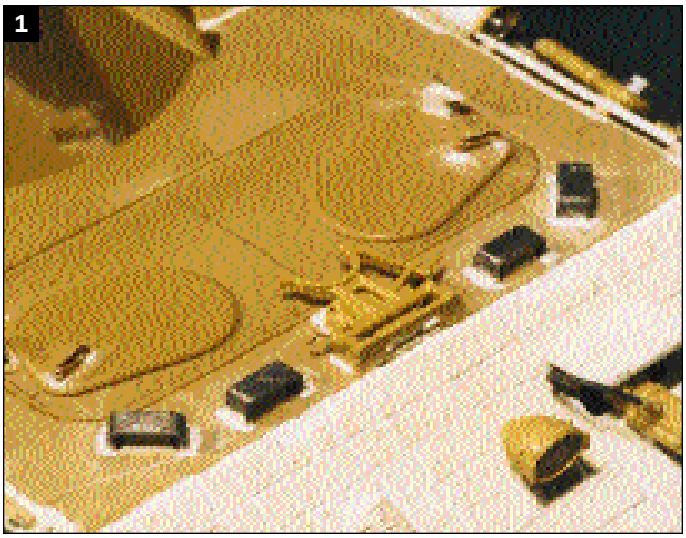
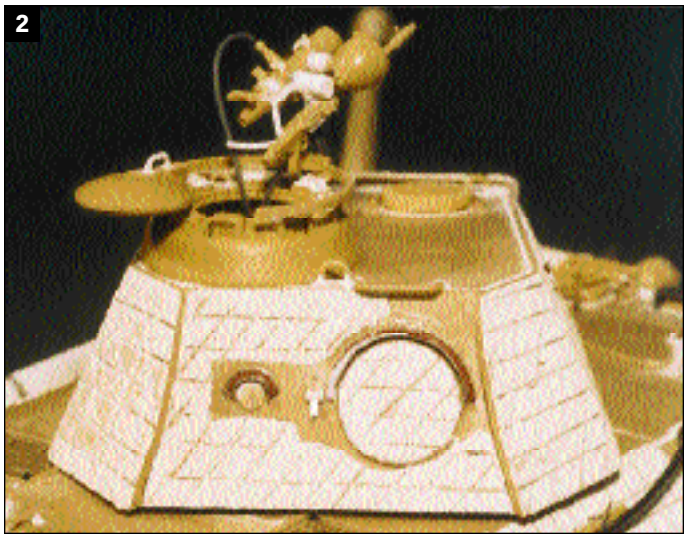


In the closing months of WWII, German armor found itself hunted relentlessly during daylight hours. Consequently, the Wehrmacht employed infrared-sight-equipped Panthers, like Thomas Anderson's model, on night operations.



Thomas used strips of metal and copper wire to fashion new details. Weld lines and Zimmerit were created by applying a mix of automotive filler and glue.



Be careful when you apply this Zimmerit formula, since one chance is all you'll likely get. Lead foil was used for the rain guards over the ports.

Infrared Panther

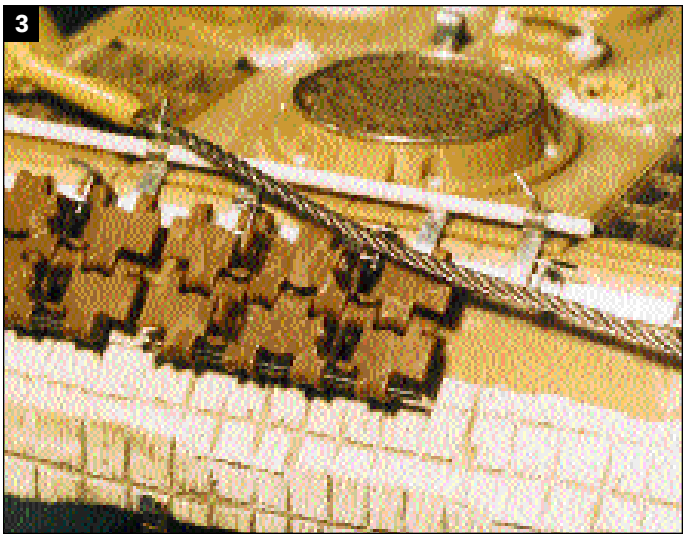
Convert a Panther D to a late war IR night fighter

By Thomas Anderson Photos by the author

Although infrared night vision technology was developed as early as 1934, it wasn't until late World War II that the Germans found a decisive need for the use of infrared (IR) sighting devices. Only a few Panther platoons had teams of vehicles equipped with this IR technology, but I felt an IR-equipped Panther would make an eye-catching detail project in 1/35 scale. Older production Panthers were chosen for the upgrade, since they were in- and- out of the factories for upgrades anyway; also, the D had a moveable driver flap perfect for the IR mounts. I started with Italeri's Panther Ausf. A (kit No. 270), since it's a good-quality kit that needed only a few modifications to backdate it to an Ausf. D (an early D is also available from Italeri, kit No. 290). For the IR equipment I used the parts from Tamiya's steel-wheeled Panther G with IR (kit No. 35174).

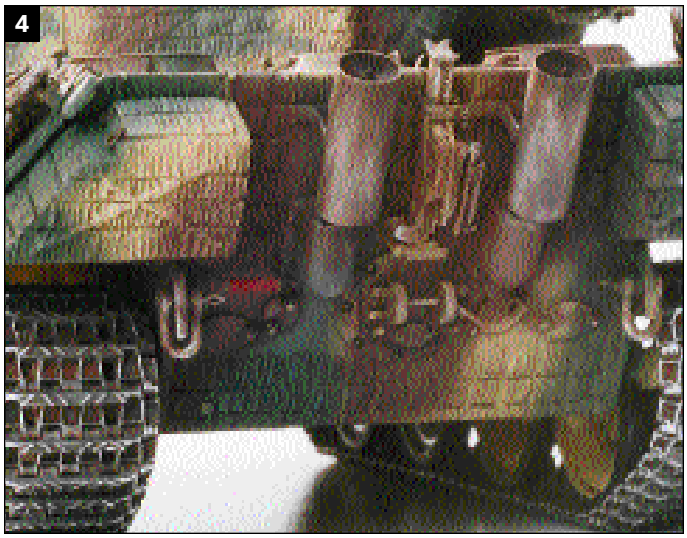
Added dimensions. Since the Italeri rear plate is too high and needs to be reduced by 2mm, I began by fixing the dimensions of the upper and lower hull pieces. While I was at it, I cut away the front mud flaps and their incorporated parts (such as the tool fittings). The Italeri kit's main flaw is that the hull's superstructure is about 4mm too short in front, so I added a longer plate of 1.5mm sheet styrene to the front upper hull. I used the same dimensions as the kit's hull front, though I made a more prominent, protruding upper edge. I then cut in the slit for the machine gun port and the driver's observation hatch; since I planned to apply Zimmerit, I didn't bother to engrave the joints and welds in front.

The Italeri kit had a lot of weld lines missing that would need to be visible on my model. I applied automotive filler putty thinned with cement, using a hypodermic needle to place weld lines where the armor joins the glacis and the rear plate, as well as a few other locations as per my references. Later I finished the job with a motor tool, carefully texturing the dried putty concoction.



3

Thomas added screens for the intakes, soda-can aluminum mounting brackets for the side skirts and tools, and thin wire for towing cables.



4

Plumes of flame from the mufflers would reveal this night-stalker's location, so shrouds were designed to help conceal it in the dark.

Zimmerit. In the case of the Panther, Zimmerit was not applied to all upper areas – the extra track mount, underneath large tool frames, and the area around the exhaust system typically did not receive the anti-magnetic mine coating. Before I applied the Zimmerit, I fashioned new, stronger tool brackets from metal strips and new grab handles from copper wire; with this added strength, spreading the Zimmerit will be less likely to damage the former fragile kit parts.

I model Zimmerit the same way I do my weld lines, using thinned automotive filler putty but applying it to the model with a wide brush. This is a very slow procedure that should be done with care, as the glue in the mixture bonds the coating to the kit surface. You can't afford to make mistakes, because they can't be fixed easily! When it was dry, I carved in the vertical lines, then carefully etched in the checker pattern, **1**.

The turret. My references of this vehicle showed only three pistol ports to the sides and rear of the turret, which meant that aside from new pistol ports of styrene rod, I wouldn't have to add much detail here. I used lead foil for the rain covers around the ports and the ammo hatch, then applied Zimmerit to the turret. Since turrets were often swapped off of damaged vehicles, I applied a different pattern to the turret's Zimmerit, **2**.

Details, details. I like to improve the detailing of any part that I can. I made a new fire extinguisher from eight separate parts, and new tool brackets were made from both metal strips and lead foil. I made a cleaning kit for the main gun using styrene tube, and I used thin wire as a towing cable and securing cable for the extra track pieces.

I added details to the engine deck by adding screens from a photoetch set in my spares box, including a fine grille, **3**. I even added a few dents with my fingernails to simulate the effect of the crew's boots on the deck. I made resin copies of some spare periscopes I had for the hatches, and fashioned a new hull ventilator. The glacis plate received a new machine gun port cover, as well as a new driver's hatch – the one in the kit lacked detail. New styrene mud flaps, bent and beaten-up as seen in references,were also added.

Since I'd shortened the rear hull plate, I had to modify the large stowage boxes. Also, most IR-equipped Panthers all had tubular exhausts which suppressed flames, **4**. Tamiya's Panther G supplied the exhaust parts, though styrene tube would have worked well,too.

All Panthers were delivered with side skirts, so I attached a few pieces of .025" sheet with metal strips I'd cut from a soda can. If combat didn't knock the skirts off entirely, it left them bent, so I dented them up a little, **5**. Finally, I added Tamiya's L/70 gun since the Italeri-supplied one was too short.

The cat's eye. The IR devices I used are from the Tamiya kit, though I modified them quite a bit by adding sections of rubber bands and copper wire to simulate the wires, using *Achtung Panzer No. 4* as a reference. I first installed the driver's optic, which was easy to mount since the image converter was welded directly to the plate under the visor. The 30cm IR light was fitted directly to the glacis plate.

The Ausf. D and early Ausf. A had in common a binocular telescopic sight fitted to the mantlet, while later versions had a monocular one. It was not uncommon to replace the binocular sight with two monocular telescopes, so the variant is up to you. To the left of the power converter was the 30cm IR search light, and the entire arrangement was fitted to a tiny shelf that attached just below the periscope aperture. The power feed lines ran into the turret roof, **6**.

For the commander's IR setup, **7**, I used reference photos to modify the Tamiya parts into accurate representations. Next time I'll also model the demolition charges attached to most Panther IR hardware (in case the technology should fall into enemy hands).

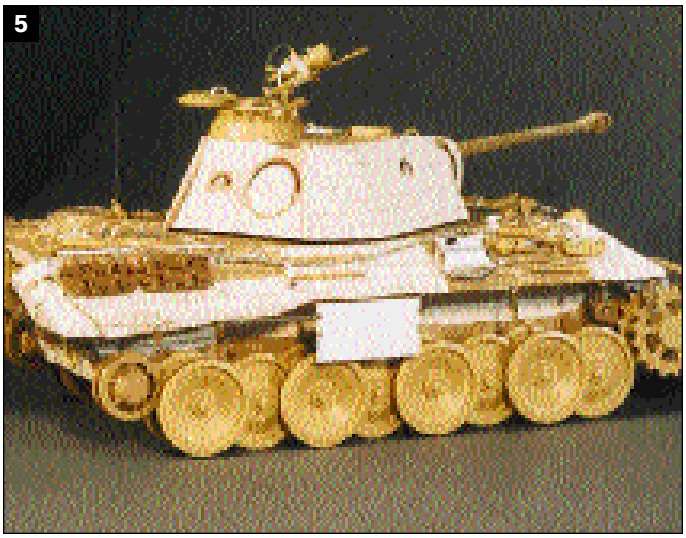
The Panther's pelt. With everything installed except for the tracks, **8**, I prepared the paint job. Early Panthers were delivered in dark yellow, with the two-tone green and red-brown camou-

REFERENCES

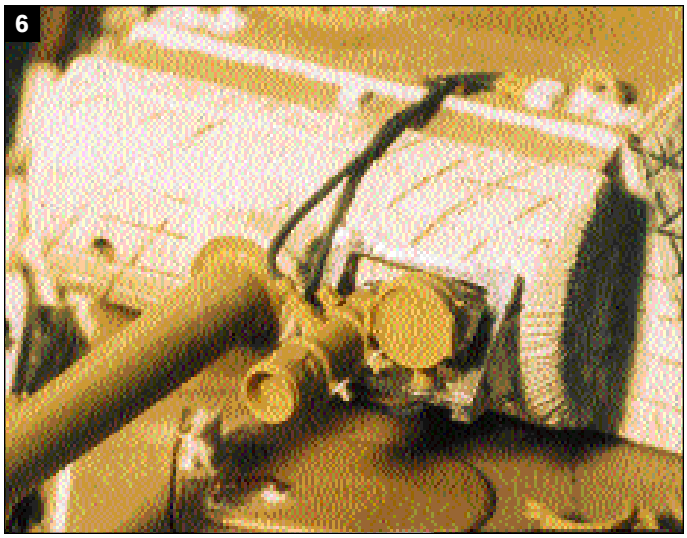
Achtung: Panzer No. 4
Dai Nippon Kaiga, 1994
Distributed by RZM Imports
Southbury, CT
203-264-0774

SOURCES

Modelkasten
Distributed by VLS
1011 Industrial Ct.
Moscow Mills, MO
63362, 636-356-4888
www.vls-vp.com



Armor side plates were frequently knocked off or damaged in the field, represented by this one remaining "skirt." Note that the plate brackets remain.



An IR setup usually consisted of a 10x optic with special filters attached to see the IR light cast by the spotlight. A small shelf held them to the mantlet.

Picking the right pattern for your Zimmerit

The late spring and early summer of 1943 marked the height of German offensive operations, and it was during this period that Zimmerit was introduced. Zimmerit was a paste applied to the vertical surfaces of German armor in an effort to defeat Soviet magnetic and adhesive mines, which needed a smooth steel surface to cling to long enough for the charge to damage or destroy the targeted vehicle.

The development of Zimmerit offered protection against magnetic mines by simply putting a layer of non-metallic material between the explosive charge's magnet and the vehicle. Zimmerit also created an erratic surface, which reduced the mine's overall area of contact. As reported by British Major J.W. Thompson and Mr. C.E. Hollis in July 1945, Zimmerit was developed in Berlin by the C.W. Zimmer Co. (hence the name). It consisted of 40% barium sulfate, 25% polyvinyl acetate, 15% ochre pigment, 10% sawdust, and 10% zinc sulfide. Zimmerit was used until mid-1944, when it was phased out due to its ineffectiveness against improved anti-tank munitions (rockets in particular), as well as the fact that the operations conducted by the Germans at this time were largely defensive in nature. A perusal of historical references indicate that many different types and variations of Zimmerit patterns were used. Factory applications were generally neat and uniform in appearance, while field applications were less so, due to battle conditions and time available for the crew to complete the application.

Vehicle name/model	Zimmerit pattern
Tiger I (mid/late)	1
King Tiger (Porsche turrets and early Henschel)	1
Panther D (late), A, G (early)	3,4, 5
Jägdtiger (Porsche suspension only)	1
Jägdpanther (early)	6
Brümmbar	1
Panzer III (M, N)	1
Panzer IV (H mid/ late, J early)	1
Panzer IV L/70, L/46	1
Sturmgeschütz III G (early/ mid)	1, 7
Sturmgeschütz IV (early/ mid)	2
Sturmtiger	1
Elephant	1

The list is intended to be a synopsis of vehicle types and the pattern generally associated with each. Please note that exceptions (especially field applications) will, on occasion, contradict this list. It is a very general guide, so it is important that references be consulted prior to attempting these methods on a model that you want to be completely accurate.

– Bob Oehler



1
ridged pattern



2
zig-zag
Sturmgeschütz IV
pattern



3
vertically ridged
(first Panther
pattern)



4
vertically ridged
(second Panther
pattern)



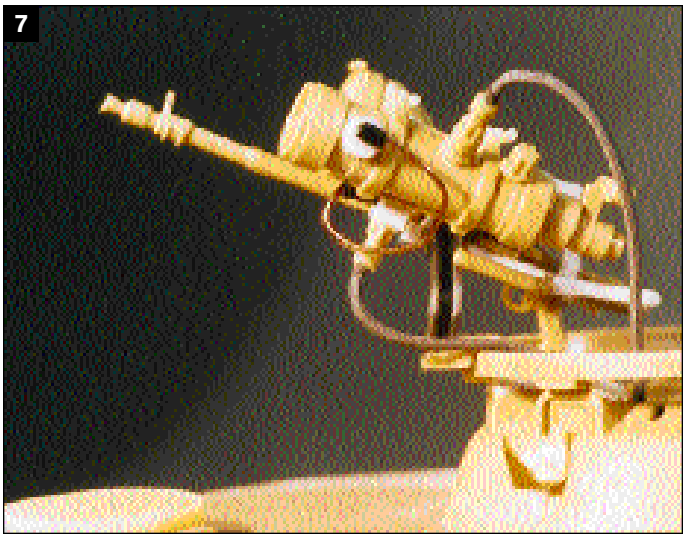
5
vertically ridged
(first Panther pat-
tern w/secondary
cross-hatch)



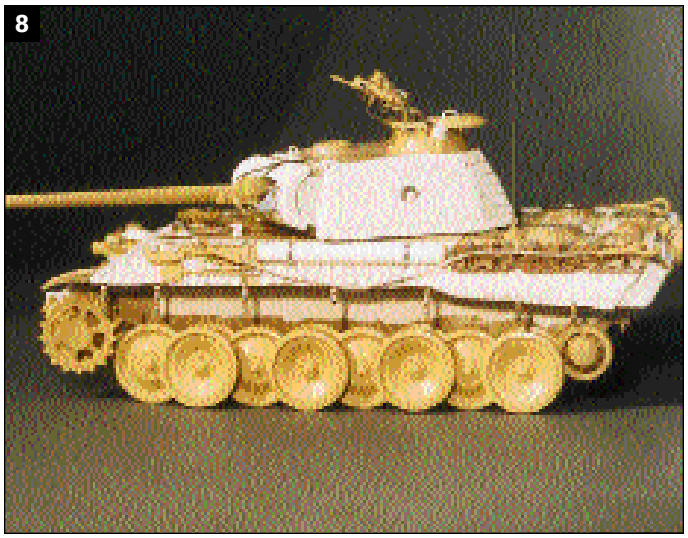
6
cross-hatch
pattern



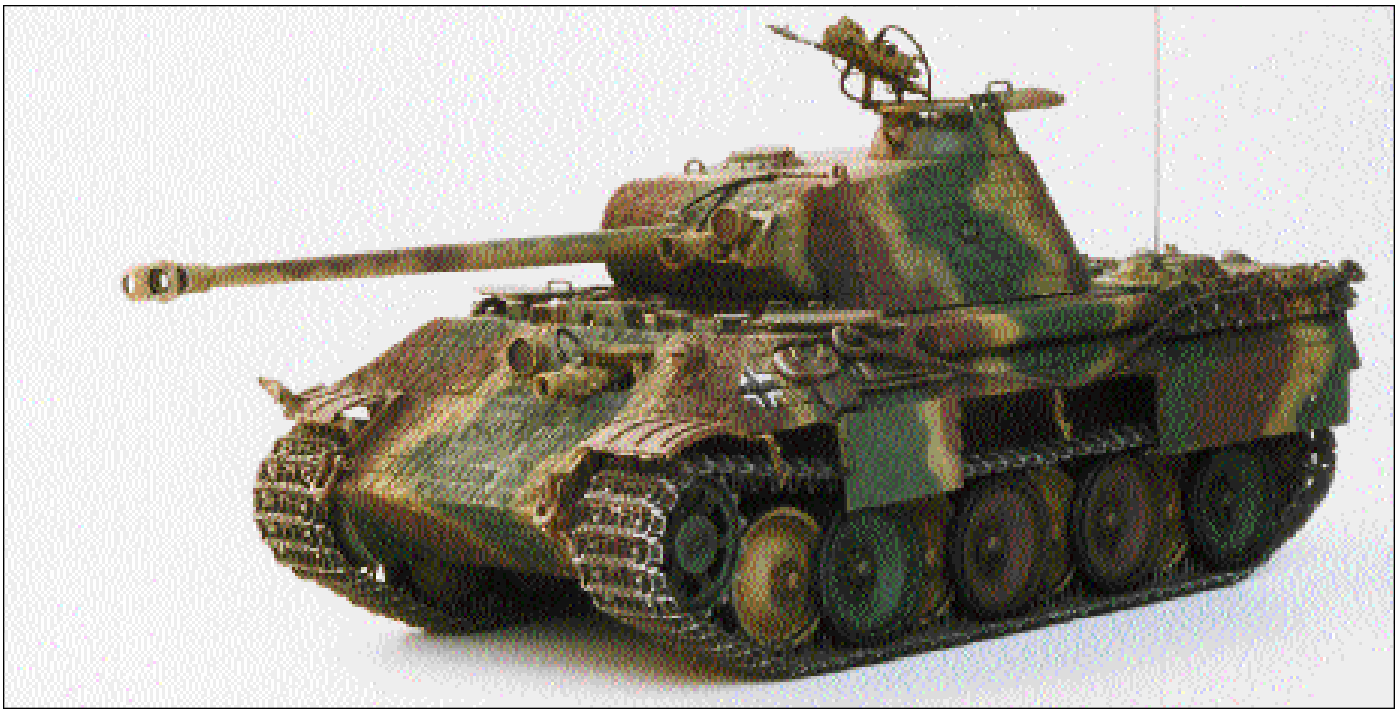
7
waffle stamp



The commander's IR setup was used by the Sd. Kfz 251/20 Falke also. Rubber bands and copper wire simulate the power cables.



The model's final appearance before Thomas airbrushed Humbrol enamels. Modelkasten's workable tracks went on after the painting.



Dented fenders and missing side skirts add a touch of war-worn realism to the model. Note how Thomas' washes accent the detail on the road wheels.

flage applied in the field (later in the war, the "ambush" scheme was applied, using small dots to break up the pattern – the May 2000 FSM). I used Humbrol enamels, applying a dry-brushing of the dark yellow after the initial camouflage was applied.

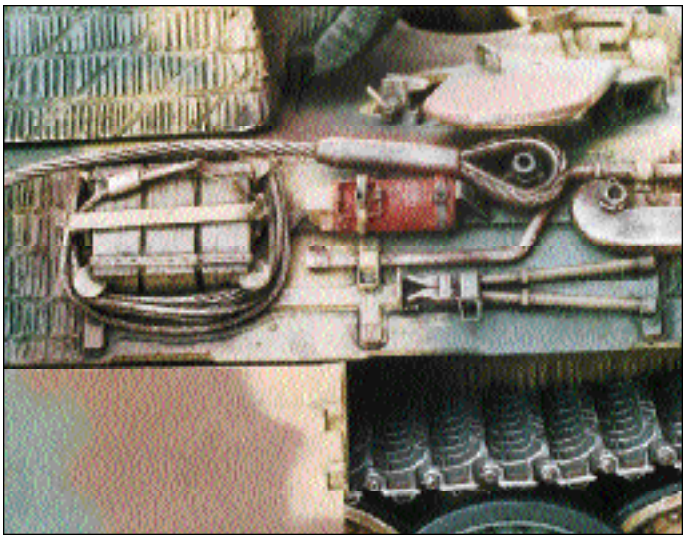
When it was dry, I painted all of the tools and extras, applying various washes of brown oil paint. I tend to exaggerate the weathering at this point, leaving rust-colored stains all over the kit – later I'll tone it down.

Next came the dry-transfers,which I prefer to use because they don't leave any visible carrier film. I used photoetched stencils held with tweezers to mask the crosses for airbrushing; the black interior of the cross was hand painted afterwards.

After all of these applications were dry, I gave the model a heavy wash of thinned black oil paint. All of the grooves and bolt heads were now prominent, and the rust stains from the previous wash were toned down. A final dry-brushing of the original dark yellow was then applied, evening out the finish.

As all of this dried for a few days, I set to work on some Panther tracks from Modelkasten. I painted them a dark gray, and then added a dark, rust-brown wash. Careful dry-brushing with silver then gave them the finishing touch. The whole model then received a semi-gloss varnish to even out the finish.

I think my night-fighting Panther looks great, and sits proudly in my collection. Keep your eye out for the kits to create this conversion, and pay attention to all of the references you can gather for modeling the details – it pays off every time. FSM



Thomas used enamels to apply the three color "ambush" scheme to his Panther. A series of rust- and black-tinted washes blended the weathering effect to what you see here. By leaving off the protective skirt plates in various locations, the aftermarket tracks are exposed to show a subtle dry-brushing of steel. The jerry cans are aftermarket add-ons.

