

\$19.95

PANZER TRACTS No.6

Schwere Panzerkampfwagen

D.W. to E-100
including the Tigers



Assembled by Thomas L. Jentz
Scale Prints by Hilary Louis Doyle

Cover Photo: This Panzerkampfwagen Tiger Ausf.B had the camouflage pattern applied sparingly, leaving much of the red oxide primer showing when it was completed by Henschel in early 1945. (WJS)

The scale prints, drawn by Hilary Louis Doyle originally in 1/24 scale, have been reduced 68.6 percent to approximately 1/35 scale - with the exception of the E-100 drawings reproduced at 1/48th scale.

With the exception of the rear decks, details for the VK 30.01 (H), VK 36.01, and Porsche Typ 100 were drawn as found in original photographs and partial drawings.

Thanks are especially due to Walter J. Spielberger (16), Karl R. Pawlas (4), Karlheinz Muench (2), Peter Chamberlain (2), Craig Hunt (1), and Steve Zaloga (1) for providing copies of rare and unique photos. Photos were also obtained from The Tank Museum (10), Porsche (4), and National Archives (2).

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schwere Panzerkampfwagen Evolution

The first mention of a heavy Panzer was in a Heeres Waffenamt report dated 30 October 1935 on the anti-tank weapons needed to successfully combat heavy French tanks, as follows: "The initial velocity of the 7.5 cm gun must be increased to about 650 meters/second to be effective against the Char 2 C, 3 C, and D. This type of increase requires the design of a completely new Panzer. Based on rough calculations, armor protection up to 20 mm thick (still not fully protected against 2 cm guns) would result in a weight of at least 30 tons. The head of the army recently spoke out against this type of tank."

Over a year after initial deliberations on whether to build a 30 ton Panzer, Baurat Kniepkamp (an automotive specialist) of Wa Prw 6 (the tank design office of the ordnance department) in January 1937 asked Henschel to design a Fahrgestell (chassis) for it. As with most Panzer designs, Wa Prw 6 laid down the specifications and selected the major components. It was then up to the contracted design firms to create a working product within the restrictions of the specifications. As in most of the previous Panzer series, Wa Prw 6 selected one firm to complete the detailed design for the chassis and a second firm to perform the detailed design work for the turret. Earlier, in November 1936, Wa Prw 6 had requested that Krupp create a conceptual design for a turret for a 30 ton Panzer mounting a 7.5 cm gun. The design of this 30 ton Panzer progressed from the D.W.1 and D.W.2 test chassis, to a VK 30.01 (H) trial series of three chassis, and finally to a VK 30.01 (H) 0-Serie of eight complete Panzers with turrets.

With a short 7.5 cm Kw.K. L/24 gun in the turret, armor protection was limited to 50 mm thick (proof against 3.7 cm Pzgr.), in order to stay within the weight class of 30 metric tons. In January 1939, work was started on designing a 65 ton Panzer (known as the S.W. and VK 65.01) with 80 mm thick armor (proof against 5 cm Pzgr.) and in June 1939 on a 100 ton Panzer (known as the A.W.) with 100 mm thick armor (proof against 8.8 cm Pzgr.). Up to this point chassis design for all heavy Panzers had been given to Henschel and turret design to Krupp.

Competition with Henschel's designs didn't occur until after Dr.h.c.Ing. Ferdinand Porsche was named chairman of the Panzerkommission and his firm started designing a 30 ton Panzer (named Typ 100) in December 1939. Henschel kept a standard drive train with mechanical transmission and steering. Porsche considered this to be inadequate for the weight and started designing gasoline engines

coupled with generators to drive electric motors. Krupp was still the sole turret designer for these heavy tanks and was contracted to produce turrets with 8.8 cm Kw.K. L/56 guns for mounting on Porsche's Typ 100 chassis.

Concerned with British developments - prior to any encounters with the Russian T-34 tanks or heavier KV-1 tanks - a decision was made in May 1941 to increase the armor-penetration capability of tank guns and to increase frontal armor protection to 100 mm. A 7.5/5 cm (tapered bore) Waffe 0725 in a Krupp turret was to be mounted on Henschel's VK 36.01, and a 8.8 cm Kw.K. L/56 in a Krupp turret was to be mounted on Porsche's VK 45.01 (P) chassis. Due to a shortage of tungsten for tapered bore projectiles, in July 1941 the Henschel chassis was converted to a VK 45.01 (H) mounting the same Krupp turret with an 8.8 cm Kw.K. L/56 gun designed for the VK 45.01 (P). In answer to the demand for increased armor penetration, Krupp started designing a new turret for the 8.8 cm Kw.K. L/71 gun to be mounted on the Porsche VK 45.02 (P) in mid-1942, which subsequently was mounted on the Henschel VK 45.03 chassis.

Faced with the fact that the Russians had successfully employed 64 metric ton KV tanks in the field, the Heeres Waffenamt lost the argument that tanks had to weigh less than 30 tons to be tactically useful. This led to the creation of super-heavy Panzer designs, where speed was sacrificed in exchange for the heaviest possible armament and armor protection. The first of these super-heavy Panzers was Krupp's VK 70.01 from November 1941 with a 10.5 cm gun. In February 1942, Porsche was ordered to design a 100 ton Panzer, which evolved into the 188 ton Maus with a 12.8 cm gun in a Krupp turret. Having had their VK 70.01 (Pz.Kpfw.Loewe) projects canceled by June 1942, Krupp made a final challenge to Porsche's Maus with their own "Tiger-Maus" in December 1942 (Tiger drive train with Maus turret). In early January 1943, Hitler decided that Porsche's Maus would go into mass production and Krupp's Tiger-Maus was only resurrected in April 1943 as the E-100 chassis in Kniepkamp's Einheitsfahrzeuge (standardized vehicle) development series.

P.S. There never was a "Porsche turret". This is a name invented for postwar literature and has been erroneously construed to mean a turret designed by Porsche. All turrets mounted on Porsche chassis were designed and assembled by Krupp.

Panzerkampfwagen VI (7.5 cm) (VK 30.01 (H)) Fgst.Nr. Serie 150411-150418

In January 1937, Baurat Kniepkamp of Wa Prw 6 asked Henschel to design a Fahrgestell (chassis) for a tank in the 30 ton class. This Panzer was originally named B.W. (verstaerkt), indicating that this was a stronger model than its predecessor the Begleitwagen (code name for the Pz.Kpfw.IV series). On 12 March 1937 the name was changed to I.W. (Infanteriewagen) and on 18 April 1937 to D.W. (Durchbruchswagen). This name implied that a new tactical role had been envisioned for these heavy Panzers to breach (durchbruch) the enemy defenses.

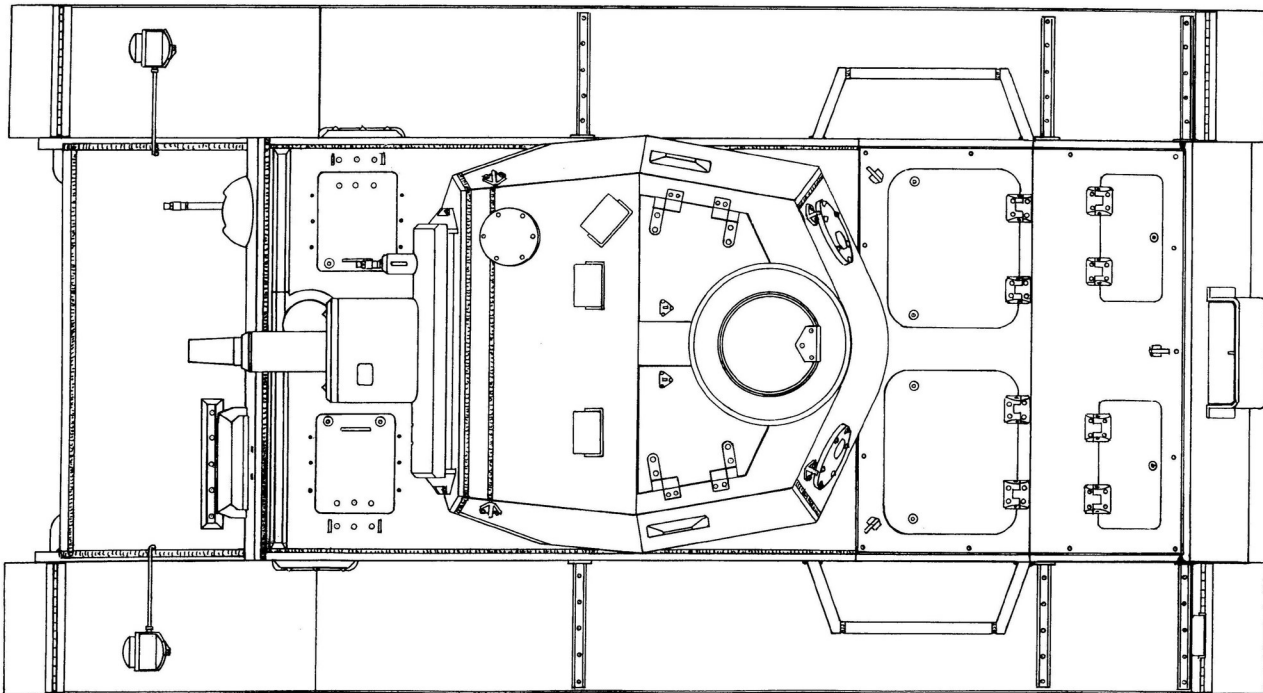
The D.W. was to be armed with a 7.5 cm Kw.K. L/24 gun and be protected by 50 mm thick armor. Henschel completed and tested two Erprobungs-Fahrgestelle (experimental chassis), named D.W.1 and D.W.2. Both had soft-steel hulls, constructed as fore and aft sections bolted at the center. Krupp was awarded the contract to design and build a D.W.-Versuchsturm (trial turret), which they completed by May 1939.

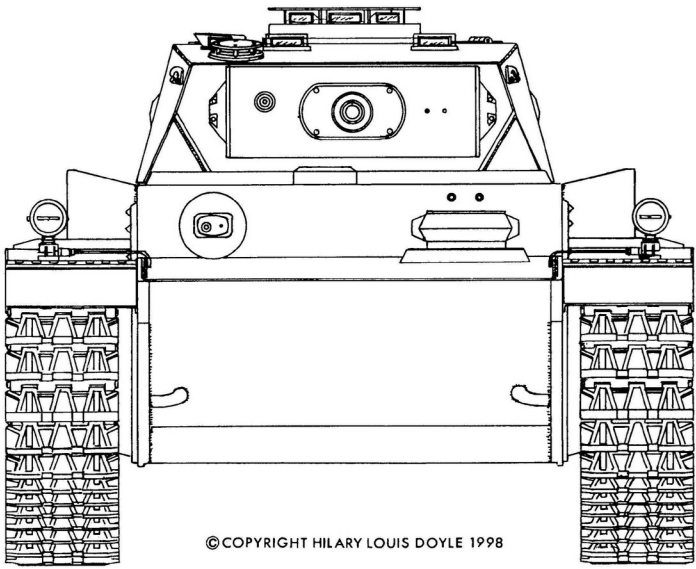
On 9 September 1938, following initial testing of the D.W. chassis, In 6 authorized the Heeres Waffenamt to continue with the development of a Panzer in the 30 ton class. With a 30 metric ton weight restriction, a Panzer armed with a 7.5 cm

Kw.K. L/24 could be designed with armor protection of 50 mm on both the front and sides. Armor plate 50 mm thick was the established standard for effective protection against uncapped armor-piercing shells fired by the German 3.7 cm Pak L/45 anti-tank gun. Officially named the Panzerkampfwagen VI (7.5 cm) by 31 October 1940, it retained the design code name of D.W. along with the new code designation VK 30.01.

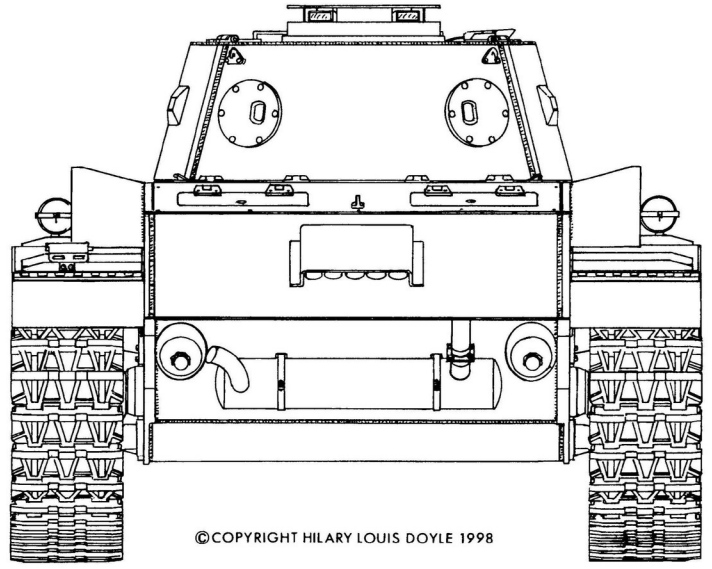
A trial series of three VK 30.01 Versuchsfahrgestell with single-piece hulls was ordered from Henschel. Krupp sent the three armored hulls to Henschel in 1940, where they were assembled and tested. In January 1940, Wa Pruef 6 issued contracts to Henschel and Krupp to complete a 0-Serie of eight VK 30.01. Krupp delivered the armor components from August 1941 to January 1942. Due to the priority being given to the Tiger project, orders were given to complete only four of the 0-Serie with turrets, to be used as training vehicles. These four were completed by Henschel in 1942.

By May 1944, six 0-Serie VK 30.01 turrets with 7.5 cm Kw.K. L/24 were released for emplacement in concrete stands as Turmstellungen and were installed in the Atlantikwall and Westwall.

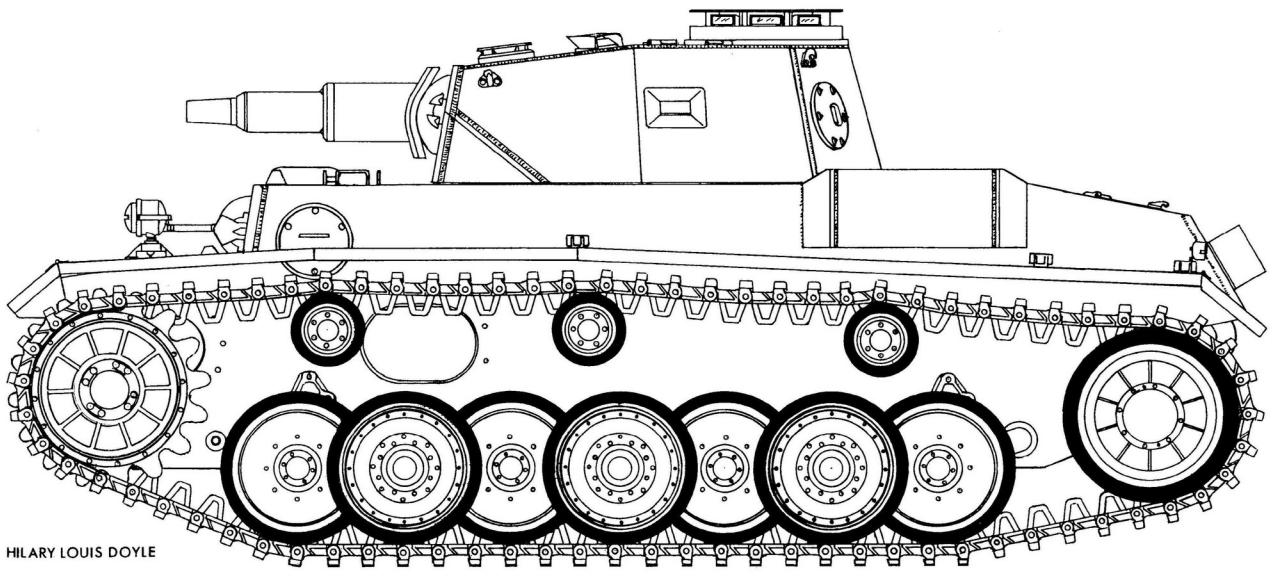




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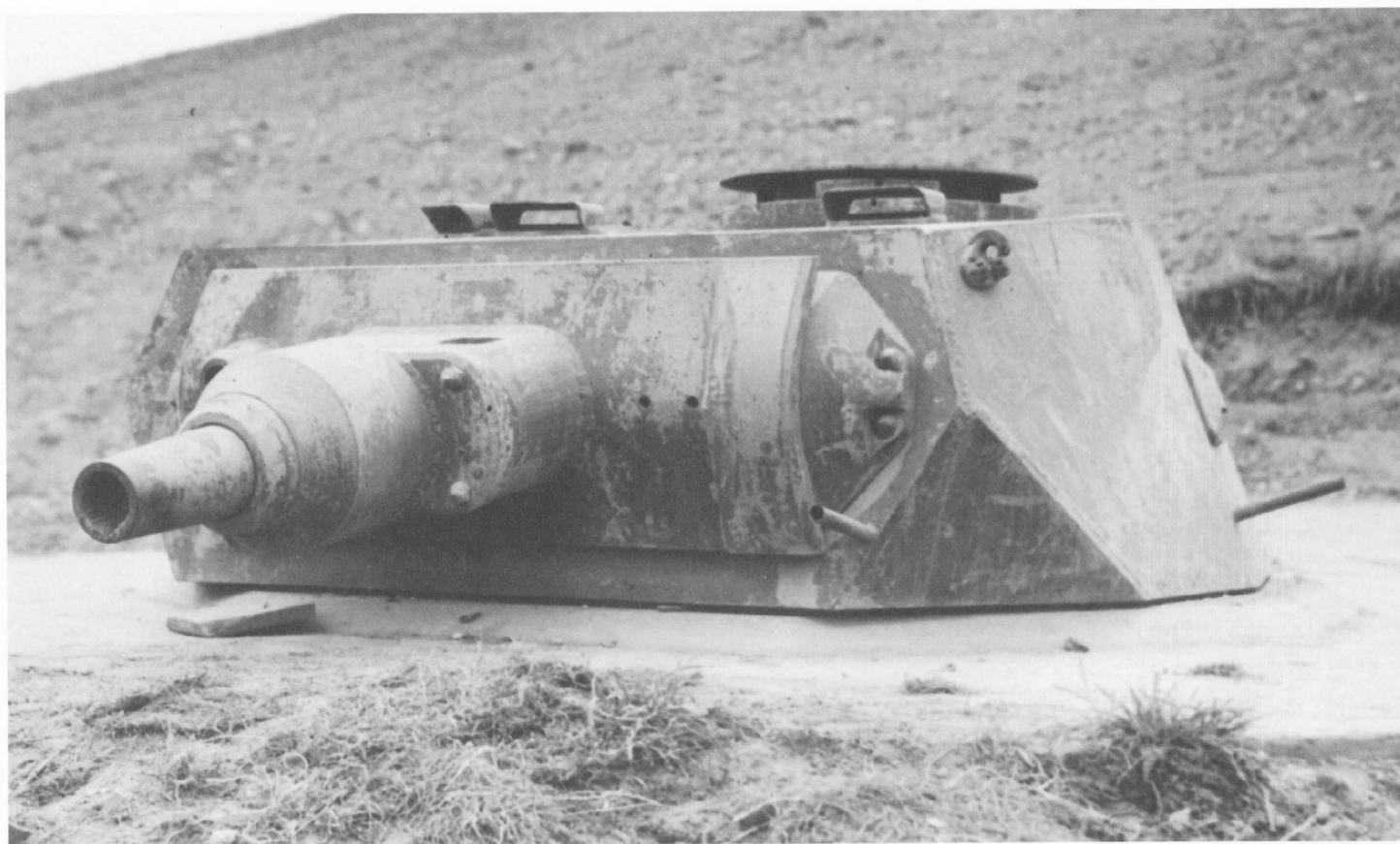


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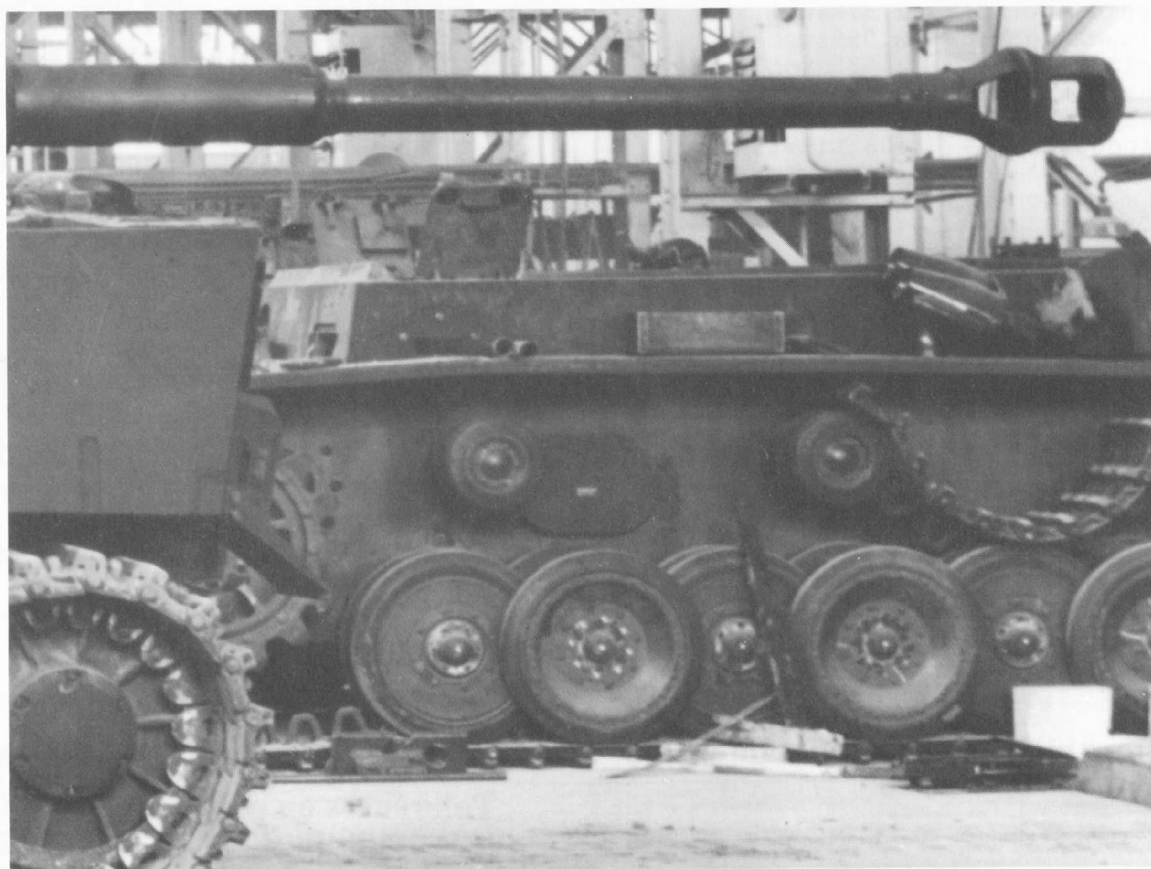


Above and Below: The VK 30.01 (H) Versuchsfahrgestell (Fgst.Nr.2) being used to test trench-digging equipment at Haustenbeck on 30 January 1944. It was the second chassis assembled by Henschel from a trial series of three. (WJS)





Above: This is one of four VK 30.01(H) turrets installed as Panzerturmstellung (armored turret emplacements) in the Atlantic Wall. (NA). Below: The third and fourth VK 30.01 (H) of the 0-Serie of eight being assembled at Henschel in April 1942. (TTM)



**Panzerkampfwagen VI (7.5 cm)
(VK 30.01)
Fgst.Nr. Serie 150411 - 150418**

Weapons Data:

In Turret: 1 - 7.5 cm Kw.K. L/24
1 - 7.92 mm M.G.34
Elevation: -10°, +20°
Traverse: 360° hydraulic and hand
Gun Sight: T.Z.F.9 (2.5x 24°)
Graduated to: 1200 meters for Pzgr
2000 meters for Sprgr.

In Ball Mount: 1 - 7.92 mm M.G.34
Elevation: -10°, +20°
Traverse: 15°L, 15°R by hand
Gun Sight: K.Z.F.2 (1.8x 18°)

Ammunition: 90 to 100 - 7.5 cm
4350 - 7.92 mm

Crew:

Commander
Gunner
Loader
Radio Operator
Driver

Communication: Fu 5 and Fu 2
Intercom

Measurements:

Length, overall: 5.775 m
Width, overall: 3.155 m
Height, overall: 2.575 m
Firing Height: 2.095 m
Wheel Base: 2.635 m
Track Contact: 2.970 m
Combat Loaded: 32 metric tons
Fuel Capacity: 408 Liters

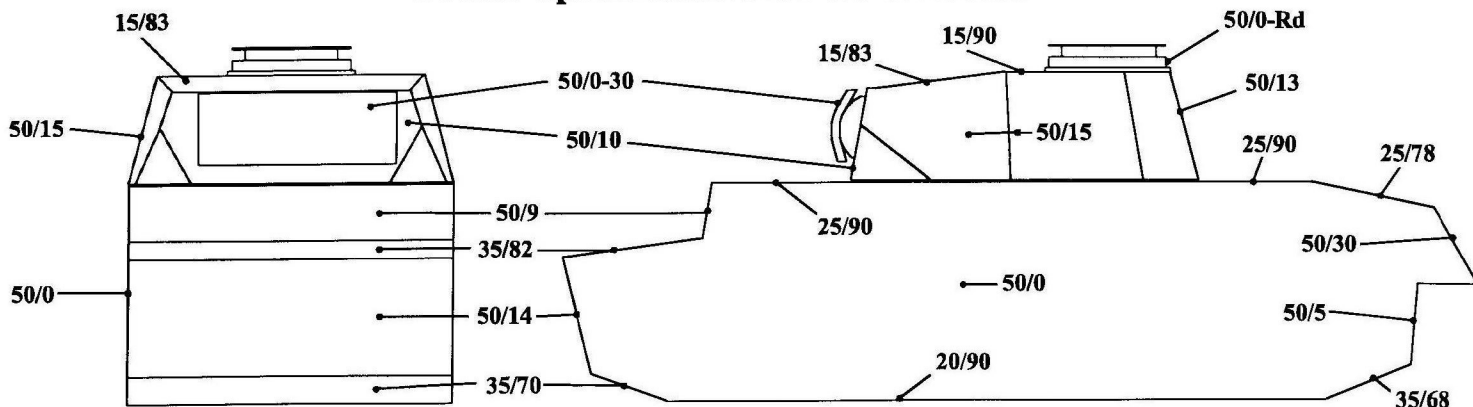
Automotive Capabilities:

Maximum Speed: 35 km/hr
Avg. Road Speed: ?? km/hr
Cross Country: ?? km/hr
Range on Road: 150 km
Cross Country: ?? km
Grade: 30°
Trench Crossing: 1.6 m
Step: 80 cm
Fording Depth: 120 cm
Ground Clearance: 45 cm
Ground Pressure: 1.04 kg/cm²
Power Ratio: 9.4 HP/ton
Steering Ratio: 1.13

Automotive Components:

Motor: Maybach HL 116
6 cylinder
water cooled
11.6 liter gasoline
300 HP @ 3000 rpm
Transmission: 6 speed SSG 77,
10 speed SRG 328 128,
or
8 speed SMG 90
Steering: Triple radius
Drive: Front sprocket
Roadwheels: 7x2 per side
Tires: 700/98 Rubber
Suspension: Torsion bars
Track: Dry pin
Kgs 520/160
Links per Side: 77

Armor Specifications for the VK 30.01



Armor thickness in mm/angle from vertical

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Tolerances on plate thickness -0 to +5 %

Panzerkampfwagen VI (7.5 cm) (VK 36.01) Ausfuehrung B

Weapons Data:

In Turret: 1 - 7.5/5 cm Kw.K.42
 1 - 7.92 mm M.G.34
 Elevation: -8°, +20°
 Traverse: 360° electric and hand
 Gun Sight: T.Z.F.9a (2.5x 24°)
 Graduated to: ? meters for Pzgr
 ? meters for Sprgr.

In Ball Mount: 1 - 7.92 mm M.G.34
 Elevation: -10° to +20°
 Traverse: 15° L, 15° R
 Gun Sight: K.Z.F.2 (1.8x 18°)

Ammunition: ? - 7.5/5 cm
 ? - 7.92 mm

Crew:

Commander
 Gunner
 Loader
 Radio Operator
 Driver

Communication: Fu 5 and Fu 2
 Intercom

Measurements:

Length, chassis: 6.050 m
 Width, overall: 3.140 m
 Height, overall: 2.685 m
 Firing Height: 2.130 m
 Wheel Base: 2.620 m
 Track Contact: 3.600 m
 Combat Loaded: 40 metric tons
 Fuel Capacity: ? Liters

Automotive Capabilities:

Maximum Speed: 50 km/hr
 Avg. Road Speed: ?? km/hr
 Cross Country: ?? km/hr
 Range on Road: ?? km
 Cross Country: ?? km
 Grade: 35°
 Trench Crossing: 2.3 m
 Step: 77 cm
 Fording Depth: 120 cm
 Ground Clearance: 45 cm
 Ground Pressure: 1.07 kg/cm²
 Power Ratio: 11.2 HP/ton
 Steering Ratio: 1.37

Automotive Components:

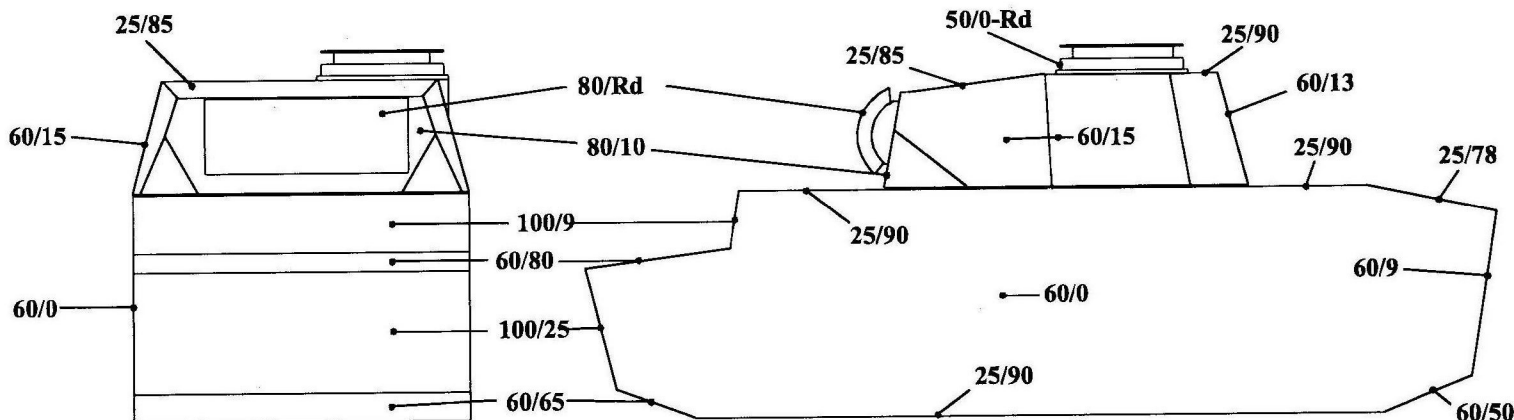
Motor: Maybach HL 174
 V-12 water cooled
 17.4 liter gasoline
 450 HP @ 3000 rpm

Transmission: OG 40 12 16
 Reverse 4.16 km/hr
 1.Gear 3.16 km/hr
 2.Gear 4.72 km/hr
 3.Gear 6.88 km/hr
 4.Gear 10.25 km/hr
 5.Gear 15.65 km/hr
 6.Gear 23.2 km/hr
 7.Gear 33.9 km/hr
 8.Gear 50.5 km/hr

Steering: Double radius
 Drive: Front sprocket
 Roadwheels: 8x2 per side
 Tires: 800/95 Rubber
 Suspension: Torsion bars
 Track: Dry pin
 Kgs 63/520/130

Links per Side: 94

Armor Specifications for the VK 36.01



Armor thickness in mm/angle from vertical

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Tolerances on plate thickness -0 to +5 %

Panzerkampfwagen VI (7.5 cm) (VK 36.01) Ausfuehrung B

In mid-1939, Wa Pruef 6 asked Krupp to design a turret for a new Panzerkampfwagen designated A.W., the abbreviation for Artilleriewagen. The turret was to have 100 mm thick armor and mount a 10.5 cm L/20 to L/28 gun. Krupp completed the conceptual design by 20 October 1939. The entire Panzerkampfwagen was projected to weigh more than 80 metric tons.

Following the defeat of France, Wa Pruef 6 declared that the development of a Panzer with a 10 cm gun had gained in importance but the weight had to be kept under 30 tons because of bridge restrictions. Krupp was ordered to convert the A.W. turret design so that it could be mounted on a D.W. Fahrgestell, or convert the D.W. turret design to mount a 10.5 cm gun and halt work on the A.W. turret. In mid-1940, Wa Pruef 6 ordered Henschel to redesign the D.W. Fahrgestell to mount the new turret with a 10.5 cm gun. The weight of the resulting Panzer, designated D.W. (VK 36.01), had now increased to 36 metric tons. Initially, the new hull design had 80 mm thick armor plates on the front, 50 mm on the sides and rear, and a 25 mm thick deck and belly.

Following the decision on 26 May 1941 to mount a weapon with higher armor-penetration capability, Krupp was notified on 11 June 1941 that the contract for one D.W.Turm with 10.5 cm L/28

armament was rescinded, and it was ordered to produce six D.W.Turm with Waffe 0725 (tapered bore gun firing subcaliber AP projectiles made out of about 1 kg of tungsten). Henschel proceeded to revise the design of the superstructure and internal layout of the VK 36.01 Fahrgestell to accommodate the new turret. With the ordered increase in the frontal armor thickness to 100 mm and side armor at 60 mm, the total weight of a complete combat-ready VK 36.01 with a crew of five had increased to 40 metric tons.

It was determined in July 1941 that an insufficient stockpile of tungsten existed to provide an adequate ammunition supply for a large number of VK 36.01 with Waffe 0725. Therefore, in accordance with Hitler's directive, the VK 36.01 was not continued as a production series. Only the six Versuchsserie VK 36.01 were to be completed.

Due to the higher priority of the Tiger project, in January 1942 Wa Pruef 6 authorized the contract to be cut back to two Pz.Kpfw.VI Ausf.B (VK 36.01). Henschel completed only one chassis without a turret in March 1942. Henschel was ordered to convert five chassis to schweres Abschleppfahrzeug (VKz 35.01), but no evidence has been found that this project was completed. Krupp was ordered to complete the six Pz.Kpfw. VK 36.01 turrets for installation as fixed emplacements, but due to bombing raids on Essen this project was not completed by the end of the war.

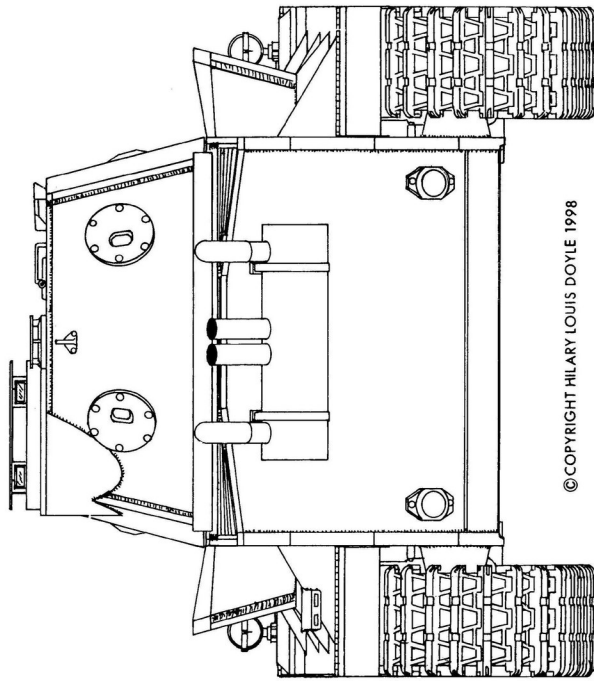


Left and Right:
The only VK 36.01 chassis
took part in comparison
trials at Berka in November
1942 - Reichsminister Speer
is driving, with Dr.Porsche
as a passenger. (WJS)

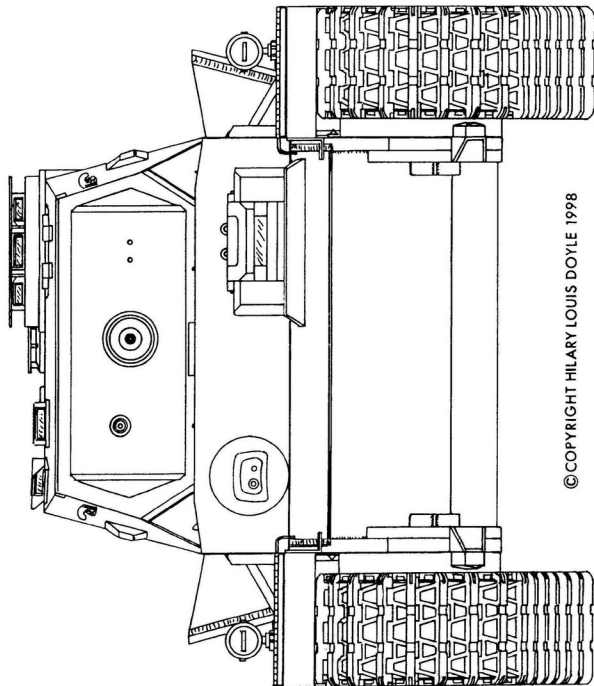


Above: After assembly at Henschel, the VK 36.01 chassis was sent down to Maybach in Friedrichshafen for further testing. (WJS)

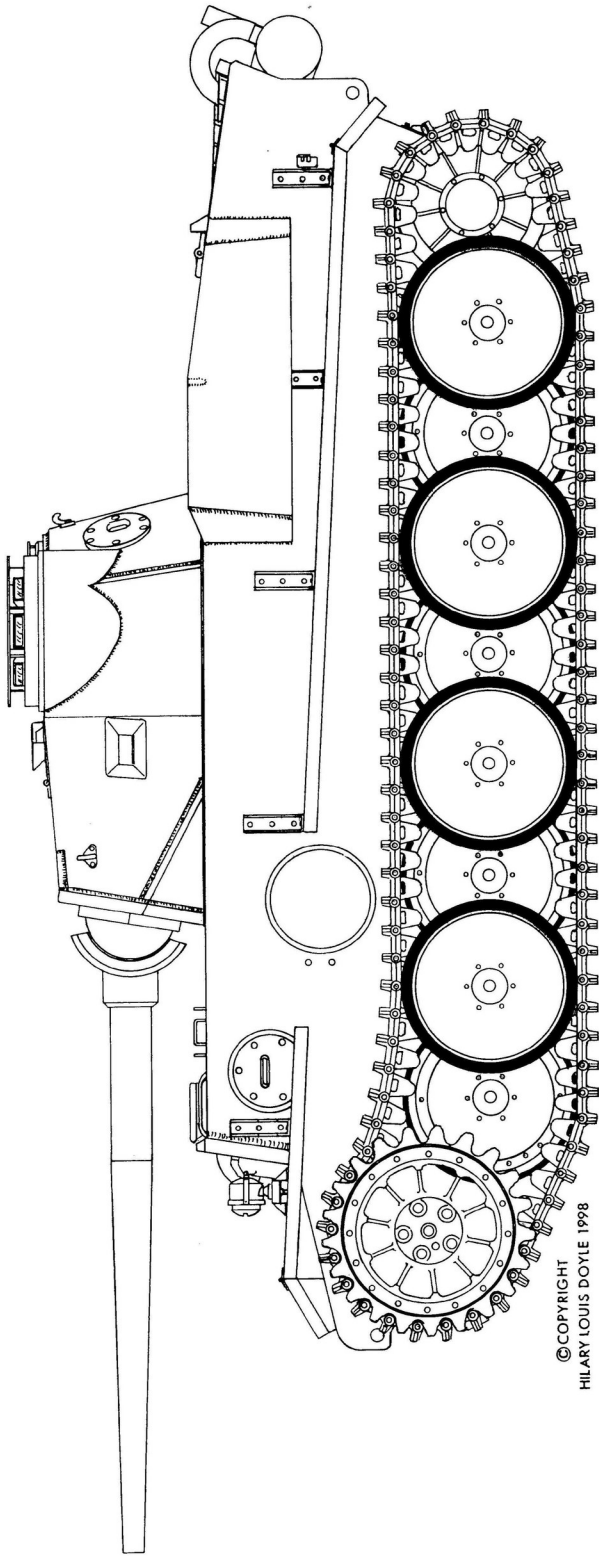




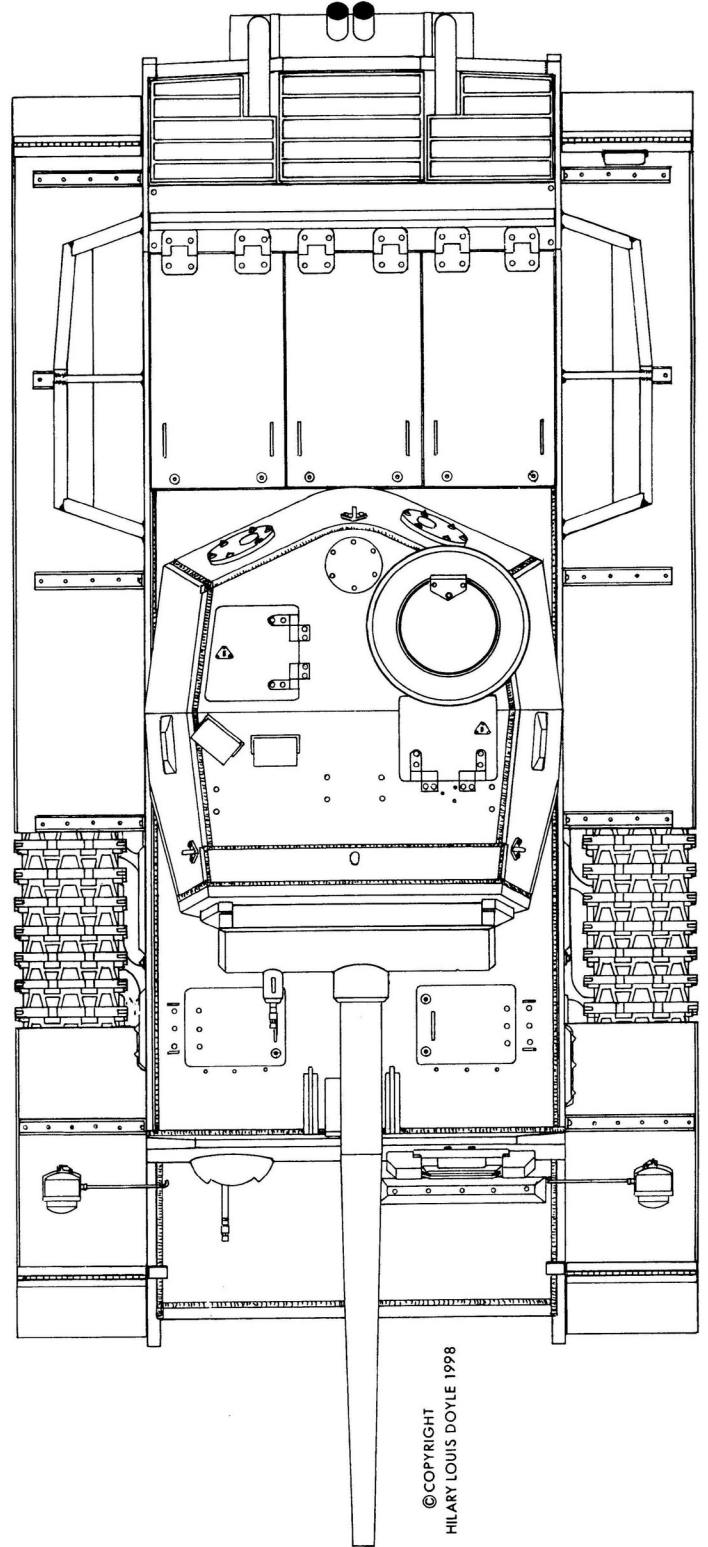
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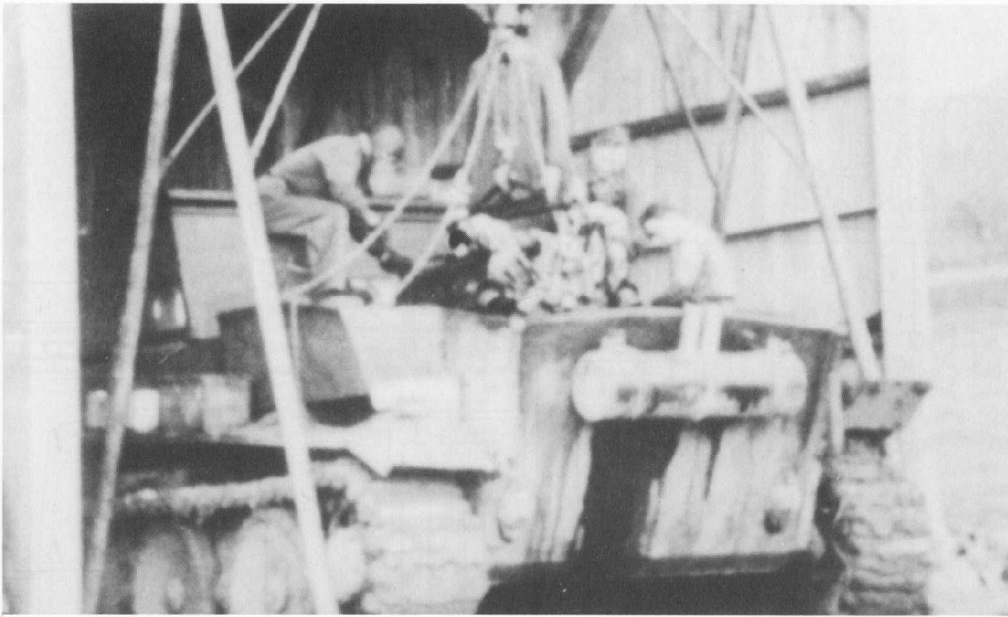
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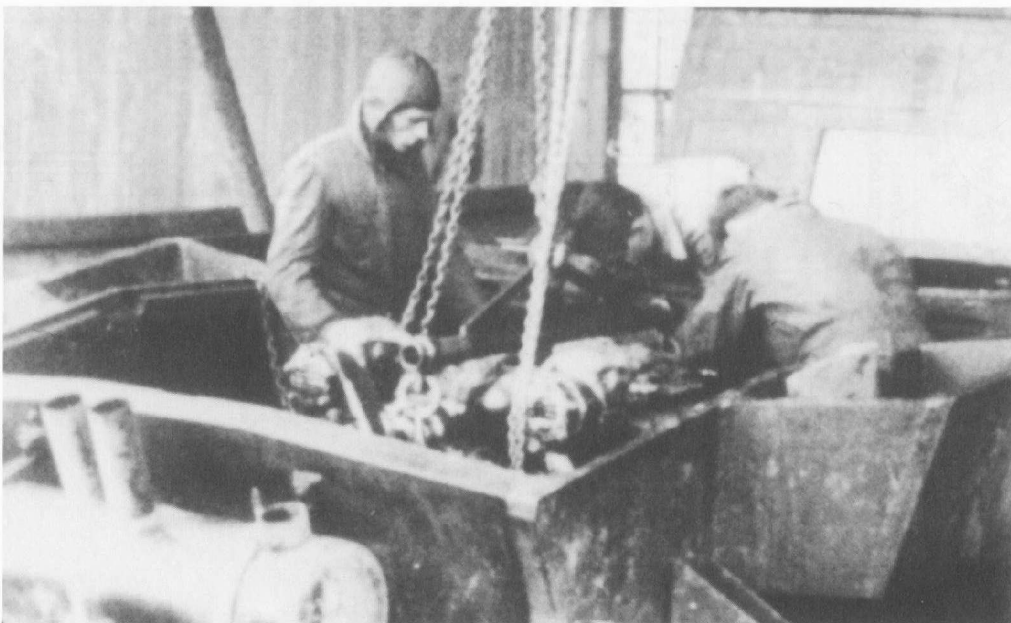
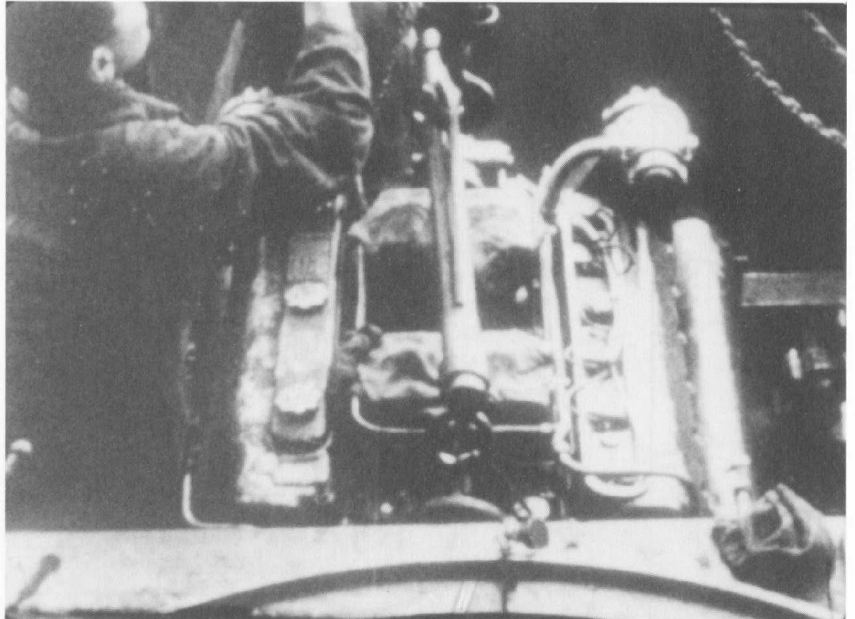
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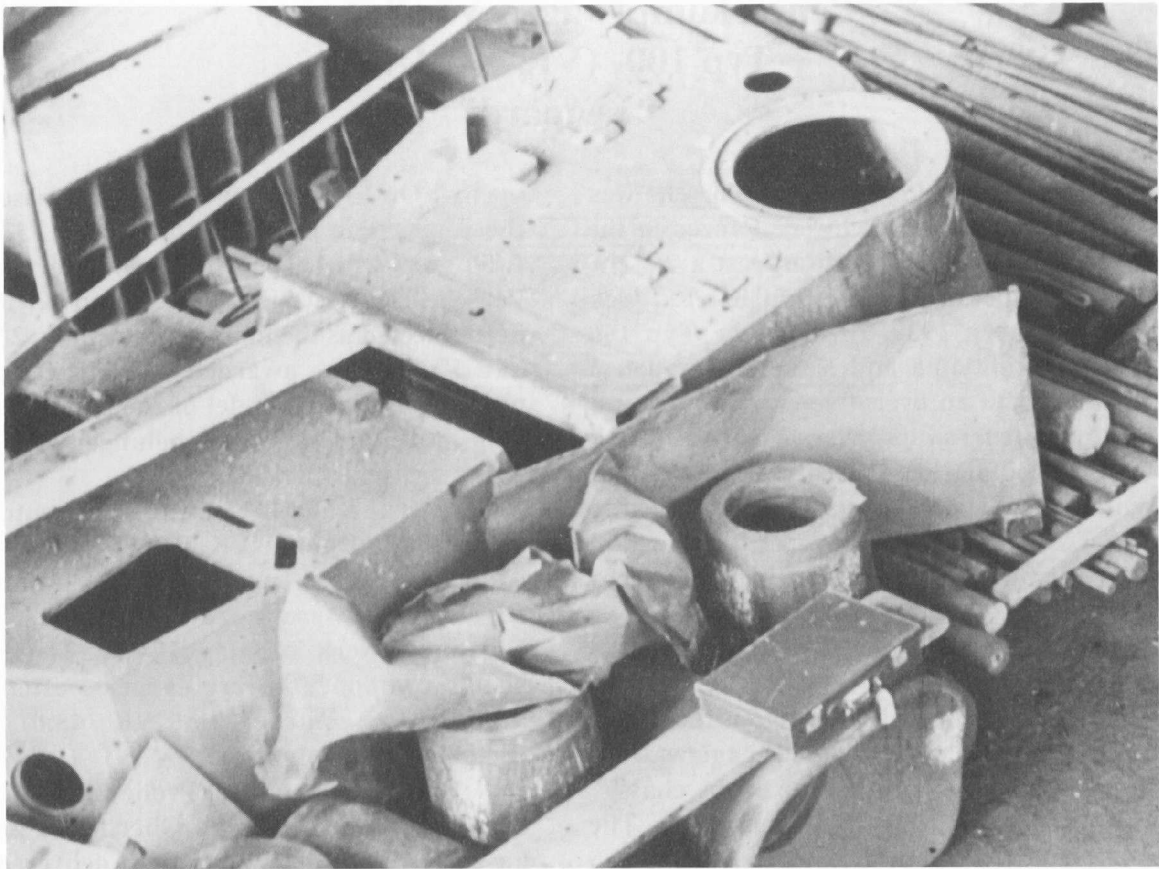


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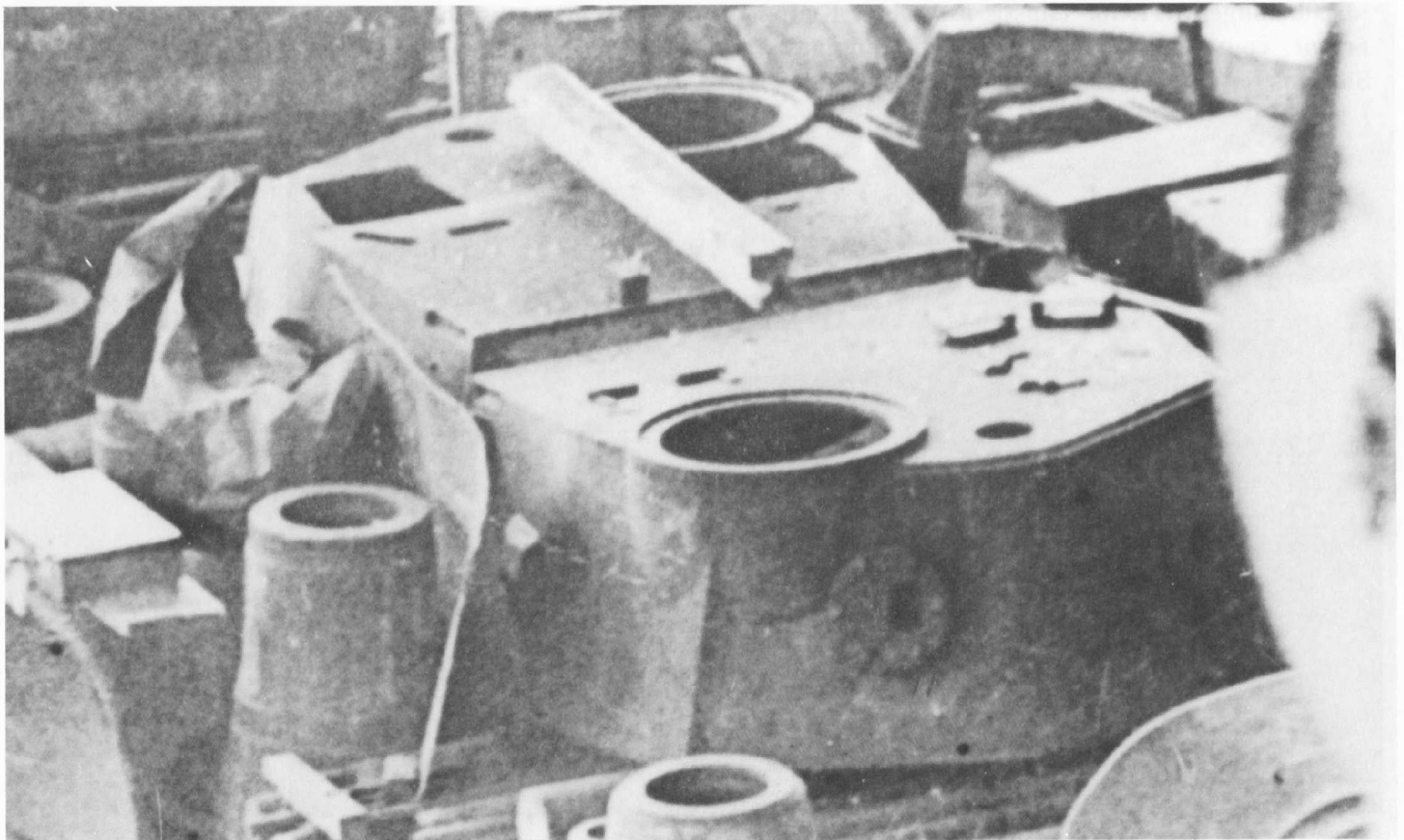


This Page:
The Maybach HL 174 engine being replaced in the only VK 36.01 chassis that was completed. The design of the lower rear of the VK 36.01 was taken over by its direct descendent, the VK 45.01 (H). (WJS)





Above and Below: The partially assembled VK 36.01 turrets were still at Krupp, Essen at the end of the war. Due to bombing raids, Krupp failed to complete the conversion of these turrets for installation as Panzerturmstellung (armored turret emplacements). (TTM)



Panzerkampfwagen VI (Porsche) Typ 100, (VK 30.01(P)) “Leopard”

At the end of 1939 Professor Dr. Porsche was tasked with development of a schwere Panzer in the 25 to 30 ton weight class for which at least a 7.5 cm Kw.K. L/24, or if possible a 10.5 cm Kw.K., was desired. In December 1939, the Porsche Typ 100 design project was initiated and a sketch completed showing a Panzer with an overall length of 8 meters, overall width of 3 meters, and overall height of 2.25 meters. Ground contact length of the track was 4.5 meters. While Porsche was allowed to independently design the chassis, they were advised of fundamental design limitations and given financial support from Wa Pruef 6.

Porsche did not consider a mechanical transmission to be adequate for this heavy vehicle and selected a gasoline-electric drive train for their Typ 100 design. Two air-cooled 10-cylinder engines were mounted beside each other in the rear of the chassis, each connected to an electric generator. The electricity was used to power two electrical motors mounted forward in the hull which in turn drove the front drive sprockets for the tracks through planetary gears in the final drives. Steering was controlled electrically. By March 1941, the design was sufficiently advanced to allow the award of contracts to Nibelungenwerk for chassis assembly, Krupp for armor components, Steyr for the engines, and Siemens for the electric generators and motors.

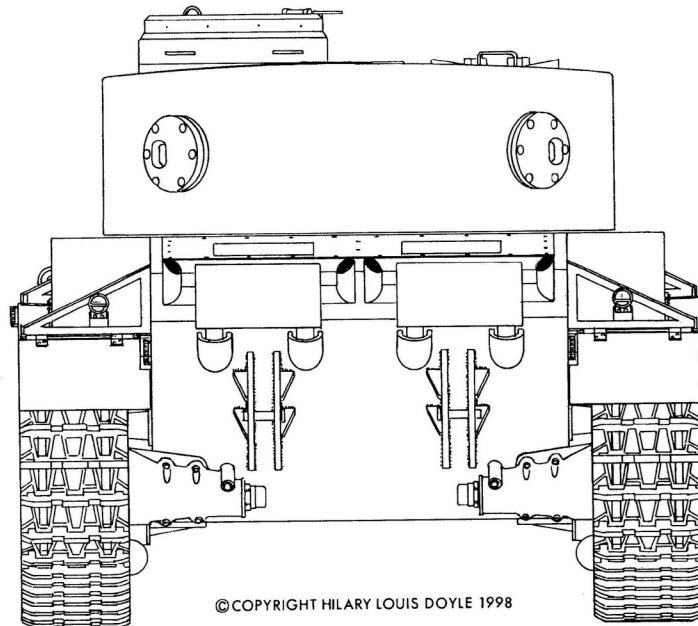
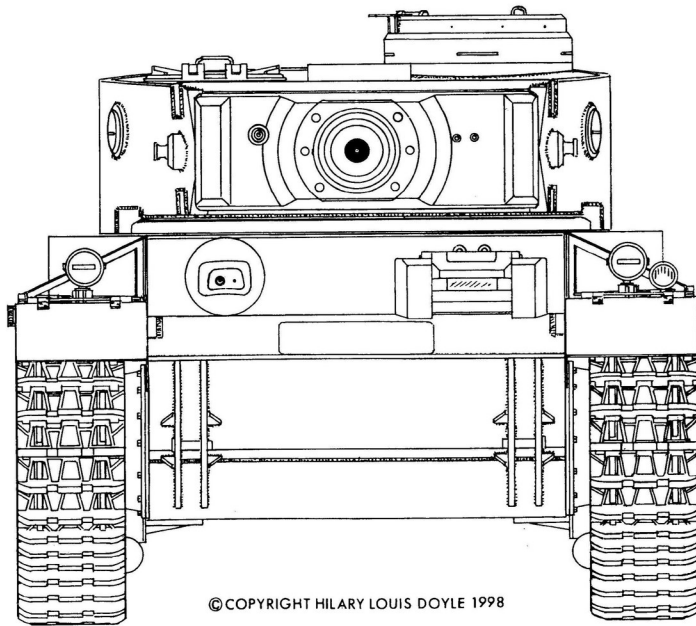
On 13 March 1941, Krupp advised Porsche of the penetration capability of 10 cm L/52 and 8.8 cm L/56 guns which could be used as armament in the Porsche Pz.Kpfw.VI. The 8.8 cm Kw.K. L/56 had been selected as the main armament by 24 April 1941, and Krupp was awarded a contract to design the turret. A wooden model of the turret was completed by Krupp and sent to Nibelungenwerk on 24 May 1941.

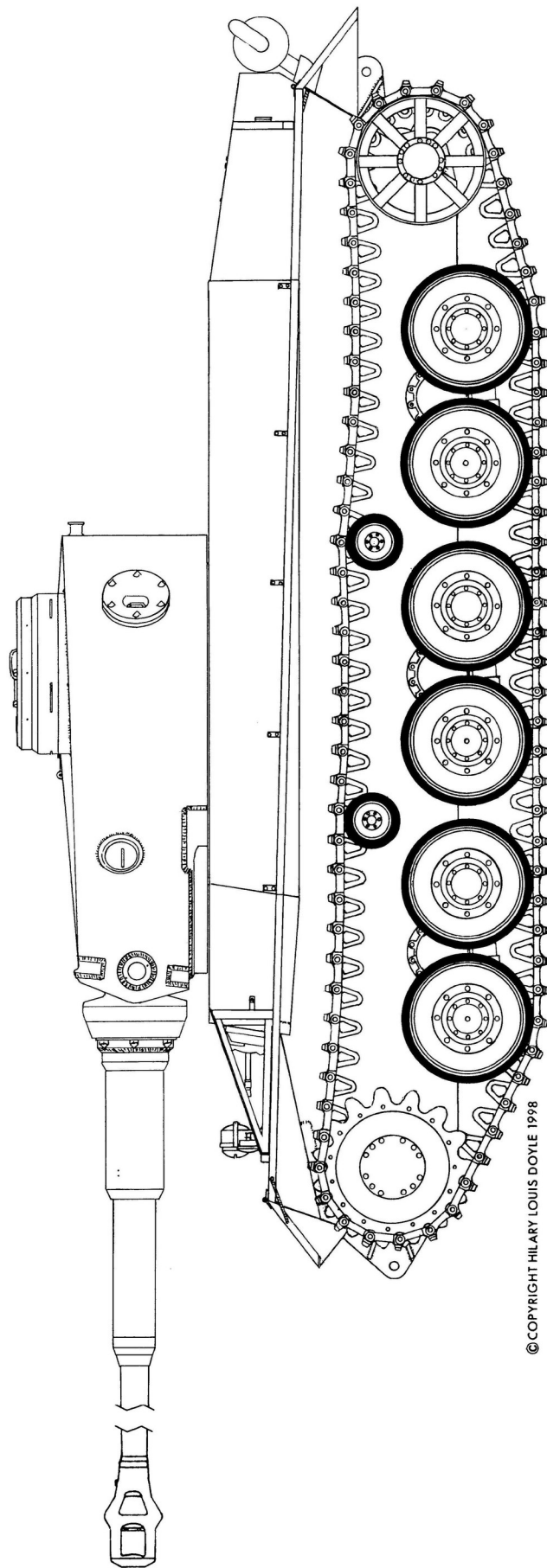
Krupp had been awarded a contract for three armor hulls for the VK 30.01 (P) by March 1941. Additional armor components to complete a total of six tanks were ordered from Krupp by Nibelungenwerk in May 1941. These orders for armor components were canceled after Krupp was awarded a contract for VK 45.01 (P) armor components in July 1941.

A single soft-steel Probewanne (test hull) was completed by Eisenwerke Oberdonau and two V-10 air-cooled Typ 100 engines were delivered by Steyr in July 1941. Only the one Typ 100 chassis was completed in running order at Nibelungenwerk. As recorded in the history of the Ruestungsinspektion XVII for the period 1 January to 31 May 1942: “Production of the Pz.Kpfw.Leopard, considered as the Versuchsfahrzeug with soft steel hull for the Tiger, was stopped as the Tigerprogram was taken on.”

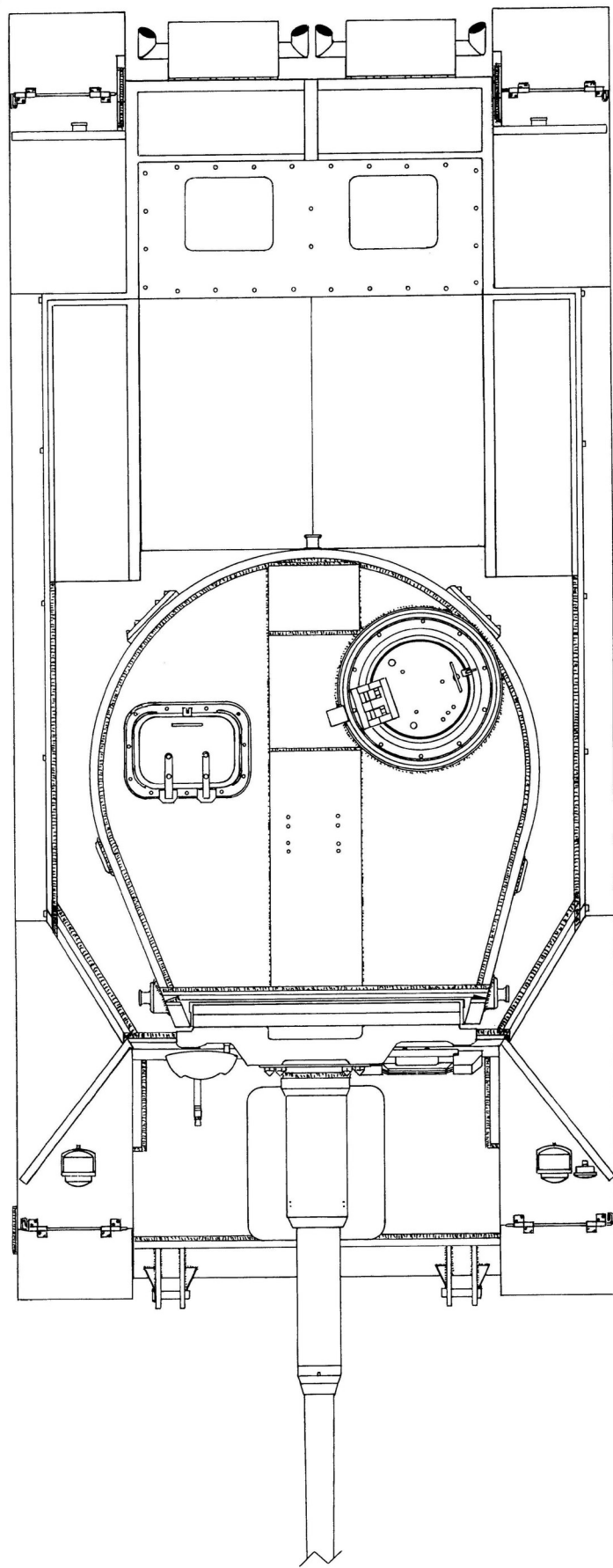


Left:
The Porsche Typ 100 chassis is being used to assist in getting a Typ 101 chassis running at Nibelungenwerk in Austria.
(WJS)





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Above and Below: A concrete test weight was mounted in place of a turret on the Porsche Typ 100 chassis with “soft” steel hull. The turret with an 8.8 cm Kw.K. L/56 gun, designed by Krupp for mounting on the Porsche Typ 100, was used for the Porsche Typ 101 and Henschel Tiger I. (WJS)



Tiger (P)

Panzerkampfwagen VI P (8.8 cm Kw.K.36 (L/56)) (Sd.Kfz.181)

Fgst.Nr. Serie 150001-150100

Weapons Data:

In Turret: 1 - 8.8 cm Kw.K.36 L/56
 1 - 7.92 mm M.G.34

Elevation: -8°, +15°
 Traverse: 360° electric and hand
 Gun Sight: T.Z.F.9b (2.5x 24°)
 Graduated to: 4000 meters for Sprgr.
 3000 meters for Pzgr.39
 1200 meters for MG

In Ball Mount: 1 - 7.92 mm M.G.34
 Elevation: -10° to +20°
 Traverse: 15° L, 15° R
 Gun Sight: K.Z.F.2 (1.8x 18°)

Ammunition: 64 (80) - 8.8 cm
 4350 - 7.92 mm
 192 - 9 mm

Crew: Commander
 Gunner
 Loader
 Driver
 Radio Operator

Communication: Fu 5 and Fu 2
 Intercom

Measurements:

Length, overall: 9.54 m
 Length, w/o gun: 6.60 m
 Width, overall: 3.20 m (3.40 m)
 Height, overall: 2.90 m
 Firing Height: 2.20 m
 Wheel Base: 2.66 m
 Track Contact: 4.12 m
 Combat Loaded: 60 metric tons
 Fuel Capacity: 520 Liters

Automotive Capabilities:

Maximum Speed: 35 km/hr
 Avg. Road Speed: 20 km/hr
 Cross Country: 8-10 km/hr
 Range on Road: 105 km
 Cross Country: 48 km
 Grade: 30°
 Trench Crossing: 2.6 m
 Step: 80 cm
 Fording Depth: 130 cm
 Ground Clearance: 48 cm
 Ground Pressure: 1.21 (1.14) kg/cm²
 Power Ratio: 10.3 HP/ton
 Pressure on Wheel: 556 kg/cm
 Steering Ratio: 1.55
 Turning Circle: 6.60 m

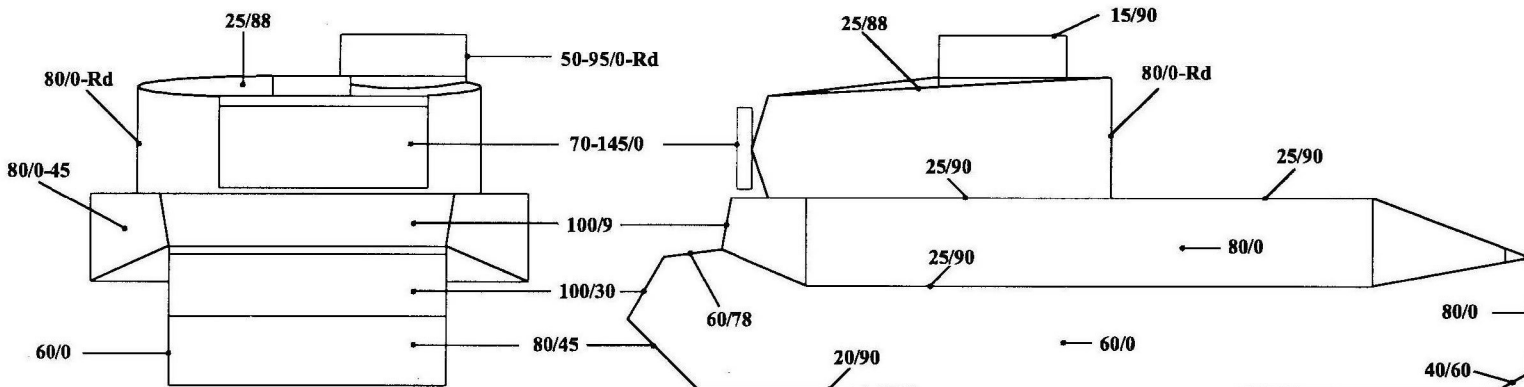
Automotive Components:

Motor: 2 Porsche Typ 101
 V-10 air cooled
 15 liter gasoline
 310 HP @ 2500 rpm

Transmission: 2 Siemens Generators
 Typ aGV 275/24 rated
 at 275 kilowatts
 2 Siemens Electric
 Motors Type D1495a
 rated at 230 Kw
 Electric control

Steering: Rear sprocket
 Drive: 6 per side
 Roadwheels: 700 mm O.D. steel
 Tires: Torsion bars
 Suspension: Dry pin
 Track: Kgs 62/600/130 or
 Kgs 62/640/130
 Links per Side: 109

Armor Specifications for the Pz.Kpfw.VI (P1)



Armor thickness in mm/angle from vertical

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Tolerances on plate thickness -0 to +5 %

“Tiger (P)”
Panzerkampfwagen VI P (8.8 cm) (Sd.Kfz.181)
Fgst.Nr.Serie 150001 - 150100

A meeting with Hitler on 26 May 1941 initiated the evolution of the Porsche Typ 100 into the Typ 101 design. It was decided to increase the frontal armor to 100 mm thick, retain the 8.8 cm Kw.K. on the Porsche model, and pursue development of both Porsche and Henschel Panzers so that six of each would be available in the summer of 1942. The main difference between the Porsche Typ 100 and Typ 101 was the engine (10 liter Typ 100 and 15 liter Typ 101), not the armament or weight classification.

The Typ 101 project wasn't started until sometime in July 1941. Utilizing the Typ 100 as its basis, Porsche did not redesign the Typ 101 hull but merely changed details. Compared to a Typ 100, the Typ 101 was upgraded with two air-cooled, V-10, Porsche Typ 101 gasoline, 310 horsepower engines coupled to two Siemens 275 kilowatt generators. The drive train was moved to the rear of the hull and the motor compartment redesigned. Steel-tired rubber-saving roadwheels replaced the rubber-tired roadwheels, and the track return rollers were dropped. A 600 mm wide track was introduced to lower the ground pressure for cross-country travel. The turret with an 8.8 cm Kw.K. L/56 gun, originally designed by Krupp for the Typ 100, was mounted farther forward on the Typ 101 chassis.

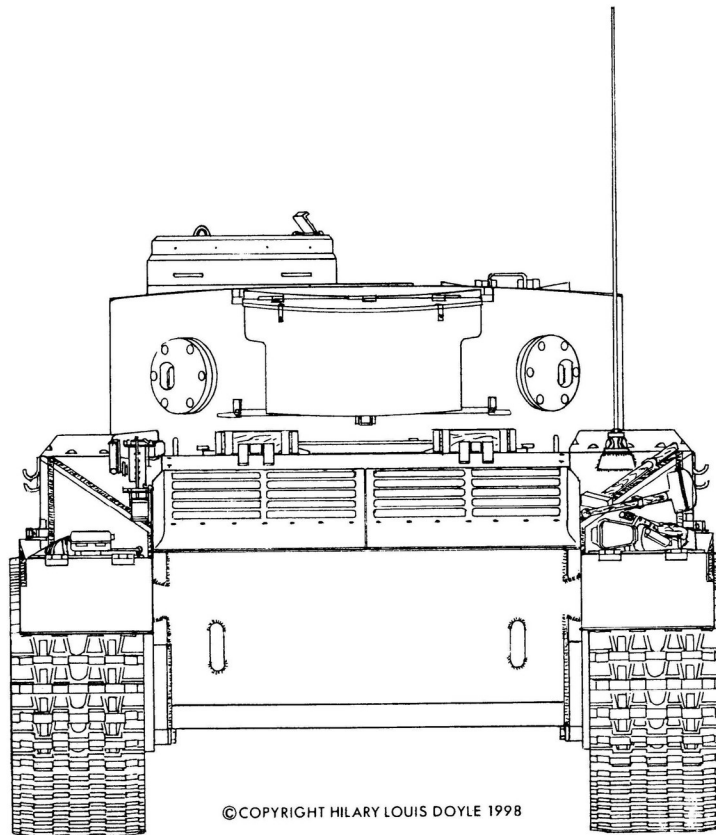
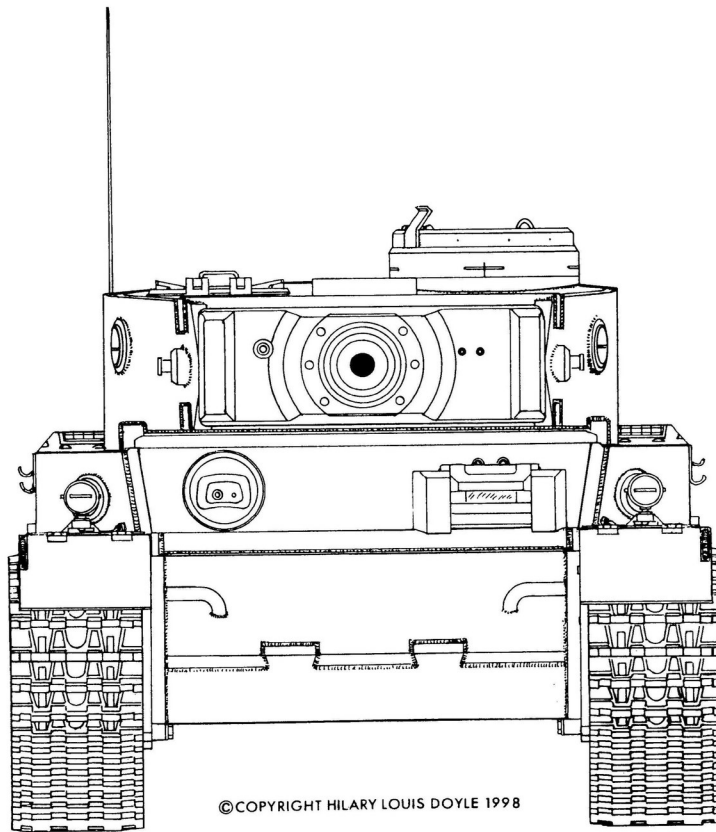
In July 1941, Krupp was awarded contracts to

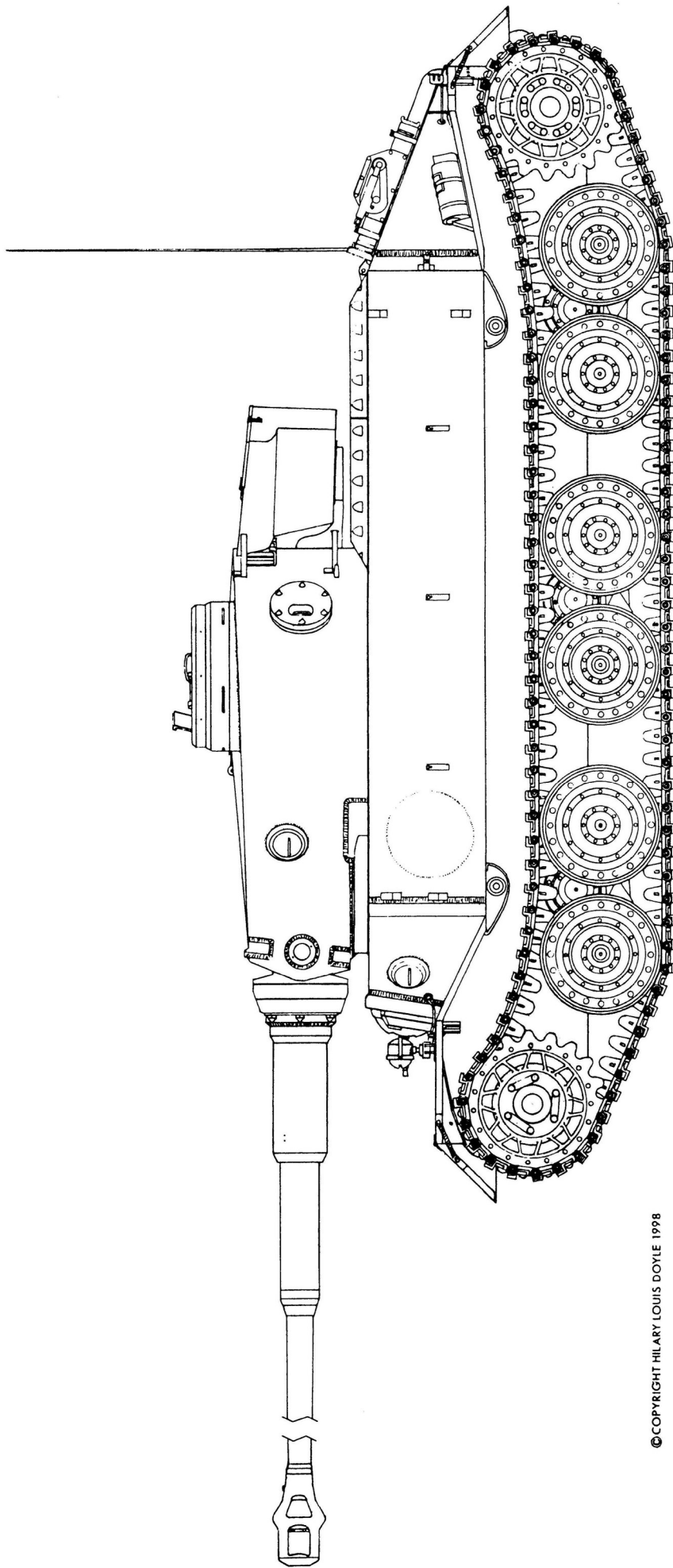
provide 100 armor hulls for the VK 45.01 (P) and assemble 100 turrets with armament in operational order for delivery to Nibelungenwerk for final assembly. Nibelungenwerk was to have completed the first 10 production series VK 45.01 (P) in May 1942. One was completed in time for Hitler's birthday in April 1942 and a second in June 1942. Due to mechanical problems only 10 of the series of 100 were completed before the series was canceled in October 1942.

The first eight turrets had lower sides and a flat roof with a raised center section to allow the gun to be depressed through a larger arc. The other 92 turrets for the VK 45.01 (P1) were exactly the same shape as those mounted on the VK 45.01 (H1). A modified Pz.Kpfw.IV stowage bin was mounted on the turret rear and the Pz.Kpfw.VI P was outfitted with tools and equipment, starting in June 1942. A command version (Befehlswagen) of the Tiger P was also completed by Nibelungenwerk with longer range radio sets and a Rauchsignalkorb (smoke signal basket) mounted in the dead space behind the commander's cupola. The Nebelkerzenwurfgeraet (smoke candle dischargers) still weren't available in early October, but the brackets were to be mounted and wiring run in the turret so that the dischargers could be added by the troops.

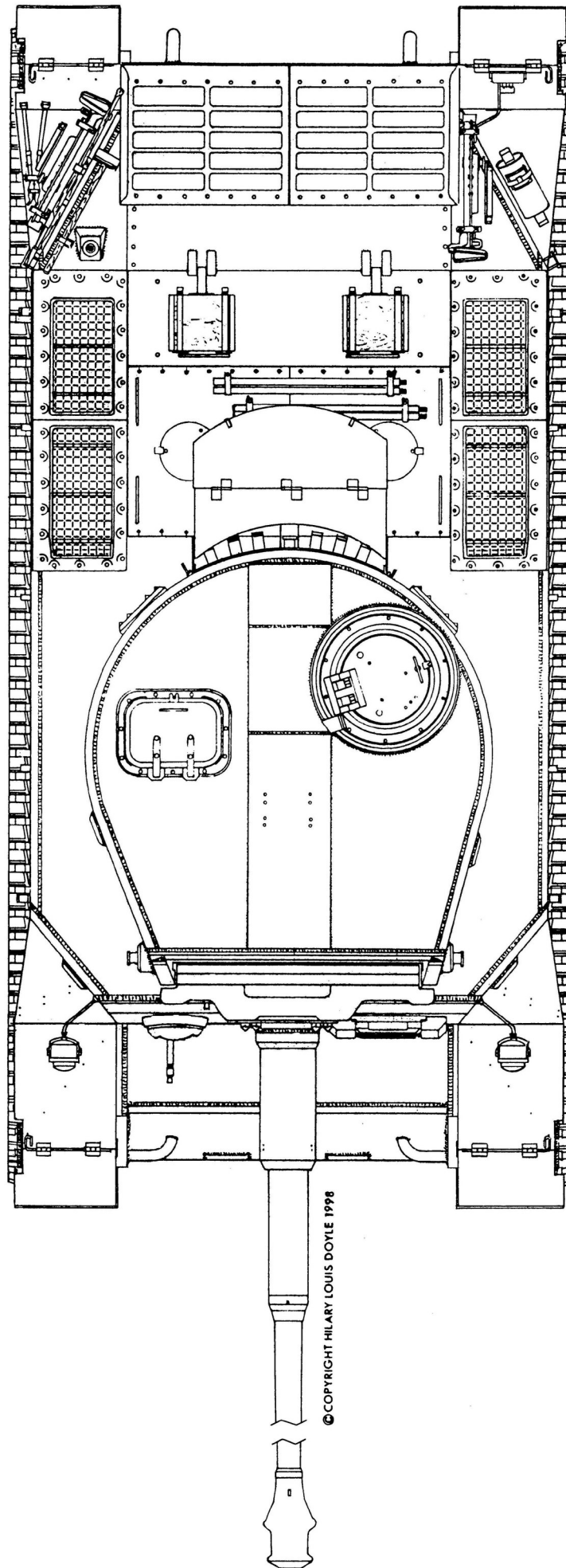


Left:
The first VK 45.01 (P) completed at Nibelungenwerk being shipped by rail for demonstration to Hitler on 20 April 1942. It has Krupp turret Nr.1 but it wasn't chassis number 1. (WJS)





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This and Opposite Page: The second Panzerkampfwagen VI (P1), completed at Nibelungenwerk in June 1942 with Krupp Turm Nr.3, is being inspected by Dr. Porsche. (Porsche)





Panzerkampfwagen VI P (Sd.Kfz.181) (als Pz.Bef.Wg.) Fgst.Nr.Serie 150001 - 150100

On 11 August, Wa Pruef 7 reported that every fifth VK 45.01 (P) was to be completed as a Panzerbefehlswagen with an additional radio set installed in the turret. An Fu 5 radio set was to be installed on the right side of the turret directly under the roof above the counterbalance cylinder and above the loader's vision port. The loader's vision slit on the right turret side was welded closed, and the parts of the vision block holder protruding into the turret were cut off. In addition to the Fu 5 radio set in the turret, either an Fu 8 (for Sd.Kfz.267) or an Fu 7 (for Sd.Kfz.268) radio set was installed in racks mounted

in the hull next to the radio operator.

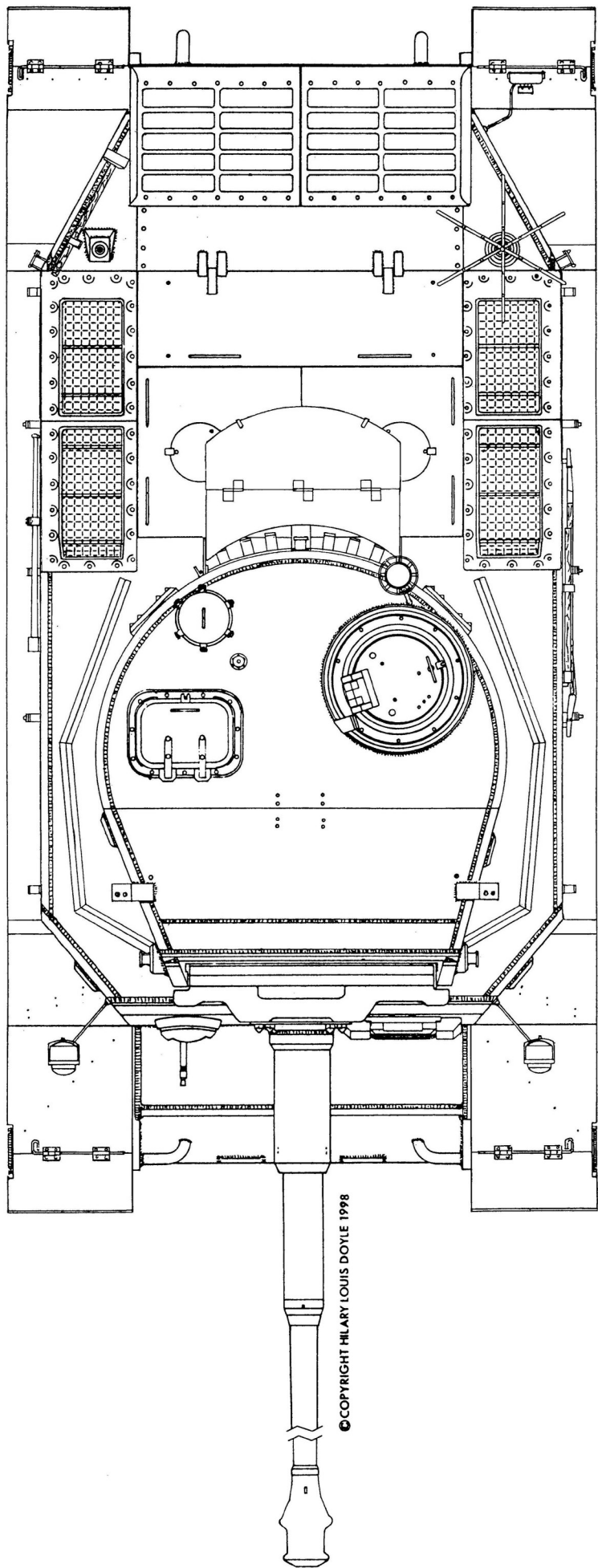
In the Fall of 1942, Panzerbefehlswagen were outfitted with a Rauchsignalkorb (smoke signal basket). This was installed by Nibelungenwerk on Turm Nr.14 in the dead space behind the commander's cupola.

Only two turrets (Turm Nr.13 and 14) were outfitted for Panzerbefehlswagen by Nibelungenwerk after they had been delivered as normal turrets by Krupp. Krupp planned to outfit Turm Nr.25 und 26 as their first Panzerbefehlswagen turrets, but series production was canceled before this occurred.

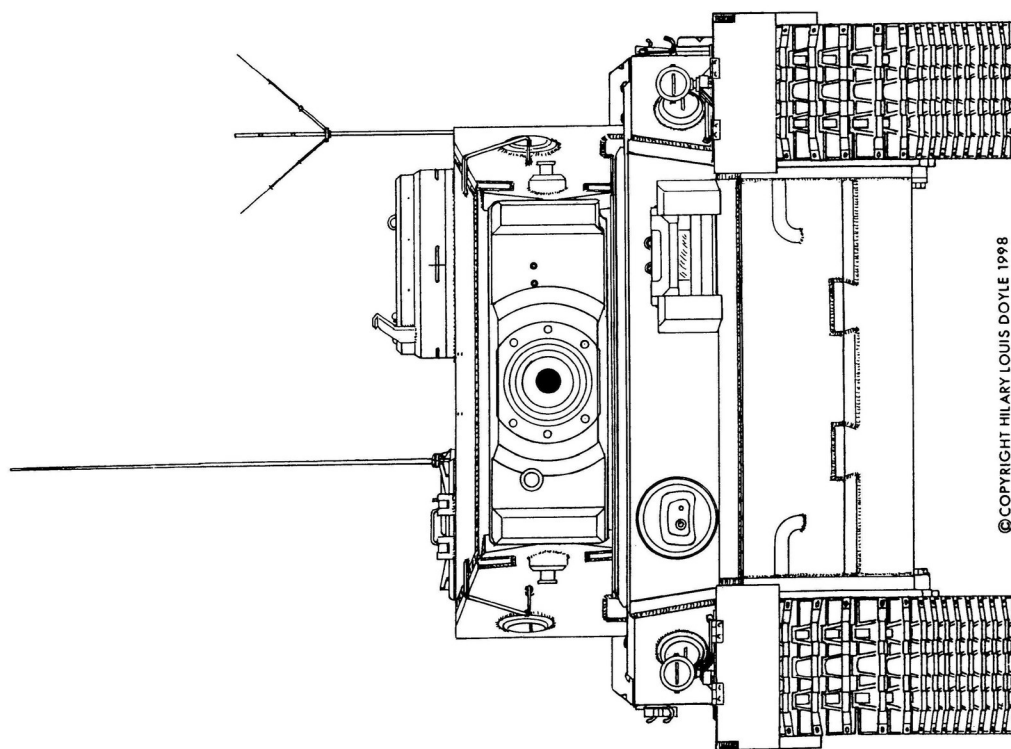
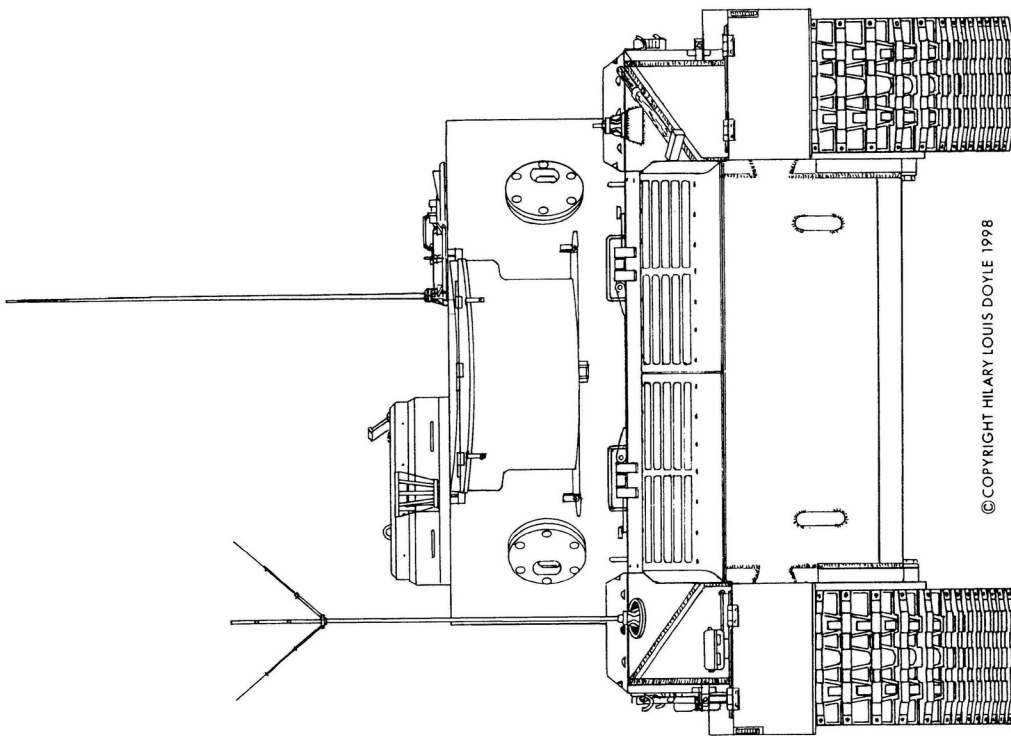


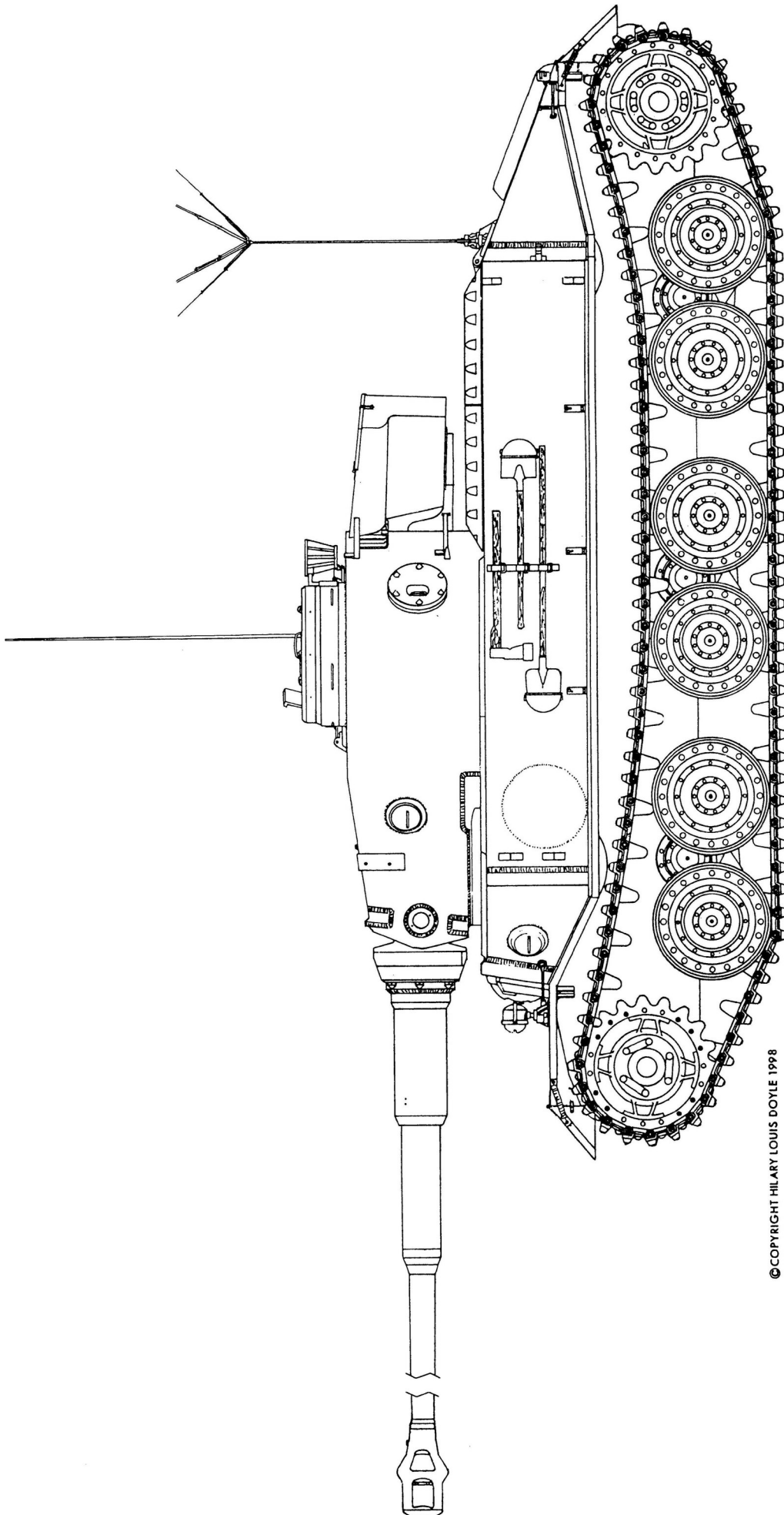
Left and Below:
The only
Panzerkampfwagen VI P
known to have been used
in combat was completed
by Nibelungenwerk as a
Panzerbefehlswagen
(Fgst.Nr.150013) with a
new turret with higher
roof (Krupp Turm
Nr.14).
(KHM)





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“Tiger I”

Panzerkampfwagen Tiger (8.8 cm) (Sd.Kfz.181)

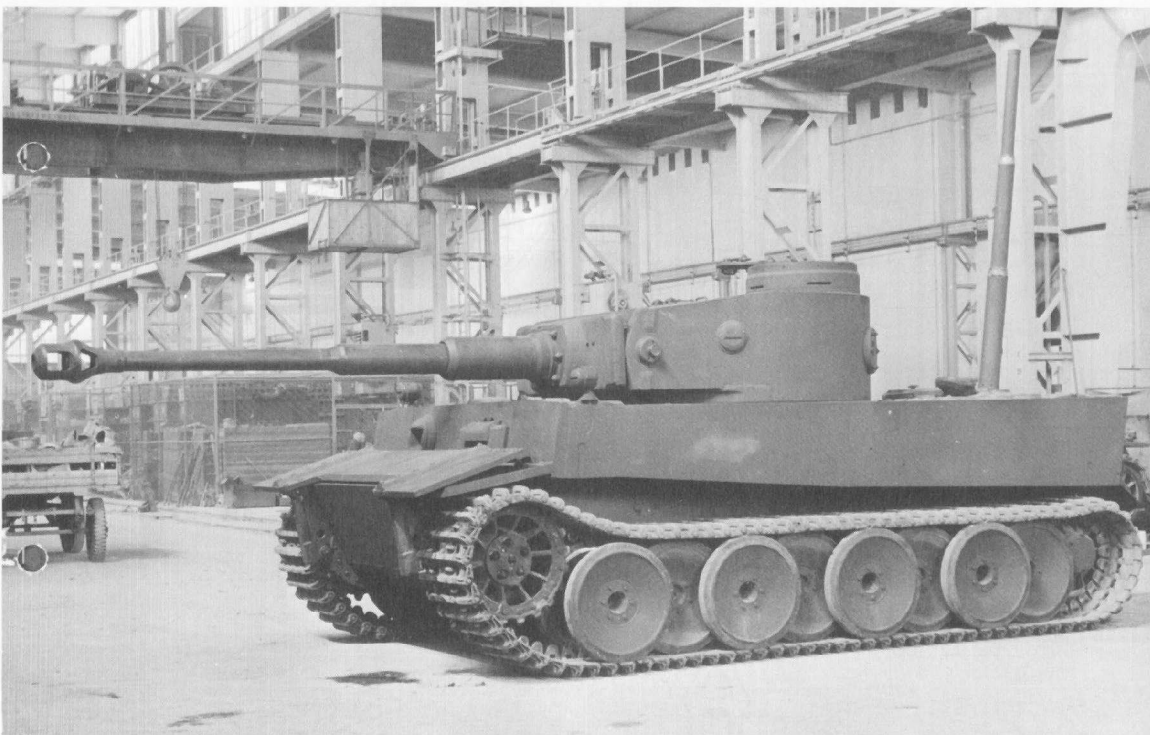
Ausf.E, Fgst.Nr. 250001 - 251346

After Hitler's decree in July 1941 that tapered-bore guns should not be utilized in the heavy Panzers, there wasn't sufficient time to develop a new turret for the Henschel chassis. Therefore, the turret developed by Krupp for the VK 45.01 (P) had to be taken over and mounted on the Henschel chassis. This measure forced Henschel to modify their chassis so that it also became a 45 ton Panzer. Important components (steering gear, final drives, suspension, idler, and drive sprocket wheels) were borrowed from the VK 36.01 and used in mid-1941 as the basis for the design of the VK 45.01 (H). New components, created specifically for the VK 45.01 (H), were the engine cooling system located in side panniers, a watertight engine compartment deck, a turret drive taken off the main drive shaft, a fuel system with four tanks, an air intake snorkel for submerged fording, and storage for 92 rounds of 8.8 cm ammunition.

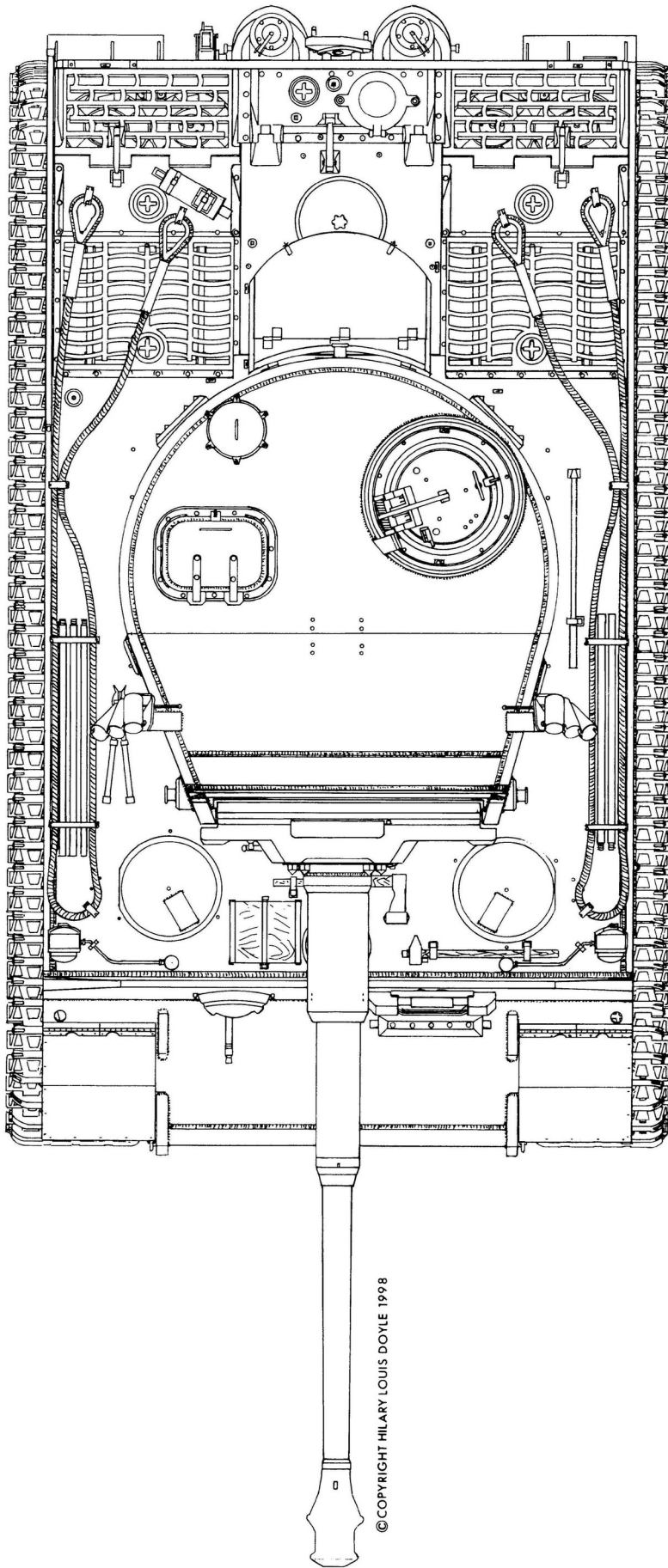
The turret for the VK 45.01 (H) was exactly the same Krupp design as the turret for the VK 45.01 (P), with the exception that they were to be outfitted for hydraulic turret traverse drives on the Henschel chassis instead of electrical turret traverse drives on the Porsche chassis. Other changes made in the turret design included the machinegun firing linkage, gunsight mount, azimuth indicator drive, equipment stowage, electrical layout, ventilation fan, and turret platform.

Henschel was awarded a contract by Wa Pruef 6 in July 1941 to assemble three Versuchs-Fahrgestell (trial chassis) with Fgst.Nr.V1, V2, and V3. The initial production series contract awarded by Wa J Rue was for assembly of 100 VK 45.01(H) chassis. A further 200 were ordered in April 1942, and the contract kept being expanded (to a total of 1346) to keep the Henschel assembly plant working at maximum capacity until VK 45.03 production could ramp up. At the same time Wegmann was awarded contracts to assemble the turrets. Following initial teething problems, the first production series Pz.Kpfw.VI H were completed in August 1942 and sent to the Eastern Front south of Leningrad. The last of the 1346 production series Tiger I were completed in August 1944. Most were issued to ten Heeres (numbered 501 to 510) and three SS (numbered 101 to 103) schwere Panzer-Abteilungen.

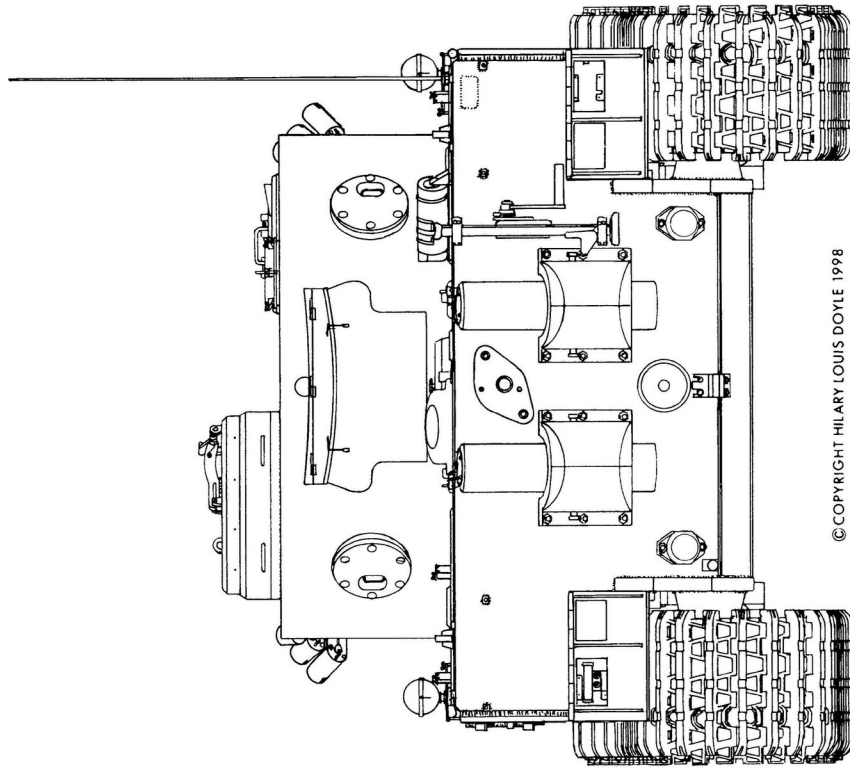
Major modifications introduced during the production run included: side track guards, S-Mine dischargers, reinforced roadwheels, Feifel air filters, emergency escape hatch on the turret side, loader's periscope, Maybach HL 230 engine, new turret with cast cupola, Zimmerit anti-magnetic coating, single headlight, steel-tired roadwheels, turret ring guard, smaller diameter idler, monocular gunsight, Nahverteidigungswaffe (close defense weapon), and 40 mm thick turret roof.



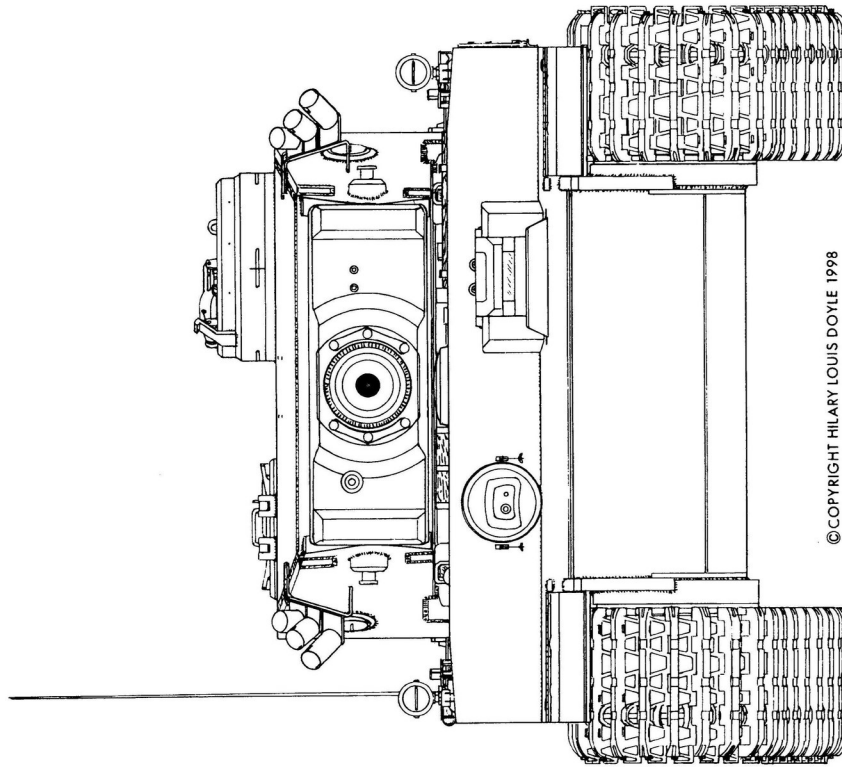
Left: The first VK 45.01 (H) (Fgst.Nr.V1) completed by Henschel in April 1942 was the only one with Vorpanzer (spaced armor) guarding the hull front. (TTM)



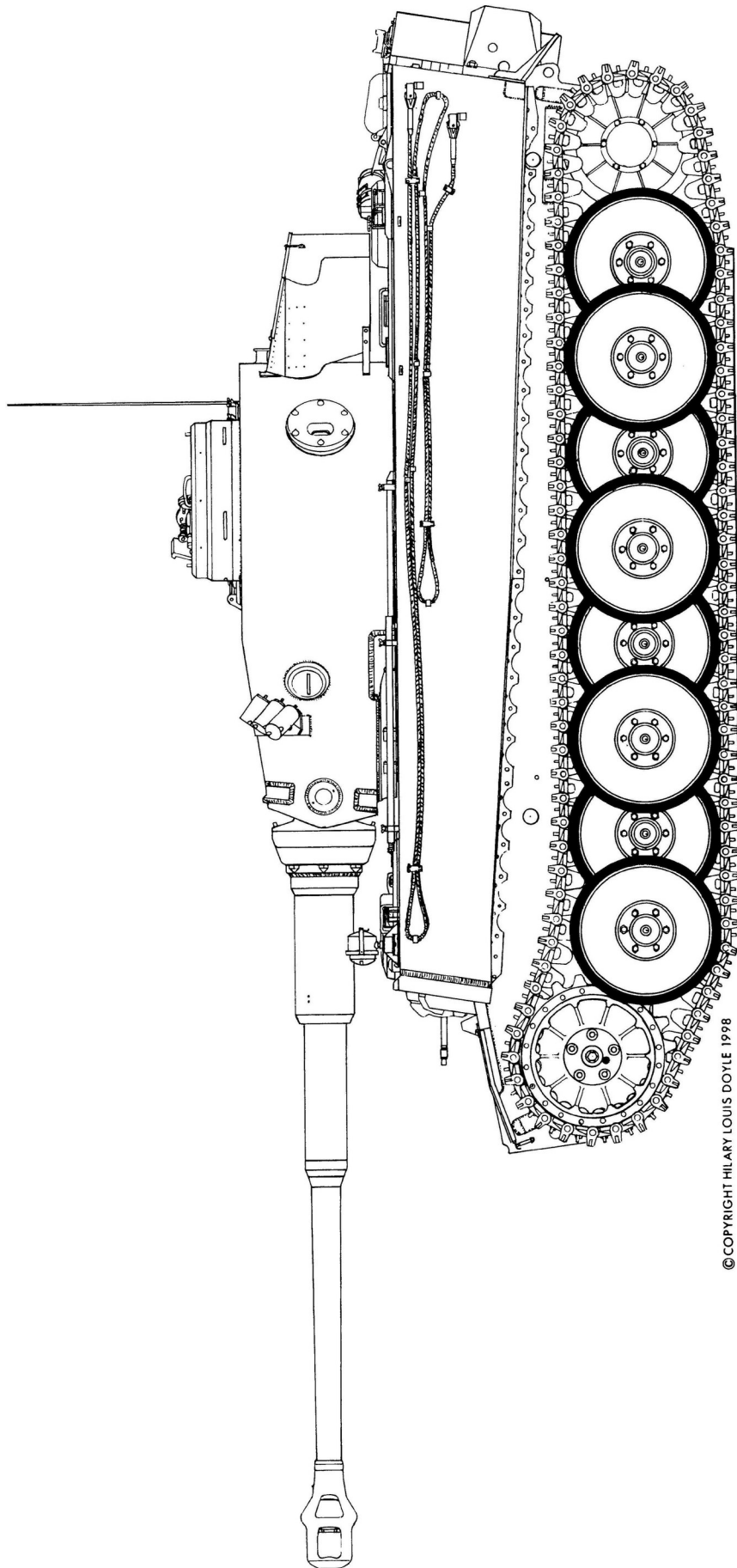
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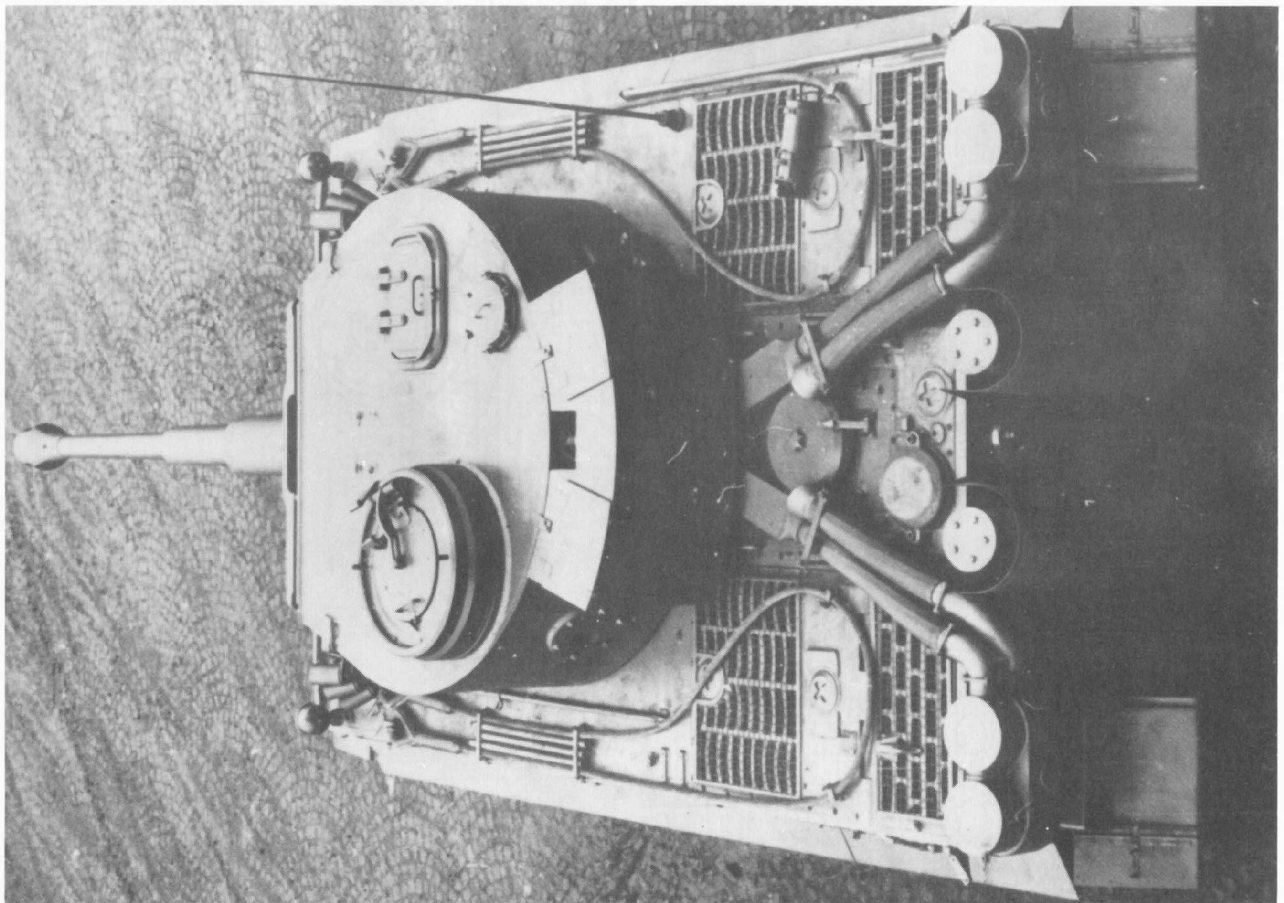
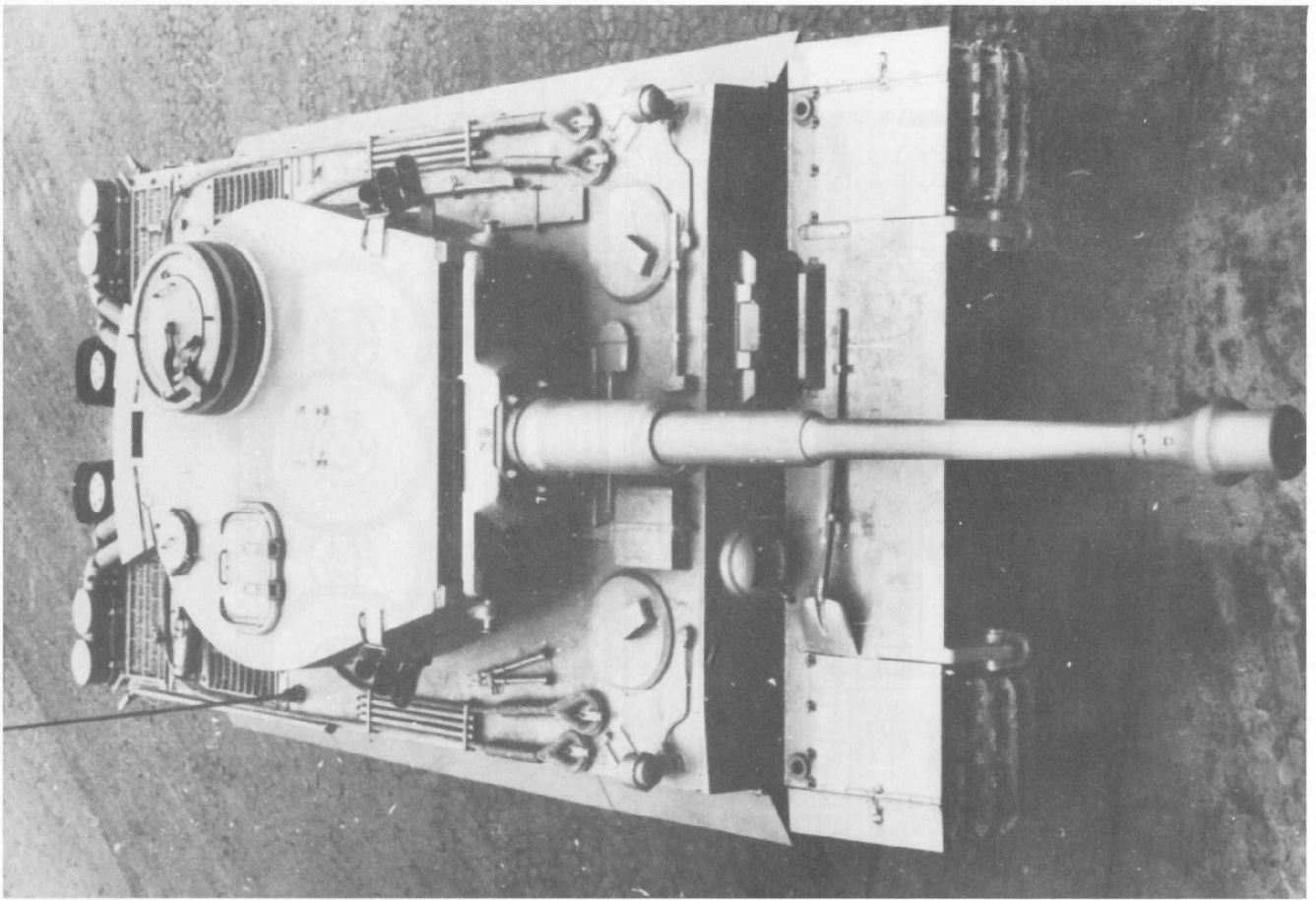
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Above: A Panzerkampfwagen VI (H) Ausf.H1 completed by Henschel in February 1943. (PC)

Tiger I

Panzerkampfwagen Tiger (8.8 cm) (Sd.Kfz.181)

Ausfuehrung E, Fgst.Nr. 250001 - 251346

Weapons Data:

In Turret: 1 - 8.8 cm Kw.K.36 L/56
 1 - 7.92 mm M.G.34

Elevation: -9°, +18°
 Traverse: 360° hydraulic and hand
 Gun Sight: T.Z.F.9b (2.5x 24°)
 (T.Z.F.9c 2.5x/5x 14°)

Graduated to: 3000 meters for Pzgr.39
 4000 meters for Sprgr.
 1200 meters for M.G.

In Ball Mount: 1 - 7.92 mm M.G.34
 Elevation: -10°, +20°
 Traverse: 15°L, 15°R
 Gun Sight: K.Z.F.2 (1.8x 18°)

Ammunition: 92 - 8.8 cm Pzgr. and Sprgr.
 4500 - 7.92 mm S.m.K. and S.m.K.L'Spur

Crew: Commander
 Gunner
 Loader
 Radio Operator
 Driver

Communication: Fu 5 and Fu 2
 Intercom

Measurements:

Length, overall: 8.450 m
 Length, chassis: 6.316 m
 Width, overall: 3.705 m
 Height, overall: 3.000 m (2.885)
 Firing Height: 2.195 m
 Wheel Base: 2.822 m
 Track Contact: 3.605 m
 Combat Loaded: 57 metric tons
 Fuel Capacity: 540 Liters

Automotive Capabilities:

Maximum Speed: 45 km/hr
 Avg. Road Speed: 20 km/hr
 Cross Country: 15 km/hr
 Range on Road: 125 km
 Cross Country: 80 km
 Grade: 35°
 Trench Crossing: 2.3 m
 Step: 79 cm
 Fording Depth: 160 cm
 Ground Clearance: 47 cm
 Ground Pressure: 1.09 kg/cm²
 Power Ratio: 11.4 HP/ton
 Steering Ratio: 1.28

Automotive Components:

Motor: Maybach HL 210 P45*
 V-12 water cooled
 21 liter gasoline
 650 HP @ 3000 rpm

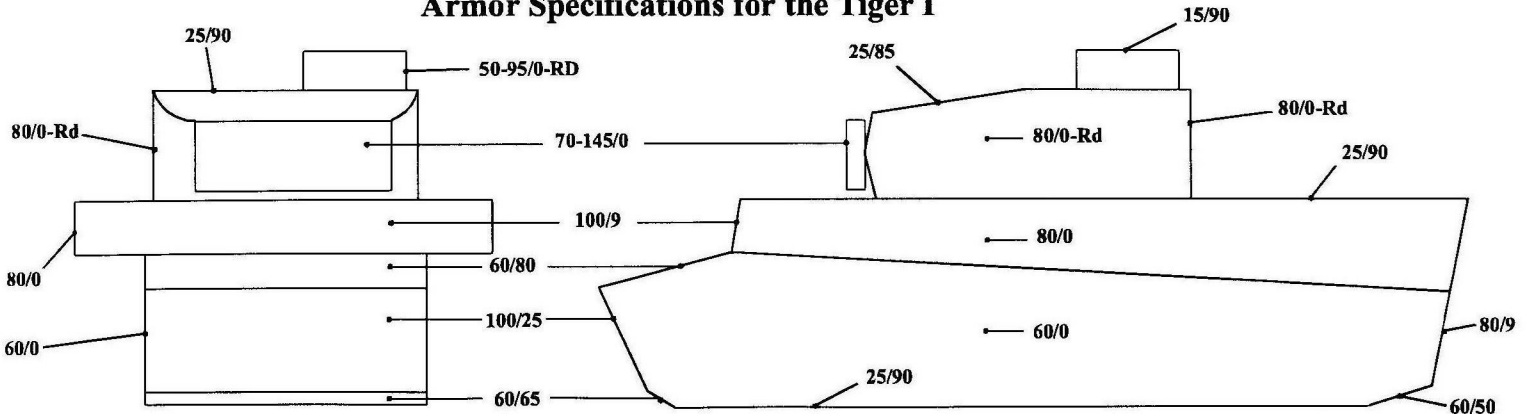
Transmission: OG 40 12 16

Reverse: 3.7 km/hr (3.1)*
 1.Gear: 2.3 km/hr (2.3)
 2.Gear: 4.2 km/hr (3.5)
 3.Gear: 6.1 km/hr (5.0)
 4.Gear: 9.1 km/hr (7.5)
 5.Gear: 13.9 km/hr (12)
 6.Gear: 21.3 km/hr (18)
 7.Gear: 30.0 km/hr (25)
 8.Gear: 45.0 km/hr (38)

Steering: Double radius
 Drive: Front sprocket
 Roadwheels: 8x3 per side (8x2)
 Tires: 800x95 Rubber (Steel)
 Suspension: Torsion bars
 Track: Dry pin
 Kgs 63/725/130
 Links per Side: 96

* After Fgst.Nr.250251 with the derated Maybach HL 230 P45 engine

Armor Specifications for the Tiger I



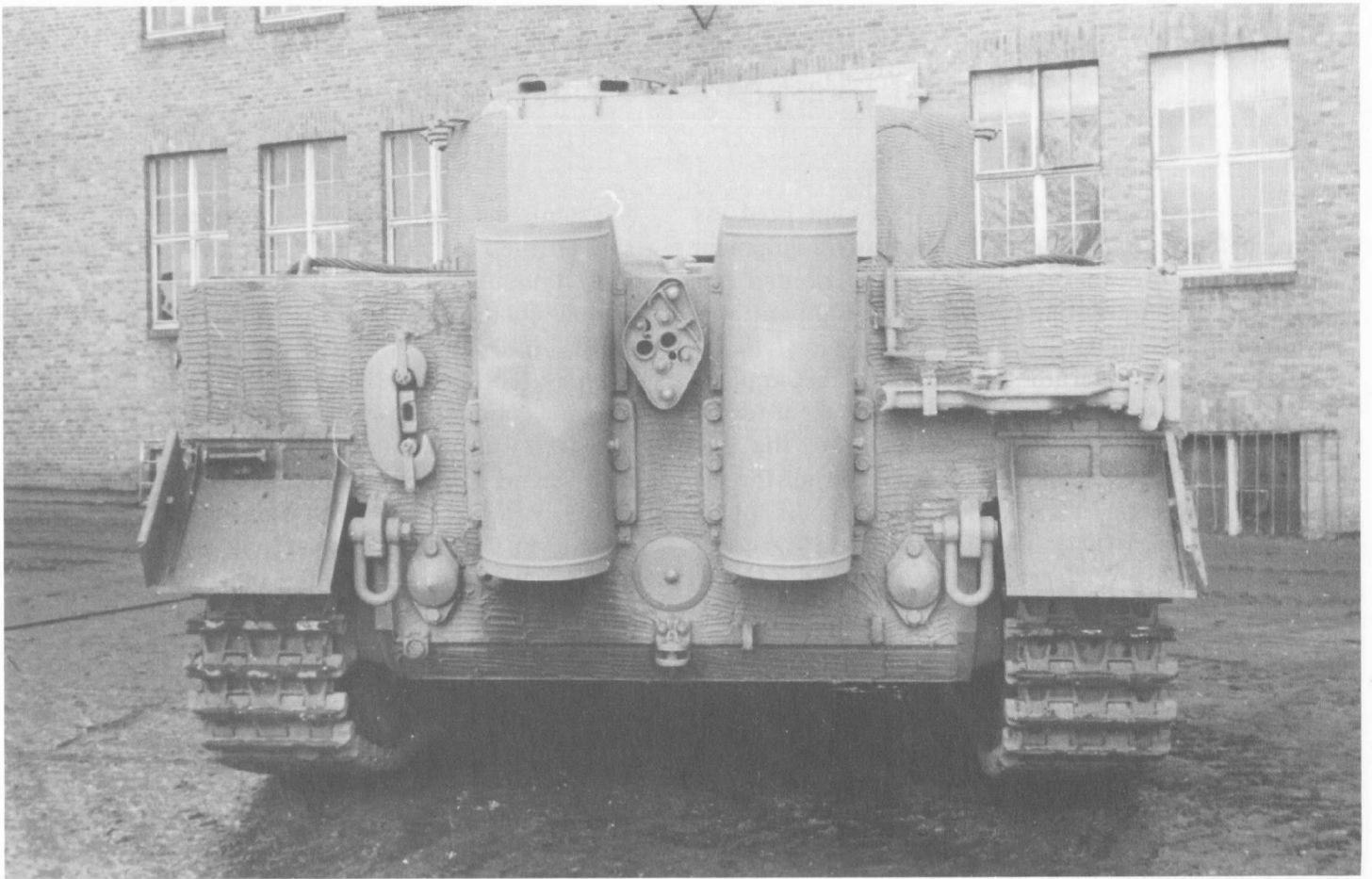
Armor thickness in mm/angle from vertical

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Tolerances on plate thickness -0 to +5 %



This and Opposite Page:
This Pz.Kpfw.Tiger Ausf.E
(completed by Henschel in
late February/early March
1944) has narrow transport
tracks, steel-tired
roadwheels, smaller diameter
idlers, and a turret ring
guard, but no longer has a
rear travel lock. (KRP)



Panzerbefehlswagen Tiger (8.8 cm) (Sd.Kfz.267 & 268) Ausf.E, Fgst.Nr.Serie 250001 - 251346

A number of Tiger I were outfitted as Panzerbefehlswagen with additional radio equipment mounted in the turret. The space needed for mounting and operating the radio equipment was acquired by dropping the machinegun mount. A Pz-Funkersitz (radio operator seat) was installed in place of the loader's seat. The vision slit in the right turret side, the opening for the machinegun in the gun mantlet, and (later) the hole in the turret roof for the loader's periscope were sealed with armor plugs welded in place. The Panzerbefehlswagen Tiger was outfitted with two different radio sets as Sd.Kfz.267 with Fu 5 and Fu 8 or Sd.Kfz.268 with Fu 5 and Fu 7.

The following equipment was dropped when a Tiger I was outfitted as a Panzerbefehlswagen: 1 M.G.34 in the gun mantlet, 1 spare barrel holder, 1 box for machinegun tools, 1 box for machinegun accessories (sight and bipod), 10 belt bags for machinegun ammunition and the stowage brackets (1500 rounds of machinegun ammunition), 26 rounds of 8.8 cm ammunition and the stowage racks, 1 baggage box in the right front of the turret by the loader, and (later) 1 periscope for the loader.

The following radio equipment was installed: a Bordsprechanlage B (intercom set model B) for Panzerbefehlswagen, a Fu 5 (10 W-Sender c und UKW-Empfaenger e) in the turret, a Fu 7 (20 W-Sender d und UKW-Empfaenger d1) or Fu 8 (30 W-Sender a und MW-Empfaenger c) in the hull, a Maschinensatz GG 400 (electrical generator set), a radio accessories box, an antenna connector for the

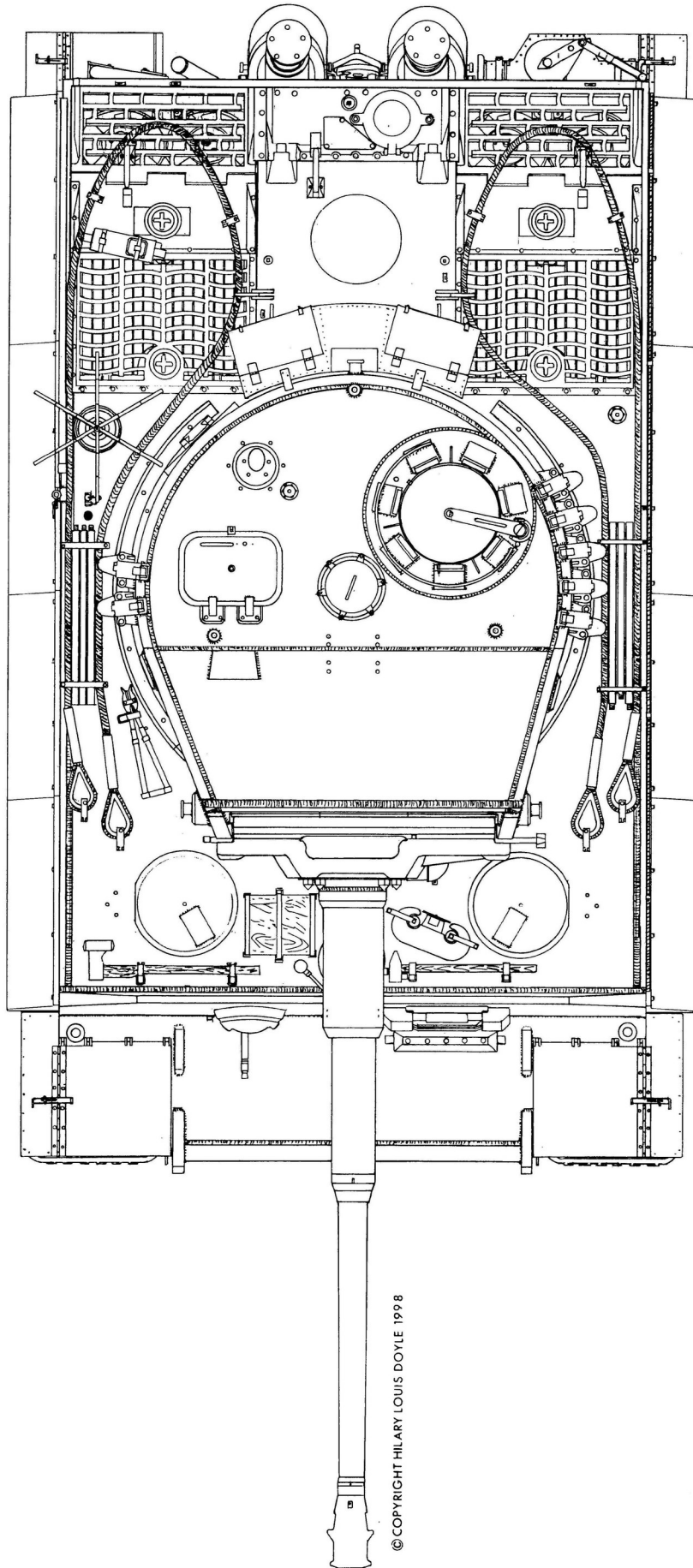
Sternantenne D for the Fu 8 (mounted on the right side on the rear deck), a Stabantenne 1.4 m for the Fu 7 (mounted on the left side on the rear deck), a Stabantenne 2 m for the Fu 5 (mounted on the turret roof), and (later) a tube for stowing the Steckmastrohre (antenna extension rods) and spare antennas (mounted outside on the hull rear). All three antennas were mounted on flexible rubber bases that could bend in all directions and spring back up by themselves. The rubber-cushioned radio rack frames for the Fu 7 or Fu 8 sender and receiver radio sets were mounted one above the other to the left of the radio operator in the hull. The rubber-cushioned radio rack frames for the Fu 5 sender and receiver radio sets were mounted one above the other on the right turret wall.

Panzerbefehlswagen armament consisted of a 8.8 cm Kw.K. L/56 in the gun mantlet, a M.G.34 in the ball mount in the driver's front plate, (later) a M.G.34 as a Flieger-MG (antiaircraft machinegun) in the turret, and a MP (machine pistol). Ammunition stowage consisted of 66 rounds for the 8.8 cm Kw.K., 22 belt bags each with 150 rounds of machinegun ammunition, and 12 signal pistol flares.

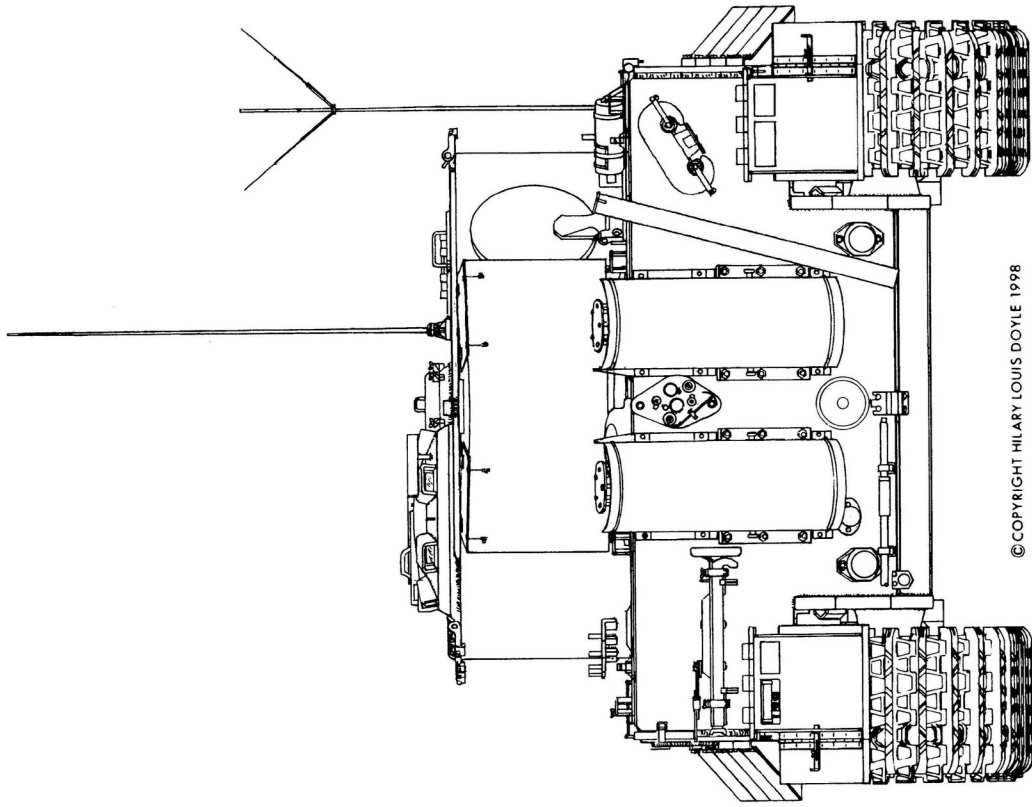
The Panzerbefehlswagen was manned by a crew of five consisting of a Kommandeur (Panzerfuehrer) (commander), Nachrichtenoffizier (Richtschiuetze) (signals officer - gunner), Panzerfunker 1 (Ladeschiuetze) (radio operator - loader), Panzerfunker 2 (Panzerfunker) (radio operator), and Fahrer (driver).



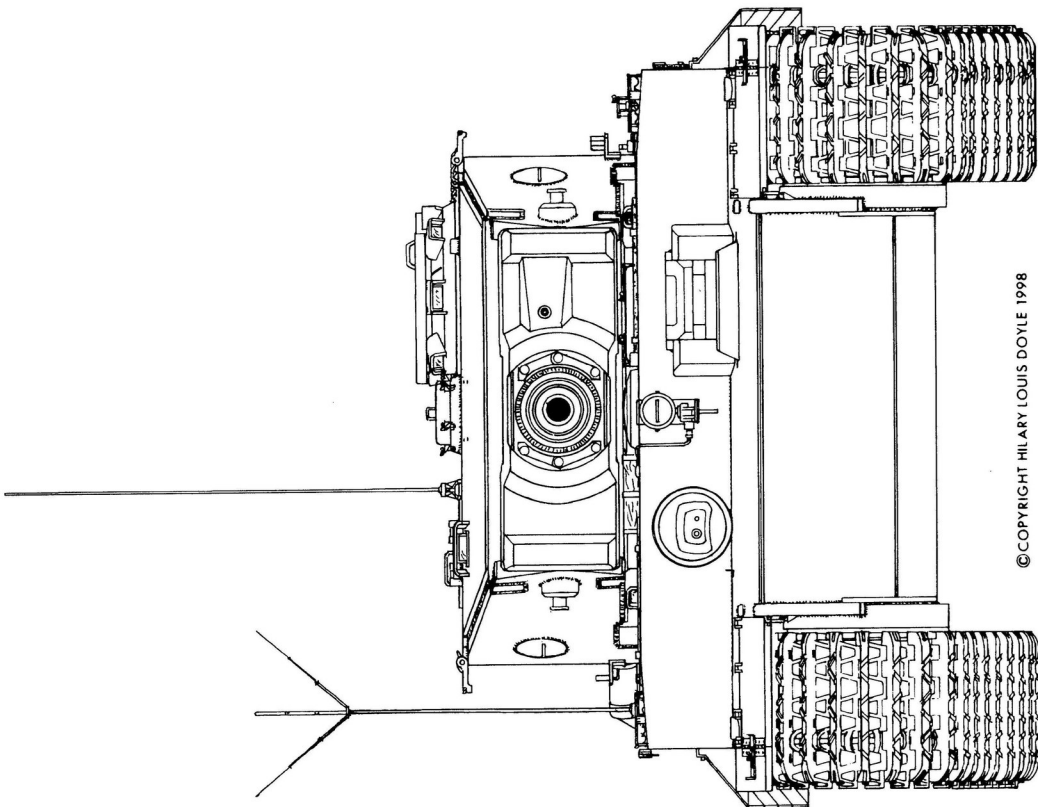
Left:
This is a very rare photograph of a Tiger which has the Zimmerit anti-magnetic coating applied in a "waffle iron" pattern. (CH)



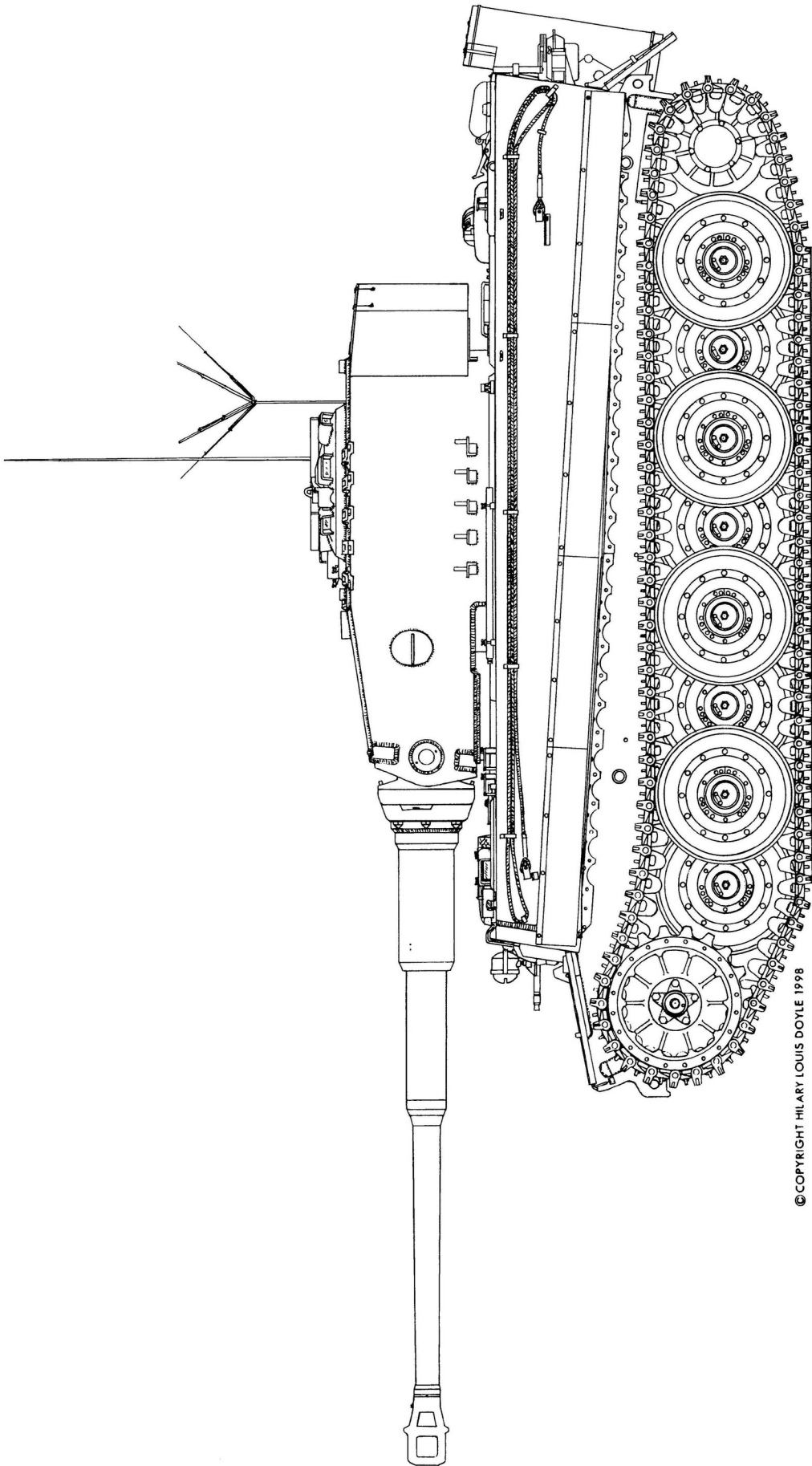
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"Tiger II"

Panzerkampfwagen Tiger (8.8 cm) (Sd.Kfz.182)

Ausf.B, Fgst.Nr. 280001-280489

It was not until April 1942 that Henschel started conceptual design work on a chassis for a turret with the 8.8 cm Kw.K. L/71 gun. Their first attempt, designated as the VK 45.02 (H), was a makeshift design which didn't survive very long. Design work on their second attempt, designated as the VK 45.03, started in earnest in October 1942. At first the design of the VK 45.03 was still based on many automotive components borrowed from the VK 45.01 (H). The preliminary designs still featured rubber-tired roadwheels and 100 mm frontal armor. Frontal armor was ordered to be increased to 150 mm in January 1943. In February 1943 Henschel was ordered to redesign the VK 45.03 in order to use as many standardized parts as possible that could be shared with the M.A.N. design for the Panther II.

Krupp was the sole designer of the turrets for the VK 45.02 (H) and VK 45.03. The only difference between the turret designed by Krupp for the VK 45.02 (P) and the VK 45.02 (H) was that turrets mounted on Porsche chassis had electric traverse drives while turrets mounted on Henschel chassis had hydraulic traverse drives. Fifty turrets (originally fabricated by Krupp for the canceled VK 45.02 (P)) were modified, fitted with hydraulic drives, and mounted on the first 50 VK 45.03 chassis from Henschel. Krupp also designed the "Serien-Turm"

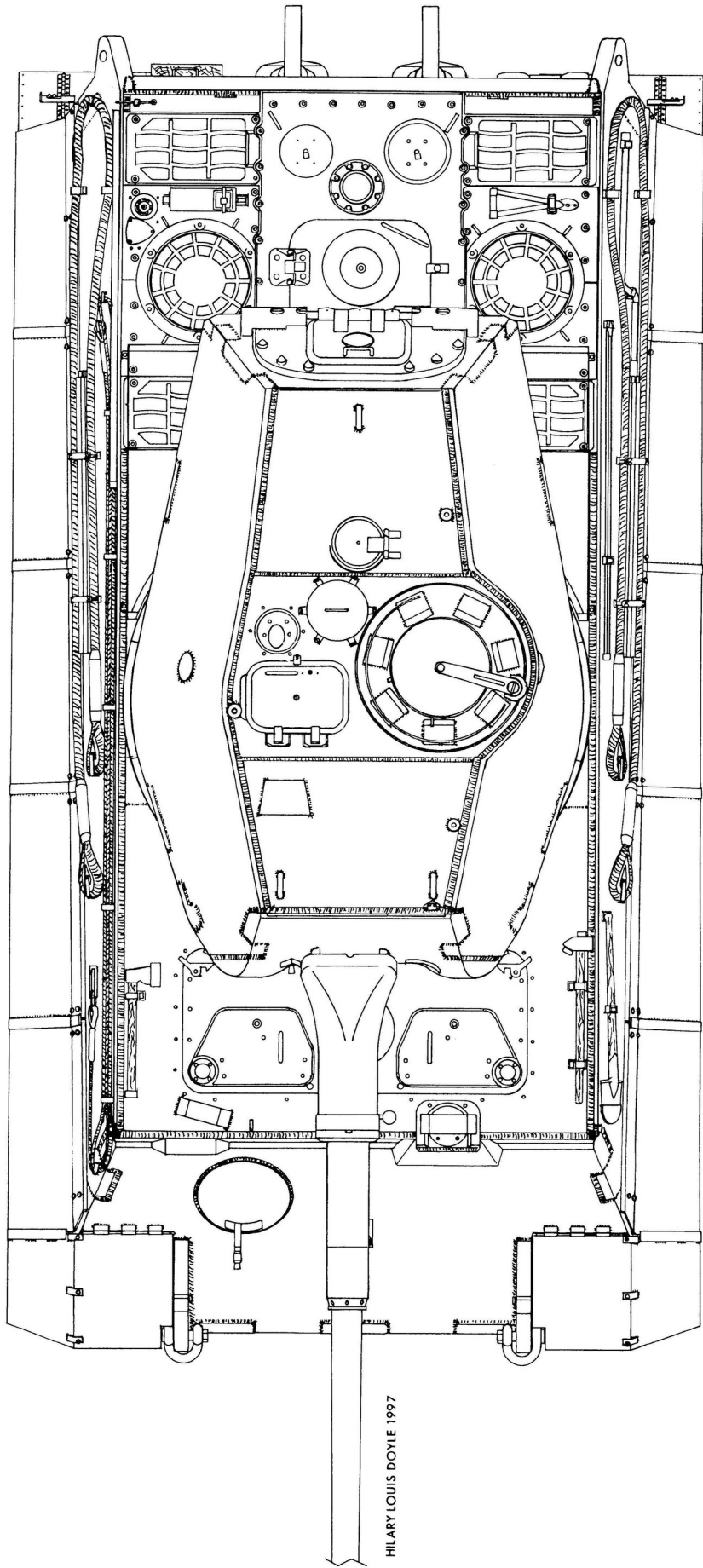
that was mounted on all subsequent Henschel chassis starting with the 51st VK 45.03 (Fgst.Nr.280048).

Henschel was awarded a contract by Wa Pruef 6 to assemble three Versuchs-Fahrgestell (trial chassis) with Fgst.Nr. V1, V2 and V3. Their first mass production contract was awarded in October 1942 by Wa J Rue for assembly of 176 chassis. Before the first chassis had been completed in October 1943, contract extensions had been awarded to raise the total order to 1234. Wegmann was again given contracts to assemble the turrets and deliver them to Henschel. A total of 489 Tiger II had been completed before Kassel was captured by Allied forces in late March 1945. Most of the Tiger II were issued to s.H.Pz.Abt.501, 503, 505, 506, 507, 509, 510, and 511 as well as s.SS-Pz.Abt.501, 502, and 503.

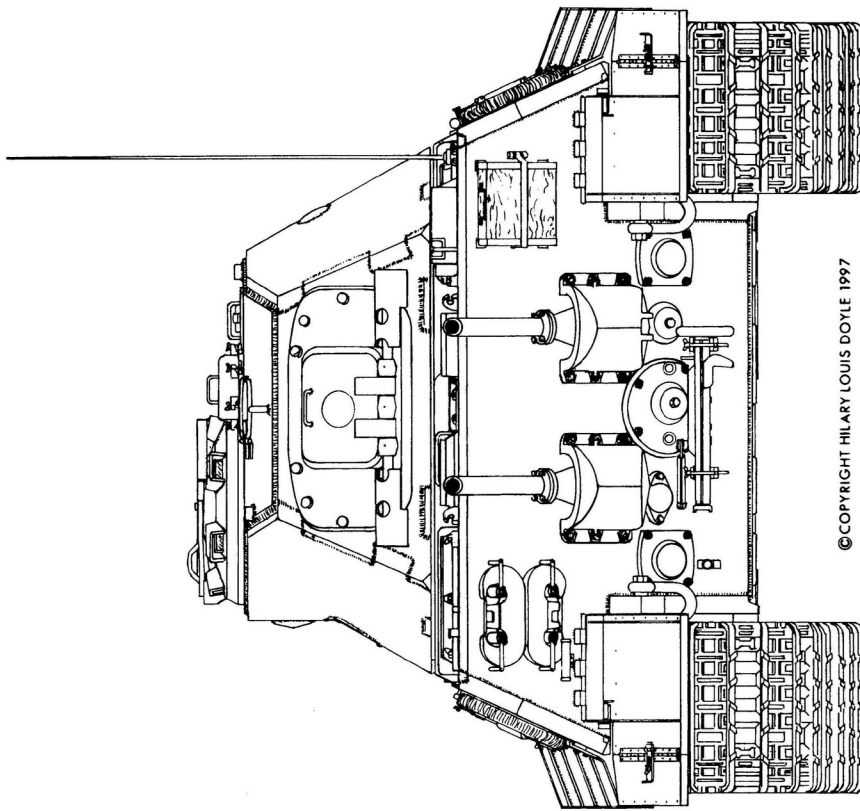
Major modifications introduced during the production run of the Tiger II included: adding a turret ring guard for Turm Nr.1-50 in April, introducing the monocular T.Z.F.9d gunsight in April, switching to the Serien-Turm with 180 mm frontal armor in June, replacing the 15 mm thick loader's hatch with a 40 mm thick hatch in June, adding a rain guard for the sight aperture in November 1944, and converting to single link tracks with an 18-tooth drive sprocket in March 1945.



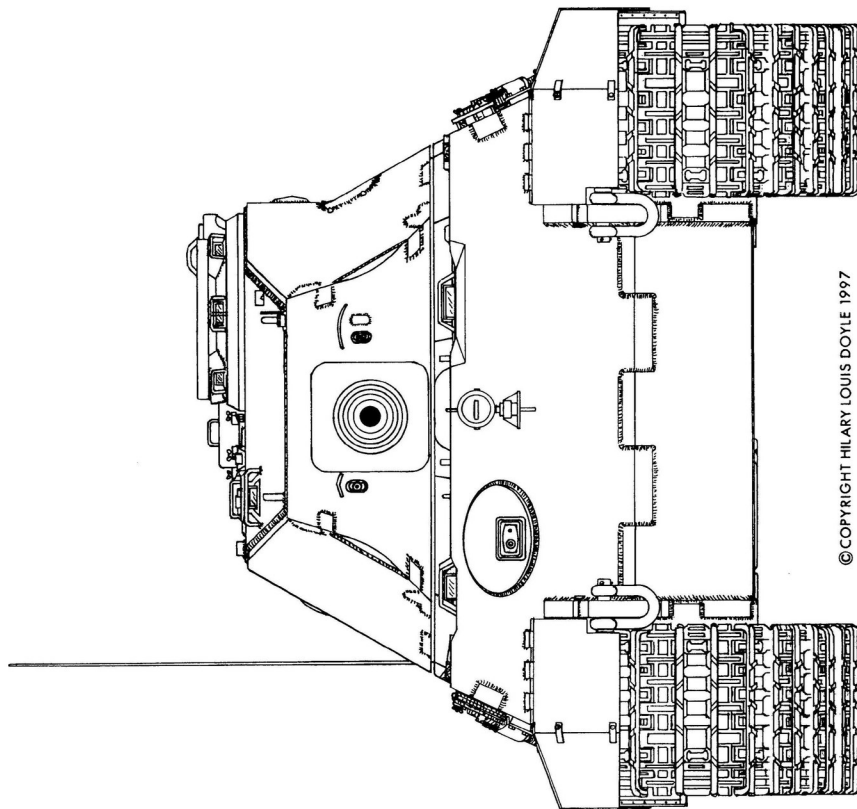
Left:
The first Tiger II (Fgst.Nr.V1) completed by Henschel in November 1943 with the Krupp turret designed for the Porsche Typ 180. The turret had 25-mm-thick fore and aft roof plates.
(WJS)



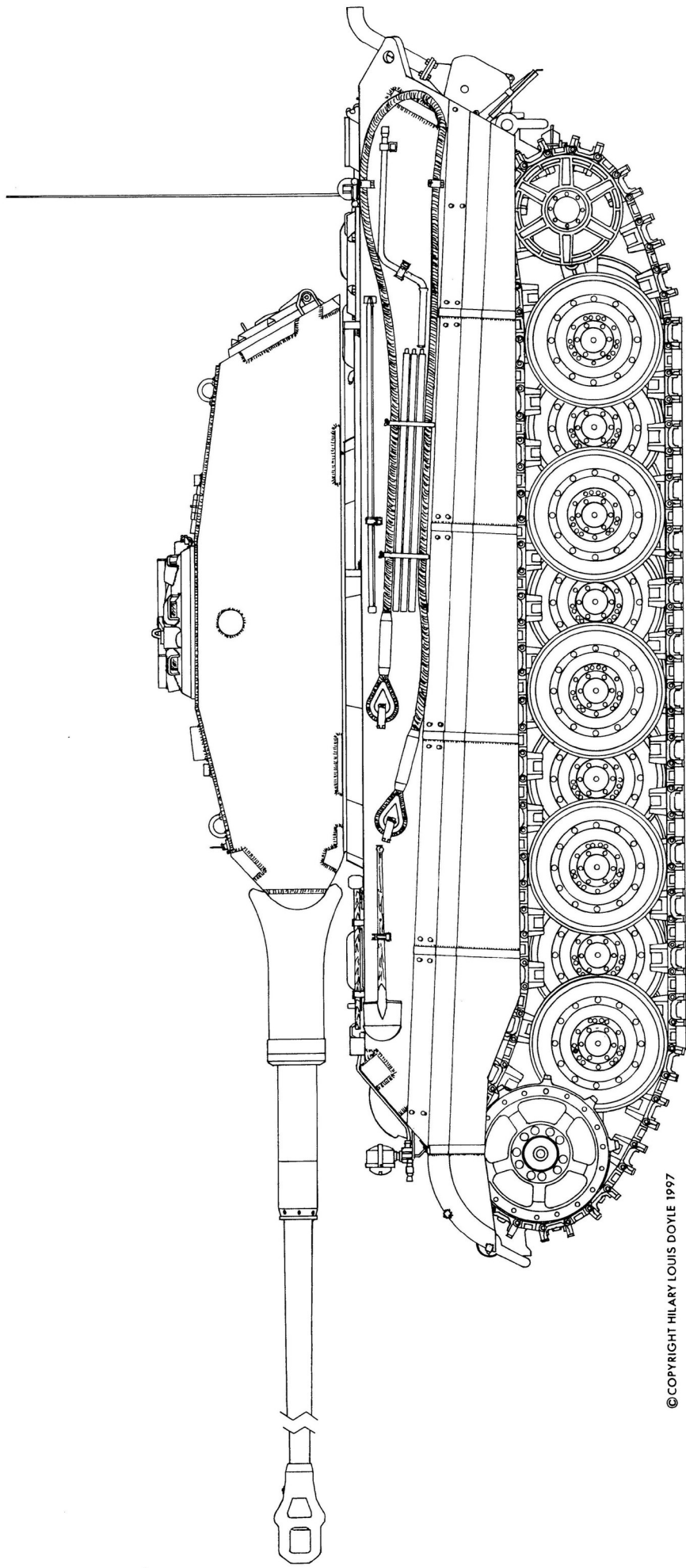
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This Page:
One of the first 47
production series Tiger II
completed by Henschel with
turret designed and
produced by Krupp for the
Porsche VK 45.02 (P). The
turrets were modified for
the Tiger II production
series by replacing the 25-
mm-thick roof plates with
40-mm-thick roof plates.
(TTM)



Tiger II

Panzerkampfwagen Tiger (8.8 cm) (Sd.Kfz.182)

Ausfuehrung B, Fgst.Nr. 280051 -

Weapons Data:

In Turret: 1 - 8.8 cm Kw.K.43 L/71
 1 - 7.92 mm M.G.34
 Elevation: -8°, +15°
 Traverse: 360° hydraulic and hand
 Gun Sight: T.Z.F.9d (2.5x/5x 14°)
 Graduated to: 3000 meters for Pzgr
 5000 meters for Sprgr.

In Ball Mount: 1 - 7.92 mm M.G.34
 Elevation: -10°, +20°
 Traverse: 15°L, 15°R hand
 Gun Sight: K.Z.F.2 (1.8x 18°)
 Graduated to: 200 meters

Ammunition: 80 (86) - 8.8 cm Pzgr.
 and Sprgr.
 5850 - 7.92 mm S.m.K.
 and S.m.K.L'Spur

Crew: Commander
 Gunner
 Loader
 Radio Operator
 Driver

Communication: Fu 5 and Fu 2
 Intercom

Measurements:

Length, overall: 10.286 m
 Length, chassis: 7.380 m
 Width, overall: 3.755 m
 Height, overall: 3.090 m
 Firing Height: 2.260 m
 Wheel Base: 2.790 m
 Track Contact: 4.120 m
 Combat Loaded: 69.8 metric tons
 Fuel Capacity: 860 Liters

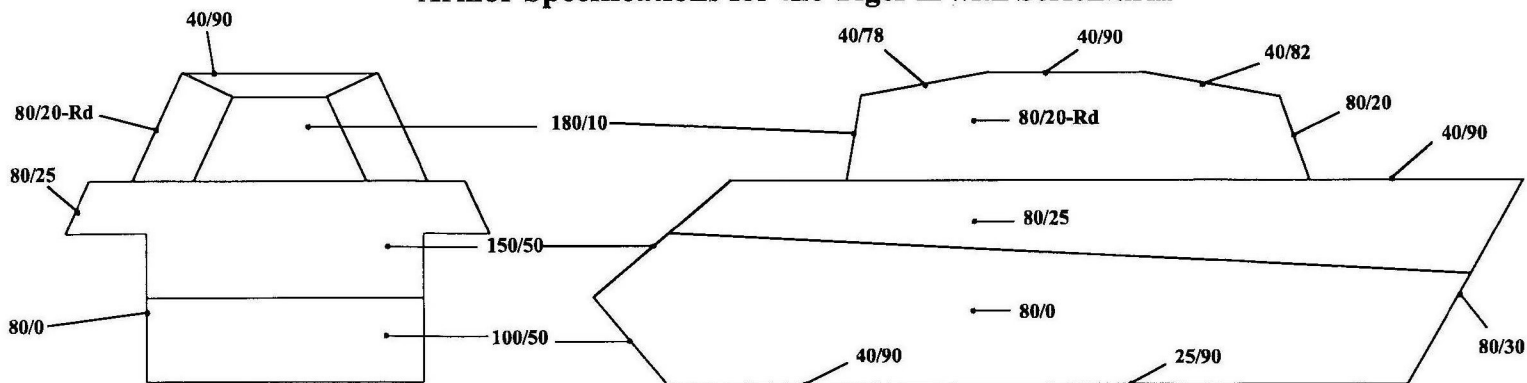
Automotive Capabilities:

Maximum Speed: 35 km/hr
 Avg. Road Speed: 15-20 km/hr
 Cross Country: 15 km/hr
 Range on Road: 140 km
 Cross Country: 90 km
 Grade: 35°
 Trench Crossing: 2.5 m
 Step: 85 cm
 Fording Depth: 160 cm
 Ground Clearance: 48 cm
 Ground Pressure: 1.03 kg/cm²
 Power Ratio: 8.6 HP/ton
 Steering Ratio: 1.48
 Turning Circle: 4.1 m

Automotive Components:

Motor: Maybach HL 230 P30
 V-12 water cooled
 23 liter gasoline
 600 HP @ 2500 rpm
 Transmission: OG 40 12 16 B
 Reverse: 2.8 km/hr
 1.Gear: 2.1 km/hr
 2.Gear: 3.2 km/hr
 3.Gear: 4.7 km/hr
 4.Gear: 6.9 km/hr
 5.Gear: 10.6 km/hr
 6.Gear: 16.0 km/hr
 7.Gear: 22.8 km/hr
 8.Gear: 34.6 km/hr
 Steering: Double radius
 Drive: Front sprocket
 Roadwheels: 9x2 per side
 Tires: 800 mm Steel
 Suspension: Torsion bars
 Track: Dry pin
 Gg 24/800/300
 Links per Side: 46 & 46

Armor Specifications for the Tiger II with Serienturm



Armor thickness in mm/angle from vertical

Copyright 2000 Thomas L. Jentz (Not to Scale)

Tolerances on plate thickness -0 to +5 %

Panzerbefehlswagen Tiger (8.8 cm) (Sd.Kfz.267 & 268)

Ausf.B, Fgst.Nr.Serie 280051-280489

The Panzerbefehlswagen (command tank) version of the Tiger Ausf.B was created simply by installing additional radio sets (along with the necessary transformers, cushioned mounts, wiring, junction boxes, aerials, GG400 auxiliary generator set and other equipment) and reducing the ammunition stowage to provide the needed space. Compared to a Pz.Kpfw.Tiger Ausf.B with 80 rounds of main gun ammunition and 32 bags each containing 150 rounds of machinegun ammunition, the Pz.Bef.Wg.Tiger Ausf.B carried only 63 rounds for the main gun (32 Pzgr. (AP) and 31 Sprgr. (HE)) and 22 bags for the machineguns.

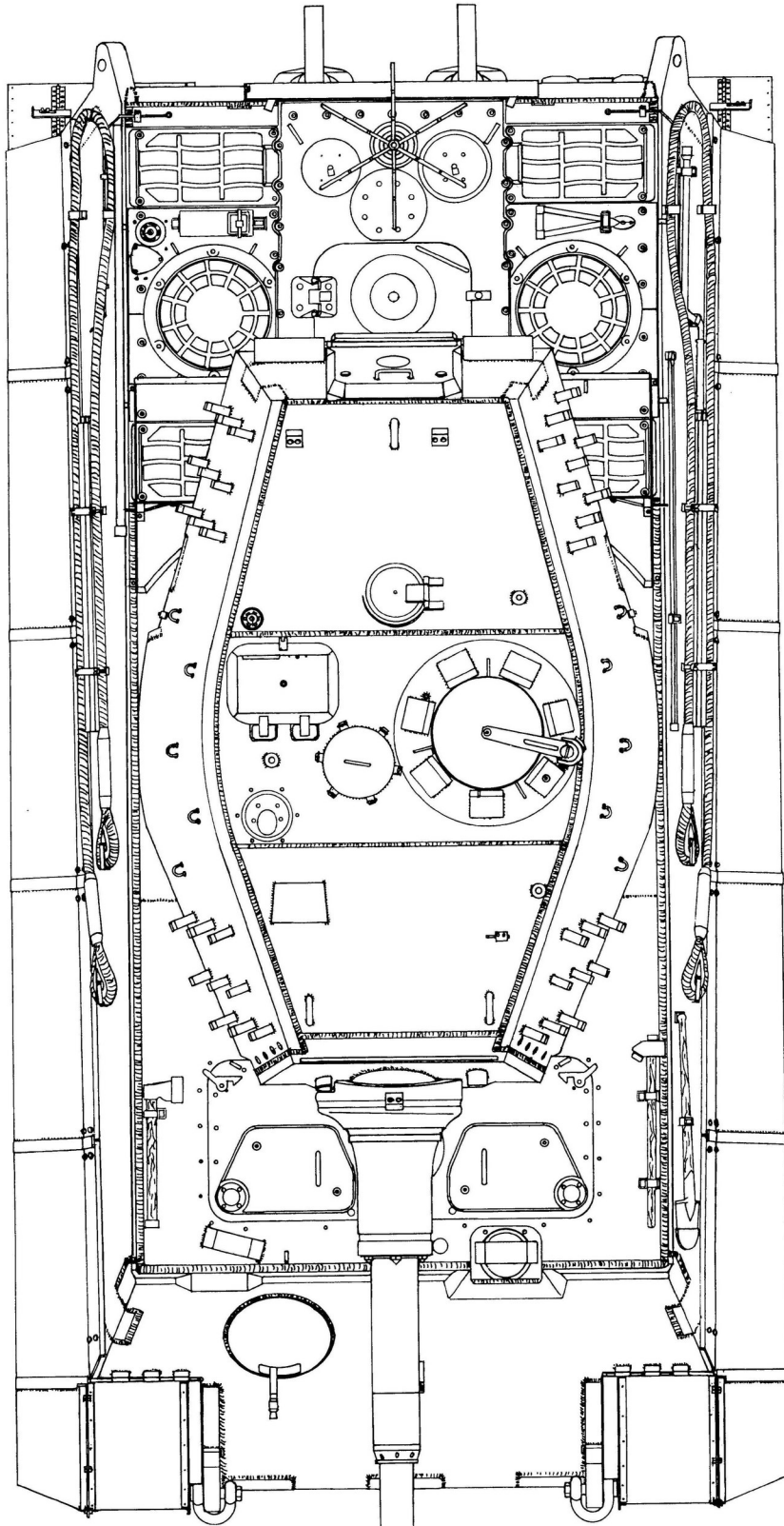
The Panzerbefehlswagen Tiger Ausf.B was outfitted in two versions: the Sd.Kfz.267 for longer range communication with higher headquarters, and the Sd.Kfz.268 for communication with supporting aircraft. The Sd.Kfz.267 was outfitted with a Fu 8 (30 watt transmitter with medium wave length receiver, operated in the frequency band 0.83 to 3 MHz) and a Fu 5 (10 watt transmitter with ultra short wave length receiver, operated in the frequency band

27.2 to 33.4 MHz). A Sternantenne D (star aerial) for the Fu 8 was mounted on an Antennenfuss beweglich Nr.1 (flexible antenna base) with an insulator. The white porcelain insulator was protected by an armor cylinder welded to the rear deck behind the engine compartment vent. An Antennenstab 2 m (2-meter rod aerial) for the Fu 5 was mounted behind the loader's hatch on the turret roof. The Sd.Kfz.268 was outfitted with a Fu 7 (20 watt transmitter and ultra short wave length receiver, operated in the frequency band 42.1 to 47.8 MHz) and a Fu 5. A 1.4-meter Antennenstab 1.4 m (1.4-meter rod aerial) was used with the Fu 7 radio set.

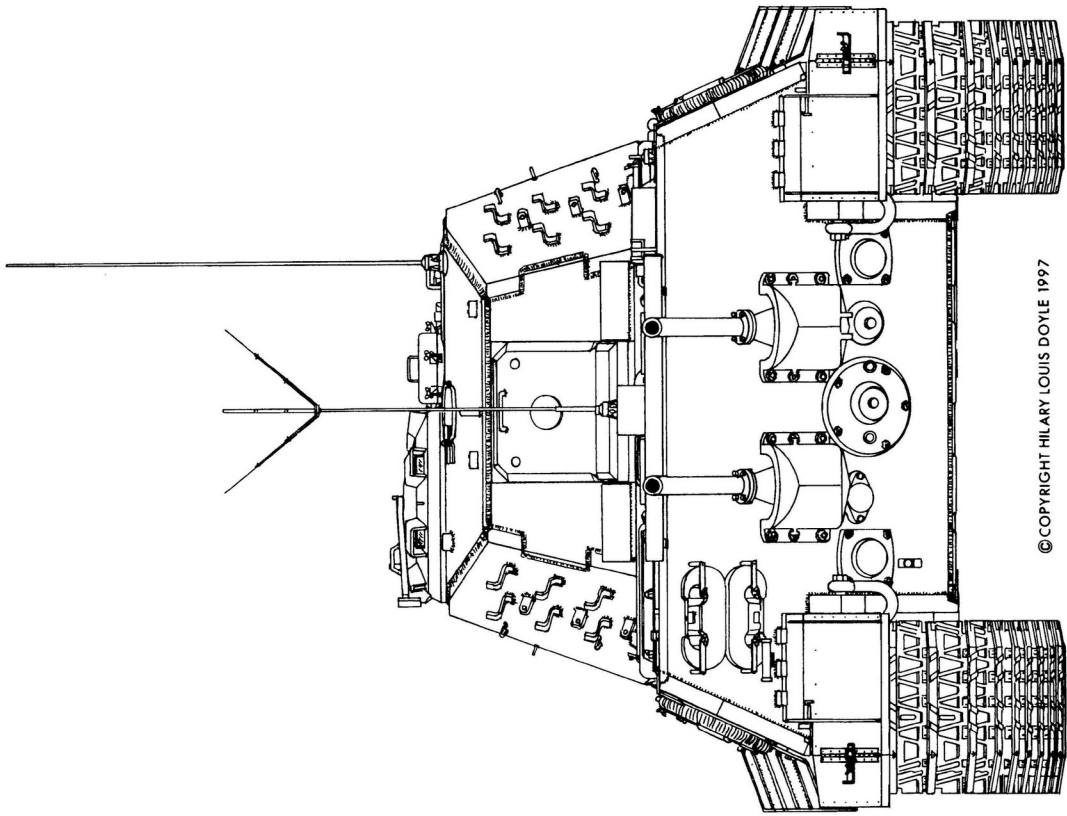
None of the first 50 Tiger II with Turm Nr.1-50 were outfitted as Panzerbefehlswagen. Only after conversion to the Serien-Turm, starting with the 51st Tiger Ausf.B produced, were they completed as Pz.Bef.Wg.Tiger Ausf.B. A production record from Henschel for September 1944 reveals that every 20th Tiger Ausf.B (Fgst.Nr.280200, 280220, 280240, 280260, etc.) was being outfitted as a Panzerbefehlswagen.



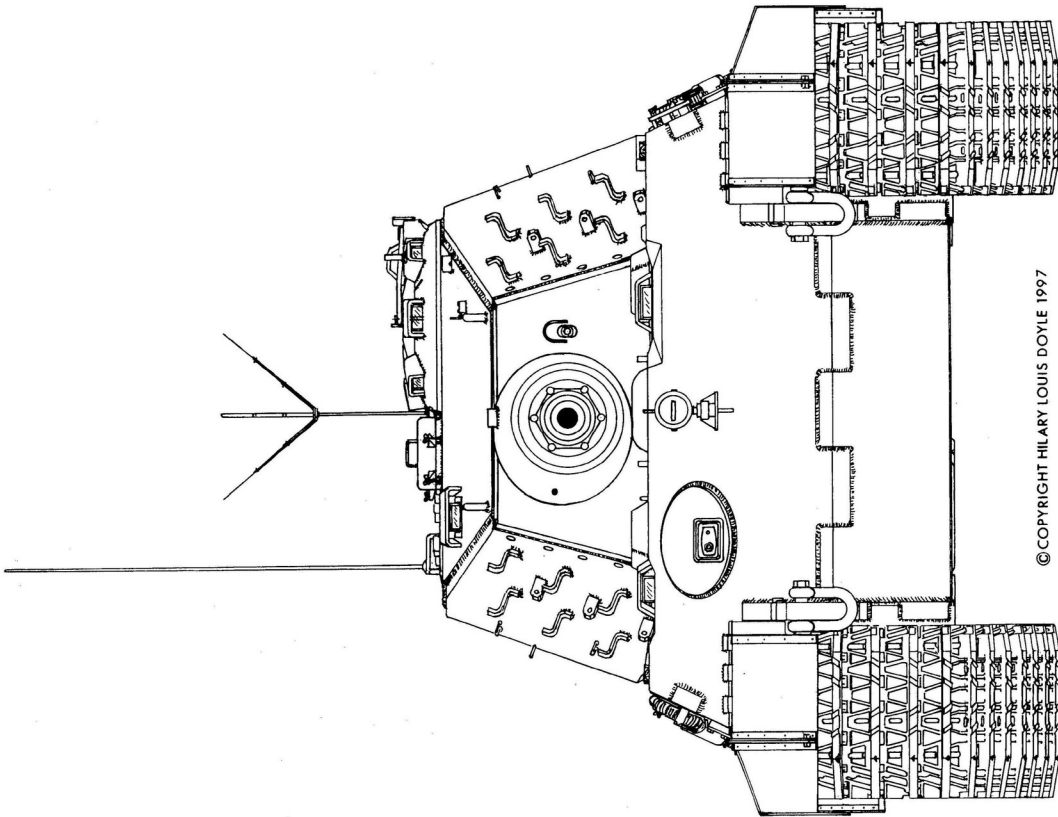
Left:
This Panzerbefehlswagen Tiger Ausf.B (completed by Henschel in July 1944) had a cylindrical armor guard around the porcelain insulator base for the "Sternantenne" on the rear deck and a tube for carrying spare antenna rods mounted across the top of the hull rear. (SZ)



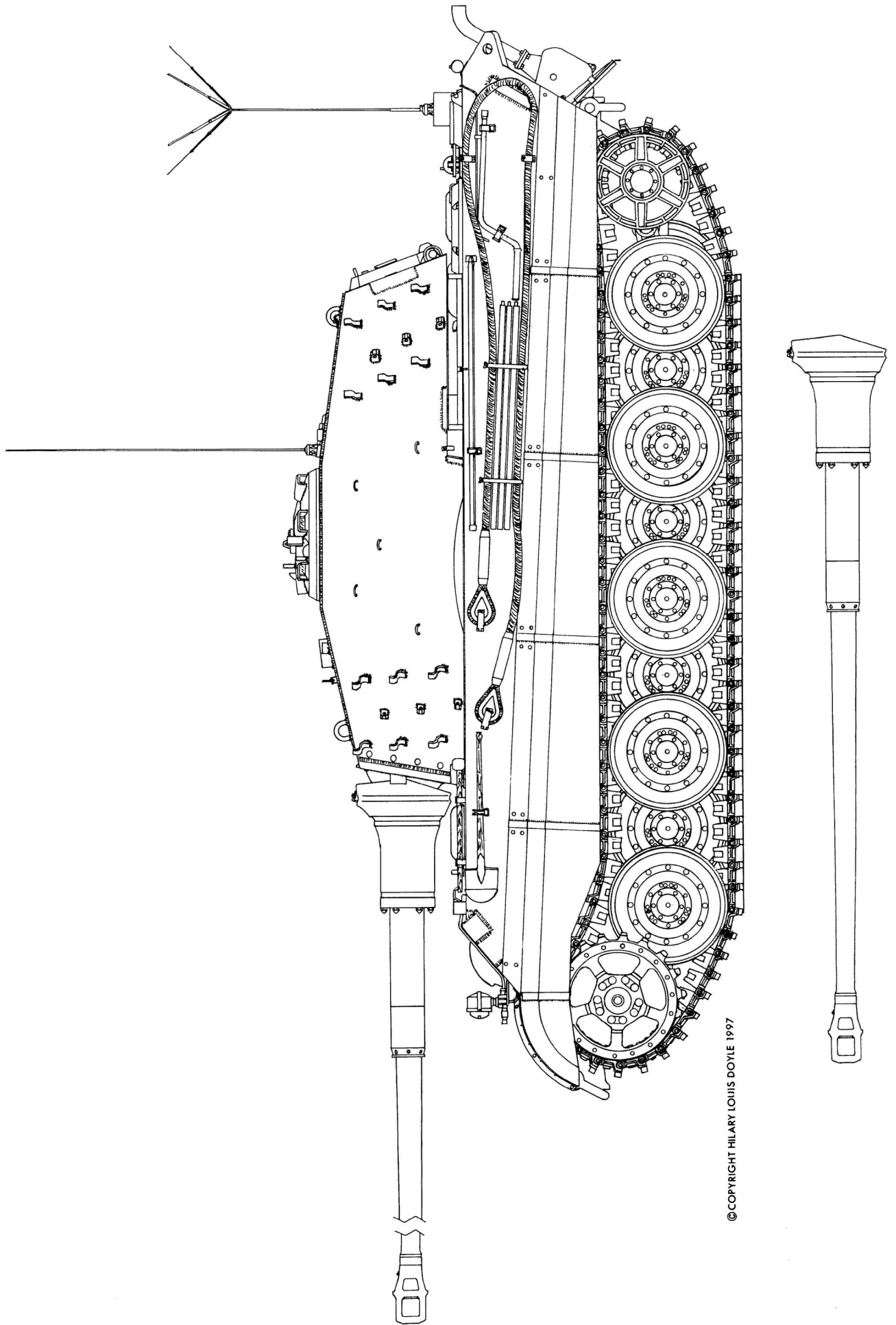
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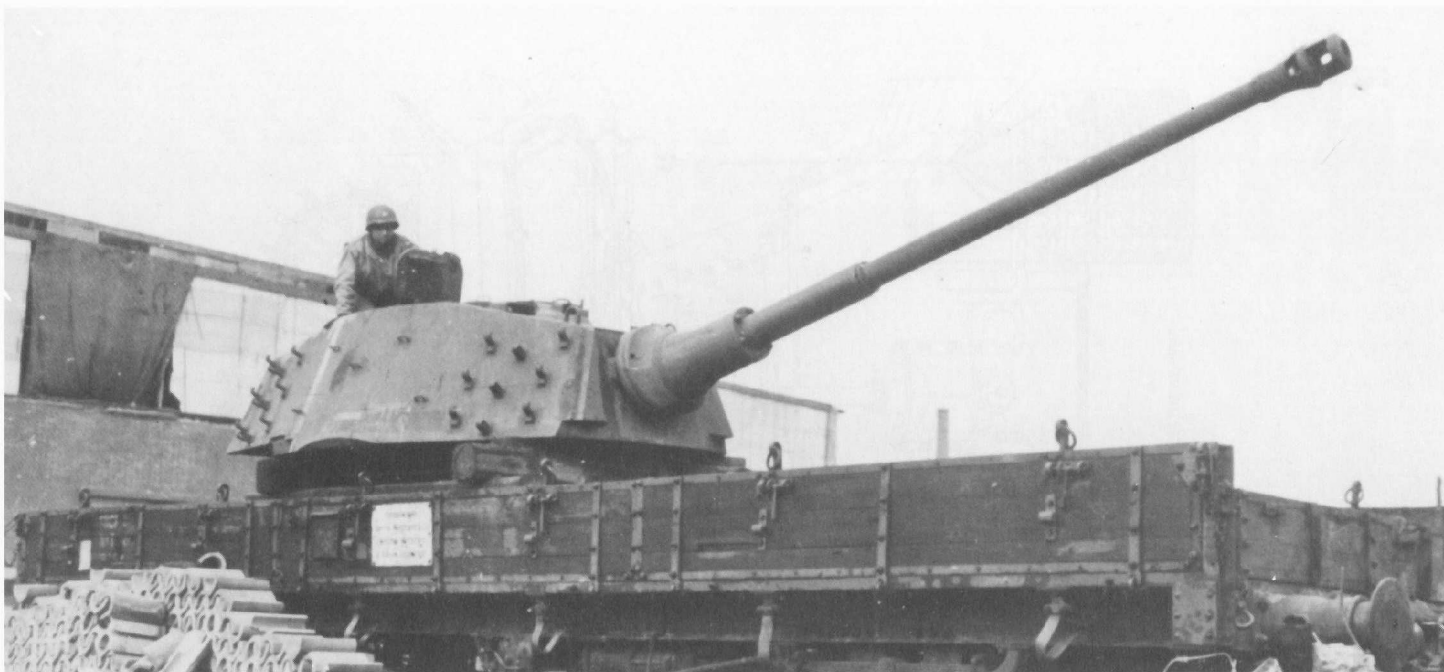
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Above: One of the last Tiger II turrets had hangers for the single link Kgs 73/800/152 track and loops to hold branches for camouflage on the turret side. (TTM)

Below: One of the last Tiger II had 18 teeth drive sprockets for single link Kgs 73/800/152, reinforcing ribs on the track guards, and a base coat of Dunkelgruen (RAL 6003) paint.



Panzerkampfwagen "Maus"

Fgst.Nr.Serie 351451- Porsche Typ 205

During a conference with Speer on 21-22 March 1942, Hitler ordered that Porsche was to be given a contract for independent design of a 100 ton Panzer. In April 1944, Krupp was asked to design a turret with a 15 cm Kw.K. to be offered to Porsche for their VK 100.01. Concerned that heavier Russian tanks would appear, Hitler authorized an increase in weight of a super-heavy tank to 120 tons. Priority was to be given to the heaviest armor connected with the highest performance gun.

After consideration of the advantages and disadvantages of Krupp's proposal for the Tiger-Maus and Porsche's proposal for their Typ 205 "Maus", on 3 January 1944 Hitler decided in favor of Porsche's proposal. Porsche was responsible for designing the vehicle, Krupp for producing the hulls and turrets, and Alkett for assembly. Based on the armor-piercing ammunition situation, the 12.8 cm gun was chosen as the most suitable weapon.

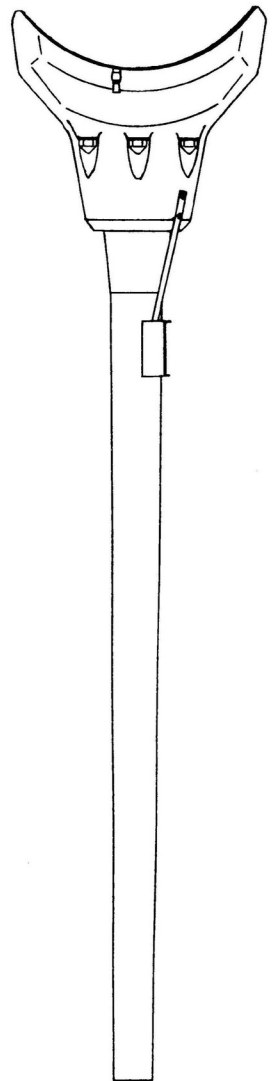
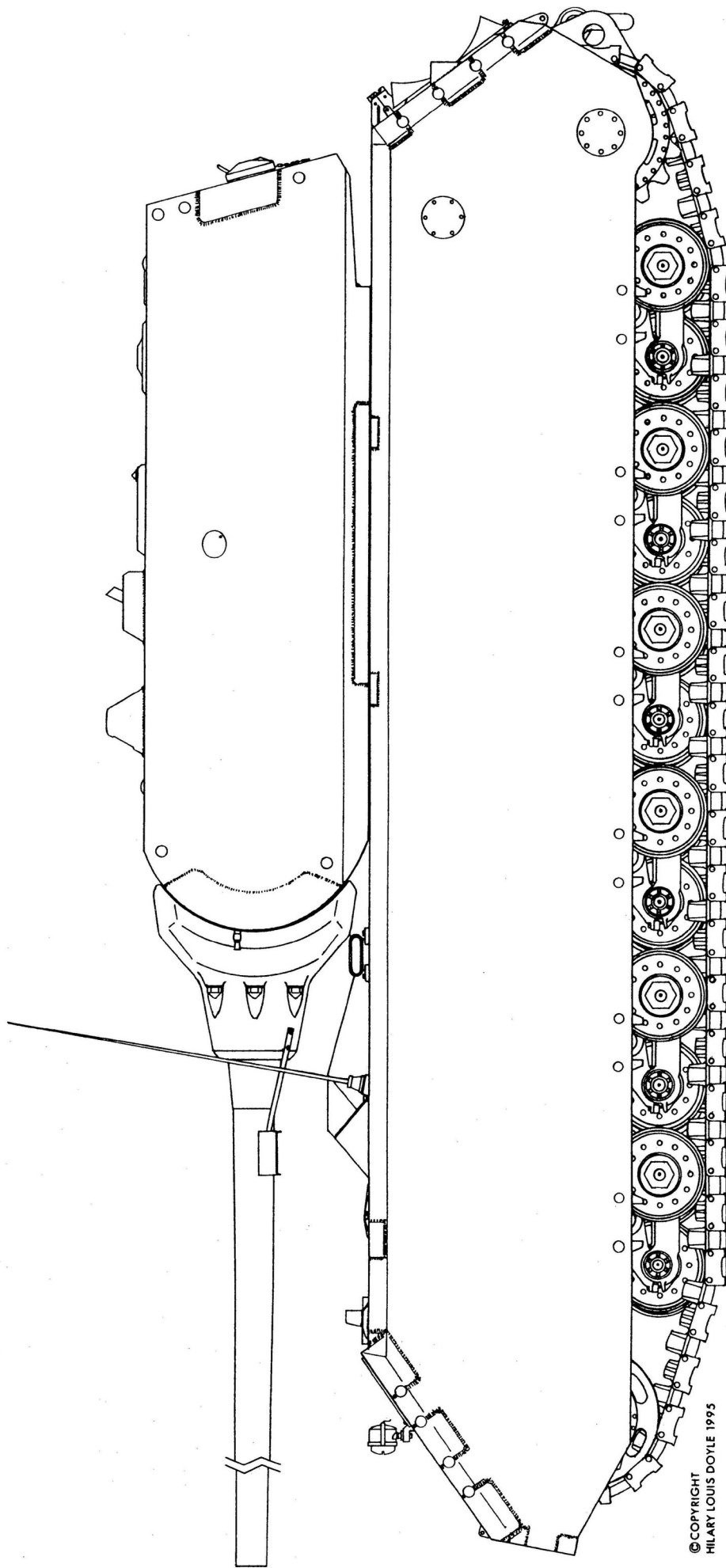
Porsche created a unique design for the drive train in this 188 metric ton Panzer. A modified Daimler-Benz 44.5 liter V-12 gasoline engine (rated at 1540 metric horsepower at 2500 rpm) drove a double generator which provided power for two electric motors for the rear drive sprockets. The suspension was also quite unique with 12 pairs of steel-tired roadwheels per side with volute springs running on 1100 mm wide tracks.

Maus armor was invulnerable to attack from most tank guns firing normal armor-piercing shells or shot. Tests conducted in June 1943, firing 8.8 cm Pzgr.39-1 projectiles from a 8.8 cm Pak 43 against Maus armor hulls and a turret at a range of 100 meters, proved that 200 mm thick armor at an angle of 32 degrees and 240 mm thick armor at an angle of 0 degrees couldn't be defeated by this attack.

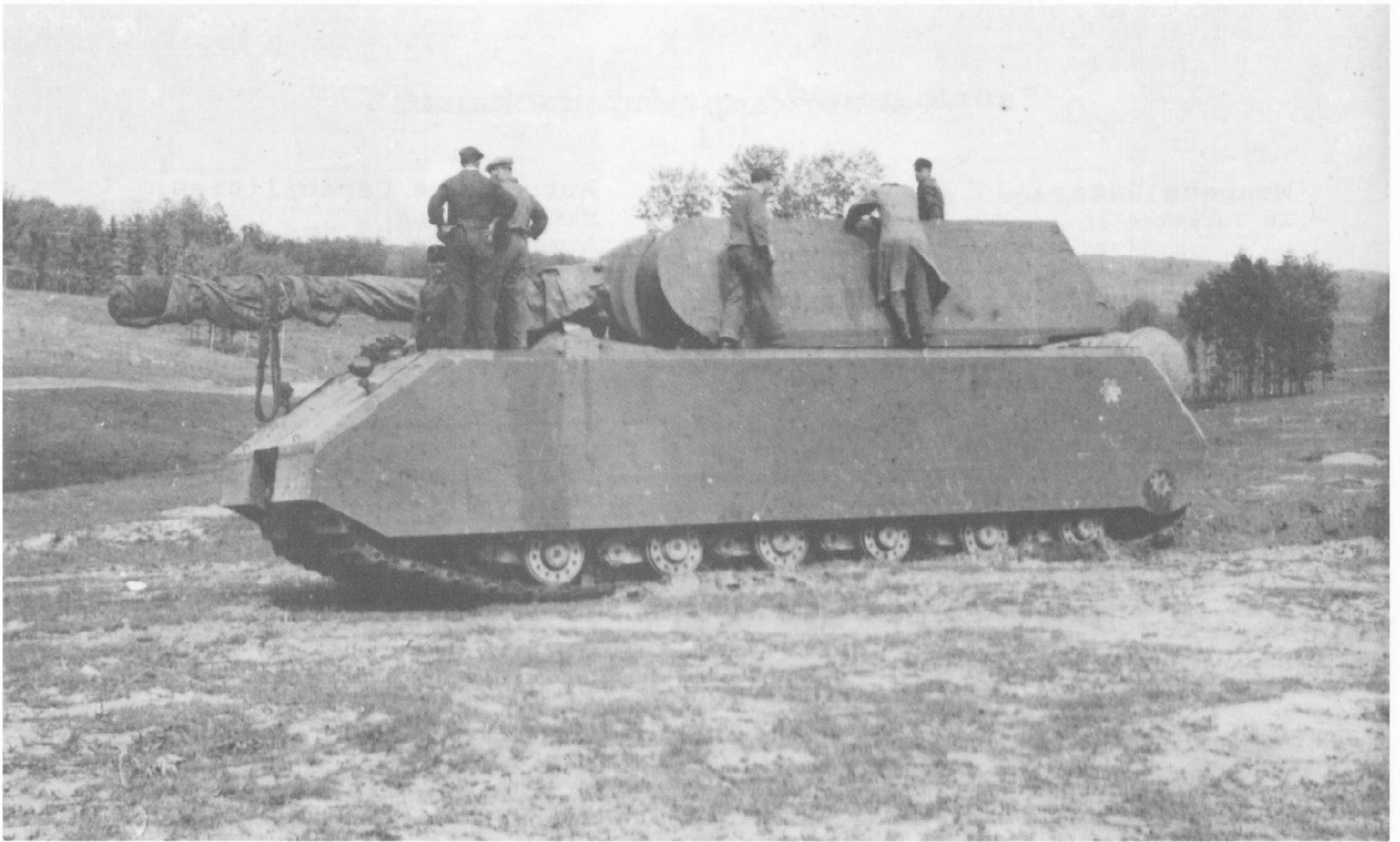
Contracts were awarded by Wa Pruef 6 for a Versuchs-Serie of six and by Wa J Rue for a production series of 120 "Maeuse" in February 1943 (increased to 135 in May). By 1 November 1943 the decision was made to cancel the entire Maus production series and all but two chassis and one turret for the Versuchs-Serie. Assembly of the first Maus chassis began at Alkett in mid-September 1943. It was completed on 22 December and sent by rail to Boeblingen, arriving on 14 January 1944. Work on the second Maus began at Alkett in January and the unfinished chassis was sent to Boeblingen in March with assembly completed in June 1944. The Versuchs-Turm Maus I was completed by Krupp, sent to Boeblingen in early May, and mounted on the second Maus chassis for a demonstration in early June 1944. Both the 1.Fahrzeug (chassis with test weight) and the 2.Fahrzeug (complete with turret) were sent to Kummersdorf in late 1944/early 1945.



Left:
The only Maus completed with a turret had a base coat of Dunkelgelb (RAL 7028) paint with Olivgruen (RAL 6003) and Rotbraun (RAL 8017) stripes added for camouflage. (WJS)



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Above and Below: The second Maus chassis was assembled by Alkett and shipped by rail to Boeblingen near Stuttgart where the only turret completed by Krupp was mounted. (WJS)



Panzerkampfwagen "Maus"

Weapons Data:

In Turret: 1 - 12.8 cm Kw.K.44 L/55
 1 - 7.5 cm Kw.K. L/36.5
 1 - 7.92 mm M.G.34
 Elevation: -7°, +23°
 Traverse: 360° electric and hand
 Gun Sight: T.W.Z.F.1 (3x 10°)
 Graduated to: 4000 meters for Pzgr

Ammunition: 75 - 12.8 cm
 200 - 7.5 cm
 1000 - 7.92 mm

Crew: Commander
 Gunner
 2 Loaders
 Radio Operator
 Driver

Communication: Fu 5 and Fu 8
 Intercom

Measurements:

Length, overall: 10.085 m
 Length, chassis: 9.034 m
 Width, overall: 3.670 m
 Height, overall: 3.630 m
 Wheel Base: 2.330 m
 Track Contact: 5.880 m
 Combat Loaded: 188 metric tons
 Fuel Capacity: 1600 & 1000 Liters

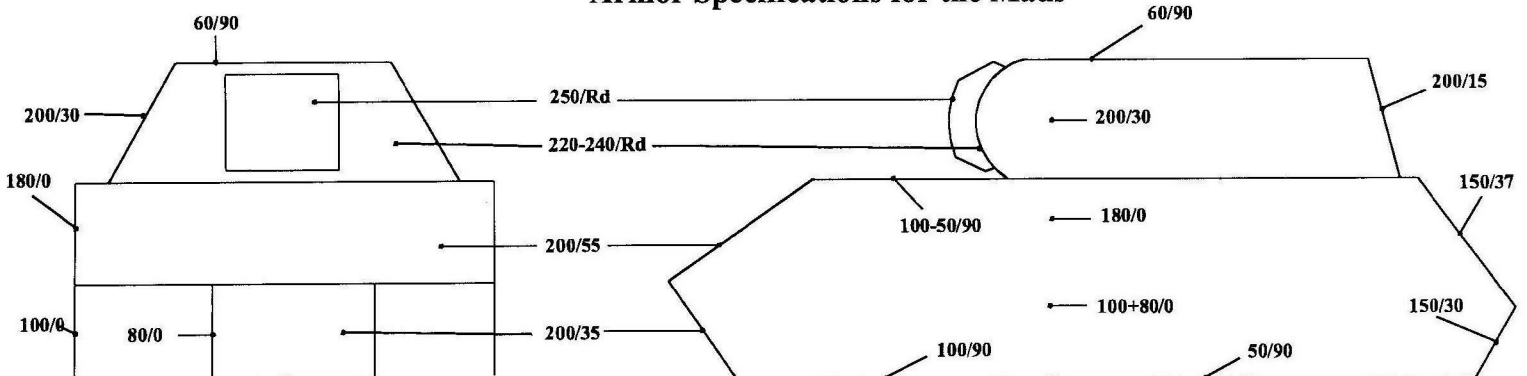
Automotive Capabilities:

Maximum Speed: 20 km/hr
 Avg. Road Speed: 18 km/hr
 Cross Country: ?? km/hr
 Range on Road: 160 km
 Cross Country: 62 km
 Grade: 35°
 Trench Crossing: 3.5 m
 Step: 75 cm
 Fording Depth: 200 cm
 Ground Clearance: 57 cm
 Ground Pressure: 1.45 kg/cm²
 Power Ratio: 8.2 HP/ton
 Steering Ratio: 2.52
 Turning Circle: 10 m

Automotive Components:

Motor: Daimler MB 509
 V-12 water cooled
 44.5 liter gasoline
 1540 HP @ 2500 rpm
 Transmission: 2 Electric generators
 driving two electric
 400 KW motors
 Steering: Electric control
 Drive: Rear sprocket
 Roadwheels: 12x2 per side
 Tires: Steel
 Suspension: Volute springs
 Track: 1100 mm wide dry pin
 Links per Side:

Armor Specifications for the Maus



Armor thickness in mm/angle from vertical

Copyright 2000 Thomas L. Jentz (Not to Scale)

Tolerances on plate thickness -0 to +5 %

Panzerkampfwagen "Tiger-Maus" E 100

Weapons Data

(based on Maus turret):
In Turret: 1 - 12.8 cm Kw.K.44 L/55
 1 - 7.5 cm Kw.K. L/36.5
 1 - 7.92 mm M.G.34
Elevation: -7°, +23°
Traverse: 360° electric and hand
Gun Sight: T.W.Z.F.1 (3x 10°)
Graduated to: 4000 meters for Pzgr

Ammunition: 75 - 12.8 cm
 200 - 7.5 cm
 1000 - 7.92 mm

Crew:

Commander
 Gunner
 2 Loaders
 Radio Operator
 Driver

Communication: Fu 5 and Fu 8
 Intercom

Measurements:

Length, chassis: 8.600 m
 Width, overall: 4.480 m
 Height, overall: 3.320 m
 Wheel Base: 3.170 m
 Track Contact: 4.900 m
 Combat Loaded: 140 metric tons
 Fuel Capacity: 2050 Liters

Automotive Capabilities:

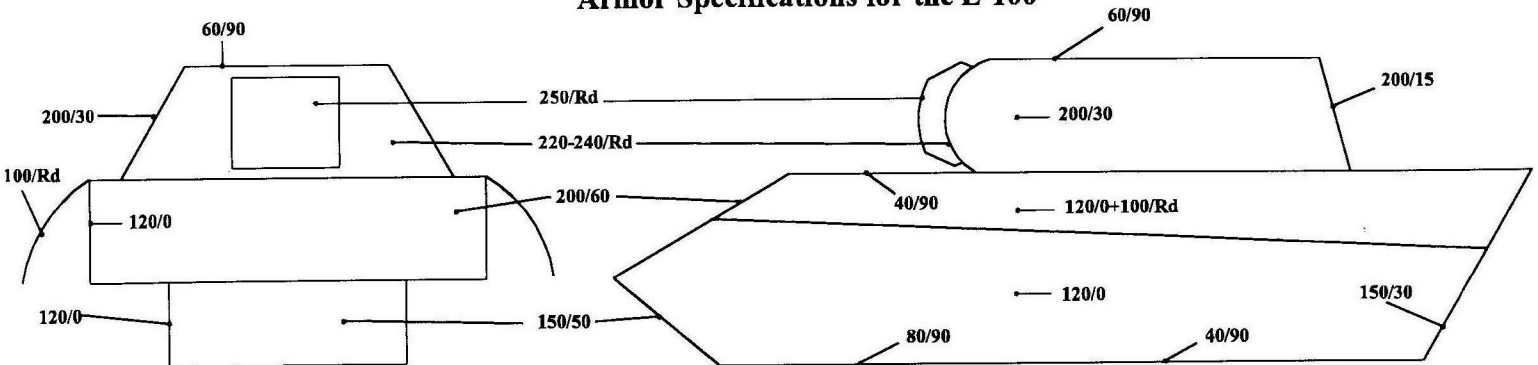
Maximum Speed: 23 km/hr
 Avg. Road Speed: ?? km/hr
 Cross Country: ?? km/hr
 Range on Road: 160 km *
 Cross Country: 100 km *
 Grade: 30°
 Trench Crossing: 2.9 m
 Step: 85 cm
 Fording Depth: 165 cm
 Ground Clearance: 50 cm
 Ground Pressure: 1.40 kg/cm²
 Power Ratio: 4.3 HP/ton
 Steering Ratio: 1.54

Automotive Components:

Motor: Maybach HL 230 P30
 V-12 water cooled
 23 liter gasoline
 600 HP @ 2500 rpm
Transmission: 8 speed OG 40 12 16B
Steering: L801 double radius
Drive: Front sprocket
Roadwheels: 8x2 per side
Tires: 900 mm Steel
Suspension: Coil springs
Track: 1000 mm wide dry pin
Links per Side:

*Automotive performance calculated by weight ratio based on Tiger II performance with the same components

Armor Specifications for the E-100



Armor thickness in mm/angle from vertical

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Tolerances on plate thickness -0 to +5 %

“Tiger-Maus” Panzerkampfwagen E-100

From November 1941 to June 1942, Krupp proposed a series of designs for super-heavy tanks ranging in weight from 70 to 90 metric tons. Known as the Pz.Kpfw. "Loewe" (refer to Panzer-Tracts No.20), none of these projects advanced past conceptual sketches. Having been awarded the contract to design the turret for Porsche's Typ 205, Krupp was aware of the competition design.

In November 1942, Krupp offered an alternative to Porsche's Maus design: a 155 ton Panzer with the same turret Krupp had designed for the Maus. On 18 December 1942, Krupp proposed a Tiger-Maus (with Tiger drive train components and the Maus turret) weighing about 130 metric tons. They could reduce the weight from 155 to 130 tons by dropping the 100 mm thick outer armor shields; decreasing the armor thickness on the rear, top, and belly; decreasing the width to 3270 mm by using narrower transport tracks; utilizing lighter Tiger drive train components; and shortening the track contact length by 880 mm and the hull by 680 mm.

A final proposal with sketches of various versions of a 130 ton Tiger-Maus was submitted on 31 December 1942. Advantages of the Tiger-Maus over the Porsche-Maus were stated by Krupp to be: the steering ratio would be only 1.5 versus 2.5; transport by rail would not block oncoming traffic on the parallel line; the track drive would not be jammed by built-up dirt; proven components would allow immediate series production; and the lower weight would result

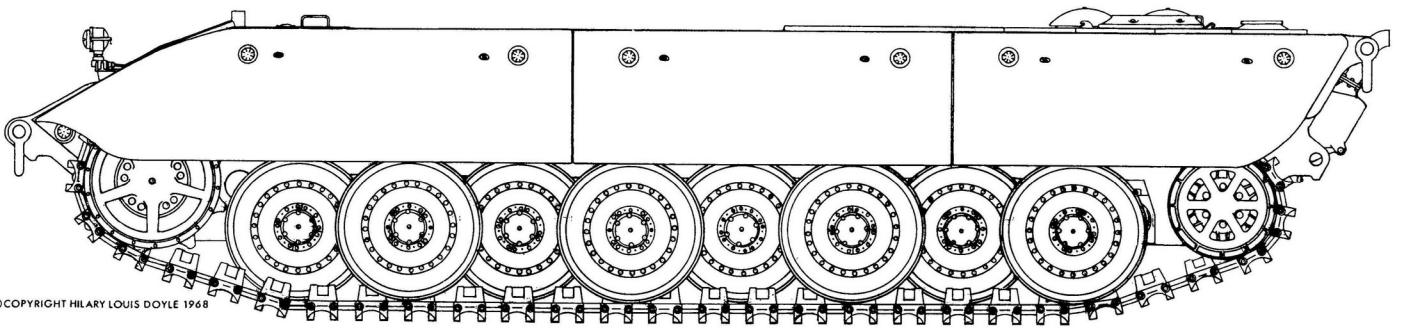
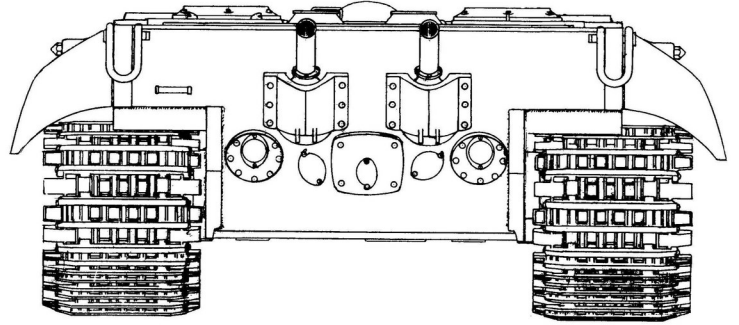
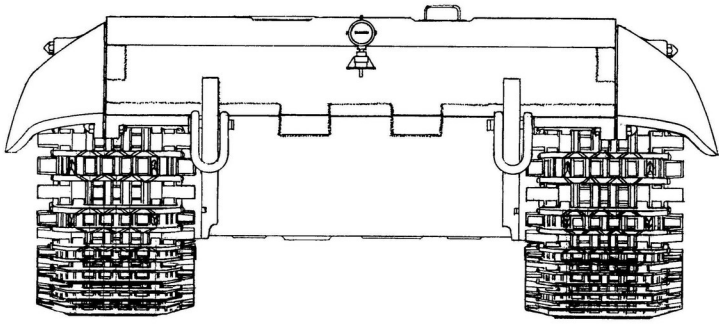
in higher production and lower material and fuel consumption. Krupp promised that they could deliver the first Tiger-Maus by about November 1943. After comparing Krupp's and Porsche's designs, Hitler decided on 3 January 1943 in favor of Porsche's Maus.

But this wasn't the end of the Tiger-Maus. In April 1943, Oberbaurat Kniepkamp of Wa Pruef 6 obtained permission from the Panzerkommission to build an E-100 Versuchsfahrzeug as part of his development series of Einheitsfahrzeuge (standard vehicles) including the E-10, E-25, and E-50/75. The proposed Tiger-Maus chassis was used as the basis for the E-100 design. The only significant change to the design was conversion to an external double coil spring suspension. A new turret was not designed for the E-100; it still retained the same turret ring diameter and clearances needed to mount the turret designed by Krupp for Porsche's Maus.

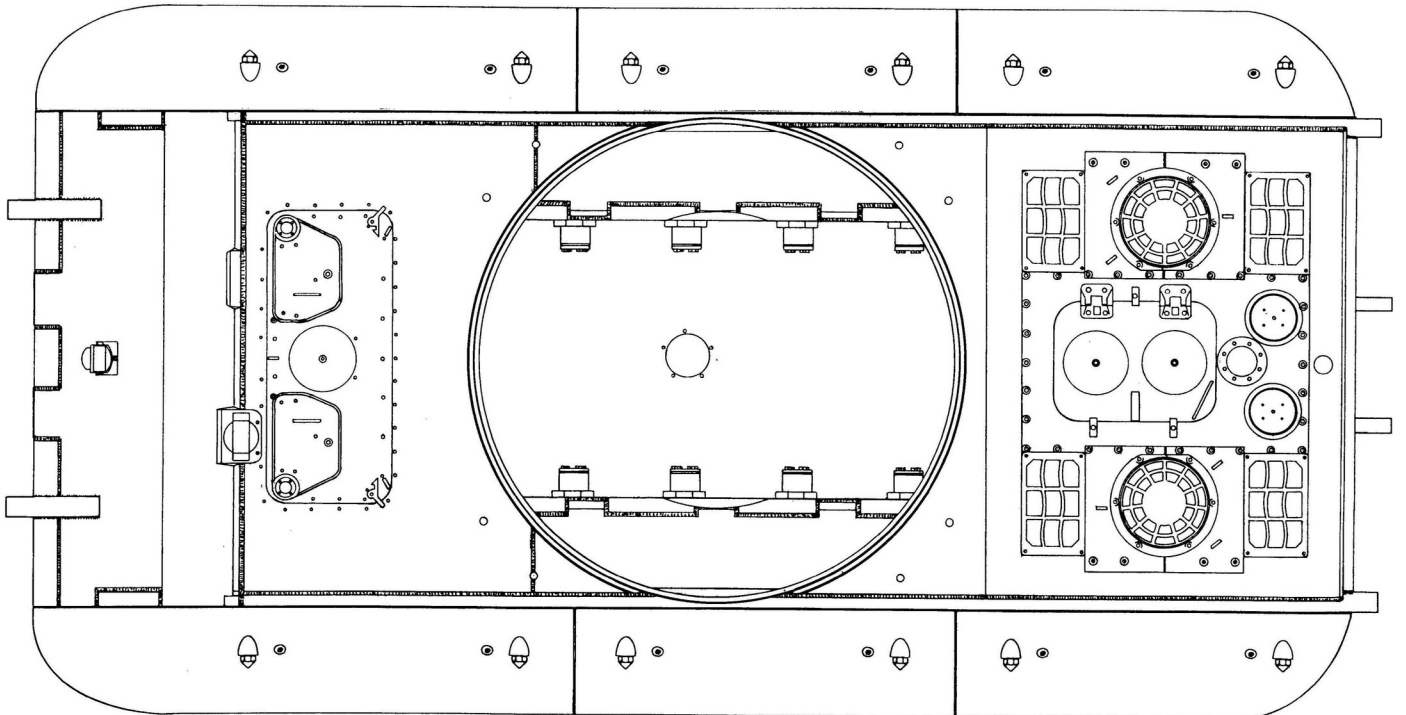
Without any previous experience in heavy vehicle or Panzer design, the firm of Adler was chosen by Kniepkamp as the design firm. Adler's engineering staff started work on the detailed design on 30 June 1943. Their main contribution was the design of the coil spring suspension. D.H.H.V. reported completing a hull for the E-100 in May 1944. Assembly of the E-100 chassis was conducted at a Henschel facility near Paderborn, where it was found incomplete by Allied forces in March 1945.

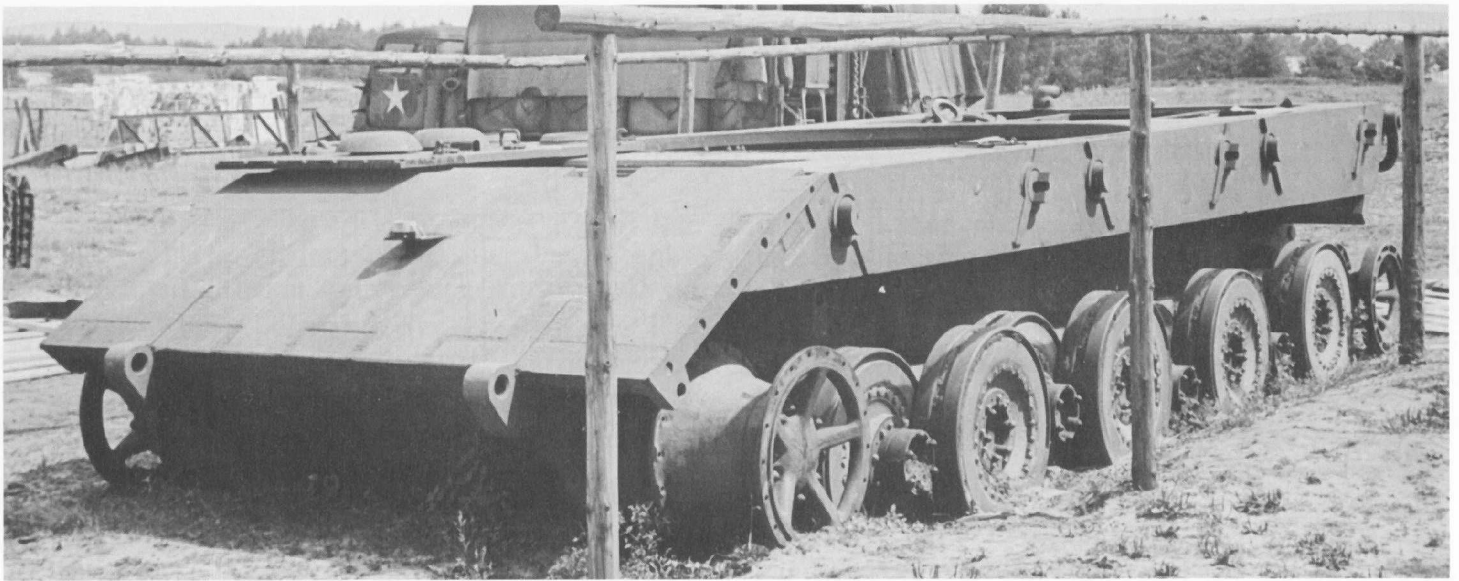


Left:
The partially assembled E-100 chassis as found by Allied troops at a Henschel facility near Paderborn in March 1945. (NA)

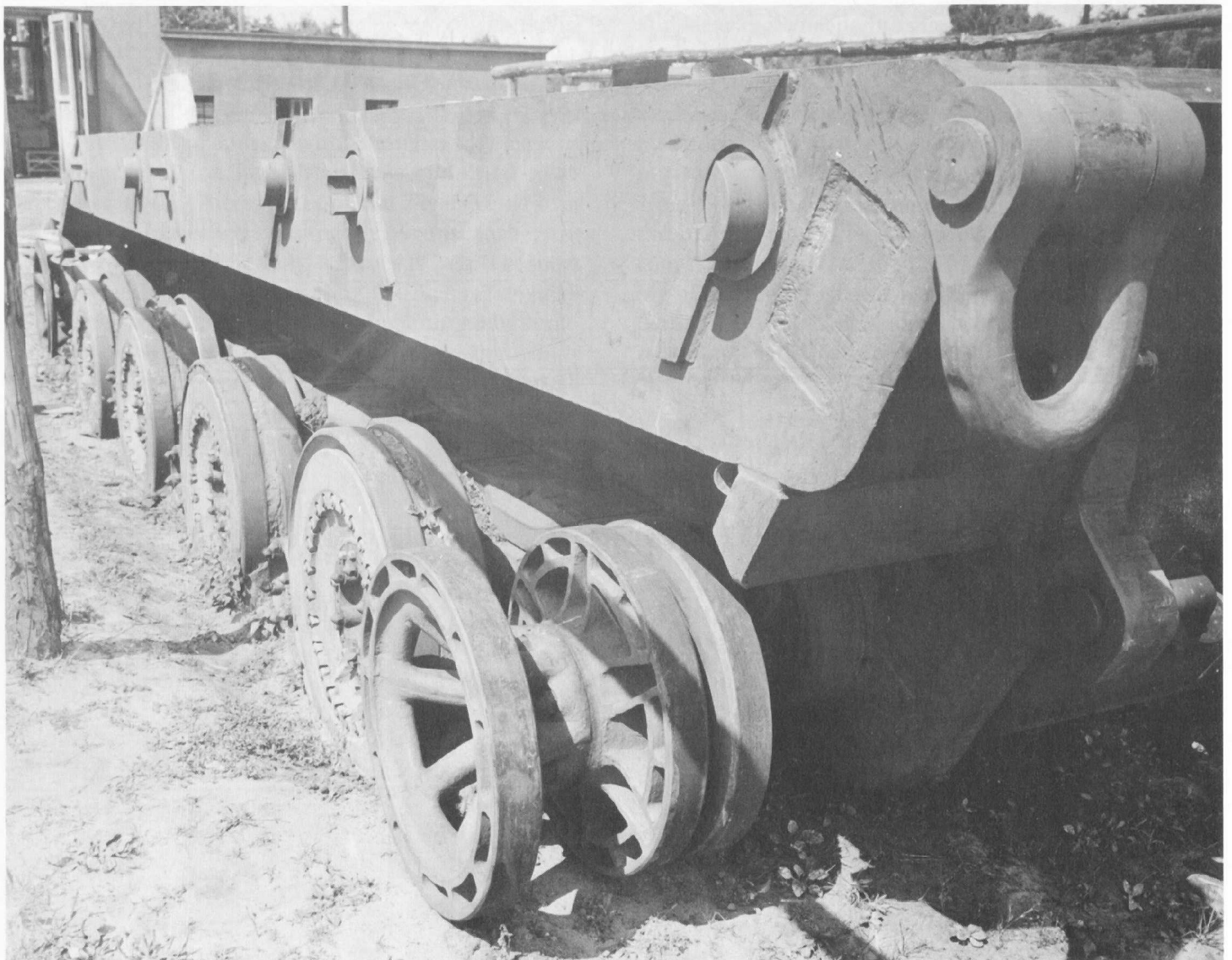


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After capture, the roadwheels were fitted but the drive sprockets and suspension springs were missing. The E-100 was to have the same turret that Krupp created for the Maus. (TTM)



GLOSSARY OF GERMAN MILITARY TERMS

| | |
|------------------------------|---|
| Abschleppfahrzeug | towing vehicle |
| Abteilung | Abt. - battalion with less than five companies |
| Ausfuehrung | Ausf. - model designation |
| Befehls | command |
| Begleitwagen | B.W. - code name for Pz.Kpfw.IV |
| Bordsprechanlage | intercom set |
| Durchbruch | breach, penetrate |
| Einheitsfahrzeug | standardized vehicle |
| Empfaenger | radio receiver |
| Erprobungs | experimental, test |
| Fahrer | driver |
| Fahrgestell | Fgst. - chassis |
| Fahrzeug | vehicle |
| Funk | Fu - radio |
| Funker | radio operator |
| Geraet | device, equipment, weapon |
| Heer | German army |
| Kommandeur | commander |
| Kraftfahrzeug | Kfz. - motorized vehicle |
| Kw.K. | tank gun |
| Ladeschuetze | loader |
| Loewe | lion |
| Nachrichtoffizier | signals officer |
| Nahverteidigungswaffe | close defense weapon |
| Nebelkerzenwurfgeraet | smoke candle dischargers |
| Pak | anti-tank gun |
| Panzerbefehlswagen | command tank |
| Panzerfuehrer | tank commander |
| Panzergranate | Pzgr. - armor-piercing shell |
| Panzerkampfwagen | Pz.Kpfw. - generic name for tank |
| Probewanne | test hull |
| Rauchsignalkorb | smoke signal basket |
| Richtschuetze | gunner |
| schwere | heavy |
| Sd.Kfz. | special vehicle |
| S.m.K. | steel core ammunition |
| Sprenggranaten | Sprgr. - high-explosive fragmentation shells |
| Stabantenne | rod aerial |
| Sternantenne | star-shaped aerial |
| Turm | turret |
| Turmstellung | turrets on fixed emplacements |
| Verstaerkt | strengthened, reinforced |
| Versuchs | experimental |
| VK | Vollketten - fully tracked |
| Waffe | weapon |
| Waffenamt | ordnance department |
| Wa Pruef 6 | automotive design office under the Heeres Waffenamt |
| Wa Prw 6 | automotive design office under the Heeres Waffenamt |

PANZER TRACTS

| | | <u>Available</u> | |
|-------|-------------------------------------|---------------------------------------|-------|
| No.1 | Panzerkampfwagen I | Kl.Tr. to VK18.01 | |
| No.2 | Panzerkampfwagen II | La.S.100 to VK16.01 | |
| No.3 | Panzerkampfwagen III | Le.Tr. to Pz.Bef.Wg.Ausf.K | |
| No.4 | Panzerkampfwagen IV | Gr.Tr. to Pz.Bef.Wg.IV Ausf.J | Apr97 |
| No.5 | Panzerkampfwagen Panther | VK20.01 to Panther Ausf.F | |
| No.6 | Schwere Panzerkampfwagen | D.W. to E100 | Mar01 |
| No.7 | Panzerjaeger | 3.7 cm Tak to 8.8 cm Waffentraeger | |
| No.8 | Sturmgeschuetz | s.Pak to Sturmmoerser | Jan00 |
| No.9 | Jagdpanzer | Jagdpanzer 38 to Jagdtiger | Jul97 |
| No.10 | Artillerie Sfl. | 15 cm sIG to 60 cm Karl | |
| No.11 | Panzerbeobachtungswagen | Sd.Kfz.253 to Pz.Beob.Wg.Panther | |
| No.12 | Flak Sfl. and Flakpanzer | Sd.Kfz.10/4 to 8.8 cm VFW | Apr98 |
| No.13 | Panzerspaehwagen | Sd.Kfz.3 to Sd.Kfz.234/4 | |
| No.14 | Gepanzerte Pionier Fahrzeuge | Goliath to Raeumer S | Jul98 |
| No.15 | Schuetzenpanzerwagen | Sd.Kfz.250 to Kaetzchen | |
| No.16 | Bergepanzerwagen | Bergepanzer 38 to Bergepanther | Nov97 |
| No.17 | Gepanzerte Nachschub Fahrzeuge..... | VK3.01 to schwere Wehrmacht-Schlepper | |
| No.18 | Panzerkampfwagen 35(t)/38(t) | L.T.Sk. to Pz.Kpfw.38(t) Ausf.G | |
| No.19 | Beute-Panzerkampfwagen | Polish TK to Russian KW II | |
| No.20 | Paper Panzers | Concepts remaining on drawing boards | |

Includes data on over 350 German armored vehicles from 1925 to 1945

Illustrated with scale prints drawn by Hilary Louis Doyle and photographs selected for clarity of detail and rarity of model.

Development history, unique characteristics, major modifications, data sheets, and armor specifications all based solely on original documents and existing vehicles.