U-form ringstand für Ft17 panzerturm – building tutorial

Let me tell you a few words about the construction of my smallscale (1/72) vignette with a German bunker. The bunker is completely scratchbuilt. Figures are from Italeri. I really like their new figures sets. Materials used for the diorama are cheap and commonly affordable. Building techniques are not complicated. Everybody can do it. All you need is a bit of time and patience.

Fig. 1

1) Historical background:

Such bunkers were built during the second world war by Germans along the Atlantic coast. They were a part of The Atlantic wall. It was an extensive system of coastal fortifications built in 1942 until 1944. It should stop an allied invasion of Europe.

Such types of bunkers, as represented on my diorama, were called „ringstands“ (or „Tobruk stands“) by the Germans. Ringstands were standardized bunkers, built in huge numbers along the whole Atlantic wall.

They could be armed with MGs, mortars, tank turrets, guns, observation devices etc. Types of ringstand were standardized, but some local designs could be found. The most common type was R 58 designed for machine gun or mortar. „My“ bunker was called U – form ringstand für Ft17 panzerturm. It was equipped with tureets from captured French light tanks Renault Ft 17. Both types of turrets - octogonal and conical (Berliet) were used. Turrets could be armed with 3,7 cm Puteaux gun or 8 mm Hotchkiss machinegun. Some turrets were adapted for German MG 34 machinegun. There are some pictures of real bunkers on fig. 2 – 4.

Fig. 2: Bunker without turret octogonal base plate. Screws for fixing the base plate are visible.

Fig. 3: Bunker with base plate and without turret

Fig. 4: Ft 17 bunker built in Cherbourg

2) Building a model of bunker

At first, you must prepare a scale plan. Just go through the internet and find some plans. Divide the dimensions with 72 and draw your own plan (Fig 5). I used balsa wood sheets of various thickness (1, 2 and 4 mm) for construction.

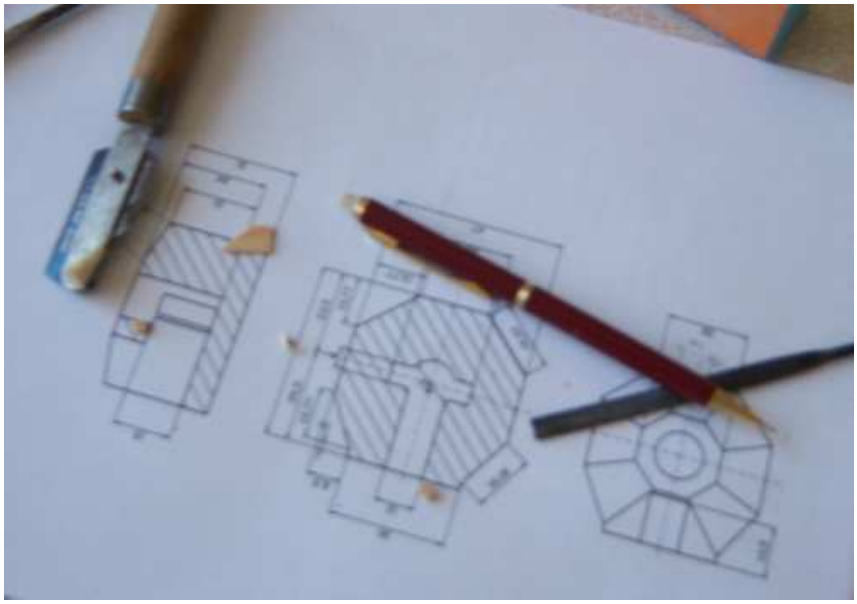

Fig. 5

Fix the base plate of model to a wooden plate with modellers pins. Glue rectangular wooden profile to the base plate (of model) to achieve the right angle of sides (fig. 6).

Fig. 6

The top of the bunker is beveled. Put some ribs with required angle inside the structure (fig.7, 8). At first glue them with PVA glue and then fix them with superglue (cyanoacrylate).

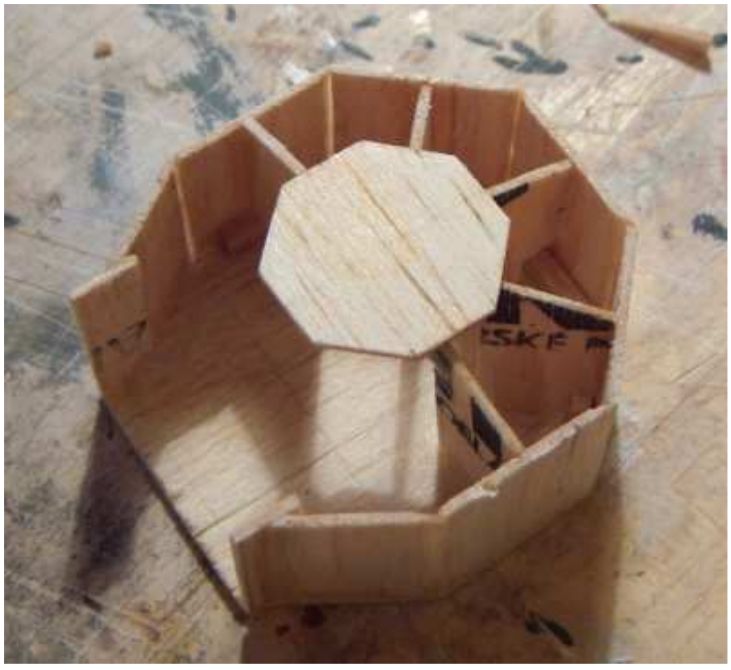

Fig. 7

Fig. 8

Finishing the top of the bunker (fig. 9, 10, 11). Use 1 mm thick sheets of balsa. Some shapes are quite complicated. If you are not expert on descriptive geometry, you can only estimate their right dimensions. It´s better to measure required dimensions during a building phase of your model.

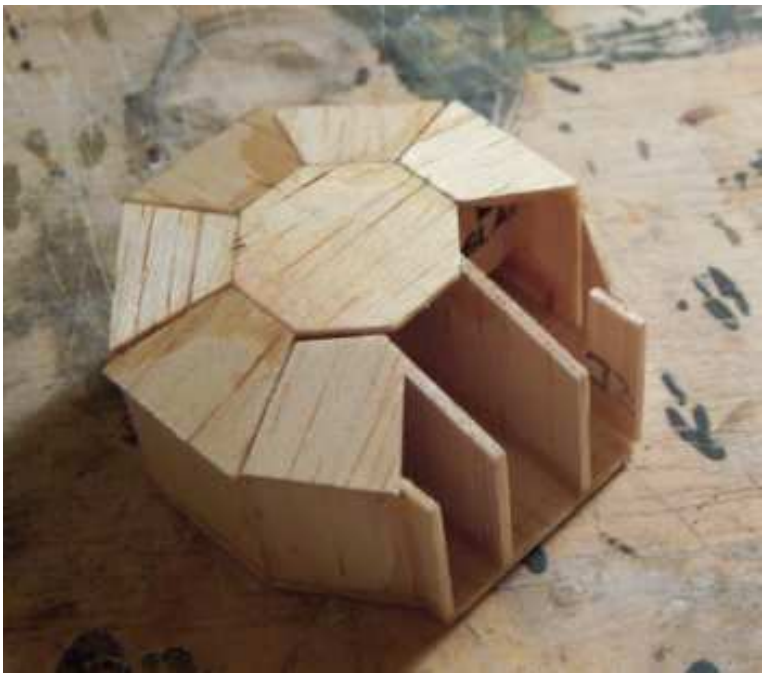

Fig. 9

Fig. 10

Fig. 11

I used Tamiya putty to close slots between plates. After the putty is dry, dilute a little PVA glue (consistence of milk) with water and apply this mixture on the surface of bunker with paint brush with soft hair (glossy areas which could be seen on fig. 12)

Fig. 12

During the break for drying the PVA glue you can prepare resin plates with concrete surface texture (described in separate article „*How to make concrete surface on your model*“). Mould and plates you can see on fig. 13. Cut them with modeller saw and file the sharp edges with file. Rough the back sides of plates with sandpaper or file. Fix them to their place with a few drops of dense PVA glue and then, on the perimeter of plates, apply a cyanoacrylate. If you use good cyanoacrylate, it will rise under the plates. Let it dry for a few hours (fig. 14).

It´s time to demonstrate the concrete surface on the top of the bunker. The are no plank marks as on its sides. Take a piece of ceramic clay and let it dry. It must be hard as a stone. Then crushed it. Only a powder must remain of it. Add a little water and mix it. It must have a consistence like toothpaste. Apply a several layers of this mixture to the top part of the bunker. Each layer over (perpendicular) the previous. Let it dry. Some cracks will appear. So apply the mixture on it again. Some narrow cracks are acceptable. They will dissappear during grinding of the surface with fine sandpaper (intended for work under water). So grind the surface. It could be rough as the real concrete surface. See fig. 14 and 15. Now, that´s all from the building phase of the bunker. You can apply a primer and paint with light grey colour. If you are brave enough, you can make a silicone mould and cast it in gypsum. Making of mould will be described in paragraph 4.

Fig. 13

Fig. 14

Fig. 15

3) Accessories

It´s necessary to add some accessories to the bunker. This includes doors, pedestal plate and, of course, gun turret. Doors are made from plastic sheet (fig. 16). The perpends between planks are made using an engraving tool. I used the same technique to demonstrate wooden surface on the planks as for resin plates with plank marks (see the separate article meant in paragraph 2). The pedestal plate is made from plastic sheet too (fig. 16). Mark centers for fixing screws, drill holes for them. Heads of screws are made from plastic bars (diameter 0,8 mm). Cut a piece of the bar, put it to the hole and fix it with cyanoacrylate. After it is dry, use a wide file and file the heads of „screws“ to the same height. Unfortunatelly, screws are not on the fig. 16. The photo was taken before they were fixed to the plate. The turret is a resin copy of one included in RPM kit (kit no. 72200). The technology of casting will be described in the next paragraph.

Fig. 16

4) Casting

As I wrote at the end of par. 2, I decided to make a mold for casting the bunker from gypsum. I placed the bunker on a plastic sheet and fixed it with PVA glue. I did the same with doors, pedestal plate and turret. I made a border from plastic sheets around it (see fig. 16 and 17). I applied a thin layer of silicone on the bunker, doors and borders.

The material used for mould is a two component silicone „*Lukopren N1520*“. There are many equivalents of it. Just type Axxon to the Google and search. I mixed it according to manufacturer´s instructions and poured it into the „box“ and let it dry for 24 hours. To take the model of bunker out of the mould, you must make two partial cuts on each side of the mould (see the red line on fig. 18). The thinner blade you use, the better result you reach. It´s not necessary to do it with doors and pedestal plate. The mould is elastic and it´s easy to take such plane pieces from it out.

Now degrease the mould, mix a gypsum with water and pour it inside (fig. 18). I used *Gedeo* gypsum, but I think you can reach the same results with common gypsum. Just find the right consistency of the mixture.

There is a complete cast on the fig. 19. As you see, every rougness and crack, made on the model, is perfectly copied on it. Let it dry and you can paint it.

The material used for casting the doors, turret and pedestal plate is a Czech legend „*Epoxy CHS 1200*“. It´s a kind of two component epoxide putty (glue), which could be used for casting too. Of course, there are better ones, but this is cheaper then resin equivalents from Axxon. Unfortunatelly I don´t have pictures of doors, turret and base plate casts. That´s all I want to tell you about the bunker. Now it´s time to set it into a piece of terrain. So let´s build a vignette!!!

Fig. 17

Fig. 18

Fig. 19

5) The vignette

The terrain around the bunker is nothing special. Only the connecting trench requires much work. Cut a piece of plywood, redraw the outlines of terrain on a piece of styrofoam and glue it together with PVA glue (fig. 20). Take a plaster bandage, apply it on the terrain (including sides of the vignette) and let it dry (fig. 21). Check the dimensions of revetting (wooden planks + stakes) and set it aside (fig. 22). Paint them separately. Set the bunker into the „hole“ in terrain and glue it with PVA. Bunker must now be painted with base colour before you fix it to the „hole“. Use a gypsum or a little diluted gypsum putty from *Den Braven* to smooth the terrain and sides of vignette. Plain the sides of vignette with sandpaper and remove the gypsum dust (fig. 23).

Paint the terrain with brown colour (tempera, acrylic,….) and glue the revetting to the sides of connecting trench. Apply PVA glue and sprinkle the terrain over with crushed stones, dirt etc. Let it dry and than paint it with various earth colours. Drybrush the stones (fig. 24 and 25). Take a static grass and glue it to the base. It´s not necessary to cover all areas (fig. 26). Weathering of bunker and wooden parts is made using pigments and water paints. That´s all. At the end, paint the sides of vignette. I think black is the best for this purpose. You can add some accessories. Here I choose a woden box and a German helmet. And figures,……. of course.

Fig. 20

Fig. 21

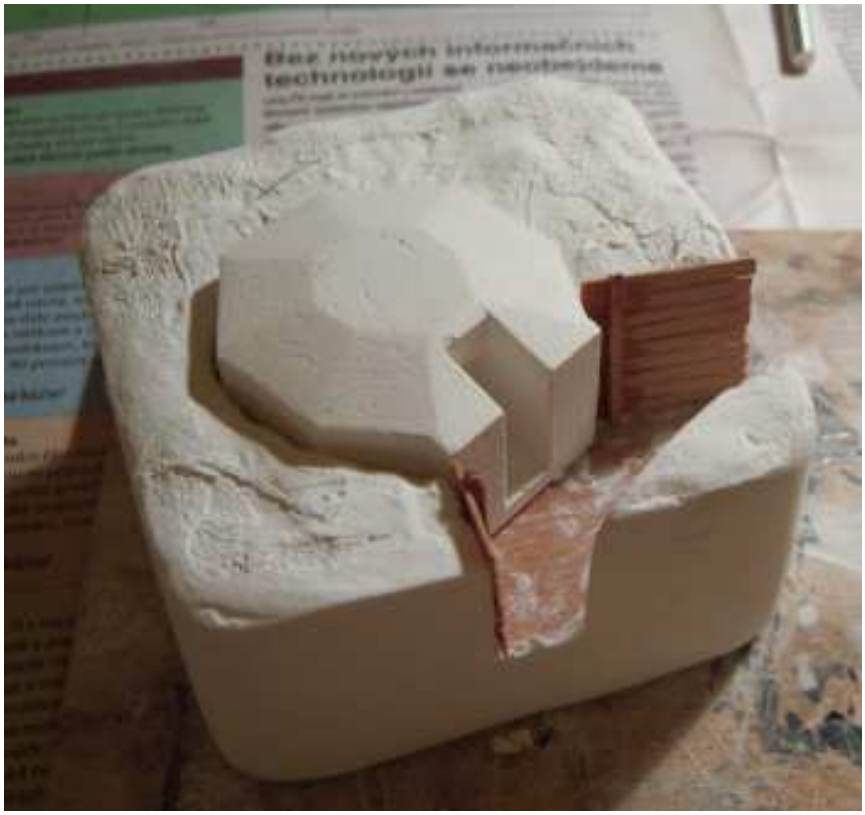

Fig. 22

Fig. 23

Fig. 24

Fig. 25

Fig. 26

6) Figures

Figures of American soldiers are from Italeri (set no. 6120). They are painted with acrylics and shaded with oil paints. Before you use the oil wash (burnt umber), it´s better to apply a thin layer of glossy acrylic varnish. The worn effect is achieved using pigments. So there´s an end of it !!!

7) References:

http://www.bennosfigures.com/forum/viewtopic.php?t=4676

http://forum.axishistory.com/viewtopic.php?f=70&t=157525&p=1371311&hilit=ft17#p1371311

http://www.gyges.dk/Ringstande.htm

http://fortifikace.bloguje.cz/tema-5-nemecka.php

http://home.tiscali.nl/bunkerarchief/index_sub_ba_ijmuiden.htm

P.S. : I do apologize for my English. I hope native English forgive me. Maybe somebody could make corrections in text. I would by thankful.

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