15. TRACKS Fig.3.)

Type - Single pin secured by malleable cotter pins.

Material - Cast (non-magnetic)

Width of shoe - $11\frac{1}{8}$"

Pitch of shoe - $3\frac{5}{8}$"

Shoes per track - 105

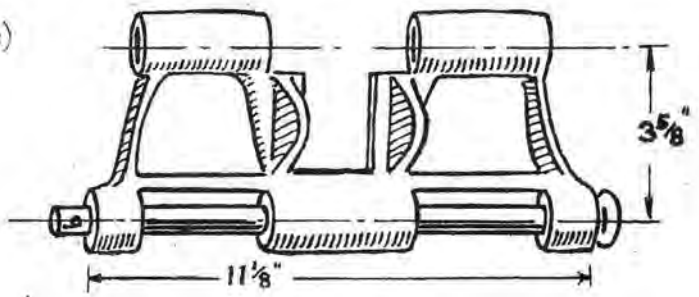

FIG. 3 TRACK SHOE

Adjustment (Fig.4.) - by eccentric mounting of rear idlers. It is effected by movement of a hexagon nut in hub of idler wheel and is retained by serrated keeper plate. Adjustment is quick and accessible.

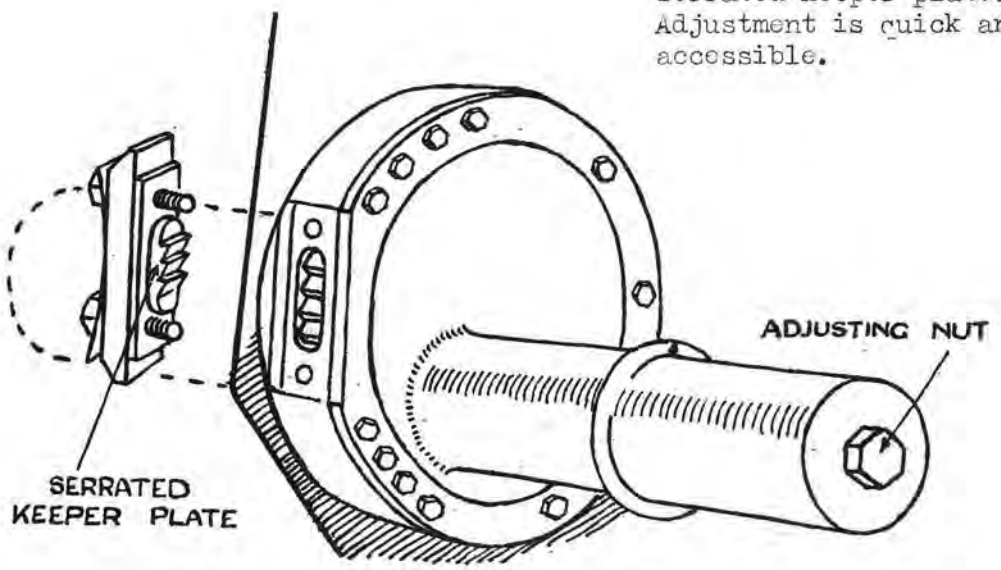

FIG. 4 TRACK ADJUSTMENT

16. ENGINE

Maker MAYBACH MOTORENBAU. Motor No. 16595. Year: 1938

Type 6-cylinder. H.L. 62 TRM.

Fuel Petrol.

Rating 140 H.P.

Capacity 6.191 litres.

Valves Two per cylinder actuated by overhead camshaft through roller type rockers. Adjustment is obtained by rotation of eccentric bushes in rocker arms.

SUSPENSION DATA SHEET NO. 3.

Pz.Kw. II

Gross Weight of Vehicle 9 tons 10 cwts. Max. Speed 35 m.p.h.

This tank is equipped with ten independent suspension units; five per side, spaced equally apart as shown in the figure. Each assembly is composed of a simple bell-crank suspension arm which pivots in a bearing housed within the hull. The lower end of the arm carries the wheel; whilst the upper end forms the anchorage for the laminated cantilever spring.

Springing is effected, as shown in the diagram, by the engagement of the floating end of the cantilever with a roller, mounted on needle bearings, which is bolted to the side plate of the hull. Any vertical wheel displacement will thus be accompanied by a corresponding spring flexure.

Station 1 to 4 are identical, and have a spring anchorage depth of 5 ins.; the rear station, however, has an anchorage of only 4 ins., and in addition this spring is disposed almost horizontally.

From an investigation of captured vehicles it is found the laminated cantilever springs have a width of 3.14 ins., and at static deflection have an effective length of almost 17 ins. The actual numbers of leaves in each unit, however, show considerable differences, and may vary between 12 and 20. In a corresponding manner the leaf thicknesses exhibit a similar variability, the average being 0.2 ins. In general the rear assembly has approximately only 80% of the average number of leaves in each remaining unit. Usually three main leaves pass beneath the roller.

To every unit a rubber bumper stop is fitted. This is bolted to the hull side and engages with a corresponding depression at the end of the suspension arm. The position of these bumpers allows a maximum vertical wheel displacement of 4 ins. from static deflection to full bump.

The static deflection, determined experimently on a number of vehicles, has an average value of 1.7 ins., which corresponds to a ground-hull clearance of 13 ins.

The wheels are of light alloy disc type with rubber tyres, the overall diameter being 22 ins.

No shock absorbers are fitted to this tank.

The wheels are mounted on a combination of ball and roller races which are protected on the hull side by a simple labyrinth and felt washer seal.

The suspension arms are free to rotate on double needle roller bearings.

The $24\frac{3}{4}$ inch diameter rear idler wheel is used as a track tensioner. The axle of this wheel is mounted eccentrically on a serrated disc. The disc carries a pinion whose shaft passes through the idler wheel hub and ends in an easily accessible hexagonal nut. The teeth of the pinion engage with an internal rack, together forming an epicyclic pair. Rotation of the pinion by the nut causes the disc to rotate, and since the idler wheel axis is eccentric by 2 ins. an adjustment of the track is thus effected. The disc is afterwards locked by three teeth on a keeper plate which engage with its serrated edge when bolted in place.

L.J.BISHOP.
October, 1943.

EXAMINED AT FARNBOROUGH (D.T.D. No. 3003) March, 1943.

EXAMINERS: MAJOR J.D. BARNES, R.T.R., and MR. D.M. PEARCE, B.A. (Cantab)

D.T.D. PROJECT NO. V.7022.

1. TYPE

Pz.Kw.II Chassis Number 26332.

2. IDENTIFICATION MARKINGS

245 on both turret side plates and rear plate.
Afrika Korps sign on nearside and tail plate
The German Cross is painted on offside superstructure and on the tail plate.
"26332" (Chassis Number) is painted in black on the offside front nose plate. Stamped on the offside of the superstructure are the markings:

"X 46 - 9745 - E.H.W. 61"

and on the rear engine superstructure:

"X 144 - 9145. E.H.W. 61"

On engine compartment bulkhead "26332" (Chassis Number).

3. GENERAL CONDITION

FIG.1

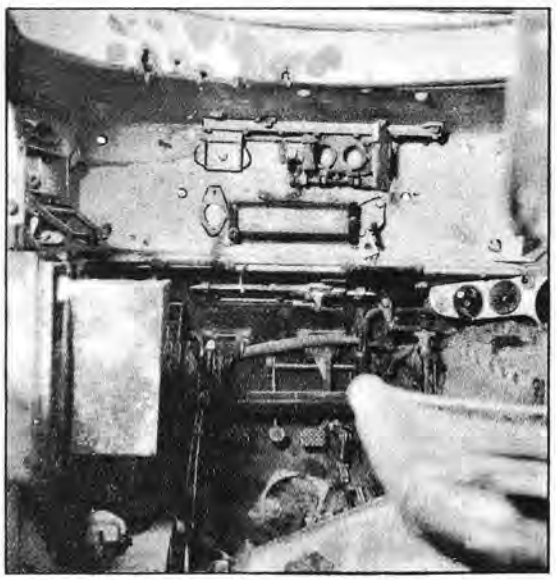

FIG.2

The tank is a non-runner and has a large hole in the nearside rear of the turret and superstructure (See Fig.1)

There is no sign of a fire having occurred, but very considerable damage by blast is evident in the fighting and engine compartments (See Fig.II) Both the guns and the tracks are deficient. The transmission and suspension systems appear to be in reasonable condition.

9. ACCESS DOORS & ESCAPE HATCHES

Minor modifications have been made to the access doors in this vehicle. The small rectangular plate on the offside of the glacis plate is replaced by a circular plate of $7\frac{3}{4}$" diameter which is opened by a hexagon key from the outside.

The hinges have been dispensed with on the louvred hatch at the rear - this is now secured by set screws.

10. SEATING

FIG. 3

Three seats are provided.

W/T Operator's Seat

This is adjustable and has an adjustable backrest. It is mounted in the left rear corner of the fighting compartment. The backrest may be reversed, but is not adjustable in this position.

Gunner/Commander's Seat

Is secured to a tubular support welded to the rear wall of the turret. It folds and is adjustable for height.

Driver's Seat

Is situated in the nearside front of the ing compartment. It adjustable longitudinally and has an adjustable back rest.

11. SUSPENSION

An important observation is a spare bogie wheel found on this vehicle. On all Pz. Kw. II's previously examined, and on this vehicle, the bogie wheels are of aluminium construction whereas the odd spare wheel is of steel disc type.

Idlers - a new type of idler is fitted to this vehicle. The wheel is formed of a truncated cone of 10 mm. plate, the top of which is welded to the hub. The inside of the cone is braced with eight 3 mm. triangular webs which are welded to the hub. A rim is formed at the base of the cone giving overall diameter of 2' 0" and an outer rim is secured to this at a distance of $3\frac{1}{2}$" by the welding of folded trianular distance pieces. The assembly is completed by the fitting of a conical hub cap. The construction of this idler wheel has the appearance of giving considerable rigidity with a minimum of weight. It would at the same time - by reason of its presentation of an unbroken sloping surface - offer a reasonably invulnerable target itself and afford good protection for the track tensioning mechanism.

12. ELECTRICAL EQUIPMENT

Lighting, starting and charging are carried out at a pressure of 12 volts. One 12 volt lead acid accumulator of about 120 amp./hrs. capacity is mounted on the fighting compartment floor and the feed to all circuits except the wireless is controlled by a battery isolating switch fitted adjacent to the batteries.