



Short Feature Article

DML/Dragon

PzKpfw IV Ausf. F1(F)

1:35 scale

by

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A note from Geoff...

This is one of those cases where I could have gone either way - add a short entry including the finished pics in your Subscribers' Gallery or make the most of the material Dai has sent and create a Short feature Article? I went for the latter because Dai has included some great information on how he achieved these results as well as including a few build up photos.

So... not the usual in-depth build this time but a neat little SFA that I think you'll enjoy as much as I do, every time I look at it - thanks again Dai and keep up the excellent work.

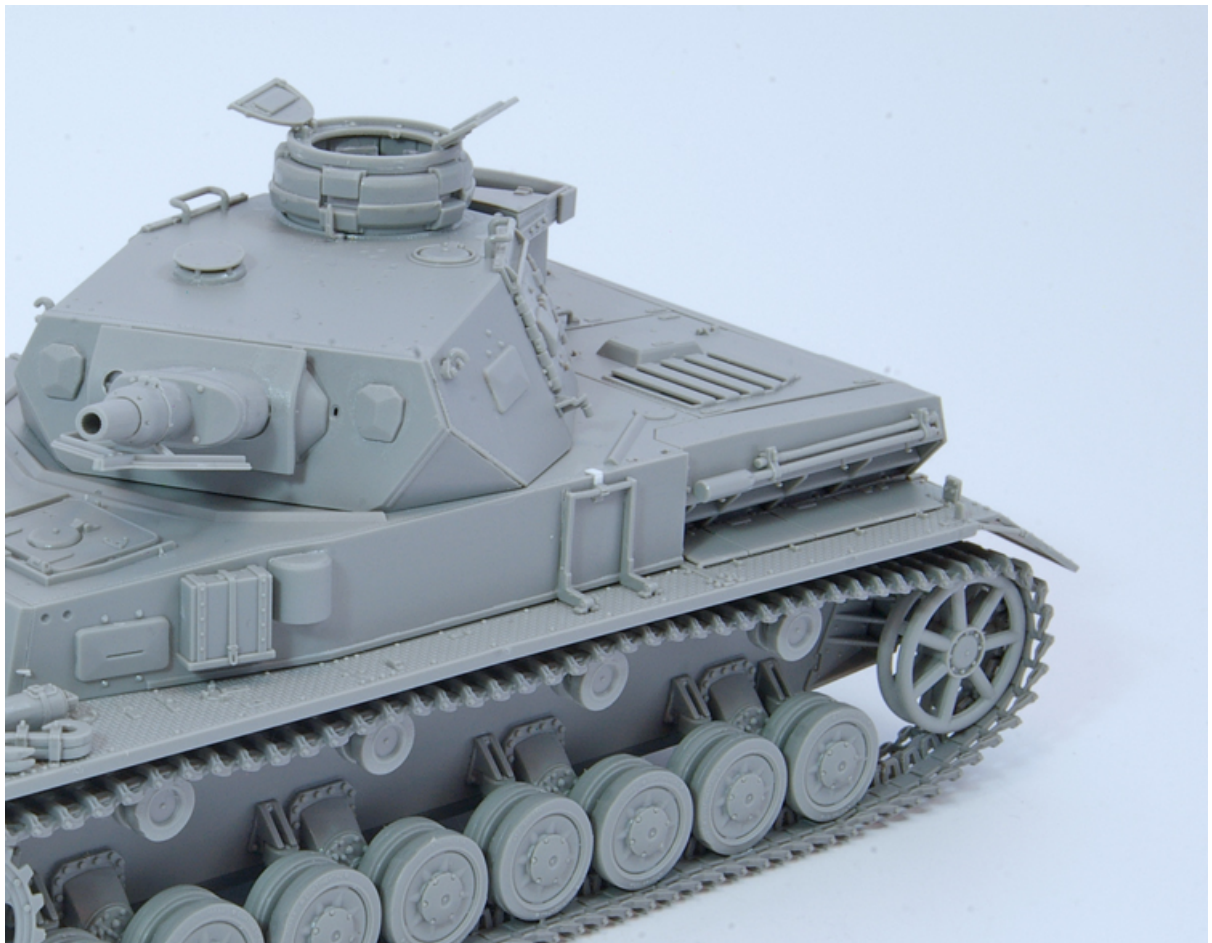
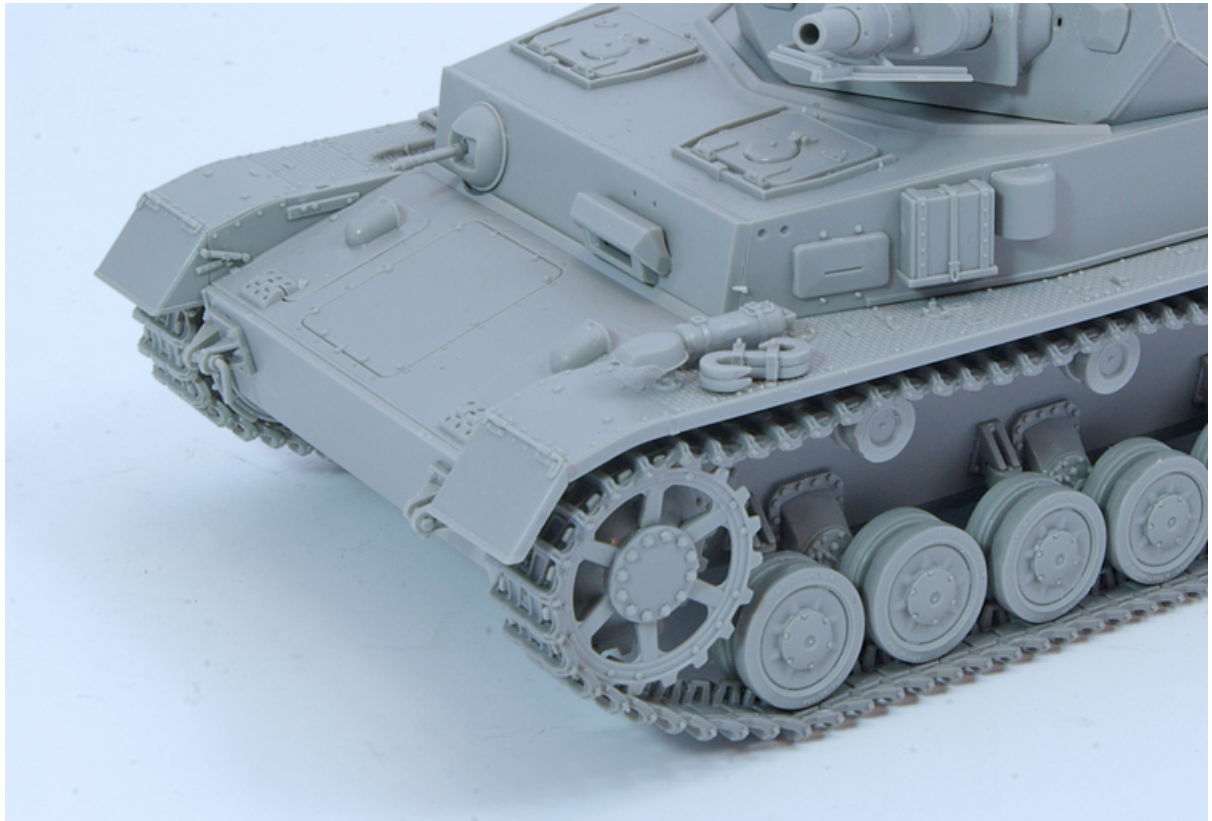
Over to you Dai...

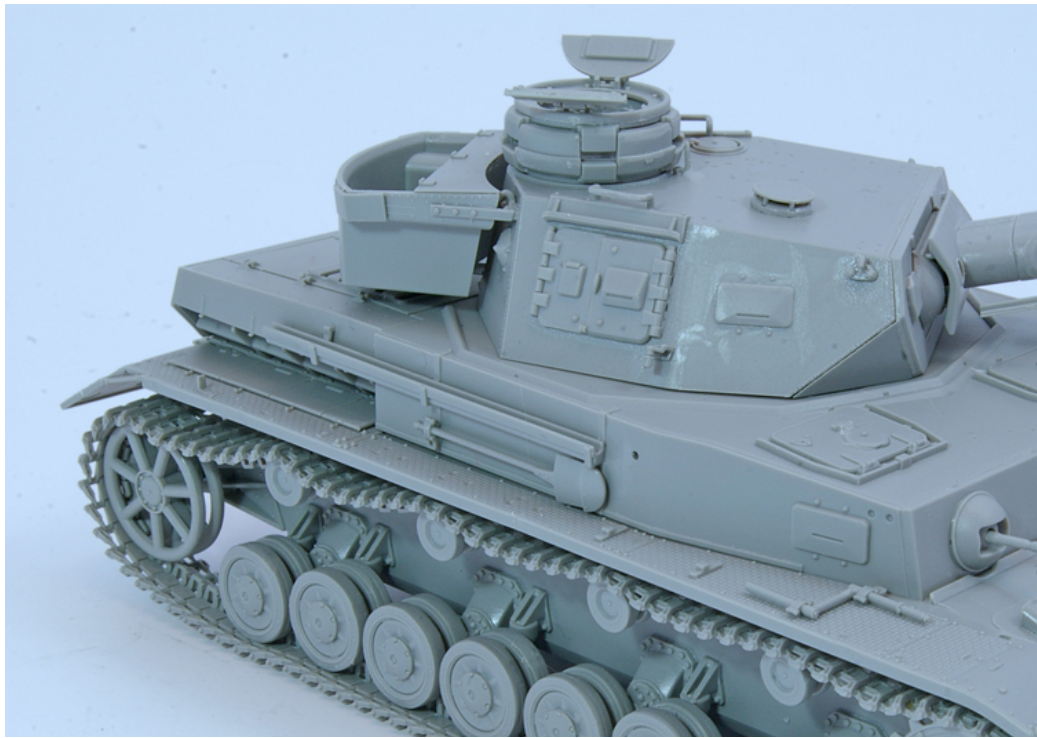
This is the DML PzKpfw IV F1 built more or less straight from the box.



DML's PzKpfw IV series are really well detailed kits and those I've completed so far have been a pleasure to build. I added very little to the kit apart from a camouflage net and some items of stowage in the bin at the rear of the turret. The net was made from muslin soaked in a mixture of white glue and water. The other items of stowage were embedded in this while it was still wet and then removed for painting a couple of days later when the glue had dried. I rather liked the idea of leaving the stowage bin open. I assumed that this would have been primed in the usual red primer used on German vehicles and it seemed logical that the inside of the bin and the back of the lid might have been left that way when the rest of the tank was painted. Items like this and the unpainted replacement road wheels brought an extra touch of colour to the model.







There were no problems experienced during construction. While cleaning up the mould lines around the road wheels was a little tedious, I understand that when the tyres were new they actually had a mould separation line around them so I suppose you could actually leave them there - though it just doesn't seem right!!

I usually dry-brush my armour models towards the end of the painting stage - though this technique seems to have fallen out of favour these days with pigments and filters having taken over. In this case I changed the order of things when compared with my usual painting sequence. I added a dark brown wash using Vandyke Brown oil paint, dry-brushed the model with Humbrol enamel using a khaki shade similar to the overall colour of the model and then added a little chipping with a sponge and Vallejo German Camouflage Black / Brown.

Usually I put the chipping on before the dry-brushing, but I think that this way around may actually work better - more experimentation called for here.

The colour scheme is a little odd in that DML suggest that this vehicle had a Dark Yellow base coat with a Field Grey overspray. I suppose that an overspray of green and / or red brown would have been more usual. However, this does make the model look a little different and the idea of a front line crew using up a stock of grey paint that they found hanging around does not seem that unlikely - and anyway I like it.

Hope you do too?...

Dai W.











A bit of background to the Panzer IV...

The Panzer IV was the brainchild of the German general and innovative armoured warfare theorist Heinz Guderian. In concept, it was intended to be a support tank for use against enemy anti-tank guns and fortifications. Ideally, each tank battalion in a panzer division was to have three medium companies of Panzer IIIs and one heavy company of Panzer IVs. On 11 January 1934, the German army wrote the specifications for a "medium tractor", and issued them to a number of defence companies. To support the Panzer III, which would be armed with a 37-millimetre (1.46 in) anti-tank gun, the new vehicle would have a short-barrelled, howitzer-like 75-millimetre (2.95 in) as its main gun, and was allotted a weight limit of 24 tonnes (26.46 short tons). Development was carried out under the name Begleitwagen ("accompanying vehicle"), or BW, to disguise its actual purpose, given that Germany was still theoretically bound by the Treaty of Versailles ban on tanks, MAN, Krupp, and Rheinmetall-Borsig each developed prototypes, with Krupp's being selected for further development.

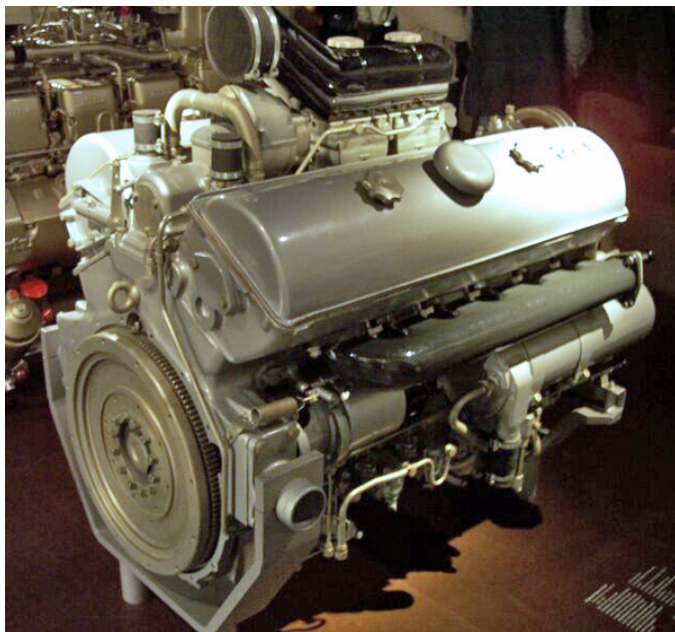


Photo: The 300 horsepower Maybach HL 120TRM engine used in most Panzer IV production models (courtesy of Stahlkocher)

The chassis had originally been designed with a six-wheeled Schachtellaufwerk interleaved road wheel suspension (as German half-tracks had already adopted), but the German Army amended this to a torsion bar system. Permitting greater vertical deflection of the road wheels, this was intended to improve

performance and crew comfort both on- and off-road. However, due to the urgent requirement for the new tank, neither proposal was adopted, and Krupp instead equipped it with a simple leaf spring double-bogie suspension, with eight rubber-rimmed road wheels per side.

The prototype required a crew of five men; the hull contained the engine bay to the rear, with the driver and radio operator, who doubled as the hull machine gunner, seated at the front-left and front-right, respectively. In the turret, the tank commander sat beneath his roof hatch, while the gunner was situated to the

left of the gun breech and the loader to the right. The turret was offset 66.5 mm (2.62 in) to the left of the chassis centre line, while the engine was moved 152.4 mm (6.00 in) to the right. This allowed the torque shaft to clear the rotary base junction, which provided electrical power to turn the turret, while connecting to the transmission box mounted in the hull between the driver and radio operator. Due to the asymmetric layout, the right side of the tank contained the bulk of its stowage volume, which was taken up by ready-use ammunition lockers

Accepted into service as the Versuchskraftfahrzeug 622 (Vs.Kfz. 622), production began in 1936 at Fried. Krupp Grusonwerk AG factory at Magdeburg



Photo: Panzer IV Ausf. F 1 mit 7,5 cm KwK L/24 ohne Hoheitsabzeichen; ca. 1941/1942 (courtesy of German Bundesarchiv)

Ausf A-F1...

The first mass-produced version of the Panzer IV was the Ausführung A (abbreviated to Ausf. A, meaning "Variant A"), in 1936. It was powered by Maybach's HL 108TR, producing 250 PS (183.87 kW), and used the SGR 75 transmission with five forward gears and one reverse, achieving a maximum road speed of 31 kilometres per hour (19.26 mph). As main armament, the vehicle mounted the short-barrelled, howitzer-like 75 mm (2.95 in) Kampfwagenkanone 37 L/24 (7.5 cm

KwK 37 L/24) tank gun, which was a low-velocity weapon mainly designed to fire high-explosive shells. Against armoured targets, firing the Panzergranate (armor-piercing shell) at 430 metres per second (1,410 ft/s) the KwK 37 could penetrate 43 millimetres (1.69 in), inclined at 30 degrees, at ranges of up to 700 metres (2,300 ft). A 7.92 mm (0.31 in) MG 34 machine gun was mounted coaxially with the main weapon in the turret, while a second machine gun of the same type was mounted in the front plate of the hull. The main weapon and coaxial machine gun were sighted with a Turmzielfernrohr 5b optic while the hull machine gun was sighted with a Kugelzielfernrohr 2 optic. The Ausf. A was protected by 14.5 mm (0.57 in) of steel armour on the front plate of the chassis, and 20 mm (0.79 in) on the turret. This was only capable of stopping artillery fragments, small-arms fire, and light anti-tank projectiles.

After manufacturing 35 tanks of the A version, in 1937 production moved to the Ausf. B. Improvements included the replacement of the original engine with the more powerful 300 PS (220.65 kW) Maybach HL 120TR, and the transmission with the new SSG 75 transmission, with six forward gears and one reverse gear. Despite a weight increase to 16 t (18 short tons), this improved the tank's speed to 42 kilometres per hour (26.10 mph). The glacis plate was augmented to a maximum thickness of 30 millimetres (1.18 in), while a new driver's visor was installed on the straightened hull front plate, and the hull-mounted machine gun was replaced by a covered pistol port and visor flap. The superstructure width and ammunition stowage were reduced to save weight. A new commander's cupola was introduced which was adopted from the Panzer III Ausf. C. A Nebelkerzenabwurfvorrichtung (smoke grenade discharger rack) was mounted on the rear of the hull starting in July 1938 and was back fitted to earlier Ausf. A and Ausf. B chassis starting in August 1938. Forty-two Panzer IV Ausf. Bs were manufactured before the introduction of the Ausf. C in 1938. This saw the turret armor increased to 30 mm (1.18 in), which brought the tank's weight to 18.14 t (20.00 short tons). After assembling 40 Ausf. Cs, starting with chassis number 80341, the engine was replaced with the improved HL 120TRM. The last of the 140 Ausf. Cs was produced in August 1939, and production changed to the Ausf. D; this variant, of which 248 vehicles were produced, reintroduced the hull machine gun and changed the turret's internal gun mantlet to a 35 mm (1.38 in) thick external mantlet. Again, protection was upgraded, this time by increasing side armour to 20 mm (0.79 in). As the German invasion of Poland in September 1939 came to an end, it was decided to scale up production of the Panzer IV, which was adopted for general use on 27 September 1939 as the Sonderkraftfahrzeug 161 (Sd.Kfz. 161)

In response to the difficulty of penetrating the armour of British infantry tanks (Matilda and Matilda II) during the Battle of France, the Germans had tested a 50 mm (1.97 in) gun—based on the 5 cm Pak 38 anti-tank gun—on a Panzer IV Ausf. D. However, with the rapid German victory in France, the original order of 80 tanks was canceled before they entered production.

In October 1940, the Ausf. E was introduced. This had 30 millimetres (1.18 in) of armour on the bow plate, while a 30-millimetre (1.18 in) appliqué steel plate was added to the glacis as an interim measure. A new driver's visor, adopted from the Sturmgeschütz III was installed on the hull front plate. A new commander's cupola, adopted from the Panzer III Ausf. G, was relocated forward on the turret eliminating the bulge underneath the cupola. Older model Panzer IV tanks were retrofitted with these features when returned to the manufacturer for servicing. 206 Ausf. Es were produced between October 1940 and April 1941.

In April 1941, production of the Panzer IV Ausf. F started. It featured 50 mm (1.97 in) single-plate armour on the turret and hull, as opposed to the appliqué armour added to the Ausf. E, and a further increase in side armour to 30 mm (1.18 in). The main engine exhaust muffler was shortened and a compact auxiliary generator muffler was mounted to its left. The weight of the vehicle was now 22.3 tonnes (24.6 short tons), which required a corresponding modification of track width from 380 to 400 mm (14.96 to 15.75 in) to reduce ground pressure. The wider tracks also facilitated the fitting of track shoe "ice sprags", and the rear idler wheel and front sprocket were modified. The designation Ausf. F was changed in the meantime to Ausf. F1, after the distinct new model, the Ausf. F2, appeared. A total of 471 Ausf. F (later temporarily called F1) tanks were produced from April 1941 to March 1942.