



THE GERMAN NEBELWERFERS

Lieutenant Colonel Joachim Emde, *West German Army*

SOME months ago there appeared in the pages of this magazine an article which discussed the Soviet *Katyusha*, a multiple-rocket gun.¹

In this article, the author intimated that the Soviet development of a multiple-rocket gun (which he dates back to 1920) proceeded at a faster pace than the German development of a similar type weapon; that the Soviets solved the problems of multiple-rocket launchers before the Germans; and that the German use of the multiple-rocket launchers in organized units only slightly antedated their use by the Soviets. The author then went on to state emphatically:

But after that first notable expenditure of effort, German use of such weapons dwindled considerably. On the Russian front, through most of

the war, the Nazis used rockets chiefly for signaling and also to illuminate the landscape in front of their positions.

I feel that I must correct some of the misconceptions that may have grown up in military circles as the result of these statements.

By the Treaty of Versailles, which ended World War I, the German *Reichswehr* was not permitted to have artillery pieces which had long-range or large caliber capabilities. The responsible German military leaders of this period did notice, though, that the terms of the treaty did not prohibit the *Reichswehr* from developing rocket-driven weapons. This, then, was the area in which German scientists, technologists, and military people put their main efforts in developing supporting weapons.

¹ Albert Parry, "The Soviets' First Rocket Gun," *Military Review*, October 1961, pp 56-64.



Loading the 150-millimeter rocket launcher

Development

By 1930, black powder propulsive charges flared frequently on the test stands of the Kummersdorf firing range, and soon increasing efficiency and capacity for field use were developed. Among the test officials was General Walter Dornberger, the creator of the V-2 rocket and pioneer in the field of rocket-driven space aircraft.

In 1934 the first test firings with a 110-millimeter, black powder driven rocket took place from single launching racks. At this early stage in the test firing, it was found that the stabilization of the rockets by wings during the flight resulted in a large dispersion of the rockets in the target area. At high and changing wind speeds were these errors important; here, the projectile showed a tendency to turn its head into the direction of the wind.

Lieutenant Colonel Joachim Emde, West German Army, is with the ABC Defense School at Sonthofen, Bavaria. After graduation from the Officers' School at Potsdam in 1938, he served with various rocket launcher units throughout World War II. He studied civil engineering after the war, and in 1956 reentered the German Bundeswehr.

To correct this deficiency, rotation nozzles were developed and eventually adopted as standard, permitting the coverage of area targets under an acceptable dispersion factor. These rotation nozzles were one of the most important features of the German rockets; the Soviet rockets were still stabilized by fins.

Over the next few years the range of the German rockets was increased, particularly after the development of smokeless powder as a rocket propellant. Unfortunately, it was not until 1942 that smokeless powder propellants became available in sufficient quantity; until then, the black powder rocket propellants had to be used.

Dispersion Factor

Even with these developments, it was clear that the rocket launchers could not be used against pinpoint targets. There was still a relatively large dispersion factor in the target area which could not be overcome. However, it was learned that several projectiles could be placed on multiple-launching racks. So, multiple-rocket launchers—equipped with five, six, or even 10 tubes—came into being. Inside these tubes the rockets were placed on sliding rails; special types could fire the rockets directly from the packing boxes.

Since the use of multiple-rocket launchers gave a capability of literally blanketing a target—a factor important when using smoke or chemical agents—the Germans decided not to attach the rocket launcher units to the artillery. Rather, they created special units in the Chemical Corps (the so-called *Nebeltruppe*) to handle the new weapon. In a sense, then, this development followed the same pattern as established in the United States Army of pre-World War II days when the

4.2-inch mortar was developed. The mortar was assigned initially to the Chemical Corps, with a primary mission of firing smoke-filled or chemical-filled rounds.

During World War II, as we all know, chemical agents were not employed. Therefore, in the early stages of the war, the German rocket projectiles (*nebelwerfers*) were filled not only with smoke, but also with high explosives. For the latter purpose a projectile was invented which contained the propulsive charge in the front part and the explosive charge equipped with a high-sensitive tail fuze behind the circular rotation nozzles of the propulsive charge.

At the moment of impact the explosive charge detonated above the ground at a height equal to the length of the propulsive charge (50 to 60 centimeters), thus giving greater fragmentation effect against targets, and providing the weapon with another and unanticipated effect: The blast of successive detonations during mass firing on a target could damage the lungs of human targets, resulting in a large number of casualties with no apparent injury to the exterior surfaces of the body.

Weapons

The main weapon of the *Nebeltruppe* was the 150-millimeter rocket launcher 41. It had a launching rack with six tubes; in each tube three sliding rails were mounted to give the rocket proper guidance and direction. The rockets were electrically ignited by means of a blasting machine, the opposite tubes being ignited at one-second intervals.

This weapon was fired only in the lower elevation angles, with a rate of fire of six rounds every 10 seconds. Thus one battery with six rocket

launchers could cover a target area with 36 rounds in 10 seconds. The launcher could be reloaded and reignited every 50 to 60 seconds, with well-trained crews accomplishing this process in somewhat lesser time. It could throw a high-explosive round some 6,700 meters; a smoke-filled round some 300 meters less. Its main effect was caused by fragmentation.

On the other hand, the 210-millimeter rocket launcher 42, which had five tubes, was mainly employed against entrenched targets or field fortifications. Construction and firing rates were about equal to the rocket launcher 41, although a somewhat longer time for reloading was required. It did have a longer range, however, somewhere in the neighborhood of 8,000 meters. The 210-millimeter rockets had their propulsive charges located behind the explosive charges, and the impact fuze could be set for a delayed explosion. Thus with this weapon a deeper penetration into the ground could be effected and an enormous cratering effect could be obtained.

The heavy weapons of the *Nebeltruppe* were the rocket launchers of a 280/320-millimeter projectile (the *Schweres Wurfgerat* 41), with a propulsive charge equal to that of the 150-millimeter but with a correspondingly reduced range of some 2,000 meters. Later on these were replaced by a 300-millimeter rocket launcher which had six tubes and a split-trail carriage. The propulsive charge was equal to that employed in the 210-millimeter rocket, but the range was slightly more than 4,000 meters.

A special type of rocket launcher was the 150-millimeter mounted on a semitracked vehicle which had thin armor. This weapon could be loaded



The 280/320-millimeter rocket launcher with unfuzed 280-millimeter rockets in foreground

with 10 rounds, and each battery had eight launchers. It had high mobility, could be loaded while the vehicle was moving, and after firing from a stationary position, it could be moved quickly to a new firing area.

Employment

The rocket launchers were generally employed in mass and against



Rocket launchers mounted on half-tracked vehicles

area targets. Only by a concentration of fire on limited areas during a limited period of time could the maximum efficiency of this weapon be exploited.

There were, of course, exceptional cases. Often, single, highly mobile batteries were employed as a "fire brigade" at a threatened sector of the front. In late 1942 at Stalingrad, for example, the German 6th Army beginning at 2000 on the night of 22 November was to make a break to the west through the Soviets' encircling ring. The spearhead of the breakout attempt was to consist of the 24th Panzer Division, the 14th Panzer Di-



The 280/320-millimeter rockets firing from heavy launcher frame

vision, and a few motorized infantry divisions. Behind the spearhead, the wounded and the transport echelons were to be taken out, covered by non-motorized infantry divisions. The rear guard was made up of motorized infantry divisions, reinforced by tanks and the 3d Battalion, 2d Heavy Launcher Regiment.

Thirty minutes prior to the breakout attempt, a Soviet division command post, a Soviet regimental command post, and a Soviet artillery command post were to be blanketed by rocket launcher fire.

On schedule, at 1930, the first rocket salvo went off and fell into the target

areas. But then, by an order from Hitler, the breakthrough attempt was canceled.

Although there was some evidence that the Soviet command posts had been put out of action, there remained only 72 rounds of launcher ammunition. Thus it was no longer possible to employ the launchers for area fire,



Gunner with magnetos firing a launcher at least in battalion-sized units. Too, the Soviets did not offer a target which appeared to make such employment worthwhile.

The launchers, to a great extent, had to take over on the east side of the German pocket the mission of the artillery, most of which had been moved to the west to assist in the breakout. Firing had to be executed by individual launchers on point targets, and, surprisingly enough, the fire proved to be extremely accurate. Against one Soviet attack, one single launcher managed to blunt the Soviet

effort by firing three rounds, as single shots, and getting three direct hits about 100 meters in front of the German infantry position.

Organization

The smallest firing launcher unit was the battery, with each battery generally having six launchers. Three batteries formed a battalion, with some of the battalions having an additional launcher battery mounted on armored vehicles.

The battalions were formed into launcher regiments, depending on the caliber of the rockets. By 1943 the regiments were being brought together to form launcher brigades. This enabled the Germans to concentrate a huge volume of fire against one target area with minimum personnel and equipment.

The first launcher regiment—*Nebelwerfer* Regiment 51—was organized in 1940. It had three battalions, each battalion having three batteries. Initially, each battery had eight 150-millimeter rocket launchers, a number reduced by two before the campaign in the USSR. When originally organized, the launchers of this regiment were scheduled to participate in Operation *Seelowe*, the invasion of England. They received their baptism of fire, instead, during the invasion of the Soviet Union when the fortifications in the Brest Litovsk area were blasted with about 10,000 rocket projectiles.*

During the course of the war, the German Army established 31 launcher regiments; 15 heavy launcher regiments; three entrenched launcher regiments; four regiments for training and replacement purposes; and 25 in-

* A statement (attributed to General Dornberger) in the article mentioned earlier that the Germans during the first 20 minutes of the war with the Soviet Union expended approximately a million and a half rockets is an exaggeration.



All photos courtesy of author
Night firing of 150-millimeter battery

dependent battalions. All of these units eventually saw frontline duty, and some of the regiments were established several times. Launcher Regiment 51, annihilated at Stalingrad, was reestablished in 1942 and again in 1944. In one six-month period between July and December 1943, while engaged on the Eastern Front near Orel and Smolensk, this one regiment fired a total of 68,344 high-explosive 150-millimeter and 8,325 high-explosive 210-millimeter rounds against 43 tank concentrations, 342 infantry assembly areas, 145 Soviet attacks, and 42 Soviet artillery positions.

All told, the Germans employed on the Eastern Front from 60 to 80 rocket launcher battalions. Rocket launcher units, but not in the same numbers, were employed in the northern areas, in Africa, and against the Allied forces in Italy and France.

Conclusion

Rockets and rocket-driven weapons are today often included in the headlines of newspapers and periodicals. In actuality, the authors of these items usually refer only to satellites and space ships. Seldom, if at all, does anyone call attention to the predecessors of today's giants of the space age. Little is said of the smaller rockets and rocket launchers.

Certainly, since the end of World War II, weapons of war have changed. The nuclear weapon now dominates the scene and influences our military concepts and our military training.

But efforts are still being exerted to strengthen our conventional war capabilities. Certainly, the Soviets have made extensive use of the knowledge they gained with their rocket launchers (and with captured German equipment) during the last war; they have repeatedly demonstrated new and more advanced versions during their May Day military reviews in Moscow.

To me, we are forgetting the lessons we learned from our more advanced, more sophisticated rockets of World War II days. We forget the capabilities possessed by powder-driven rockets. It seems to me that we should continually recall the words of General Dornberger who, at a reunion in 1954 of former German rocket launcher personnel, said: "The powder-driven rocket will be an important weapon for decades." I agree.