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Sd.Kfz. 301

Borgward IV Ausf. A (modified)

Bénouville, France 1944

Step-by-Step Finishing German Armor

By Glenn Bartolotti



A complete Step-by-Step guide to Painting and Finishing Armor Models

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British War Museum

*Borgward captured by the British 51st Highland Division, Bénouville, June 27, 1944
Note the 51st Division's symbol marked on the front in chalk.*

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Materials Used

The materials I use are very easy to obtain and simple to use. Most are inexpensive and found in most all art supply stores. Over the years I have learned to use these basic materials to obtain finishes that look very realistic. **Consistency** is very important and following each step is also very important to obtain the desired finish.

You will notice that in none of the steps will you see the method of dry-brushing. I do not like to use this method as some armor modelers do. I prefer a more subtle look in which I feel represents the look of a full scale armor vehicle.



Materials used for painting and weathering. In this Step-by-Step Acrylic paints are used to paint the model showing the same results can be achieved with enamel or acrylic paints!

I modified the airbrush bottle syphon to fit Testors Model Master paint jars and Tamiya jars so I can spray the paint directly from the bottle without having to mix in a new bottle.



I use a basic single action airbrush. Nothing special.

Sd.Kfz. 301 Borgward IV Ausf. A (modified)



The Borgward IV, officially designated Schwerer Ladungsträger Borgward B IV (heavy explosive carrier Borgward B IV), was a German remote-controlled demolition vehicle used in World War II.

During World War II, the Wehrmacht used three remotely operated demolition tanks: the light Goliath (Sd. Kfz. 302/303a/303b), the medium Springer (Sd.Kfz. 304) and the heavy Borgward IV (Sd.Kfz. 301). The Borgward IV was the largest of the vehicles and the only one capable of releasing its explosives before detonating; the two smaller vehicles were destroyed when their explosive charges detonated.

Borgward originally developed the B IV as an ammunition carrier, but was found unsuitable. It was also tested as a remote minesweeper,

but was too vulnerable to mines and too expensive. During the Battle of France, German engineers from the 1st Panzer Division converted 10 Panzer I Ausf Bs into demolition and mine clearing vehicles, using them to place timed charges on bunkers or minefields without losing the vehicle. The Waffenamt found the idea valuable, and ordered the B IV's development as a remote-controlled demolition vehicle. The first vehicles were delivered in 1942.

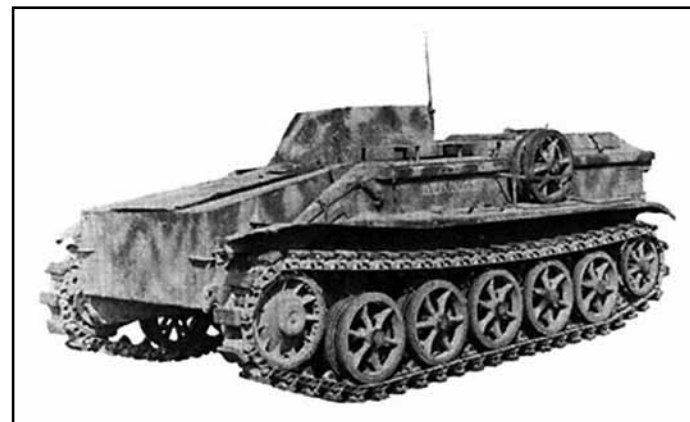
The Borgward IV was much heavier than the Goliath, and carried a much larger payload. Both the Borgward IV and the Goliath were operated by radio, but due to the Borgward IV's much longer range a driver in the vehicle would bring it independently to its destination before dismounting and conducting it to its target by radio. When it reached the target, the vehicle

would drop the charge and leave the danger area. This put Borgward IV operators in great danger. While the Borgward IV was armored, its armor was inadequate by 1942-43, and its larger size than the Goliath made it much easier to spot.

Three models of the Borgward were produced, Ausführung (abbreviated to Ausf.) A, Ausf. B and Ausf. C, primarily differing in armor, weight and radio equipment.

The Borgward IV Ausf. A, the first model to enter serial production, was equipped with a 49 horsepower 4-cylinder water-cooled gasoline engine. Ausf. A was the most produced model, with approximately 616 produced between May 1942 and June 1943. In June 1943, production shifted to the similar Borgward IV Ausf. B. The Ausf. B weighed 400 kg

(880 lb) more, the radio antenna was moved and better radio equipment was used. From June to November 1943, 260 of this model were produced. Soviet armor and saw some action at the Battle of Berlin. From Wikipedia, the free encyclopedia



Borgward captured by the British 51st Highland Division 1944

1



1. Borgward IV Ausf.A Heavy Demolition Charge Vehicle DML/
Dragon Models 1/35 Scale Plastic Model Tank Kit
DM-DR6101



Note: The kit is billed as an Ausf. A, but the track provided is that which was introduced on the Ausf. B. It comes with "bits" for either version, but the instructions only provide for building one of the vehicles with the administrative driver's compartment with windshield. The armored covers (parts Z 30, 30, and 32) are included so care needs to be taken during assembly to make the modified version as in my Reference photos.

2



2. The model is given a **primer coat** to give the model a good base to start the paint process. I use a basic spray can primer that can be purchased at the local home store. This primer coat makes painting the steps much easier because you get a smooth coat of color to allow you to see all the areas that will be needed to be painted in the steps used to shade and high light the model.

3



Burnt Umber

Available as:
→ Burnt Umber Acryl (F)- 1/2 oz. Bottle
SKU# 4605 Price: USD\$ 3.69

3. The first step in the painting process is the **pre-shade**. This is the darkest shadow color. Burnt Umber 4605 is used. What you are trying to achieve in this is to make sure any areas that your light source cannot hit is painted. You are for the most part adding artificial shadows. All the recesses, corners, tracks, and under objects that stand off the tank. It is also best achieved in some areas by painting the areas from under the tank as to just paint under the objects.

4



Sandgelb RLM 79

Available as:
→ Sandgelb RLM 79 Acryl (SG)- 1/2 oz. Bottle
SKU# 4789 Price: USD\$ 3.69

4. Next step in the painting process is the **base coat** this is the main color. Testors 4789 Sandgelb is used in this step.

Cover the main parts of the Borgward. Let some Shadow show though.

Aluminum foil is used to masked the tracks and wheels.

5



Sandgelb RLM 79

Available as:

→ Sandgelb RLM 79 Acryl (SG)- 1/2 oz. Bottle
SKU# 4789 Price: USD\$ 3.69



5. Airbrush the road wheels and drive wheel. It's ok if some overspray gets on the tracks.

6



Tan

Available as:

→ Tan FS20400 Acryl (SG)- 1/2 oz. Bottle
SKU# 4697 Price: USD\$ 3.69



6. Next step in the painting process is the **high-light**. This is 4722 Randome Tan. What you are trying to achieve is to make sure any areas of your light source can hit is painted. This step will bring out your Borgwards details. Paint all the high spots, centers of any panels and the tops of objects that stand off the tank. Once again contrast is important!

7



British Crimson

Available as:
→ British Crimson Acryl (F)- 1/2 oz. Bottle
SKU# 4609 Price: USDS 3.69



7. Next step in the painting process is the **1st camo color**. 4609 (British Crimson). This is the (Rotbraun) shade of the camo pattern. In painting this step remember that the air guns used by the crews did not cover large areas at a time so make sure your airbrush is set to do a small spray which is usually achieved by turning the air pressure lower, and making sure your paint is thinned correctly. It is a good idea to practice first on some card stock.

8



Olivgrun RLM 80

Available as:
→ Olivgrun RLM 80 Acryl (SG)- 1/2 oz. Bottle
SKU# 4790 Price: USDS 3.69



8. Next step in the painting process is the **2nd camo color**. 4790 Olivgrun. This is the green or (Dunkelgrun) shade of the camo pattern. Again it is a good idea to practice first on some card stock to get your airbrush zeroed in.

9



9. The model is now given a Testors clear gloss coat only in the areas that the **decals** will be applied. Micro Sol was used to flatten the decals down. I used the decals from the kit. When dry, spray the tank with Testors clear flat and allow to dry for about 2 days. A flat finish is very important to my Step-by-Step finishing.



NOTE: Always use clean turpentine for each step!

10



10. Next step is the **wash**. First I brush the model with clean turpentine. I put a dab of raw umber oil paint on a pallet, the oil paint is thinned with turpentine on the pallet and then applied to the model with a small brush. I do not want the wash to coat the entire model, it is controlled just where I want it. This is called a pin wash, apply to all of the surface details to create false shadows around each one, and any excess wash is blended into the surrounding surface once dry. I streak it down the sides like it would naturally, but care should be taken not to overdo this...be subtle.

Note the wash on the left side of model in this photo.

Once the body of the Borgward's wash has dried it is turned on its side and the road wheels are given a wash. It is put on its side so the wash stays around the bolts and details not allowing the wash to drain down to the bottom of the wheels only. This gives all the wheels a even effect all around.



11



11. Next step in the weathering process is the **paint chips & scratches**. I add chipped paint with raw umber oil paint. A small sponge or make-up applicator is used to apply the chips.

The sponge is press into raw umber oil paint then onto the armor surface lightly. The key to chips are make them **small** and without any pattern, keeping them on the most abused edges and damaged areas.

Use common sense and remember that less is more with chipped/worn areas, and think very small!

NOTE: Always use clean turpentine for each step!

12. Next step is the **effects**. I use heavily thinned white mixed with naples yellow artist oil paint to give flat areas of the tank a look as though water that has mixed with dust and dried on the surface. In this case it will fade the paint as the sun does.

I paint the area with clean turpentine before. I put a dab of oil paint mixture on a pallet, the oil paint is thinned with turpentine on the pallet and then applied to the model with a small brush as dots. Blend in with clean turpentine being very subtle as you go over the model. Allow this to drain down the sides as it would in real life.

I have used white, blue and yellow oil paint shades.

12



13



13. Next step is **pastel pigment weathering**. I use pastels in the same way you use pigments, but I make my own powder. The pastels are \$1.00 a stick at the art store and come in a large variety of shades. I use a file to grind them into powder. I mix them with turpentine on a pallet and apply them with a brush.

The tracks get a earth color **thinned heavily with turpentine**. Make sure you thin the powder heavily because if not it will dry and cover to much of the tracks, a little goes a long way!

Apply this mixture to the road wheels as well.



14



14. Last step is **metal accents**. I use a no. 2 graphite pencil to add the metal accents to the drive sprocket teeth and track teeth.

Finished Model



Finished Model

