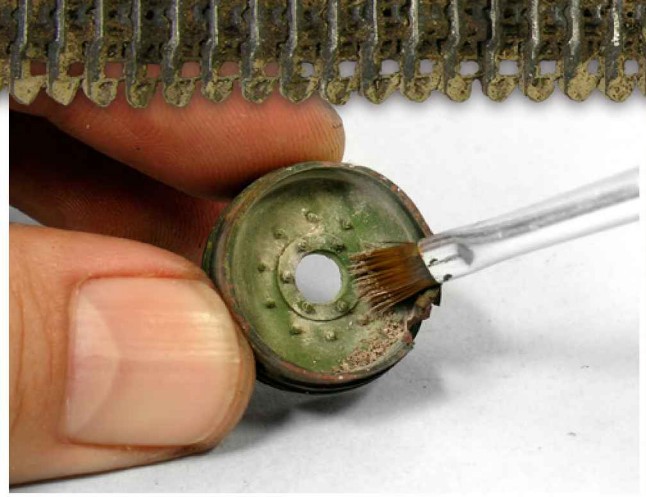
We bring out the details with AK045 Dark Brown Wash.

We dry brush the edges and protruding details with AK715 Resedagrün. This colour works well for highlighting the rim, painted with 4BO Russian Green.

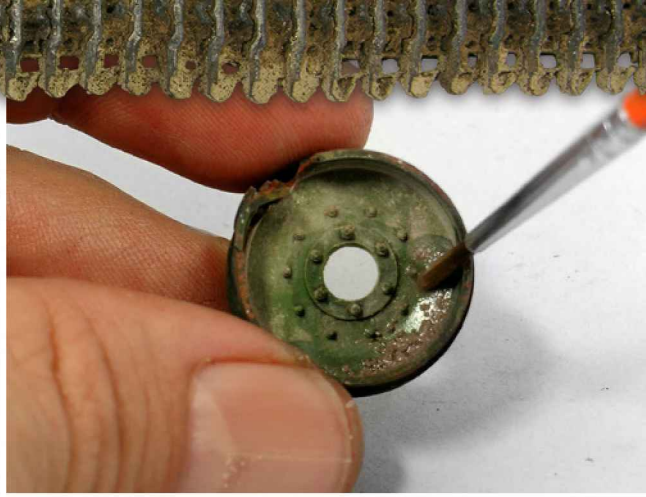


To begin with the rust in the damaged area of the rim, use AK708 Dark Rust. It has been lightly stippled on to the surface with a flat brush on some parts of the tread and in the area of impact.

To provide richer color variance to the rust, use another slightly lighter shade. AK707 Medium Rust is perfect to combine with the previous one.



The next step is dusting. We will use a mixture of pigments AK040 Light Dust and AK042 Europe Earth applied with a thin brush rubbing in dry on the middle and inner perimeter of the rim. Also leave some accumulation on the perimeter to simulate pressed dirt.



As we have been explaining, to fix the pigment we use AK048 Pigment Fixer applied with a fine brush and trying to act through capillarity without touching the pigment. This will make the accumulations remain as such.

Pigments are easily dissolved when we stir them with a brush soaked in diluent or fixer on the surface on which they have been placed. To keep them from dissolving and losing their characteristic texture and earthy look, we load a brush with fixer and touch the areas around the pigments and let the dry pigments suck up the fixer through capilary action without ever physically touching the pigments with your brush.

In this photo we can see the final look of the wheel and earth accumulations.

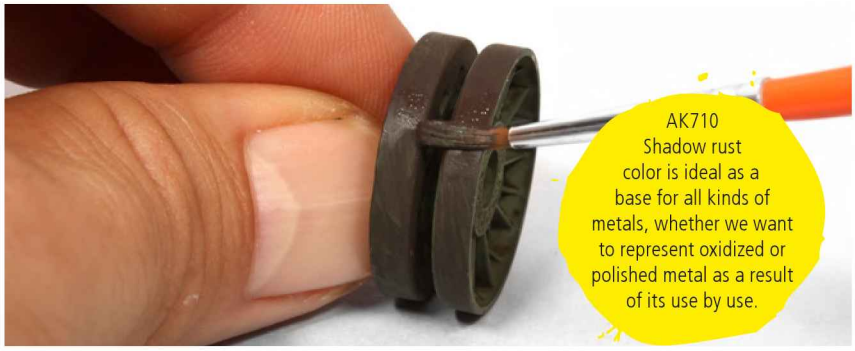
Look of the wheel in which we can see the stripes of the rim over which rubber once existed.

Note the oxide in the impact zone.

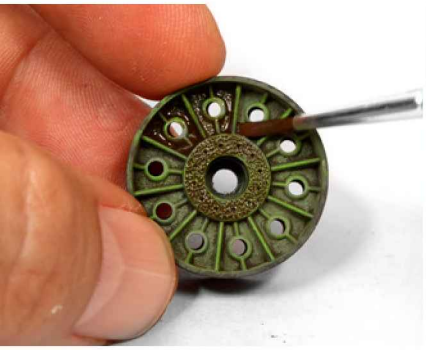
3.2.2 WHEELS OF A VEHICLE IN USE

The most important thing in this case is to imitate the appearance of polished metal of the rim because we are simulating a wheel that is in use which will also be dusty.

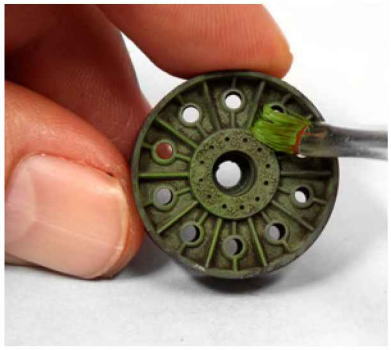
The initial process is the same as in previous cases we have explained before. We begin by airbrushing the rim, this time with AK750 Protective green.



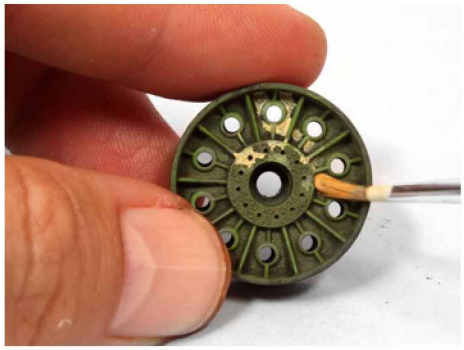
Then with a round brush we apply AK710 Shadow rust on the metal strip rolling.



Now apply a general dark wash with AK045 Dark Brown...



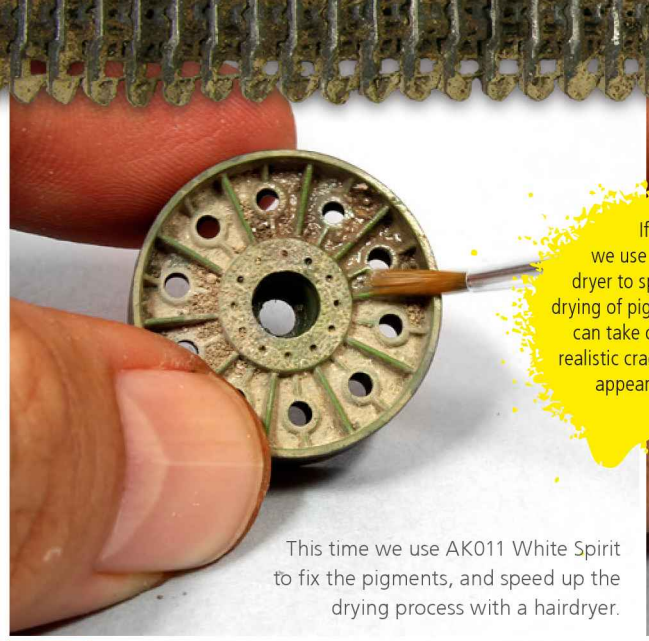
...and dry brush with AK715 resedagrün to highlight the details and edges.



To mimic the dust, first do a wash with acrylic AK723 Dust dissolved 50% in water...

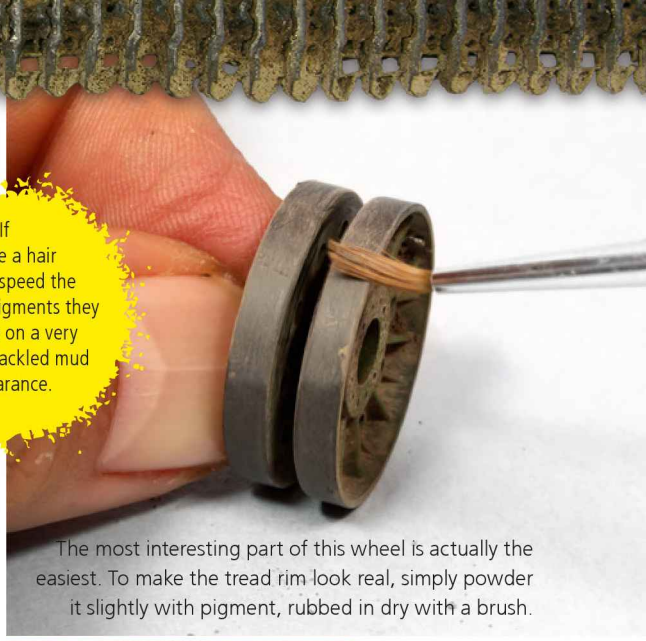
...and then with acrylic AK724 Dry Light Mud also diluted at 50% in water. In this case, since it is a relatively small part and highly textured piece, we don't have to worry about the paint drying and creating a patchy appearance

To make small accumulations of dirt and dry mud we will switch back to the pigments with a fine brush depositing small amounts of it in the desired locations. This time we used AK042 European Earth.

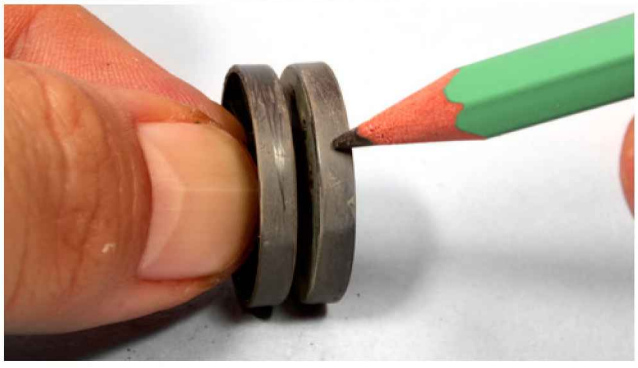


This time we use AK011 White Spirit to fix the pigments, and speed up the drying process with a hairdryer.

If we use a hair dryer to speed the drying of pigments they can take on a very realistic crackled mud appearance.



The most interesting part of this wheel is actually the easiest. To make the tread rim look real, simply powder it slightly with pigment, rubbed in dry with a brush.



Then with a graphite pencil we "painted" the tread without covering the entire surface.

Finally, apply graphite over the entire tread directly with the graphite pencil. This is the surface where wheels touch with tracks and should be well polished due to friction.

Note the dry and cracked mud accumulated between the spokes of the wheel.

Aspect of the tread and rim edges polished by the friction with the track.

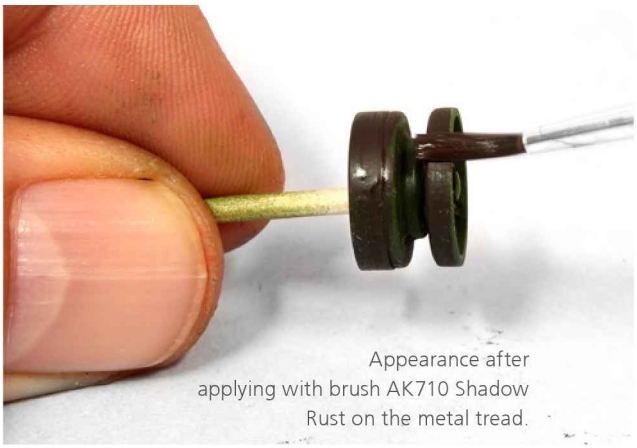
3.3 Sprocket and idler wheels

Although it is particular of the wheels without tread, the most important thing in this case is to imitate the look of polished metal of the tread and as we have seen before simulate the dust and dirt accumulations due to their use. We will include some oil stains caused by the constant maintenance of the vehicles.

3.3.1 IDLER WHEEL

As the name suggests, the idler wheel is responsible for maintaining the tracks proper tension.

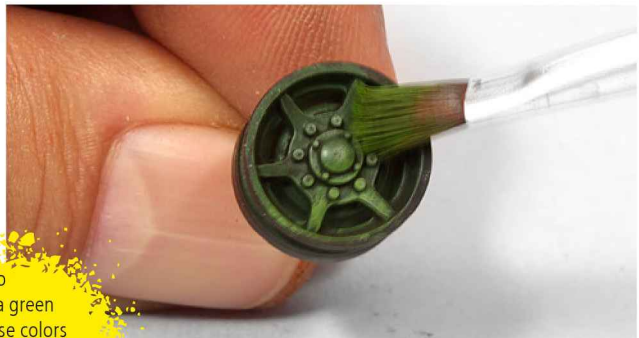
Appearance of the wheel after airbrushing the green base layer selected.



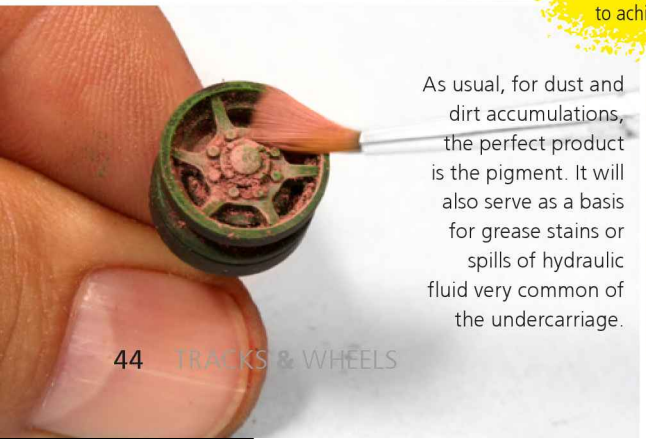
Appearance after applying with brush AK710 Shadow Rust on the metal tread.

Appearance after applying a wash AK045 Dark Brown suitable for greens.

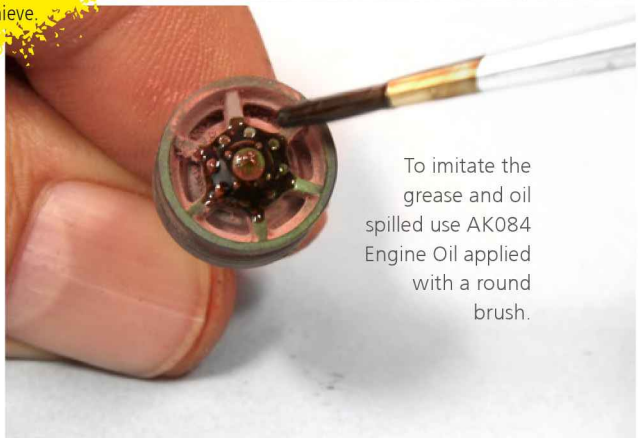
To soften a green we can use colors like white, flesh tones or even different browns and yellows, all depends on what you want to achieve.



Appearance after applying through dry brush the base color lighter or with a lighter reference to the chosen color base.



As usual, for dust and dirt accumulations, the perfect product is the pigment. It will also serve as a basis for grease stains or spills of hydraulic fluid very common of the undercarriage.



To imitate the grease and oil spilled use AK084 Engine Oil applied with a round brush.

Both with AK084 Engine Oil as with AK025 Fuel stains, AK079 Wet effects, or even new aircraft effects you can get different results if applied on a base with or without pigments. In both cases realistic results are obtained and often surprise us.

Finally apply a graphite pencil across the tread.

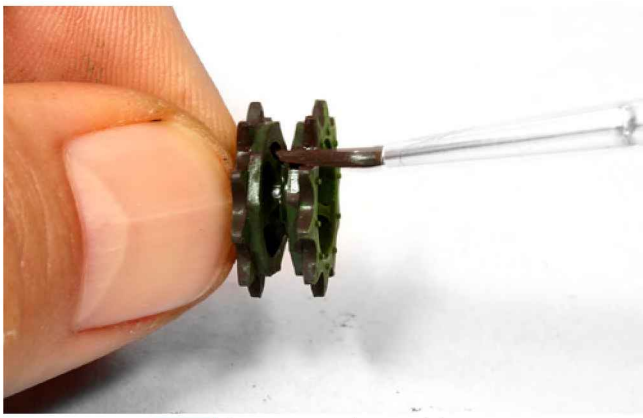
Appearance of the finished wheel in which we can observe how while oil stains shine in areas where there was not pigment, the oil stains appear completely matte over them.

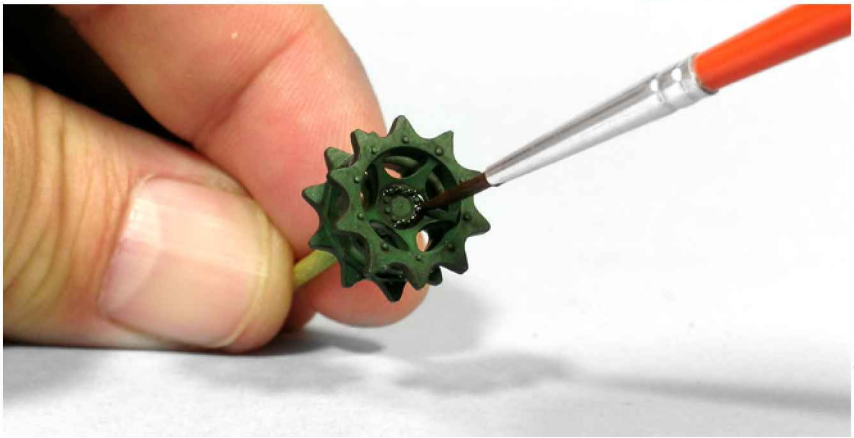
Aspect of the tread and rim edges polished by the rubbing of the track.

3.3.2 SPROCKET WHEEL

These wheels are responsible for driving the movement of the tracks.

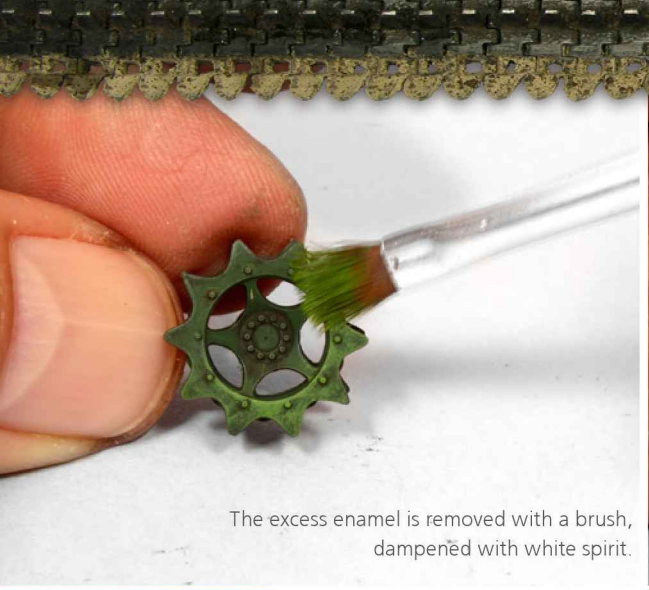
Appearance of the wheel after the selected green airbrush basecoat.



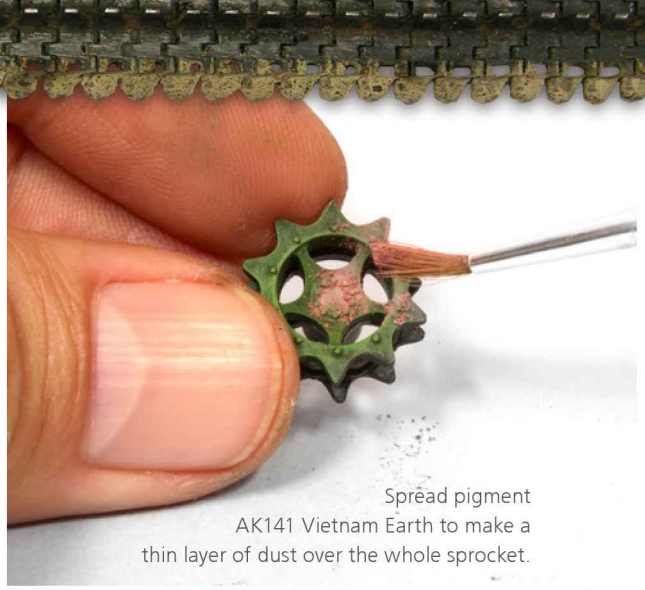


Appearance after applying AK711 Chipping Color in the bolts and contact zone with the track.

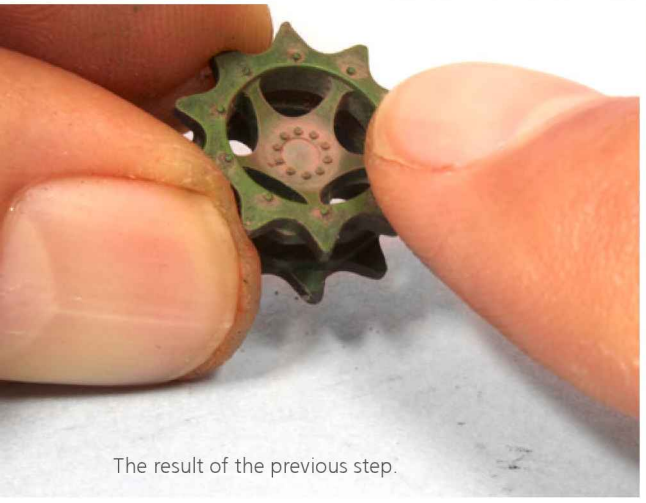
We apply AK045 Dark Brown Wash to bring out the details such as nuts and bolts.



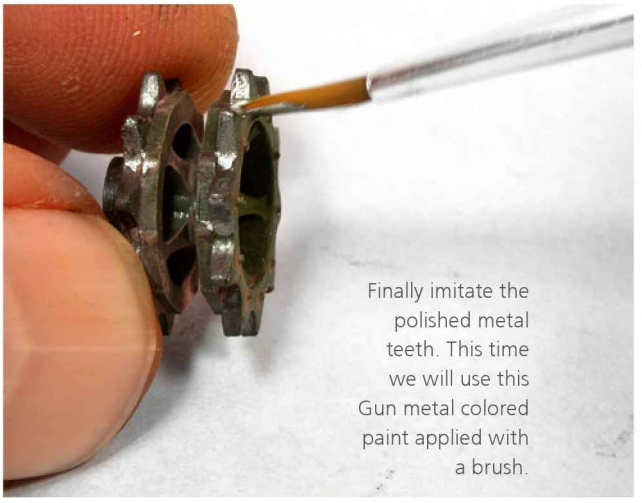
The excess enamel is removed with a brush, dampened with white spirit.



Spread pigment AK141 Vietnam Earth to make a thin layer of dust over the whole sprocket.



The result of the previous step.



Finally imitate the polished metal teeth. This time we will use this Gun metal colored paint applied with a brush.

Appereance of the wheel with the dusty look.

Look of the teeth polished by the rubbing of the track.

CHAP 4

Preparation and assembly of tracks

If on the chapter about wheels, the manufacturers had considerably improved the quality of the products that we can find on the market. On the tracks market it has already been a long time since this quality was reached

The flagship track products for quite some time now has been metal tracks. With them, we can provide the ultimate realism to our models as they are virtually as real as real ones. The metal tracks allow you to simulate the weight and movement in a very realistic way. Their biggest problem is and has always been the price, sometimes exceeding the price of the scale model or kit itself for which they were intended.

Same case with rigid plastic tracks. At first they were only included by some manufacturers and although the result is not as good as its metal counterpart, the quality is very good and they offer a very good price-quality ratio.

Even the tracks made of soft plastic, the most common ones included in kits, they come in one piece and have been improved and could be used, but we don't get the same result that we do with metal or rigid plastic because of the drawbacks of the material they are made of. Their burrs are more difficult to remove, it's quite difficult to get the natural sag of the tracks once put in place, and even when it comes to paint, a lot of times the paint you put on the tracks will crack when bent and flake right off. Although less common, you can find tracks made of resin. And some of the rigid plastic variety come with individual links and some one piece track sections where the links come molded together. These are known as "Link and Length" tracks.

Finally observe that there are also tracks made of resin, but maybe the less common ones. As some of rigid plastic, they used to be supplied in lengths of various links, for the straight parts and link to link for the curves, although its quality has never been remarkable you have to add the fact that for its preparation and assembly was needed many kinds of glue which has made them even less atractive.

4.1 Plastic tracks

The most common tools used for the preparation and assembly of plastic tracks are metal files, cleaning pads, tweezers, pliers and extra-thin plastic model cement. The latter is essential for this purpose, because we will use one of its primary features. Using this type of cement, we can glue parts already held together. It will wick into the joint for a firm bond.

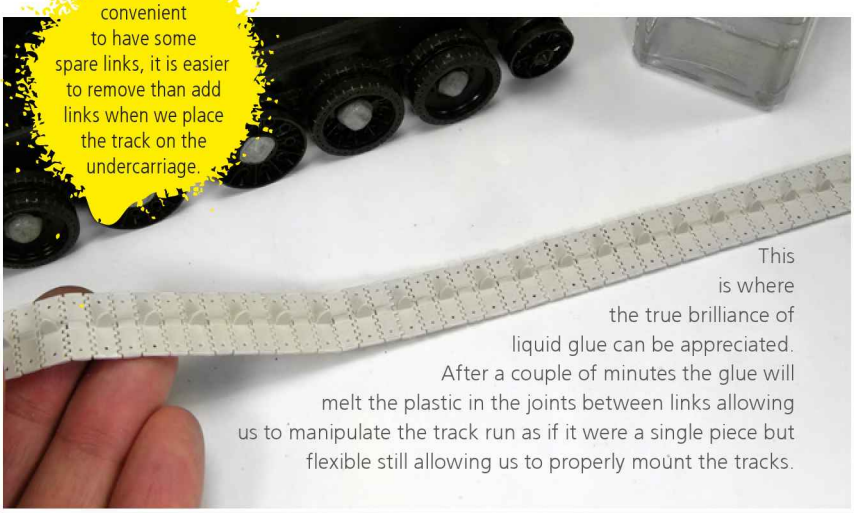
Once we have the links clean and without burrs, for which we would have used the metal files and cleaning pad, we must prepare a kind of guide where to place the links and form the entire track. With the help of thick plastic strips and double-sided tape to prepare the guide with necessary width to fit the links.

Once the plastic guides are fixed with double-sided tape to the cutting mat, begin to mount the track fitting all the links.

In this case, the guides can be repositioned. We have chosen this option in which we will flip the track link to face down and reposition the guides to the width of the tracks "tooth".

Once we have completed a track, with liquid glue and a brush, glue all the links.

It is convenient to have some spare links, it is easier to remove than add links when we place the track on the undercarriage.



This is where the true brilliance of liquid glue can be appreciated. After a couple of minutes the glue will melt the plastic in the joints between links allowing us to manipulate the track run as if it were a single piece but flexible still allowing us to properly mount the tracks.

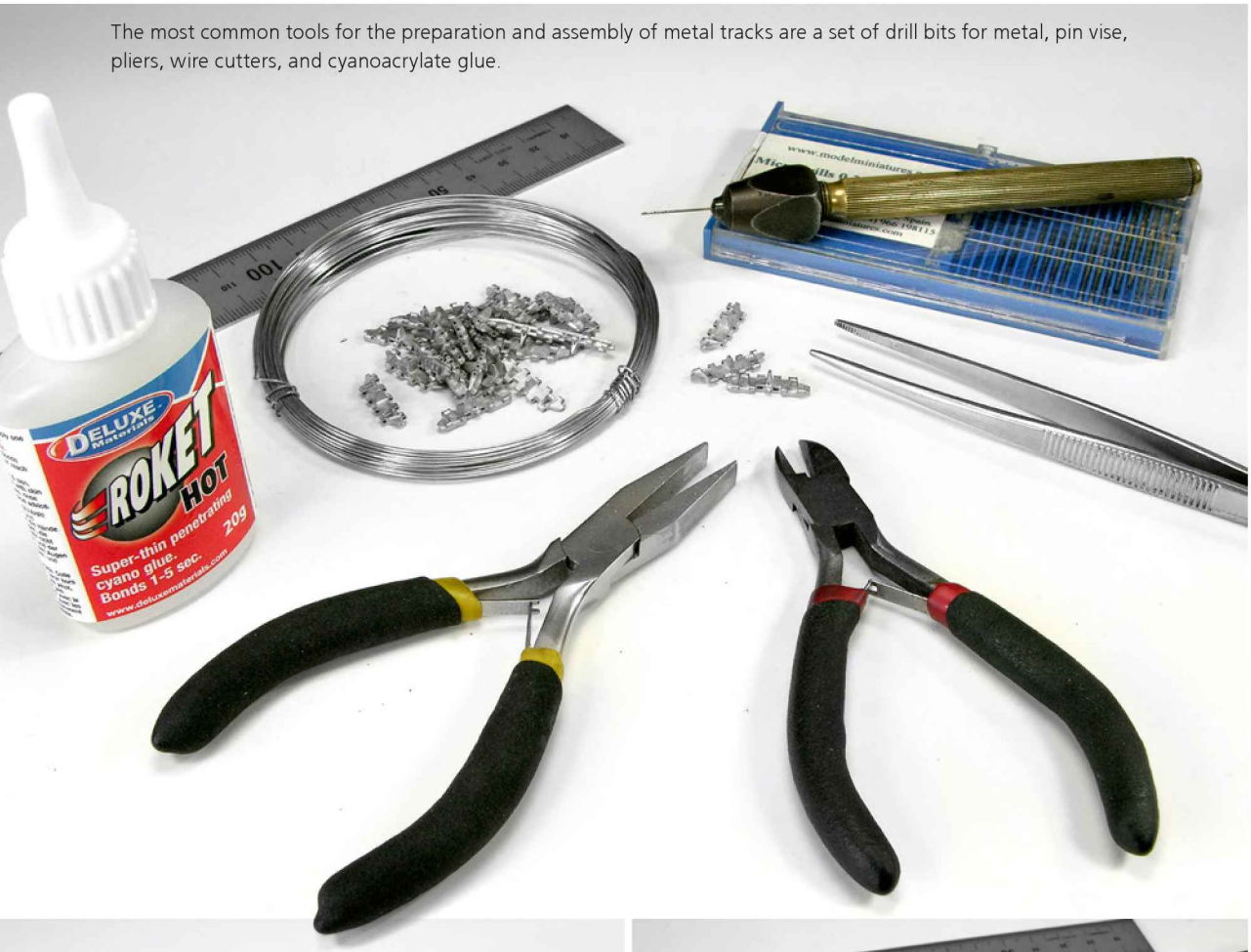
Once we have mounted the tracks and they have been positioned to replicate the right amount of sag, again with liquid glue, we reinforce the joints and allowing the tracks to dry completely with their desired form.

The drying process is relatively fast so we must be aware of it and monitor the separation between the links. Sometimes, due to handling, some links will seperate, however we have ample time to rectify these types of problems.

Tracks and undercarriage have been prepared and ready to separate from the hull to ease the eventual painting and weathering process.

4.2 Metal tracks

The most common tools for the preparation and assembly of metal tracks are a set of drill bits for metal, pin vise, pliers, wire cutters, and cyanoacrylate glue.



Usually, these types of tracks do not have any burrs so their links are clean and do not require any treatment in that sense, all that's required is drilling out the hole to the size of wire that will be passed through to connect the links

With flat pliers, straighten the wire as much as possible to avoid problems for us when slide it through the holes in the links.

Once we have determined how long the metal wire should be to connect the tracks, cut off as many as needed.

Most of the time the wire supplied along with the tracks is very thin. With the passage of time the wire tends to cause the links to develop excessive unwanted sag.

With your fingers, hold the links together with their holes lined up. With the help of tweezers we will insert a piece of wire into the and push them all the way in.

Once we're done with the tracks and placed all its links, we add a small drop of super glue to the ends.

We apply super glue only to the visible end of the wire. To do this, use a piece of thin wire or needle to deposit each droplet of super glue being careful not to glue the links together and make them immobile.

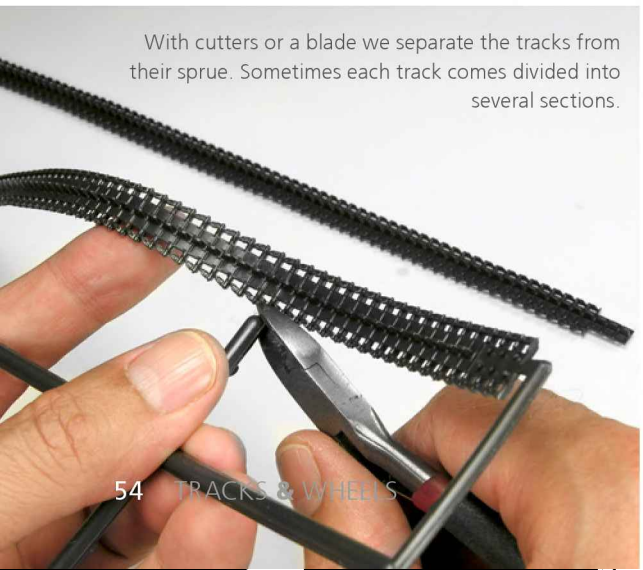
Appearance of the tracks placed in their final position and offering its natural sag due to the weight of the metal.

Tracks ready to paint and completely mobile for subsequent placement of a fast and convenient way.

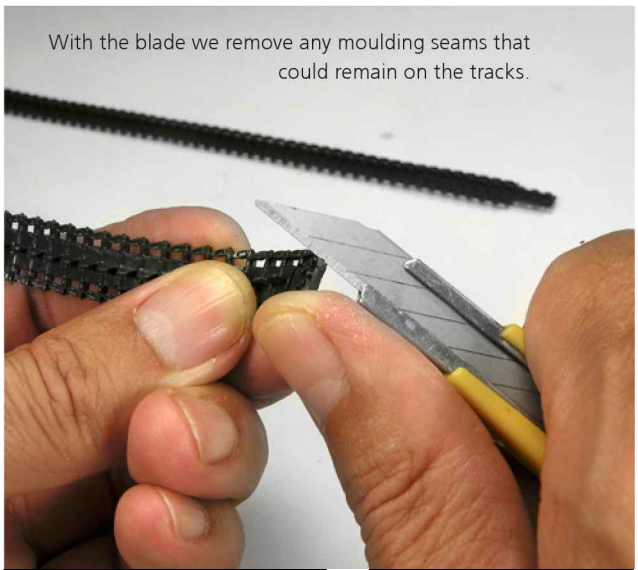
4.3 Vinyl tracks

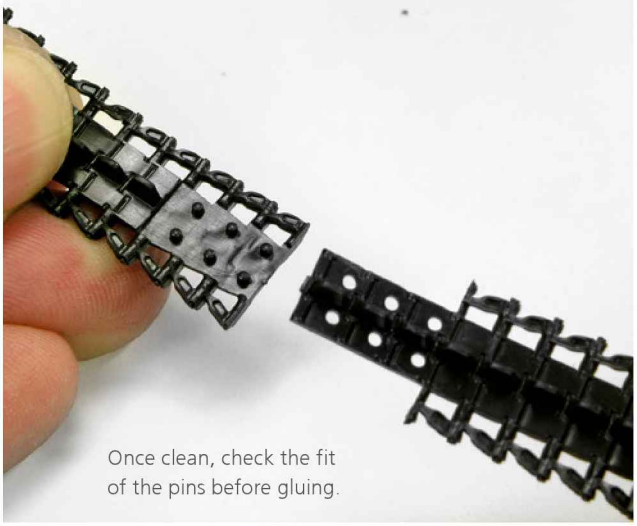
The only tools needed to assemble these kinds of vinyl tracks are a small flat blade screwdriver, a lighter or heat source, wire cutters and/or a knife blade and cyanoacrylate adhesive. Due to the material used for the tracks, burrs on them are extremely difficult to remove, if not impossible, so we will not need any file or sandpaper.

With cutters or a blade we separate the tracks from their sprue. Sometimes each track comes divided into several sections.

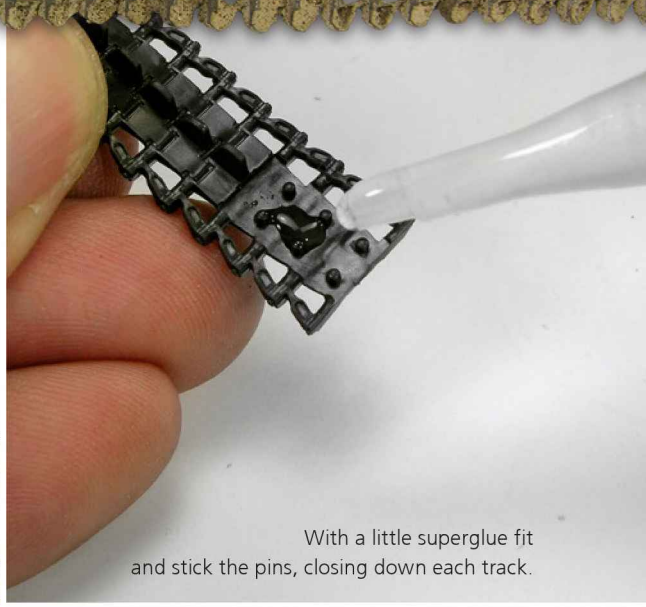


With the blade we remove any moulding seams that could remain on the tracks.





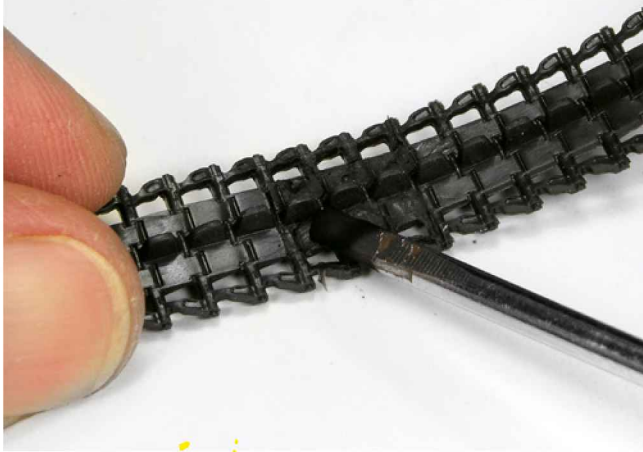
Once clean, check the fit of the pins before gluing.



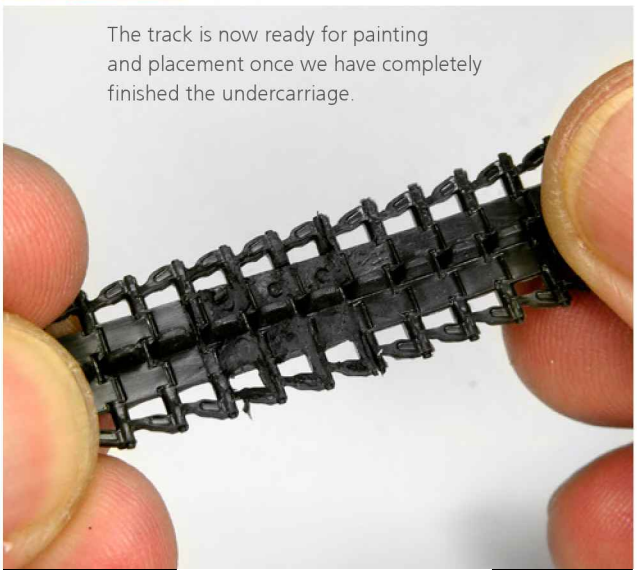
With a little superglue fit and stick the pins, closing down each track.

Heat the screwdriver with a lighter for 10 or 15 seconds.

Carefully press the screwdriver over the vinyl pin pressing until it melts and flattened so that the track stays joined and closed like a bracelet.



The track is now ready for painting and placement once we have completely finished the undercarriage.



Once we painted the tracks and the chassis we should be careful when placing it in its final location as we can damage the track and crack off the paint.

4.4 Damaged rubber pads on plastic track links

(pictures Nacho Íñigo / text Ruhén González)

For plastic links, as we have described in section 4.1, the most suitable tools to work are good pliers or wire cutters, knives of various shapes and a cleaning pad to clean and polish.

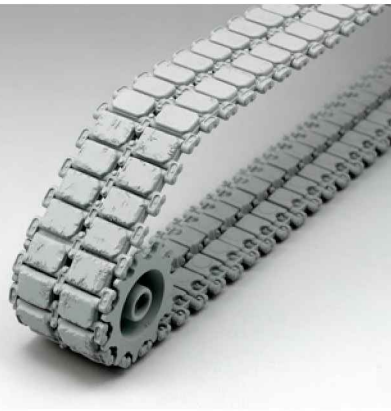
The use of vehicles with tracks on all types of terrain causes the solid rubber shoes on the links to sometimes suffer damage in the shape of cuts and nicks. These shoes dampen the noise of the tracks rolling on asphalt and rocky terrain and they suffer the most damage of any other part of the track from their use and eventually have to be replaced. When replicating this type of damage it is good to follow real reference pictures and allow them to inspire you.

Beware our fingers whenever we work with the blades in this way.

With sprue cutters, we separate the links from their sprue and clean all burrs. For all cuts, bites, nicks, scratches, and marks that are produced we use different types of blades. Once they are as damaged as you'd like them to be, we will use a cleaning pad and eliminate all unnecessary debris.

In this picture we see all the elements that make up a single link and the damage caused on the rubber pads.

To assemble the tracks we use glue for plastic so that we get one piece which will facilitate the painting and weathering process. When painting, we airbrush the whole track run as one piece.

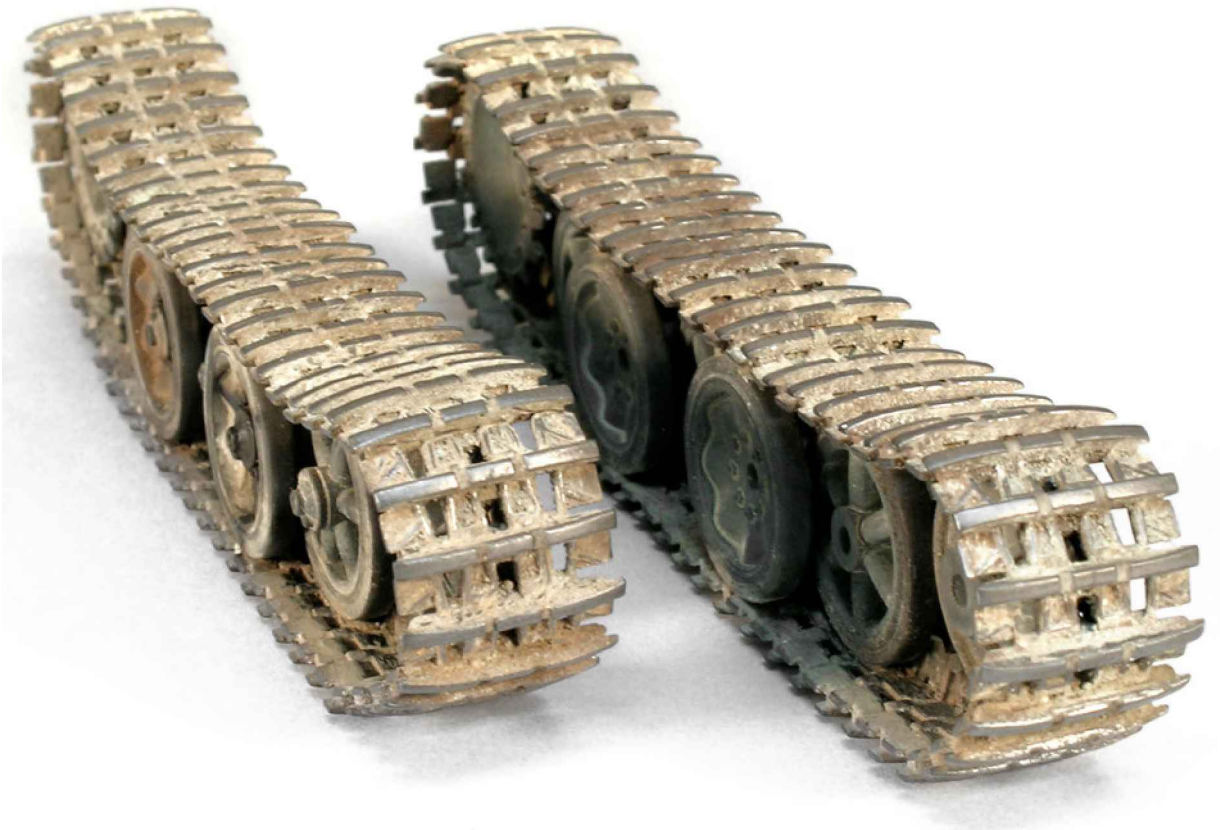


With these small details we get to improve the final appearence of our model

CHAP 5
Track painting

The products used for painting the tracks are very similar to those used in Chapter 2 for painting the wheels. We apply an acrylic base over a primed surface, and later reproduce the desired effects with enamels, pigments, plaster and thinner.

We strongly advise you to look for inspiration on reference photos. The latter are the main source of our ideas, and all effects presented in this chapter are based on the appearance of real tracks. Remember that reality is our best ally.



5.1 Plastic tracks

Some of the plastic tracks that are included in the kits are so versatile and are so well reproduced like their metal counterparts.

The only drawbacks are the large number of pieces involved and their fragility than compared to metal links.

Now we have a specific primer for tracks, AK185 with two attributes to consider. On the one hand those of any primer for hardness and gripping, greater than normal paint. And secondly its brown color to avoid painting because it is a base color very appropiate for subsequent aging treatments.

We start by priming the tracks with AK175 Grey Primer. Next, we airbrush the base coat, mixed from Tamiya XF-1 Flat Black (50%) and XF-52 Flat Earth (50%), diluted with GAIA thinner.

We paint the connectors with any dark rust color and go over the rubber pads with a dark gray acrylic by using a fine round brush.

With pigment AK086 Dark Steel and a fader we rub the teeth and connectors to give a metal and burnished appearance due to constant rubbing. To prevent staining the rubber pads you can use masking tape cut to size.

To dust them use pigments AK081 Dark Earth, AK042 European Earth, AK040 Light Dust and AK041 North African Dust. Make a dry mix and apply on the tracks.

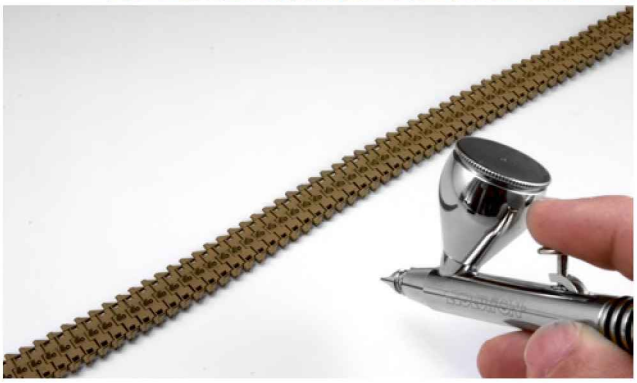
To fix the pigments we use AK080 Kursk Earth and AK015 Dust Effects diluted with some AK011 White Spirit. We apply it as a wash along the tracks.

The final touch is to reproduce some streaks and stains of dark oil, randomly distributed over the connectors and plugs.

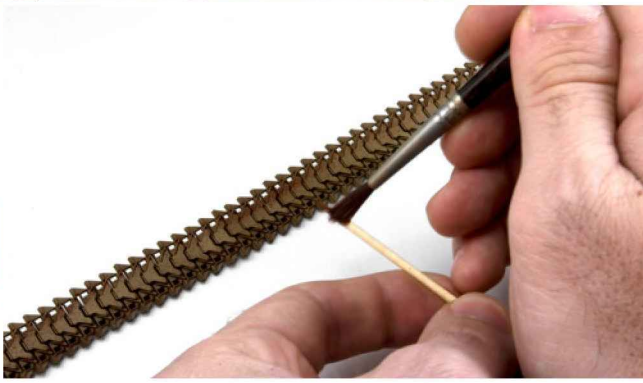
5.2 Metal tracks

5.2.1 DUSTED. Pictures and Text Pere Plá.

We will try to represent tracks with dusted rubber shoes from normal use on dry, dusty terrain. We will also try to represent the metal of the links with the characteristic reddish color due to the oxidation suffered over time.

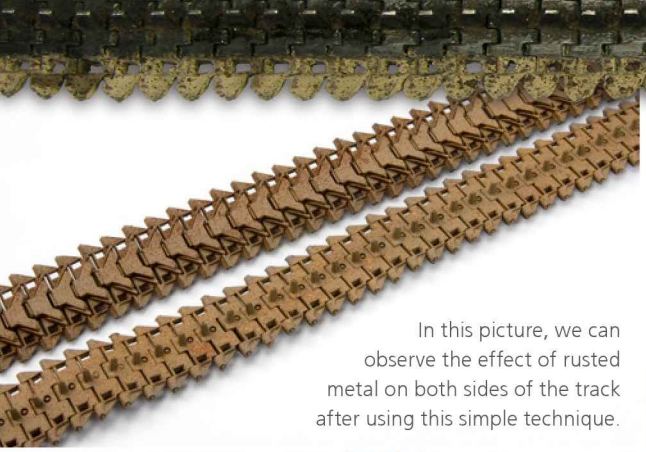


After airbrushing a primer layer of AK175 Grey Primer, apply a base of Tamiya XF-52 Earth also with the airbrush.



First we will splash the track with dark rust from Vallejo, a stiff brush and a toothpick. To achieve good results the paint should not be too diluted. It is also worth practicing using the stick and brush to make this kind of splash effect on a surface unusefull for us.

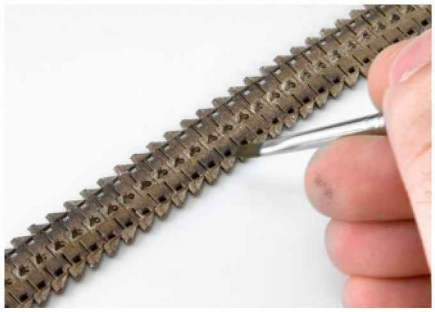
Then repeat the process of splashing but with a lighter rust color adding variety and depth.



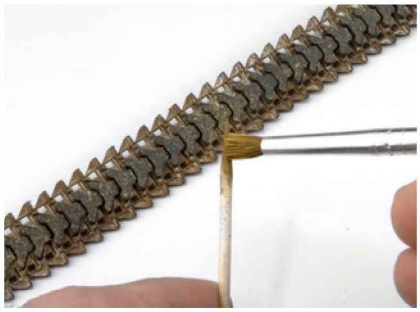
In this picture, we can observe the effect of rusted metal on both sides of the track after using this simple technique.

The next step is to apply a wash of AK015 Dust Effects. To do this you first apply the product directly from the jar and then will dilute it with a brush soaked in thinner to accumulate in the creases.

On the outer side apply the same wash. Once dry, paint the rubber blocks with acrylic AK735 Flat Black and a fine round brush.

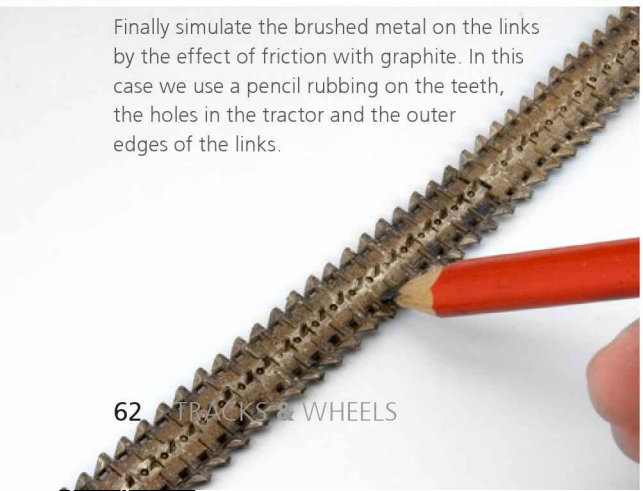


In the inside of the track apply dry brush with AK720 Rubber / Tyres. This color will simulate rubbing of the motor into the holes of the links.

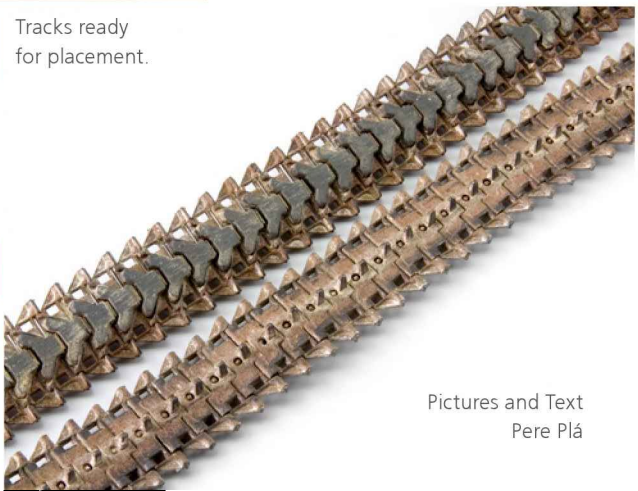


To create the effect of dust, dirt, and debris that accumulates between the links, apply a mixture of AK015 Dust Effects and pigment AK040 Light Dust and splash the mixture with a toothpick and brush with coarse bristles. We will apply this on both sides, but insist more on the external face.

After that, with a brush moistened with AK011 White Spirit, "sweep" some of the spots generated by the effect of splashing and drag the pigment to get random spots.



Finally simulate the brushed metal on the links by the effect of friction with graphite. In this case we use a pencil rubbing on the teeth, the holes in the tractor and the outer edges of the links.



Tracks ready for placement.

Pictures and Text
Pere Plá

5.2.2 MUDDIED

In this section we will try to get the muddy appearance of the tracks of a tank after being used in wet and earthy areas, trying to get fresh accumulations of wet and dry mud that almost completely hide the metal from them.

The first step is to get a base layer of an earthy color. This color has been made from references AK723 Dust, AK724 Dry Light Mud and AK722 Dark Tracks. Mix roughly equal parts and airbrush them without diluting them to make sure the tracks are well coated.

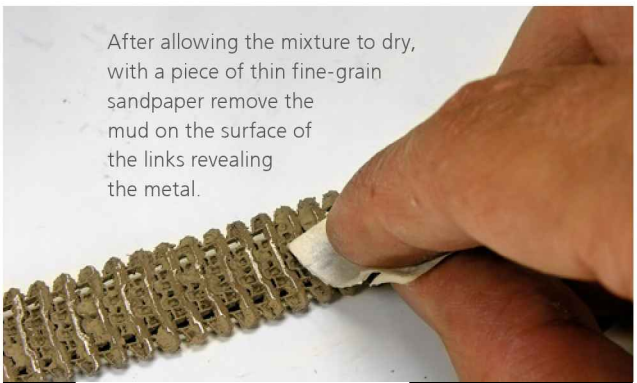
In a well also mix equal parts AK017 Earth Effects, AK022 Africa Dust Effects and AK015 Dust Effects with a brush.

Add some Plaster to the mix to create the texture of dry mud.

Repeat the process until we get the right consistency.

Using a stiff brush, apply the mixture on the outside of the track causing it to accumulate in the crevices.

In the inside only apply the mixture at the ends of the track.



After allowing the mixture to dry, with a piece of thin fine-grain sandpaper remove the mud on the surface of the links revealing the metal.

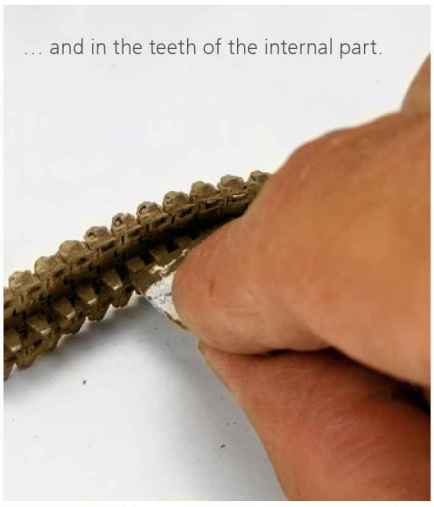
With AK023 Dark mud and plaster prepare another mix, this time thinner than last time.

We will mix it with the brush to check the consistency.

Apply the mixture on the center of the links by the external part of the tracks.

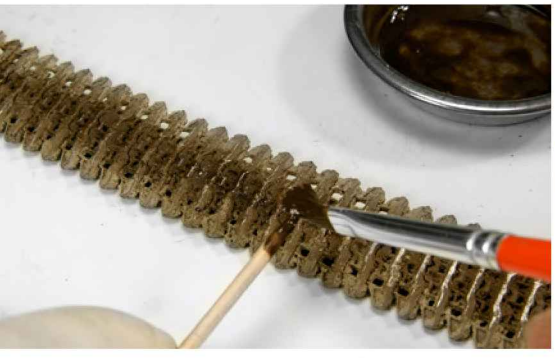
Also apply it around the teeth on interior surfaces.

Again use sandpaper to reveal the metal on the extrenal surface ...



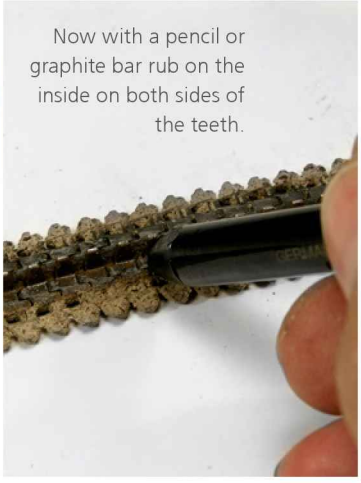
... and in the teeth of the internal part.

The third mixture to be used shall be obtained by AK016 Fresh Mud and AK079 Wet Effects with which we get some kind of wet look.

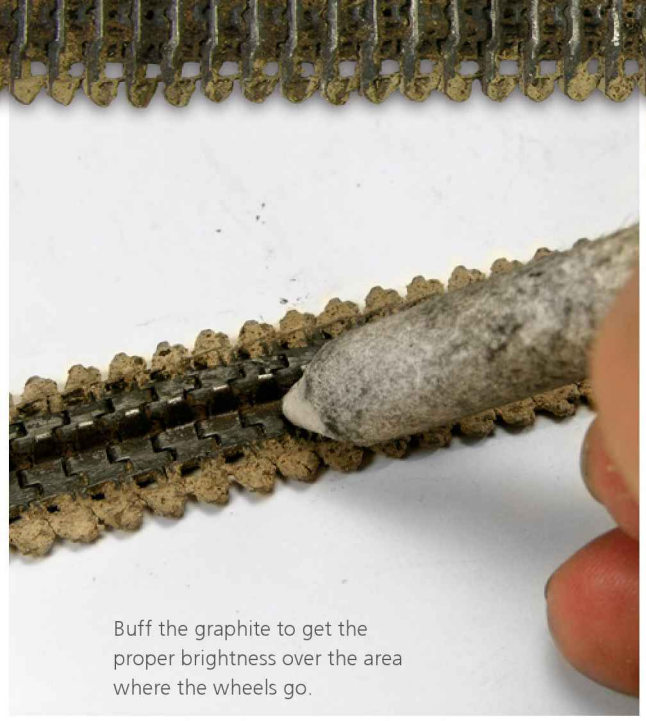


On the outer side we apply the same wash. Once dried paint the rubber block with acrylic AK735 Flat Black and a thin and round brush...

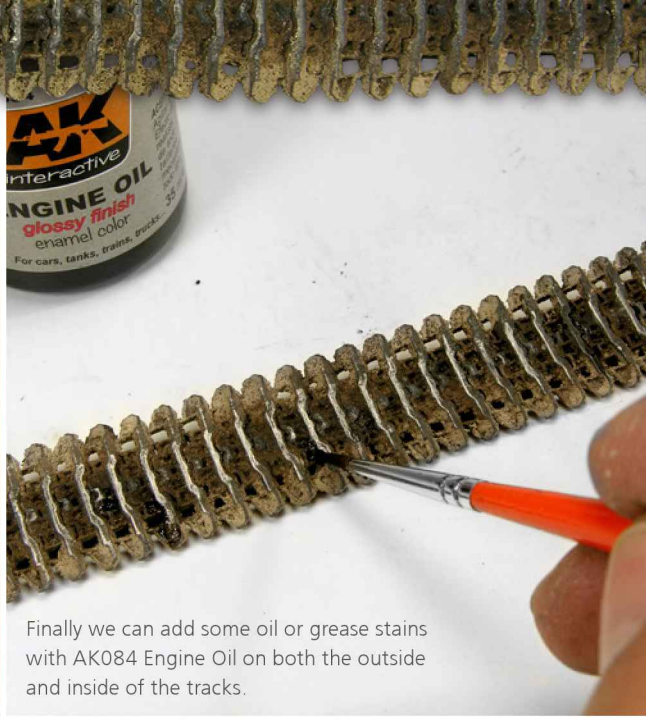
... and in the inner side apply through dry brush AK720 Rubber/ Tyres; this color will simulate the the rub of the idlers in the holes of the links



Now with a pencil or graphite bar rub on the inside on both sides of the teeth.



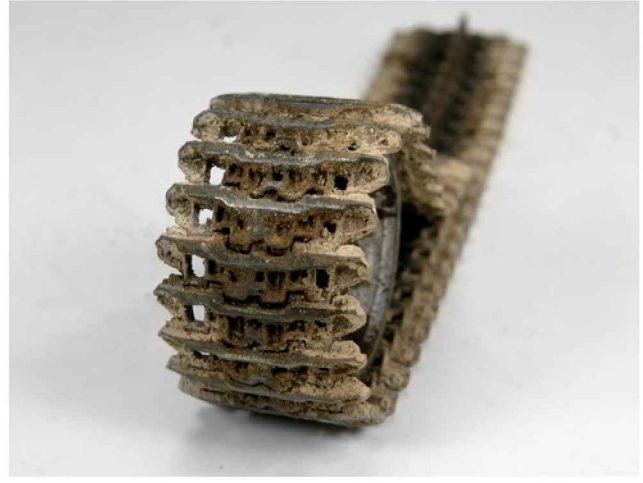
Buff the graphite to get the proper brightness over the area where the wheels go.



Finally we can add some oil or grease stains with AK084 Engine Oil on both the outside and inside of the tracks.

Final appearance of the completely finished track.

Thanks Adam for all the inspiration



5.2.3 RUSTED AND DUSTED

Let's paint some metal tracks with the intention of making them look like they belong to a vehicle that has been a long time out of service and therefore the tracks suffered the wear of time out in the elements. The appearance will be the rusty metal from long ago and younger rusted remnants. The predominant color is dark reddish brown color with small traces of lighter rust and orange also accumulate a good layer of dust from the atmosphere.

To start give it a prime layer to the tracks with Mr. Surfacer 500 from Gunze Sangyo diluted with Gaianotes thinner. This would give us more grip when painting.

Then paint the tracks completely with AK721 Rusty Tracks. This color will provide the general base on which we will work.

Then use AK708 Dark Rust, applying it perpendicularly with a hard and uneven bristle brush. We will use the paint straight from the jar but we will soften the brush on a rag to get a slightly speckled appearance.

To enrich rust repeat the above process but this time we will use AK707 Medium Rust.

Finally repeat once again with AK706 Light Rust to get the most vivid colors.

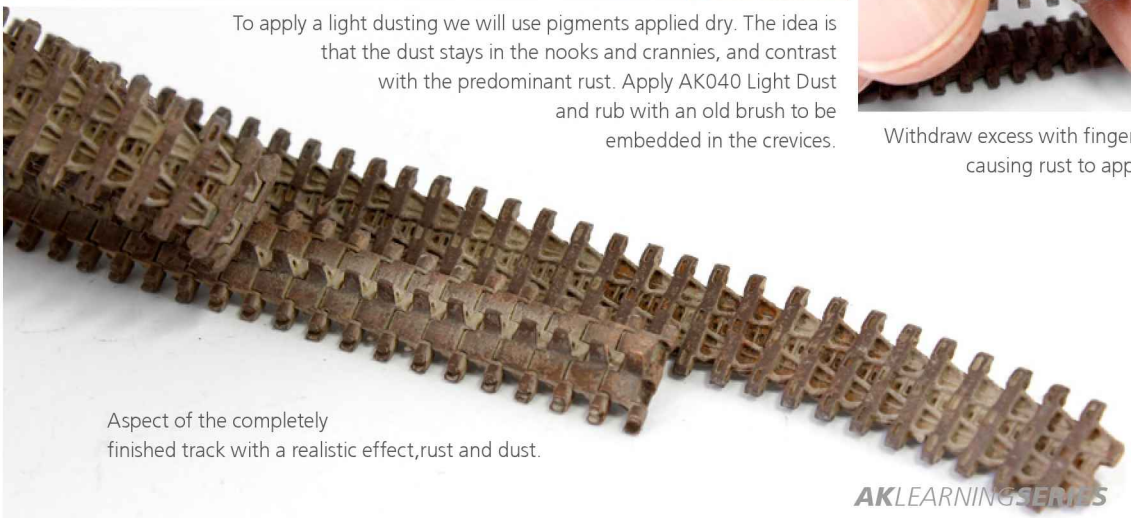
With some AK3012 Light Flesh accentuate the entire rusting process slightly.

Finally, we use AK710 Shadow Rust applied with a dry brush to partially recover the darker shade of rust on those parts that are supposed to received more wear when the tracks were operational.

Appearance of fully rusted tracks and ready for dusting.

To apply a light dusting we will use pigments applied dry. The idea is that the dust stays in the nooks and crannies, and contrast with the predominant rust. Apply AK040 Light Dust and rub with an old brush to be embedded in the crevices.

Withdraw excess with fingertips causing rust to appear.



Aspect of the completely finished track with a realistic effect,rust and dust.

5.2.3 USING BURNISHING LIQUIDS

To finish the metal tracks, we can choose between two methods of work.

The first one was thoroughly explained in the previous sections. Basically, we prime the metal tracks, and later use paints and various weathering products to achieve the desired finish.

The second method owes its existence to a product that had been developed to be applied directly to the white metal alloy. Since the metal tracks are manufactured from the same material, we can take advantage of the features of this liquid in scale modelling. When we dip the metal tracks in the burnishing fluid, it creates a patina which colour ranges, from a reddish rusty tone to dark brown, depending on the time of application. This way, it creates a perfect base colour and very realistic texture, preparing the tracks for further treatment. We then apply a wash, and reproduce some dust or mud using pigments and enamels, depending on the final effect we want to achieve.

Pour the product into a container with caution. It can be diluted but this will change the reaction times

Dip the tracks in the liquid AK159 Metal Burnishing Fluid.

Let the liquid act for a few seconds.

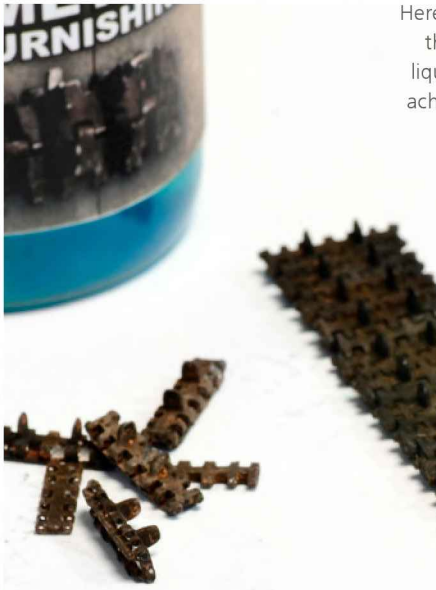
With an old brush help the liquid penetrate inside the cavities to achieve a uniform look.

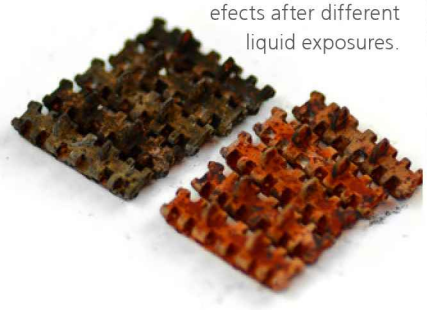
Dry it out with an absorbent paper and let the liquid react to create the rust.

After half an hour the liquid will have finished reacting achieving the desired effects

Clean the track with water to remove the excess.

Here you can see the final result, with this new formula you can play with liquid exposure and liquid dilution to achieve many different kind of looks.





Here we can see different efects after different liquid exposures.

CHAP 6

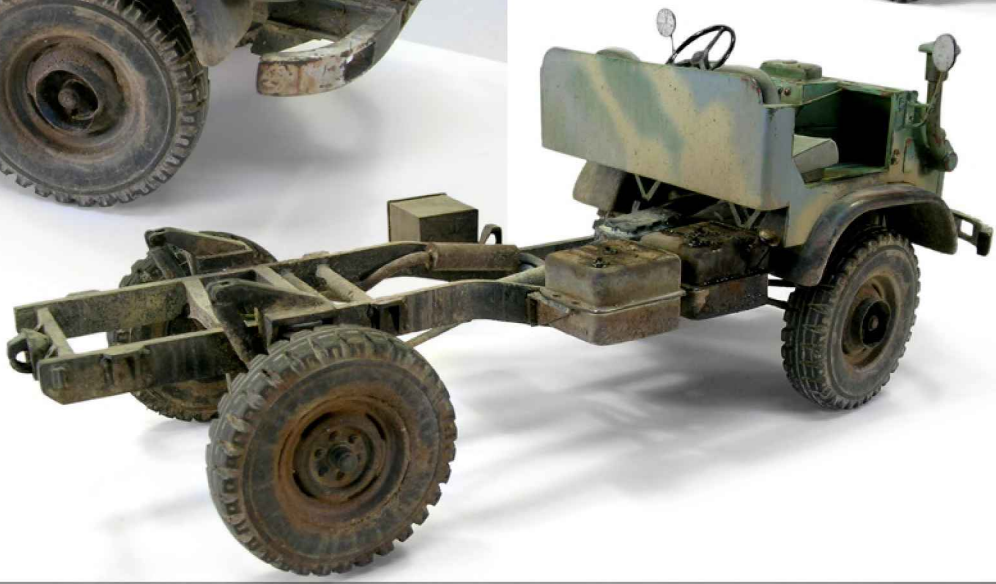
Undercarriage painting

The following pictures show a variety of effects and finishes applied to the running gear of wheeled, half-tracked and tracked vehicle models. You can also see further examples of use of wheels and tracks made of different materials, which were described in the previous chapters of this book, as well as the results of employing all techniques and tricks we have explained. Here, the effects can be viewed on finished models.

One piece vinyl tracks and resin wheels Scale models gallery

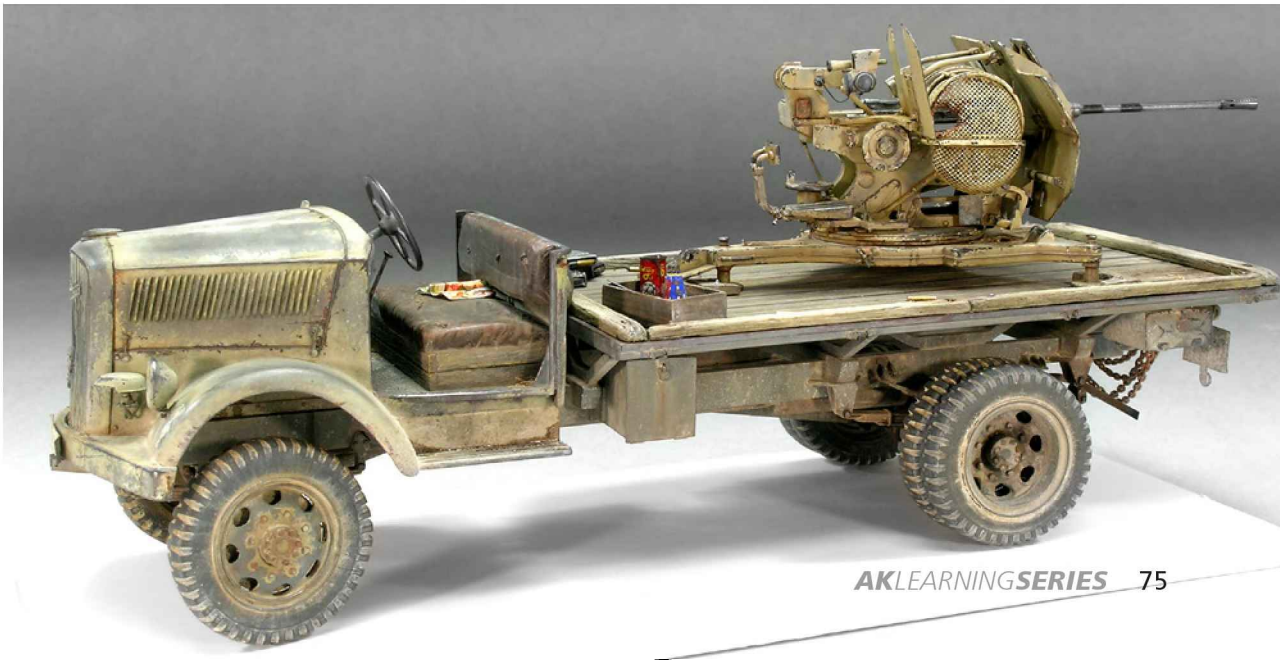
Plastic tracks and single track links

Resin rims and rubber tires



Plastic tracks assembled from single links and connectors

Resin wheels



Plastic tracks assembled from single links and connectors

Plastic wheels


27-5K

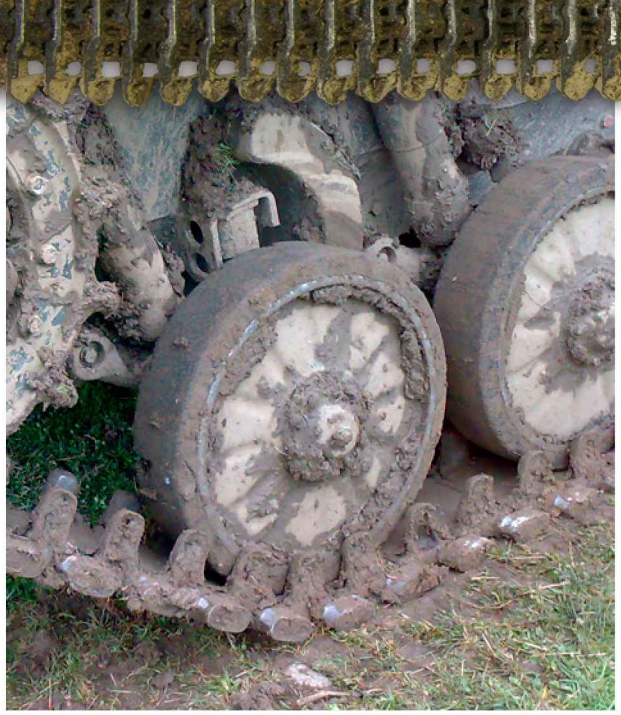
Metal tracks

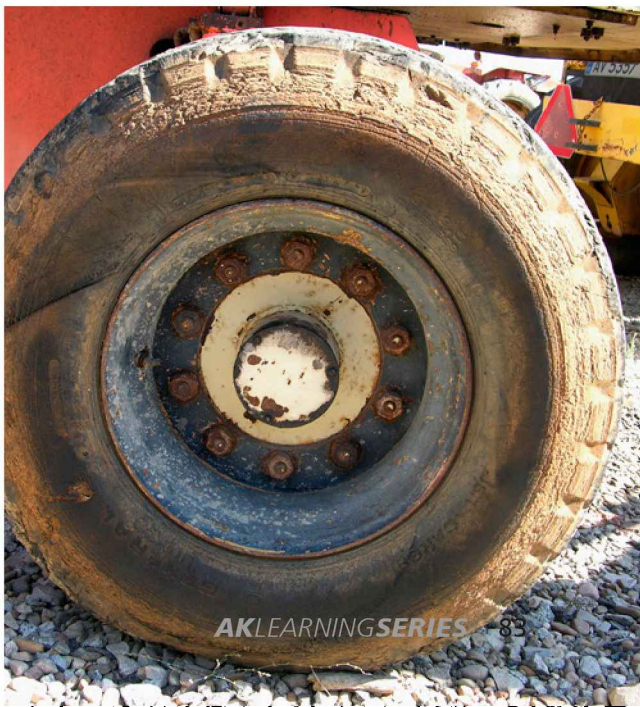
Reference pictures









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The extremely talented artists within this book take you on a journey through every aspect of painting and weathering tracks and wheels through their very own words guiding you through their styles and approaches. Follow along as they teach you the methods and skills they've developed over time by explaining the how and why of weathering and environmetal effects, the affect they have on our scale models and perhaps more importantly, the manipulation of the colors used and the tricks to getting the most out of them in scale model painting.

Read along with the authors as they teach you how to create a feeling of unity by establishing passages of light and shade over complex wheels and tracks by connecting the elements through color. Follow the artists in depth tutorial as they share their knowledge in a book explainingthe aspects of painting wheels and tracks. The artist's own approach and signature style is found within the text of each chapter, providing subjective experience and objective know-how as a result of years of practice and experience. The results found within are absolutely striking.

These pages are so profusely illustrated with 'in progress' photos and descriptive text explaining tracks and wheels painting and wetahering, from the very start to the most sublime of finishes. A complete step-by-step guide, photo references and page after page of in depth works-in-progress chapters that are written by artists who excel in these mediums, this truly is a big book.

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