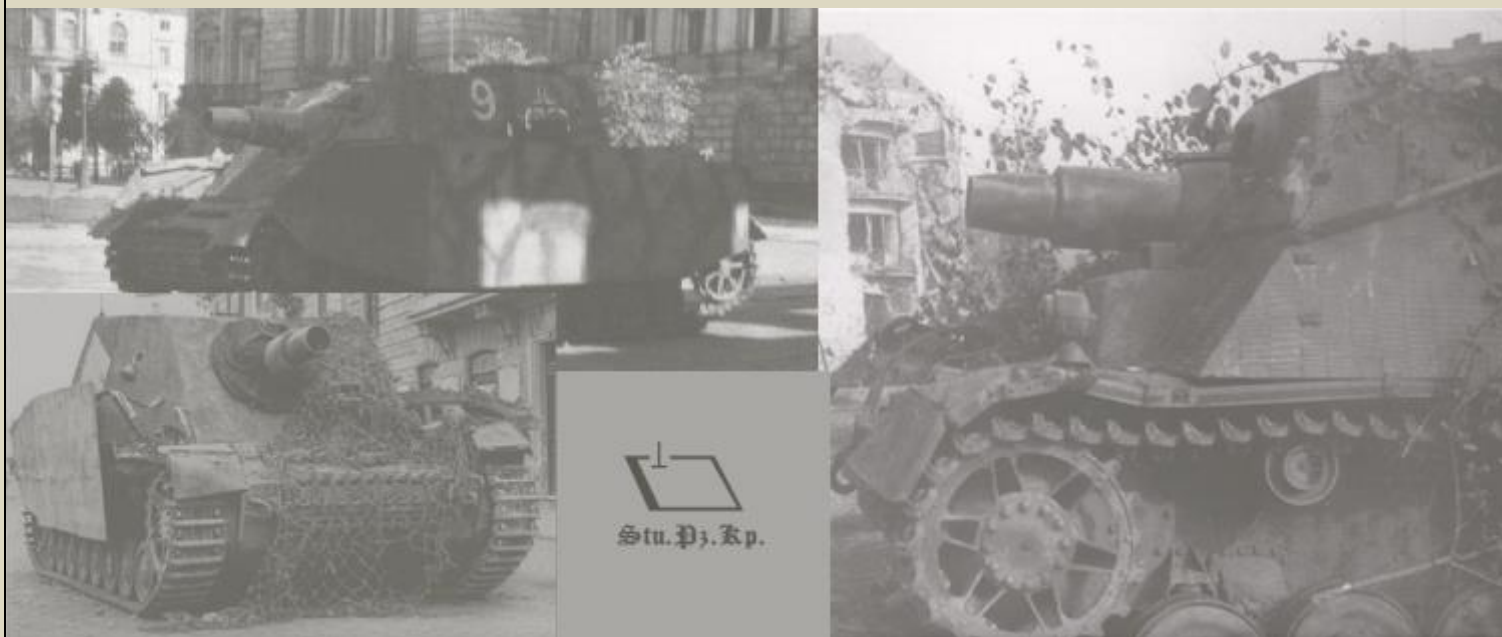


US MILITARY INTELLIGENCE REPORT

[BIVc Remote-Controlled Demolition Vehicle]



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HEADQUARTERS
COMMUNICATION ZONE, ETOUSA
OFFICE OF THE CHIEF ORDNANCE OFFICE
APO 887

ETO ORDNANCE TECHNICAL INTELLIGENCE REPORT NO. 126

22 January, 1945

SUBJECT: BIVc Remote-Controlled Demolition Vehicle.

Observations by: 1st. Lt. D.M. Gilles, Ord. Tech. Intell. Sec., Ord. Service, Hq Com Z, ETOUSA.

1. General:

A BIV radio-controlled full-track, demolition vehicle of the type described in ETO Tech. Intell. Report No. 90, has been recovered and given a preliminary examination. Markings on the nomenclature plates of the hydraulic unit and charge release unit include the designation "BIVc". The vehicle is basically similar to the BIVb type reported in W.O. Technical Intelligence Summaries Nos. 129 and 130. The BIVc is slightly larger and has increased armor thickness. There is also a different arrangement of the engine and forward compartments.

2. Data:

Overall length	13 ft. 2 in.
Overall width	6 ft. ½ in.
Overall height	4 ft. 7 ½ in.
Width of hull	4 ft. ¾ in.
Height of hull (forward compartment)	3 ft. 8 ¼ in.
Height of hull (engine compartment)	4 ft. 4 in.
Weight (from marking on vehicle)	4580 kg. (10,076 lbs.)

Armor:

	<u>Thickness</u>	<u>Angle</u>
Hull sides	20 mm. (25/32 in.)	Vertical
Hull rear	20 mm. (25/32 in.)	29°
Hull front (center section)	20 mm. (25/32 in.)	32°
Hull front (outer sections)	20 mm. plus	59°
Hull bottom	6 mm. (1/4 in.)	Horizontal
Driver's shields	15 mm. (5/8 in.)	22°

3. Hull: (See Photos 1 and 2)

The hull is of welded construction with no bulkhead between the engine and forward compartments. The top of the hull is not armored, but, with the exception of the section above the driver's seat, is covered with hinged sheet metal sections.

- a. Engine Compartment: the engine is mounted at the rear along the center line of the hull. A single gasoline tank of 135 liter (35.6 US gal.) capacity is mounted against the left side of the hull, and the radiator extends across the upper rear of the compartment. Two 12-volt batteries are located on the floor just behind the driver's seat.
- b. Forward Compartment: unlike the BIVb, the driver's seat and controls are located on the left side, and the radio control equipment is mounted on the right side. The transmission and differential are centrally located in the side of the hull; the driver enters and leave the vehicle through the top. Armor shields with $\frac{1}{4}$ " X $4\frac{3}{4}$ " vision slits are provided in front of and on each side of the driver. These are hinged to fold outward, giving full vision to the front and sides when protection is not needed. (See Photos 1 and 4).

4. Suspension:

The vehicle has the normal torsion bar suspension with five bogie wheels, front drive sprocket, adjustable rear idler and no return rollers. The double bogie wheels are equipped with rubber tires. The track is cast steel.

Diameter of bogie wheel	- 17 ins.
Diameter of idler wheel	- 15 ins.
Diameter of sprocket	- $19\frac{1}{4}$ ins.
Width of track	- 8 ins.
Pitch of track	- $3\frac{3}{4}$ ins.

5. Engine and Power Train:

The engine is a six-cylinder, water-cooled, valve-in-head gasoline engine equipped with a Solex downdraft carburetor and Bosch ignition system. (see Photo 3). The engine number is "190326 * OZ47*". What appears to be a fluid coupling is built integral with the flywheel housing. The exhaust muffler is mounted on the outside of the left hull plate.

The transmission consists of a forward-reverse gear train and a two-speed gear train, both contained in a single gear case. A short drive shaft connects the engine and transmission. Steering is accomplished by external contracting brakes mounted on either side of the differential and apparently acting on a gear train similar to that in the 1-ton half-track. Access to the unit is through a large rectangular hatch in the front hull plate. The final drive assemblies are mounted outside of the hull.

6. Cooling System:

The radiator extends across the upper rear of the engine compartment and ahead of it are located two double belt-driven cooling fans enclosed in shrouds (see Photo 3). An engine oil cooler is mounted on the right side of the engine and connected in the cooling system.

A cold-weather starting system for pre-heating the coolant is provided. Valves located in the engine compartment shut off the flow of coolant from the radiator and permit it to be circulated through the heating system by means of a manually operated pump located between the radiator and the rear hull plate. The heating apparatus is mounted on the hull floor in back of the engine and consists of an auxiliary tank and a heat transfer unit. This heating unit is a cylindrical jacket with internal radial fins which taper from rear to front. Access to the jacket is through the rear hull plate by means of a hole with a pivoted cover. Presumably the heating is accomplished by directing a flame from a portable burner of some type into the cylindrical jacket while circulating the coolant through it by means of the pump. Oil lines connect the fluid coupling of the power train to the auxiliary tank and it therefore appears that the system is also used to pre-head the fluid after the engine is started, or possibly as an oil cooler.

7. Remote Control System: (See Photo 5)

The vehicle is changed from manual to remote control by means of a switch located to the right of the driver. The hydraulic unit for remote control operation is located to the right of the engine and is belt-driven. As in the BIVb, the controls are operated by hydraulic cylinders.

The radio control equipment is mounted on the right side of the vehicle opposite the driver, and generally conforms to that of the BIVb. The aerial is at the center of the hull. Two aiming lights are provided - one at the rear of the hull and one at the rear of the forward compartment. (See Photo 2)

8. Demolition Charge:

All but the main container for the charge was missing from the vehicle. However, from the size of the container, the charge appears to have been the same as for previous models, i.e., approximately 800 lbs. of T.N.T. The release mechanism and detonating mechanism also appear to be the same as for previous models.

9. Name Plates and Markings:

The following markings were found on the vehicle:-

a. Painted on the left side of the hull –

VE KI III	(loading class III)
Gesamtgewicht 4580 Kg.	(Total weight 4580 Kg.)

b. Name plates on hydraulic unit –

TYPE	OSG BIVc	BAUMUSTER	KUM – C1
	brd	Gerät – Nr.	
F. Nr.	7590	Werk-Nr-Hbu	01574
		Anforderz	

c. Name plate on control box –

TYPE	Sch K + UE6 BIVc
	brd
F.Nr.	1266

d. Name plates on radio receive unit –

TYPE	KE 6 a/R	
	c IW	O 171 V
Nr.	17837	43

e. Name plates on charge release unit –

TYPE	W.S. Sch	BVIc
	brd	
F. Nr.	833	BATTERIE
(1) DRÜCKENOPFÖLER – MIT ÖL FÜLLEN		
ALLE 100 KM.		
(2) KNOPF 4 X DRÜCKEN		
(Press-button oiler – to be filled with oil every 100 Km. Press button four times)		

10. A more detailed examination is in progress and additional information will be given in a later report.

For the Chief Ordnance Officer,

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

Enclosure:

Appendix "A" (6) Photographs

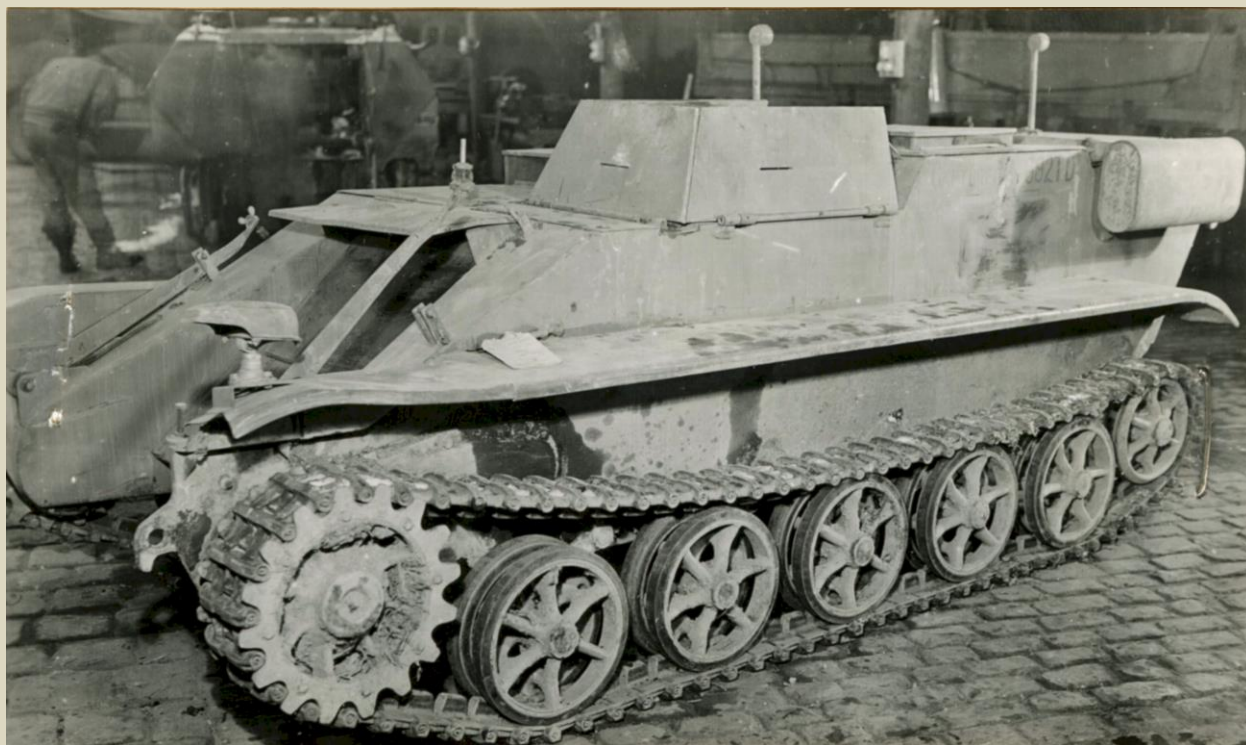


Photo 1: Left front view showing suspension, driver's shields, two aiming lights, aerial base and muffler.



Photo 2: Front view showing the hatch over the differential and arms of the charge release mechanism.

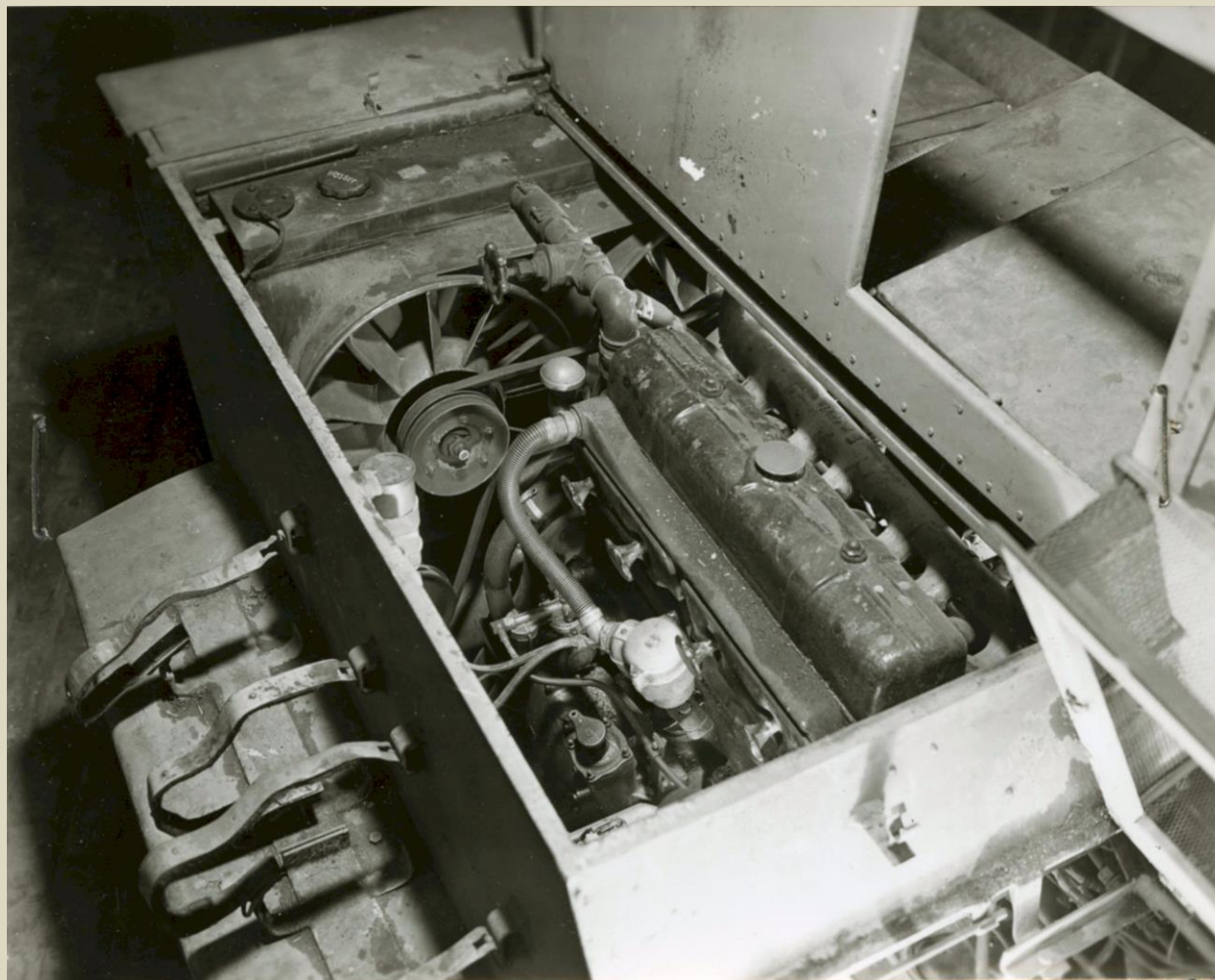


Photo 3: Right side of engine compartment. Note two cooling fans with rows of blades and shut-off valve in water connection for pre-heating equipment. Oil cooler is below fuel pump.

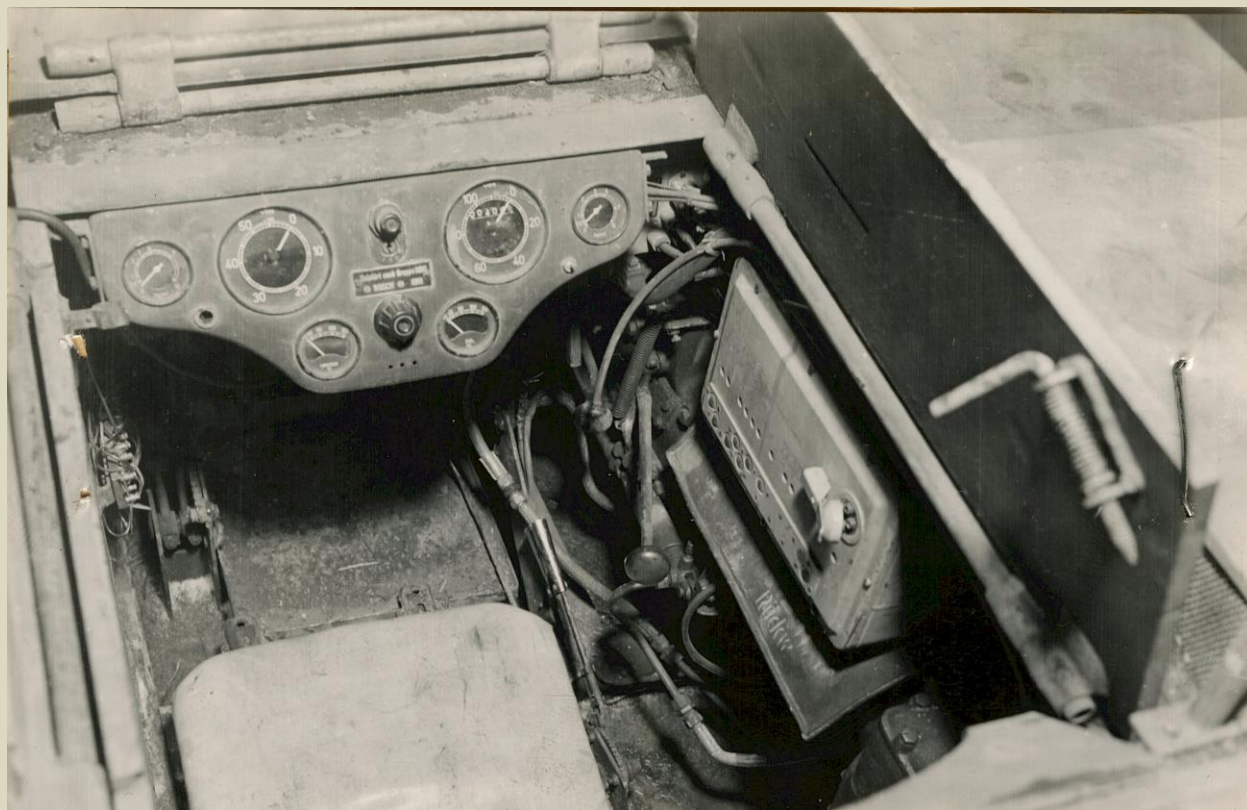


Photo 4: Driver's compartment. Master control box at right.

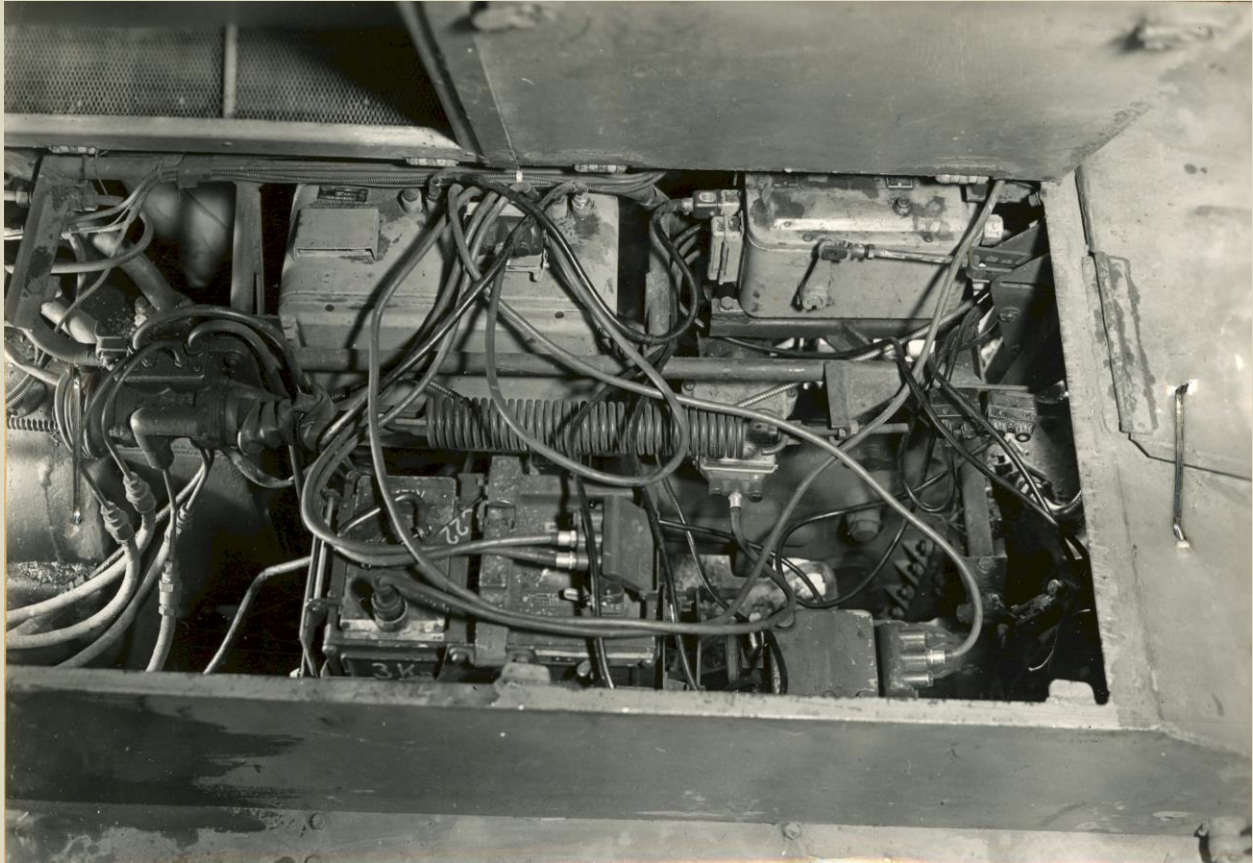


Photo 5: Remote-control equipment in right side of forward compartment. Master control box at upper center, charge-releasing unit at upper right and radio receiver at lower center.



Photo 6: Main charge container.