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HEADQUARTERS  
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ETO ORDNANCE TECHNICAL INTELLIGENCE REPORT)

NO. ....295 )

SUBJECT: Radio-Controlled Demolition Vehicle "FKL Pz NSU-Springer".

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1. GENERAL:

Specimens of the German radio-controlled demolition vehicle "Funklenk Panzer NSU-Springer" have been recovered by the Third U. S. Army at an experimental station at Kisenach, Germany.

This new demolition vehicle is similar in construction and appearance to the BIV series of remote-controlled demolition vehicles (ETO Ordnance Technical Intelligence Report No. 126), but is smaller and less expensive to build. Unlike the BIV vehicles, it carries the demolition charge inside the hull and the vehicle is considered as expendable. The principle of operation and much of the control equipment are the same as used on the BIV.

The vehicles were manufactured by the NSU factory and many of the sub-assemblies and parts are the same as those used in the NSU-built motorcycle tractor, Kl. Ketten-Kraftrad, Sd Kfz. 2. A German PW who had been conducting the experimental work states that only three of the experimental models were built. However, information obtained at the NSU factory indicates that the design had been standardized for production although minor modifications of the vehicles examined may have been made.

2. OPERATION:

According to the German PW, the vehicle is transported under its own power and has a maximum speed of 27 to 31 m.p.h. and a cruising range of 155 miles. In use, it is driven as close to the target as practicable after which the driver dismounts and it is controlled by radio from the parent tank. The charge is electrically detonated by remote control. Weight of the charge was given by the PW as 300 kg. (660 lbs.).

3. DESCRIPTION:

a. Dimensions.

Overall length ..... 10 ft. 5 in.  
Overall width ..... 4 ft. 8 in.  
Overall height, driver's shield up ..... 4 ft. 8-1/2 in.  
Overall height, driver's shield folded  
down .. 3 ft. 10-1/2 in.

b. Hull

(1) The hull is of welded construction using vertical side plates and sloping front and rear plates. Skirting plates, spaced 10-1/2 inches from the hull sides, extend down past the top of the bogie wheels (Photos 1 and 2). No partitions are used to separate the hull space into compartments.

The engine is located at the center of the hull and the transmission and differential are at the front center. The driver's position is at the rear center where he sits astride a large air duct leading from the radiator at the rear of the engine to an outlet at the rear of the hull (Photo 3). Two fuel tanks are installed, one in each rear corner of the hull.

(2) **Armor**

|                  | Thickness    | Angle to vertical |
|------------------|--------------|-------------------|
| Upper noseplate  | 27/64 in.    | 30°               |
| Lower nose plate | 27/64 in.    | 45°               |
| Front hull cover | not obtained | 75°               |
| Engine deck      | 5/16 in.     | Horizontal        |
| Hull sides       | 7/32 in.     | Vertical          |
| Tail plate       | 3/8 in.      | 45°               |
| Driver's shield  | 3/8 in.      | 20°               |
| Skirting plates  | 1/8 in.      | Vertical          |

c. **Suspension.**

(1) The suspension system appears to be the same as that of the motor-cycle tractor, Sd Kfz 2, except that it has six bogie wheels on each side instead of four and consequently uses a longer track (Photos 1 and 2). The track adjustment on the rear idler also differs in that the linkage is on the inside of the hull. The torsion bars and crank arms also appear to be the same as those on the motorcycle tractor. The torsion bars from opposite bogie wheels are mounted one above the other.

(2) **Data.**

**Sprocket:**

Type ..... solid, welded spoke, with rubber tired rims and roller type teeth.

Number of teeth ..... 12

Pitch circle diameter ..... 18 in.

**Rear idler:**

Type ..... Open spoke

Diameter ..... 16-3/8 in.

**Bogie wheels:**

Type ..... Interleaved rubber-tired twin type. Outer; pressed steel. Inner, open spoke.

Diameter ..... 17-5/8 in.

**Track:**

Type ..... Center-guide single pin with bolted-on rubber pads.

Width ..... 6-3/4 in.

Pitch ..... 4-3/4 in.

Ground contact ..... 4 ft. 6-1/8 in.

Track centers ..... 3 ft. 8-1/4 in.

d. **Engine and power train.**

The engine is a four-cylinder, water-cooled, valve-in-head, gasoline engine and appears to be the 1.5 liter Opel "Olympia" engine having a displacement of 91 cu. in. and a rating of 34 brake horsepower (Photo 4). A torque converter and fluid coupling of the same type used on the BIVc is built integral with the engine. Cooling radiators for the engine and the torque converter are located immediately to the rear of the engine, cooling air being drawn from the engine compartment and exhausted through a duct to a vent at the rear of the hull.

A two-speed transmission with a separate forward-reverse gear train is coupled to the torque converter by a short drive shaft and is bolted to the housing of the differential. A simple mechanical linkage running back to the driver's position controls the gear selection.

From the transmission, the drive is through a controlled differential of the spur gear type and single-reduction, spur gear final drives to the driving sprockets. The differential and final drives are the same as used on the motor-cycle tractor. The steering brakes are applied by a mechanical linkage from a tiller bar in the driver's compartment and are fitted with hydraulic cylinders for operation by remote control. The sprockets are fitted with mechanical internal-expanding brakes used for stopping the vehicle and as a parking brake. The brakes are operated by either a foot pedal or a hand lever.

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e. Remote control equipment.

The radio equipment and hydraulic system are similar to those of the BIVc, the hydraulic unit and master control box bearing the same markings as those on the BIVc. The radio receiver, audio unit and decoding relay were missing from the vehicle examined. The master control box is mounted in front of the driver. The German PW states that the control box is not a permanent part of the vehicle but is used only to test for the reception of commands. However, it would be difficult to remove the control box as no means for readily disconnecting it are provided.

The radio equipment and hydraulic unit are located to the right of the engine alongside the hull side plate. A single aiming light is mounted at the right front corner of the hull (Photo 2).


No provision is made for shifting the forward-reverse transmission gears but otherwise the hydraulic system is similar to the BIVc.

f. Demolition charge.

The charge is carried in eight sheet metal containers located in the front part of the hull around the engine and power train. There are three containers along the right side, four along the left side, and one at the center by the transmission and differential. The detonator is placed in the rearmost charge on the left side of the engine.

A blast operated switch for detonating the charge if the vehicle runs over a mine is located in the floor on the left side.

FOR THE CHIEF ORDNANCE OFFICER:

  
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Incl.: Photos 1 thru 4.

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Photo No. 1  
Right side view. Driver's shields are in the raised position.



Photo No. 2.  
Front view. Note aiming light at right front corner of hull  
and antenna base at front of engine cover plate.

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Photo No. 3  
Rear view showing driver's shield and controls. Screened opening at rear of hull is the cooling air outlet. Note position of skirting plates.



Photo No. 4  
Engine, torque converter and transmission.

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