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COMMUNICATIONS ZONE, ETOUSA
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ETO ORDNANCE TECHNICAL INTELLIGENCE REPORT NO. 167

SUBJECT: Panther Recovery Tank.

Observations by: Lt. R. E. Engelert and T/Sgt. H. Wood, Ord. Tech. Intell. Team #3, and Capt. D. M. Gilles, Ord. Tech. Intell.. Hq., Com.Z., ETOUSA.

1. GENERAL

A German Panther Recovery Tank, "Bergepanzer Panther", was captured in Belgium. The vehicle consists of a turretless Pz. Kpfw. Panther, Model D, with a winch installed in place of the turret and a large spade hinged to the rear of the tank.. A German manual, dated 1 July 1944, on the operation of the vehicle, was found inside.

2. WINCH

The winch mechanism is installed in the original tank fighting compartment and is enclosed by a box-like structure above the superstructure of the tank..This box is 32 ins. high, 8 ft. wide and 7½ ft. long. A top over the winch compartment is built in, 16 ins. above the top of the tank, and the upper halves of the sides are hinged from it. The open compartment formed by the hinged sides is utilized for the stowage of accessories and equipment. (Photos 1 & 2, Appendix "B").

The winch has a capacity of 40 tons (44 U. S. tons) on a straight pull and 80 tons (88 U. S. tons) using a pulley in the line. It is driven through a transfer case in the drive line from the engine. Cable diameter is 1-3/16 ins. A reproduction of a schematic diagram of the winch drive from the German manual is shown in Appendix "A". The cable coming into the winch passes through four rollers, two vertical and two horizontal, at the rear of the tank and then is wound on two four-sheared power pulleys which act as a capstan. A spring-loaded guide roller over each pulley serves to guide the cable into the correct groove (Photos 3 & 4, Appendix "B"). From the power pulleys the cable passes over a transverse directional pulley and an oscillating guide pulley, and is wound on the cable drum (Photos 3 & 4, Appendix "B").

The cable guide pulley is automatically oscillated by a crank mechanism which is driven by a worm gear on the shaft of the cable drum.

The winch control levers are located in the crew compartment. A lever under the right personnel seat operates the dog clutch for engaging the winch drive and two levers on the right control the winch clutches and brake. The schematic diagram indicates that an auxiliary dog clutch is used on some winches and is operated by a fourth lever,

3. SPADE:

A large spade which serves as a ground anchor is hinged to the bottom of t the tank rear plate (Photos 2 & 5, Appendix "B"). It is of welded construction and is made in two sections which are bolted together. The spade is raised and lowered with the winch and can be locked in the travelling position by two turnbuckles, one on each side.

Dimensions of the spade are as follows:

Width	8 ft.
Length	8 ft. 6 in.
Length of shovel section	3 ft. 4 ins.
Length of back plate	2 ft. 8 ins.

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4. EQUIPMENT:

A simple derrick is provided for lifting the heavy equipment on to the top compartment (Photo 1, Appendix "B"). It may be mounted on either side, by means of brackets attached to the superstructure side plates. When not in use, the derrick is carried in brackets alongside the vehicle. It appears that a block and tackle is used with the derrick but none was found with the equipment. Equipment found with the vehicle includes two 24-inch loose pulleys, towing cable, clevises and clevis pins, and a "Heiszlüftblaser HB-50" air heating unit mounted on sled runners previously reported in ETO Ord. Tech. Intell. Report No. 39.

5. OPERATION

Instructions for the use of the equipment are given in the manual recovered with the vehicle. The recovery vehicle is brought into position about ten yards from the tank to be recovered and the winch is used to lower the spade. The engine must be stopped before engaging the dog clutch of the winch. Both ends of the tow cable are attached to the vehicle to be recovered and the cable is placed over a loose pulley. The eyelet of the winch cable is then attached to the loose pulley. To pull out cable, the winch brake is released, the winch clutch lever placed in the neutral position and the tank is driven forward in first gear.

To winch in the disabled vehicle, the brakes of the recovery tank are set, the winch brake released and the clutch lever placed in the "on" position. Engine speed must not exceed 1500 RPM. If the load on the cable exceeds 10 tons, a warning signal lights up and the winch must be stopped. By attaching a second loose pulley to the one on the tow cable, passing the winch cable over it and anchoring the end of the winch cable to the rear pintle of the recovery tank, the towing power is raised to 80 tons. If the warning signal again lights up, a second recovery tank must be used.

To tow the disabled vehicle after recovery, tow bars are attached to the front of the hull and to the pintle of the recovery tank.

6. ARMAMENT

No armament was found on the vehicle examined but a drawing in the manual shows what appears to be a 2 cm. KwK mounted on a bracket at the top center of the glacis plate. A Bergepanzer Panther reported in War Office Technical Intelligence Summary #160 was equipped with the mounting bracket for a gun.

For the Chief Ordnance Officer:

for H. N. TOFTOY,
Col., Ord. Dept.,
Assistant.

Inclosures:
Appendix "A" .... Schematic Drawing
Appendix "B" .... Photos 1 thru 6.

Photo No. 1
Bergepanzer Panther
Note loading derrick, equipment stowage and hinged side of equipment compartment

Photo No. 2
Left rear view. Derrick is folded down and spade raised in traveling position.

Photo No. 3
Rear half of winch showing part of gear case, rear power pulley and cable drum. Guide roller is mounted over power pulley.

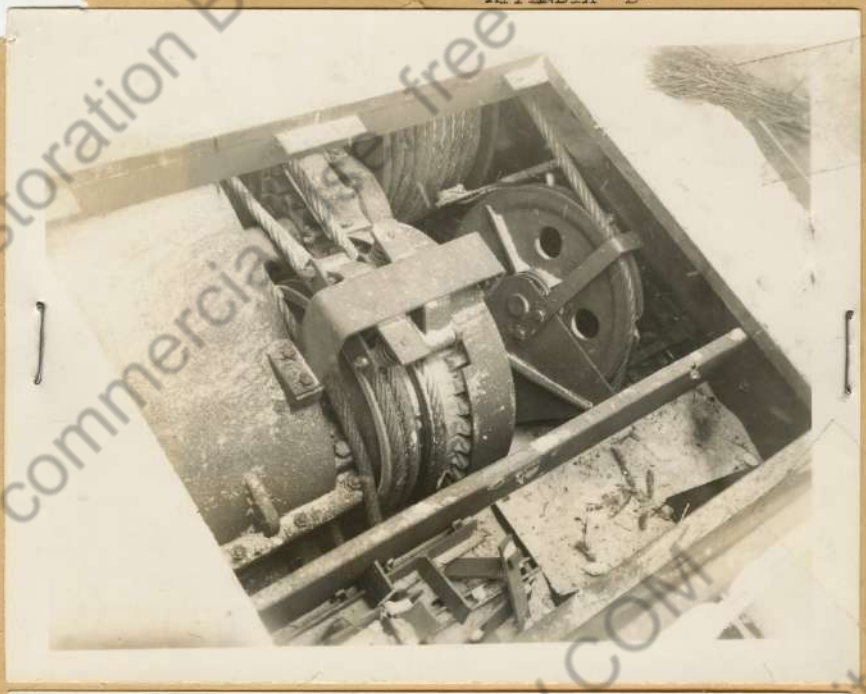
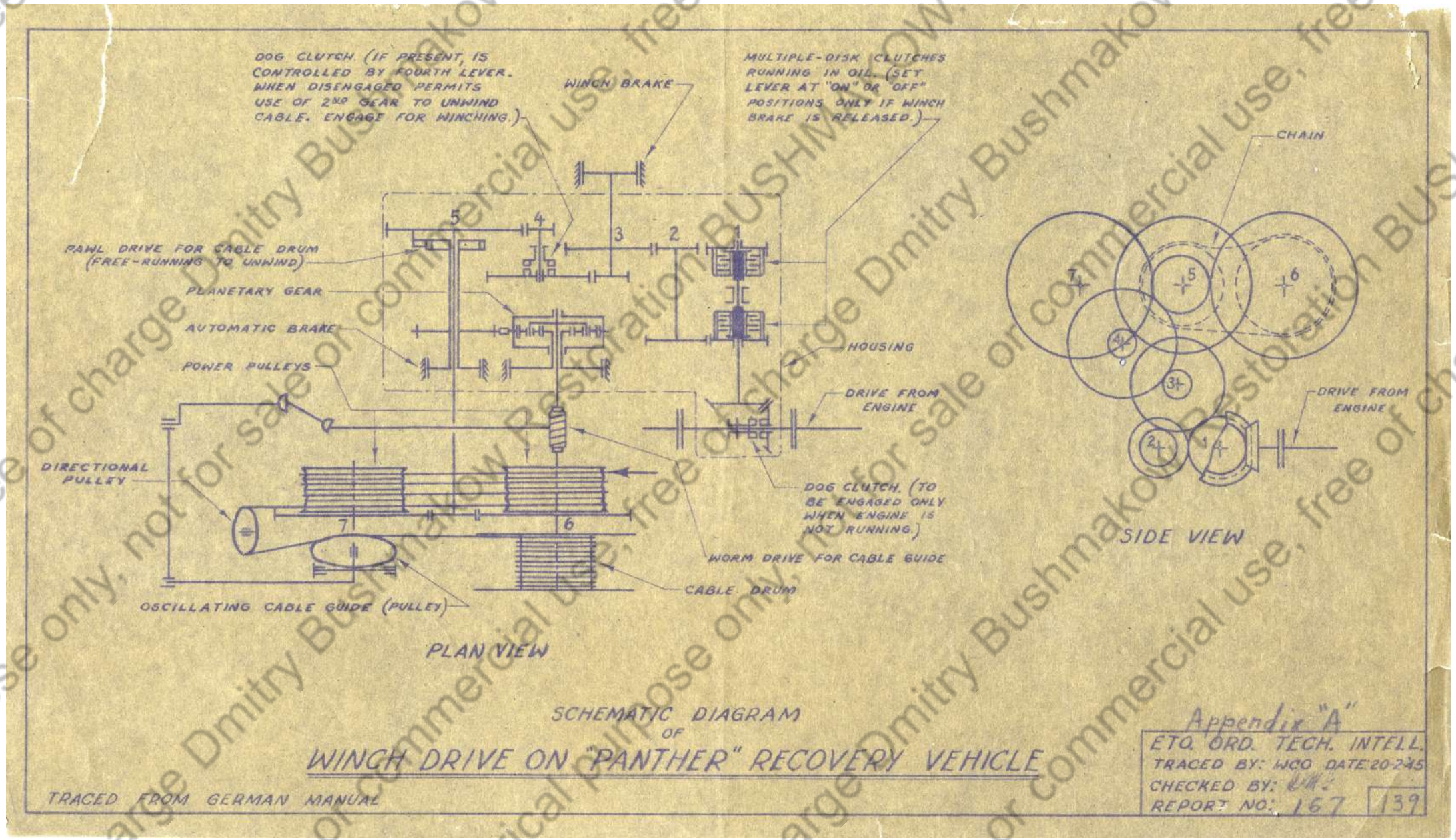


Photo No. 4
Forward half of winch. Note oscillating guide pulley ahead of cable drum in right of view.

Photo No. 5
Rear of recovery tank showing arms of spade hinged to hull and towing pintle.

Photo No. 6.
Equipment found with recovery tank in stowage compartment over winch. Note gasoline operated hot air heater on runners.



SCHEMATIC DIAGRAM
OF
WINCH DRIVE ON "PANTHER" RECOVERY VEHICLE

TRACED FROM GERMAN MANUAL

Appendix "A"

ETO. ORD. TECH. INTELL.
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