

R E S T R I C T E D

HEADQUARTERS
COMMUNICATIONS ZONE, ETOUSA
OFFICE OF THE CHIEF ORDNANCE OFFICER
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ETO ORDNANCE TECHNICAL INTELLIGENCE REPORT }
NO. 282 }

SUBJECT: Transport Trailer for Pz. Kpfw. Tiger Model B Tank

Observations by: Capt. G. D. Drury, Ord. Tech. Intell. Team No. 1

1. GENERAL:

A large German transport trailer weighing 25 tons and having a rated load carrying capacity of 75 tons was captured intact by First U. S. Army troops. From examination, it was ascertained that this trailer was the transport trailer for the Pz. Kpfw. Tiger Model B tank. It apparently had never been used for this purpose as the loading ramps and carrying platform which are wood surfaced were not marred in any way. Photos 12 to 17, Appendix "C", show a Tiger Model B tank as loaded on the trailer for evacuation. In moving the tank, the trailer was towed by two American M20 trucks.

2. DATA:

Weight, empty 23,000 kg (50,600 lbs)
Load Capacity 68,000 kg (150,000 lbs)
Lengths:
Overall 38 ft. 11-1/2 in.
Overall with ramps extended 53 ft. 0 in.
Overall (less towing bar) 32 ft. 4 in.
Platform 24 ft. 6-5/8 in.
1st wheel set to second wheel set (centers) 5 ft. 0 in.
1st wheel set to third wheel set (centers) 11 ft. 0 in.
1st wheel set to fourth wheel set (centers) 17 ft. 0 in.
1st wheel set to fifth wheel set (centers) 23 ft. 6 in.
1st wheel set to sixth wheel set (centers) 28 ft. 0 in.
Between platform suspension points 17 ft. 1 in.
Heights:
Overall (top of ramp holding studs) 6 ft. 2 in.
Overall (with stowed ramps removed) 4 ft. 1-1/2 in.
To top of platform 3 ft. 4 in.
To platform suspension points 1 ft. 11-1/2 in.
Widths:
Overall 10 ft. 2-1/4 in.
Overall of each wheel set 6 ft. 4-1/2 in.
Each individual platform 1 ft. 11 in.

Appearance of the nameplate was as follows:

-----e-n-a-----
Fabrik Nr. 17498 Baujahr 1944
Eigengewicht 23000 kg. Nutzlast 68000 kg
Achsdrucke
Bremsen Druckluft

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3. GENERAL DESCRIPTION:

The trailer consists of two longitudinal, wood-surfaced load-carrying platforms connected at the middle by a transverse member and supported at four points by two suspension units. Each of the suspension units has three wheel sets of four dual, solid-rubber-tired wheels making a total of 24 dual wheels for the trailer (Photos 1, 4 and 5). Each individual wheel set is mounted on a "fifth wheel" pivot and connected to the steering linkage so that all wheel sets turn in steering. The trailer is built so that it can be towed from either end by changing the towing bar. For purposes of clarity in this report, the end with the towing bar attached is considered as the front end.

4. SUSPENSION UNITS:

The suspension of the trailer is so designed that the load is equally distributed among the six wheel sets. This is accomplished by a unique design which is illustrated and explained in Appendix "A". For purposes of explanation, just one suspension unit is considered as the two units are identical and the load is evenly divided between them (Photo 6).

5. INDIVIDUAL WHEEL SET ARRANGEMENTS:

Each set of wheels consists of four dual solid-rubber-tired wheels making a total of eight tires (Photos 3 and 16). These four dual wheels are mounted in pairs with one axle serving two wheels. The axles are sprung on single, semi-elliptical leaf springs in a manner similar to that used on the American M9 45-ton transport trailer. The spring is mounted on the axle between the wheels and is shackled to the frame of the "fifth wheel" pivot (Photos 4 and 11).

6. STEERING ARRANGEMENT:

The towing bar is attached to the frame of the fifth wheel of the first wheel set so that lateral movement of the towing bar turns the wheel set as a unit. (Photo 8). The other five wheel sets are connected to the first wheel set by a linkage as illustrated in a diagram at Appendix "B". The linkage is so arranged that the wheel sets of each suspension unit turn in opposite directions, i.e. when turning to the right the first three wheel sets turn right and the last three turn left. The linkage for both suspension units is symmetrical so that the trailer can be steered from either end.

7. BRAKES:

The trailer is equipped with two sets of brakes as follows:

- (1) Service brakes - This is an air brake system operating on all wheels.
- (2) Loading brakes - There are two sets of loading brakes, one for each suspension unit. They are of the hydraulic type and are applied by screwing in a plunger.

8. LOADING RAMPS:

Each of the two loading ramps consists of three sections and two ramp supports (Photo 7). The sections consist of a steel frame with a wooden track surface and are so constructed that they lock into the ends of the trailer platform and the ramp supports. The trailer platform is designed so that the ramps can be fitted to either end.

For traveling, three ramp sections and two supports are stowed at each end of the trailer. The ramp sections are held in place by means of hold-down rods (Photos 1 and 3). To prevent shifting, each ramp section has on its underside two studs and on its upper side two holes for the studs of the other sections. The main trailer frame has brackets to hold the studs of the bottom section. The ramp supports are held in place by spring-loaded locks which are built into their bases and fit corresponding holes on the trailer frame.

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9. HOLDFASTS:

Four holdfasts, one at each end of each carrying platform, are used to secure the loaded tank in place during travel (Photo 12). The brackets of the holdfasts are pinned to the ends of the loading platforms and must be removed to attach the loading ramps. Photo 14 shows an internally threaded adjustable bar used to couple the holdfasts to the towing eyes of the tank.

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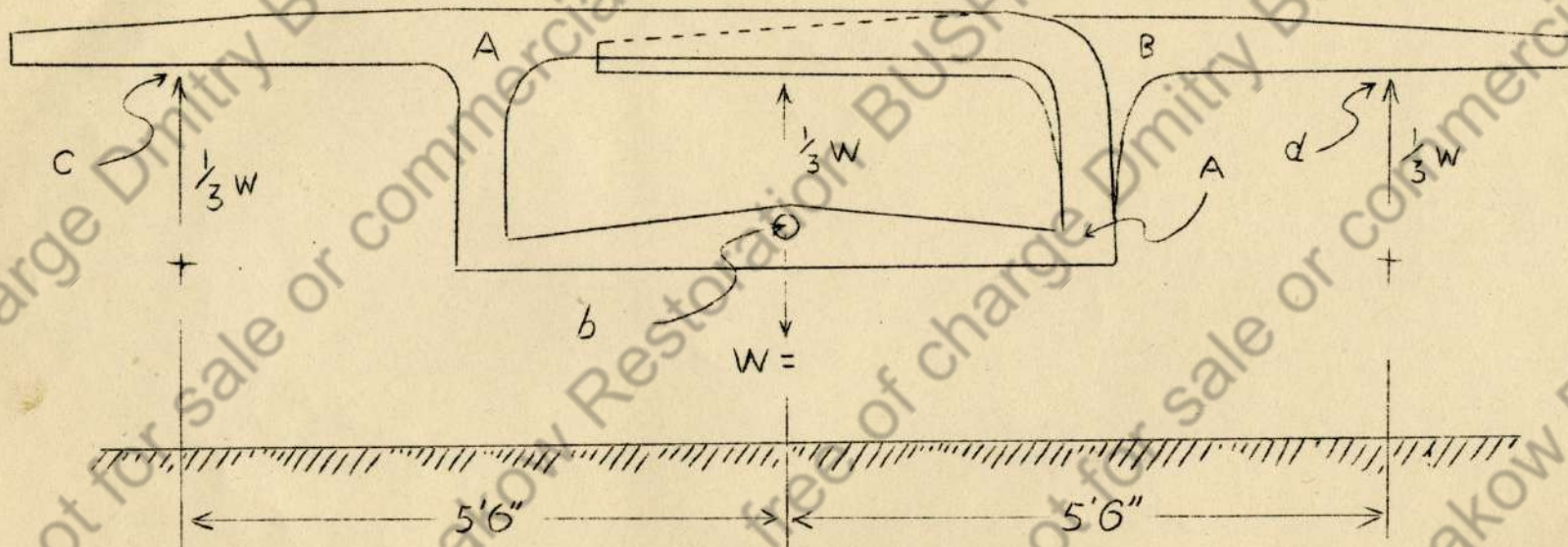
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Col., Ord. Dept.,
Assistant.

Incl.:

- Appendix "A" - Drawing of Suspension Unit
- Appendix "B" - Drawing of Steering Linkage
- Appendix "C" - Photographs 1 thru 17

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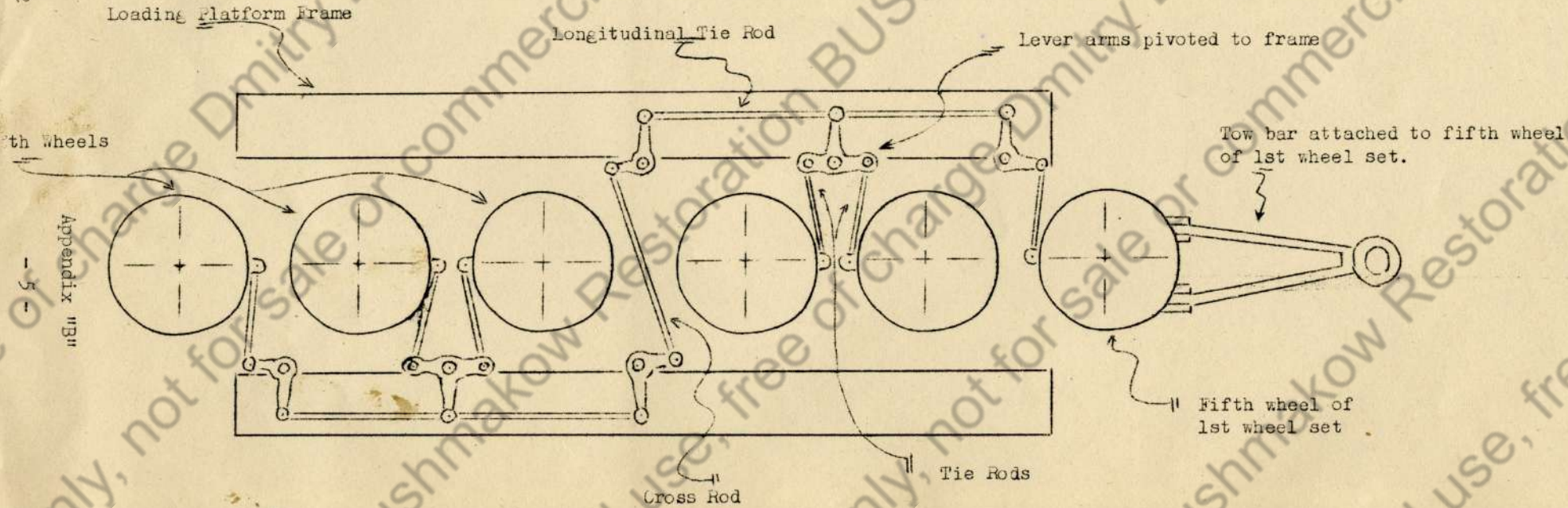
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SCHEMATIC DIAGRAM OF SUSPENSION UNIT

Weight distribution. - For purposes of explanation the two main supporting frames of the suspension unit are designated as frame A and frame B. Frame members A and B of the rear suspension unit are shown in photo No. 5. Frame A is in reality a solid member representing a solid beam. Frame B is pivoted to frame A at point a.

The total weight of the load W on the suspension unit is concentrated at point b. (See Photo 6). This is resisted by the wheel sets at points c, d, and e. Point b is located $\frac{2}{3}$ of the distance from c to a. Point a then supports $\frac{2}{3}W$ and point c supports $\frac{1}{3}W$. Frame B equally distributes the load $\frac{2}{3}W$ from a to the wheel sets at d and e. Thus each wheel set takes a load of $W/3$.



SCHEMATIC TOP VIEW OF STEERING LINKAGE OF TRANSPORT TRAILER PzKpfw TIGER MODEL B TANK

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Photo No. 1

Right side view
of trailer with
loading ramps
stowed in the
traveling position



Photo No. 2
Right front view,
Ramps are in
loading position.



Photo No. 3
Front view showing
ramp sections stowed
and held in place
by hold-down rods.
Note holdfasts for
securing loaded
tank on each side.



Photo No. 4
 Rear view showing arrangement of rear wheel set. Shackles of leaf springs are at bottom between the pairs of dual wheels. Note towing bar clevises on frame of "fifth wheel". Ramps are in loading position



Photo No. 5
 Rear suspension unit and right load carrying platform. The highest section is member A in diagram Appendix "A", and the elliptical appearing section is member A.



Photo No. 6
 Right side of trailer showing suspension points of platform. Suspension points are shown as "b" in diagram, Appendix "A".

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Photo No. 7
Ramps in loading
position



Photo No. 8.
Front of trailer
with towing bar
attached.



Photo No. 9
Heavy cross rod and
lever arm of steering
linkage and
cross members of
platform frame.
"Fifth wheels" of
third and fourth
wheel sets are at
right and left.



Photo No. 10
Steering knuckle and tie rod of second wheel set.



Photo No. 11
Spring shackle and the rod of third wheel set.



Photo No. 15
Left rear view
of Tiger tank
loaded on trailer.



Photo No. 16
Rear view of loaded
trailer with ramps
in loading position.
Note small amount
of clearance between
tank tracks and
inside edge of
trailer platform.



Photo No. 17
Side view of Tiger
tank on trailer with
ramps and equipment
stowed.



Photo No. 12
Right front corner
of trailer showing
holdfast for secur-
ing loaded tank.



Photo No. 13
Tiger tank being
driven up loading
ramps



Photo No. 14
Tiger tank on
platform of trailer,
Note overhang of
tank track and
adjustable bar on
holdfast.



