HADMÉRNÖK

X. Évfolyam 2. szám - 2015. június

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THE ROLE AND CREATION OF THE ROYAL HUNGARIAN ASSAULT ARTILLERY, AND THE ZRÍNYI II ASSAULT HOWITZER

Abstract

The royal Hungarian assault artillery was established on the base of the experiences of the Second World War. Captain József Barankay was charged to organize this temporary artillery branch. Barankay became one of the highest members of the Hungarian assault artillery. Hajmáskér (near Várpalota) was the training centre. The assault artillery had to provide direct fire support for infantry. The original intent was that every infantry division would get an assault artillery battalion, but that remained just a plan. The assault artillery battalions employed in the centre of gravity. Most of the battalions received the German Jgdpz 38(t) tank destroyer, but the 1st, the 10th and partially the 20th assault artillery battalion used the Hungarian Zrínyi II assault howitzer.

A második világháború során a magyar rohamtüzérséget a folyó háború tapasztalatai alapján, a legmodernebb alapokon állították föl. A felállítással Barankay József századost bízták meg, aki a legnagyobb alakja lett a háború idejére szervezett, ideiglenes csapatnemnek. A kiképzőközpont Hajmáskéren volt. Eredetileg minden magyar gyaloghadosztálynak szántak egy rohamtüzérosztályt, mely a gyalogság közvetlen tűztámogatásáról kellett, hogy gondoskodjon. Ez végül nem valósult meg, súlyponti csapatnem maradt a rohamtüzérség. A páncélosokat tekintve a legtöbb magyar osztály Jgdpz 38(t) vadászpáncélosokkal volt felszerelve, csak az 1. és a 10., valamint a 20. rohamtüzérosztály rendelkezett a magyar gyártású Zrínyi II rohamtarackokkal.

Keywords: *assault artillery, Barankay, Hajmáskér, Zrínyi II ~ Barankay, Hajmáskér, rohamtüzér, Zrínyi II*

PREFACE

The purpose of this study, that the Second World War had ended nearly 70 years ago. In this huge conflict, one of the élite branches of the Royal Hungarian Defence Force, the Hungarian Assault Artillery played a very important, but nowadays little known role.

The Hungarian military leadership had always kept an eye on the experiences of the war, performance of the home country and on the technical development on-going on the battlefields. In 1942, a variety of battlefield experiences had shown that due to the aerial reconnaissance and the precise measurement of the field artillery, firing positions soon came under enemy fire, so the infantry attack at the critical moment, could remain without the necessary fire support. Despite the most accurate artillery preparation scattered hostile positions and heavy weapons could remain on the battlefield, which meant a serious threat to the attacking infantry, and the momentum of the attack. In addition, enemy counterattacks with armoured vehicles could occur.[1] Therefore, the proposed accompanying artillery - which was responsible for the immediate fire support – had to be mobile with good off-road capabilities, and well armoured with great firepower. The solution was to create a modern, German pattern, Hungarian assault artillery.

THE ROLE AND EMPLOYMENT OF THE HUNGARIAN ASSAULT ARTILLERY

The firepower of the infantry heavy weapons and the field artillery gave the power and impetus of the infantry attack. This firepower enhanced by the assault artillery, which helped the fighting soldiers with its accurate direct fire. Its employment occurred when their own field artillery could not adequately support the troops and an immediate strong and direct fire support was necessary. Without this, the attack could collapse. The assault artillery helped the infantry through the struggle of the crisis, when the success or failure was on a razor's edge. Its role was decisive on the outcome of the engagements. The assault artillery battalion was specifically an assault unit, and the most precious support element to the infantry.

It was characterized by the fast, easily directed precise firepower. In addition it was well armoured and had a high mobility. Usually it was under army or corps level, and always engaged at the most difficult places. Its deployment should happen in battalion or at least battery level, in close cooperation with the infantry. The smallest unit of deployment was the battery. Further subdivision was prohibited and had to be avoided. With the words of General of Armored Troops Hermann Balck[2]: *"Tactics are just cooperation between all arms in the same time and space to reach identical goals. A weapon on its own is doomed to failure."*

After all, it was very unusual to see a whole battalion (with all its equipment) in action. It was a common thing to deploy only a troop or sometimes individual assault guns on the battlefield, because often there were not enough operational assault guns or assault howitzers at hand.

When the assault artillery supported the infantry, the battalion (or smaller unit) was not subordinated to the infantry division. After the divisional commander intimated the task, he requested suggestions from the battalion (or battery) commander. According to the assault artillery commander's recommendations the plan – if it was necessary – could be changed for the purpose of the better support by the assault guns or howitzers. It was necessary because the commanders did not know the exact use of this new branch, and unnecessary losses could be avoided with this.[3] Besides, the Hungarian assault artillery branch consisted of volunteers from other artillery formations. This ensured the highest morale and good quality of the soldiers.

Its weakness was that these weapons and equipment were expensive and hardly replaceable. That's why it could engage only in limited time and area. Long engagements had to be avoided,

because after two or three combats, the equipment needed repair, and as long as the repair was, as long the infantry lacked the direct support.

The assault gun and howitzer fired directly from an open position. Without a gun stabilizer the AFV (armoured fighting vehicle) could accurately fire from standing position. The optimum range was from 100 to 1000 metres. The space between the guns was 30 metres. Contrary to the tanks, the infantry should always escort and secure the guns, because they did not have a turret, and the orientation from this kind of AFV was very limited. This originated from its combat role. The assault guns and howitzers' only task was to support the infantry, not to carry out missions on their own – like the tanks.

The assault artillery put up the engagement with the following:

- Resistance points, heavy infantry weapons, guns, enemy observers which the field artillery could not engage during its preparatory.
- Such targets which were unknown before the attack
- Concealed weapons, units
- Live targets (e. g. enemy infantry)
- Fortifications, strong points
- Tanks and other AFVs

Attack

Before the attack, the assault artillery unit, which was assigned to support the infantry, stayed in its concealed staging area, while its commander and battery commanders with the divisional commander and his staff inspected the field of attack and discussed the details. The assault artillery did not participate in the artillery preparatory, to utilize the benefits of surprise. When their own attack reached the break-through phase, the field artillery laid the preparatory forward, and then the assault guns and howitzers pushed forward, and opened fire. They supported the infantry directly, and via radio they got new identified targets from their troop commander. If attacked in the centre, the AFVs formed a line or an inverted wedge. If attacked on the flanks, they formed an echelon, to defend themselves from an enemy counterattack from their flanks or behind. The troop commander stood in the middle, to see and lead his two other AFV. Also for the same reason, the battery and battalion commander stood behind their troops.

Defense

In defense, the assault artillery could be used only in counterattacks. The AFVs had to stage behind the main line of defense, prepared for an immediate counterattack. It was strictly prohibited to dig in the AFVs and use them like fortresses, because this would deprive the guns from their high mobility. During pursuits and retreat the assault artillery was very effective supporting other branches, especially the infantry. It could not be used in security role, not like the tanks. For delaying actions and as a rear guard could only be employed, when no tanks were available, and there were no other ways to the success.[4] During rear guard duty, the assault artillery defended their own flanks and the retreating units from encircling.

The *planned* organization of a royal Hungarian assault artillery battalion

- *Staff battery* with the battalion commander (one assault gun)
  a) Staff, motorized pioneer platoon, signal platoon, motorcycle platoon, service section, medical platoon, train.
- *1st battery* (10 assault guns)
  a) the battery commander's assault gun
  b) tree troops with three assault guns in each
  c) medical section
  d) repair section
  e) train
- *2nd battery*: just like the 1st
- *3rd battery*: just like the 1st[1]
- *Workshop battery*: to repair the weapons and armament in short or middle term.
- *Transport battery*: with heavy tractors to transport those AFVs which were unable to be towed.[2]

THE BEGINNING

Already in 1942, there was an idea in Honvédelmi Minisztérium (HM – Ministry of Defense), that the Royal Hungarian Defense Force needs a new self-propelled artillery.[5] By the end of 1943, the organization of the two Hungarian armoured divisions completed, and it was not possible to create more of this kind of units.[3] So next, the HM wanted to start their own production and adapt the assault artillery during 1944.[6] The new guidelines had not been worked out so far, so the German model had to be examined, to learn the details of the assault guns, the methods of the employment and the battlefield experiences.

On 28th October 1942 colonel general vitéz Ferenc Szombathelyi, Chief of the Defense Forces' General Staff gave an order to the Hungarian attaché in Berlin, to prepare the reception of a Hungarian committee, whose task was to inspect the German assault artillery.[7] In December that year, two Hungarian officers travelled to Jütebog (near Berlin) for a further training in the artillery school. One of the two was Captain vitéz nemes József Barankay. At the same time groups of 40 Hungarian officers received German artillery retraining. When Captain Barankay, First Lieutenant Ernő Gömbös, First Lieutenant Fedor Wáczek and Lieutenant Gábor Becsey arrived home, the organization of the royal Hungarian assault artillery started. The first cadre started to form on 1st March 1943. Barankay immediately started to work, to begin the training and organize according to his own and the committee's experiences. Meanwhile he became the commander of the forming unit. In the middle of March, the first training cadre was ready to begin the training and the drill. The training equipment was two Turán tanks, five cars and one Rába Botond truck.[8] For the training, the artillerists needed their field uniform, HBT[4] uniform, repair overalls, training clothes and gym shoes.

[1] According to the original plans, the first and the second battalion should be equipped with assault guns, and the third with assault howitzers [see later! – K. A.]. In the practice the organization and equipment of the Hungarian battalions remained homogenous. Later in 1944 some battalions got a further battery, or a company consisted of escorting soldiers.
[2] The last two batteries (workshop and transport) were never materialized in its originally planned form.
[3] There were not enough trucks to motorize further divisions.
[4] Herringbone twill.

The tasks of the first cadre were as follows:

1. Proposal for the assault artillery officers' composition,
2. Prepare the officers' training course,
3. Prepare the field manual of the new branch,
4. Prepare the training equipment,
5. Create the organization table of the 1st assault artillery battalion,
6. List material-needs and request it immediately,
7. Prepare schedules.

On 22nd May 1943 the term 'escort artillery' had officially been deleted, and the proper designation became 'assault artillery'. On 3rd July 1943 the Chief of the Defense Forces General Staff ordered to start the first officer training course for assault artillery[9] organized and led by Barankay, which lasted from 18th July till 31st August. From a high number of volunteers only the most distinguished officers could be part of it.

The training course included: tactics, organization, knowledge of the assault guns, handling and driving the own AFVs, signals knowledge and sport. Special training was conducted with special aids. Everyone fulfilled the first training course.

When the first officer training course had been lasting, the same time the HQ of the assault artillery was established. Lieutenant General Kálmán Ternegg, the inspector general of the Hungarian artillery branch had been keeping an eye on the forming assault artillery. Barankay often had complained that he had too much to organize – he needed help. Colonel Billnitzer Ernő, the former commander of the artillery battalion in Aszód, had become the head of the new artillery branch until the end of the war. The 54 year-old Billnitzer was a short, tubby, pleasant-mannered officer, soon called 'Father Bill' by his men.[10] From the very first day, he was always eating among his men and listening to their problems, help them and give advice like a good father.

In summer, colonel general Szombathelyi had inspected the forming assault artillery, and announced that seven more battalions would be organized, mostly equipped with German AFVs.[11] According to the order given by the Chief of the Defense Forces General Staff, the organization of the 1st assault artillery battalion should have been ended by 1st October 1943. Captain Barankay became the first commander of the unit. The 1st battalion soon became the educational unit at Hajmáskér, responsible to train the soldiers of further battalions. Hajmáskér had better opportunities than other training centres. Because the Hungarian assault artillery branch should have been able to combat worthily by the spring of 1944, Billnitzer gave a proposal, to transfer young volunteers - NCO's and soldiers - from the field artillery. 50 recruits per battery volunteered, so after a hard selection only one third of the volunteers could stay. The others transferred back to their original unit. The forming assault artillery had to be one of the elite branches of the Royal Hungarian Defence Force with selected soldiers.

In the beginning the artillerymen had used Turán and Toldi tanks for training. The first three assault howitzers[5] arrived in September 1943.

[5] License plate numbers were: 3H-000, 3H-001, 3 H-002

Figure. 1. Captain József Barankay [12]

THE ZRÍNYI II ASSAULT HOWITZER

The birth of the new Hungarian heavy weapon started at the same time with the organization on the new artillery branch. On July 1942 the HM III/b department (machine and AFV development) gave a recommendation to the command of the Defense Force, to equip the Hungarian armoured divisions with an armoured, self-propelled artillery weapon, which can effectively support the fast moving units. This recommendation was welcomed, especially by the general staff. The tracked gun was much more preferred than the motor-dawn artillery. The assault gun had a great off road capability, they were independent, could easily change firing positions an could follow the attack.[13] The Hungarian leadership had decided to adapt the new, German-pattern artillery branch, but the Germans kept aloof to give their AFV licenses, so another solution had to be found.

In August 1942 Árpád Denk-Doroszlay, head of the equipment team in the HM discussed the theoretical and practical solutions with János Korbuly degreed mechanical engineer, the Weiss Manfréd factory's technicality to make an own assault gun.[14] The purpose was the new AFV should be better in firepower, maneuverability and armour protection than the previously manufactured Hungarian tanks. According to the discussion the final plans were made by Ernő Kovácsházy, degreed mechanical engineer and the head constructor of the Turán tank-class.

The manufacturing started with the use of the Turán tank's main parts, the available 40M 105 mm howitzer and the 43M 75 mm tank gun. In autumn 1942, after the first order, the Weiss Manfréd factory had started to manufacture the first Hungarian assault gun. During the manufacturing the already existing technologies were used, because of the financial, material and urgent time scarcity. The technology remained the same as the Turán tank's one. The result: in December 1942 the prototype of the Zrínyi assault gun was born. Originally the HM intended to produce the Zrínyi I with the 75 mm long barrelled gun, which would have give the backbone of the Hungarian assault artillery, mostly used against enemy AFVs. Simultaneously the Zrínyi II assault howitzer had been developed, and its role was to support directly the infantry. Just like in the German Wehrmacht.[6]

Two from the three batteries of the planned assault artillery battalion consisted of Zrínyi Is and Zrínyi IIs in the third battery. It had also been planned to equip the first three battalions with 90 Zrínyi Is in 1944, and another five battalions with 110 Zrínyi Is and 90 Zrínyi IIs in 1945.[15]

[6] The assault guns and assault howitzers ratio was 7:3 in the order of battle and in the production too.

The first problem in the development of the Zrínyi I was that there had been problems in the production of the 75 mm gun. Due to material shortages the DIMÁVAG factory was unable to produce these types of guns. In this case, the Zrínyi II came into view. Only one prototype of the Zrínyi I had been developed, and its serial production never started. There were numerous problems with it during the test run.[7] In addition the Zrínyi II could do the Zrínyi I's task.

The test run of the first Zrínyi II was from 12th December 1942 to 28th January 1943 in Hajmáskér. This version had iron armour, so it was unsuitable for the battlefield employment. The test-AFV had performed well in the especially deep try-outs, so the HM ordered the first 40 assault howitzer before the end of the test run, on 26th January 1943. After the examination, the test-crew recommended fixed ammunition, a more powerful engine, side skirts and a gun with better angles. The factory only approved the smaller proposals because of the limited possibilities. The proper name of the weapon became 10,5 cm 40/43M assault howitzer from 1st May 1943.[16] The price of one Zrínyi II was rather high: 440 000 Pengő, which was equal with the price of 3 or 4 105 mm towed howitzers. The production was a real cooperative system: the hull, the motor and the transmission was made by the WM factory, the armour plates made by the Vasmű in Ózd, the howitzers and cradles made by DIMÁVAG, the radio equipment was made by the STANDARD factory and the optics were made by Gamma.

The 1st assault artillery battalion had got the first 31 Zrínyi II, each of them had side skirts. The equipping of the battalion was finished in April 1944.[17] The production of the assault howitzers was slow. Even with the full utilization of the factories' resources only 4 or 5 AFVs were produced per month.

Month	**Pieces**[8]
October 1943	10
November-December 1943	20
January 1944	7

Table 1. The shipping of the first 40 Zrínyi II

The production of the second series started in March 1944, because of material shortages. The production had lasted till 27th July 1944, when the allied air force bombed the WM factory to the ground. Up to this point only 26 Zrínyi II had been produced. From the parts and the 15 to 20 hulls trapped under the ruins six more assault howitzers were assembled in the Ganz Villamossági Ltd. in Buda. In addition, parts and hulls for six more AFVs were stored in nearby places. After 15th November 1944 no more Zrínyis were assembled. The completed, approximately 72 Zrínyi II were used to equip the 1st and the 10th assault artillery battalions and the training cadre at Hajmáskér. The 10th battalion never reached its full strength, it only had 21 AFVs. The 20th battalion also had had eight Zrínyi II, which were not handed over after the training course.

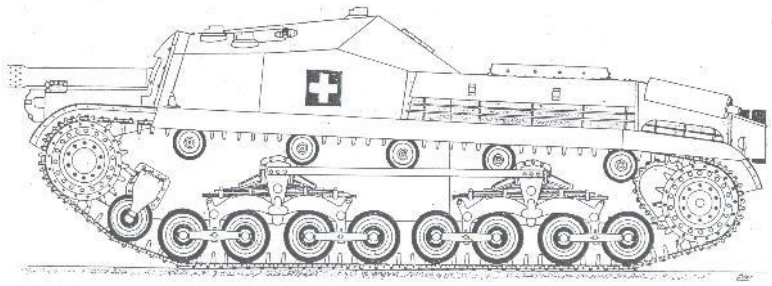

Figure 2. The 40/43M Zrínyi II assault howitzer from left side [18]

[7] There had been heavy smoke, delayed explosion while fired with the cannon and the shells often caught fire.
[8] The table doesn't include the first three Zrínyi IIs, used for training purpose.

Technical details

The 21.5 ton Zrínyi belonged to the Turán AFV-family. Its hull, running gear and drive system was the same as the Turán tanks. The hull of the assault howitzer was provided by the obsolete Czechoslovak Škoda T-21. The running gear was a complex, leaf suspension system. There were eight small sized twin-road wheels per sides, the idler wheel was at the front of the hull side, and the drive sprocket was at the rear. It had a compressed-air clutch, a pneumatic steering and braking system. The technicians increased the length of the hull with 400 millimetres, because of the new weapon.

The fighting compartment had a multangular form with three big hatches on the top. The height of the AFV was 1.9 metres, its width was 2.89 metres and its length was 5.45 metres. The hull and the superstructure was far better than the previous one which was used by the Turán, but still, this weapon had a very high need of repair. The lifetime of the vehicle structure was between 3000-5000 kilometres. This demanded a prepared, well equipped and highly trained service crew.

The armour was a homogenous, bolted and riveted version. Thanks to its shaping, it offered a small target point – so it befitted to one of the most important requirements of the modern assault guns. The front armour plate was 75 mm thick. Because this was thicker than any other armour plate that had been produced by Hungary during the Second World War, a compromised solution was needed: the 50 mm thick front armour got a 25 mm thick riveted, appliqué armour plate. As a result the front armour of the assault howitzer – the most threatened part of the vehicle – became a hard nut to crack for most of the modern anti-tank weapons. From the sides and the rear the AFV was still easily vulnerable, the thickness of the armour plate was only between 25-13 mm in these parts. To optimize the survival capability of the crews, an emergency exit had been installed at the bottom of the hull, whereas the crew could bail out with their small arms. To improve the armour protection a wire mesh skirt was attached to the sides of the assault howitzer. The additional skirt gave a very good protection, especially against cumulative rounds. The only disadvantage was that the skirt could easily struck into the ground, collect the mud which subsided on the running gear causing a jam or overcharge the motor. The weight of one piece from the mesh skirt was 250 kilograms.[19]

The main (and only) built-in weapon of the Zrínyi II was the 105 mm 40/43M L/21 howitzer. This type of howitzer was developed in 1940 by the Armament Institute (Haditechnikai Intézet – HTI) and the gun factory in Diósgyőr. According to the plans the first batteries of each infantry divisions' artillery regiment wanted to be equipped with these guns. For the production of the Zrínyi assault howitzer 41 pieces were ordered in the first phase with immediate shipping.[20] Without a traversing turret, the howitzer got limited aiming capabilities: vertically -5° and +25°, horizontally 11-11°. When aiming, the AFV should turn on its tracks by the driver according to the gunner's instructions; also the latter could help with red and green signal beacons. After the positioning, the corrections were made by the gunner who used his optic. The Zrínyi II was able to fire direct and indirect hits, too.[9] The short calibre-length did not allow a great muzzle velocity and a low trajectory. The muzzle velocity of the high explosive (HE) frag-grenade was only 471 metres/sec. At the beginning this allowed only limited success against enemy tanks. But it doesn't mean that the Zrínyi II wasn't capable of destroying enemy AFVs, only that the assault howitzer wasn't so effective from higher range. Particularly when the serial production started, a new high explosive antitank (HEAT) round was adapted: the new 1942M. Thanks to this cumulative grenade, *regardless of the distance*, the Zrínyi II became capable to defeat the T-34 main battle tank, which was the backbone of the soviet Red Army at this time.

[9] But the assault artillery only fired directly in practice.

The ammunition allowance was 90 rounds per AFV. The assault howitzer could carry 52 rounds with itself.[21] According to the battlefield experiences, the crew could pack more 30 rounds at the expense of the individual equipment. So in practice the ammunition allowance was the following:

Type of the ammunition	Number of the rounds	Weight of the rounds	Muzzle velocity
105 mm 38/33M HE frag-grenade	30	15 kg	448 m/sec
105 mm 42M HEAT grenade	16	12 kg	492 m/sec
105 mm 38/33M fog-grenade	6	16,3	431 m/sec

Table 2. The details of the ammunition [22]

The assault howitzer fired separate loading ammunition – like every howitzer in the world. This kind of solution allowed only 5 to 6 shots per minute. After the test run, the artillerymen recommended fixed ammunition, because it could increase the speed of the shooting. The requirements of the serial production were granted, but at the end this never materialized. Just like the Anti-aircraft machine gun, which were never installed.

The crew had these small arms: one light machine gun (LMG), three sub-machineguns (SMG), eight hand grenades and one flare pistol. These were placed inside the assault howitzer. Besides the standard small arms the crews always tried to get more weapons. It was not uncommon that a crew got German light machinegun and hand-held antitank weapons (*Panzerfaust*, RPzB54).

Weapon	Ammunition (pieces/weapon)
Pistol	14
SMG	280
Rifle	40
LMG	1500
MG	2500
Hand grenade	2 per crew member
105 mm howitzer	38 HE and 18 HEAT[10]
flare pistol	20

Table 3. The ammunition of an assault artillery battalion per weapons according to the ministerial decree [23]

The power resource of the Zrínyi II assault howitzer was a 260 HP, 8 cylindered, 4-stroke, water cooled, gasoline V-engine. The high speed of the AFV on terrain was 15 km/h, and on the road 43 km/h, but during the testing the crew could reach a 55 km/h top speed. The fuel consumption on the road was 180 litres/100 km, on terrain 240-400 litres/100 km. The range on the road was 280 km, on terrain 100-170 km. The Wilson-type transmission had six forward and six backward gears.

The built-in R5/a radio with microphones allowed the crew to communicate with each other and the other crews. The range of the device was 5 to 15 km. To avoid the possible problems there was also a small horn, with which the crew could communicate if the radio is jammed.

The crew of a Zrínyi II consisted of four soldiers:

1. The commander: whose task was to lead the assault howitzer, keep up the communications and order to open fire. Usually he led the AFV from his open hatch – just like the German AFV commanders. In this case he could navigate better, but was more vulnerable to the enemy fire.
2. The gunner: whose task was to operate the main weapon, the 150 mm howitzer. With his monocular optic he could aim the weapon. The howitzer got an electronic trigger.

[10] Cf. HL VKF 5090 eln.1.vkf-1943. p. 7. This decree did not mention the for example the fog-grenade. Note, that the practice and the decrees – especially in wartime – were usually not the same.

The gunner seated on the right side of the fighting compartment, in the same line with the driver. To get a better sight, he had a periscope.

3. The driver: whose task was to drive the AFV. He seated on the left side of the fighting compartment. He had a big periscope with which he could navigate.
4. Radio operator-loader: he operated the radio when the commander was unable) and loaded the howitzer.

The crew wore the Italian-style leather coverall and helmet, which had been adapted by the Hungarian tankers. The artillerymen didn't like this outfit. They preferred their field uniform and earphones.

Figure 3. An 40/43M Zrínyi II Assault howitzer at Hajmáskér with its crew [24]

THE 2-8. CADRES

It had been also a task of the 1st assault artillery battalion to organize and execute a second officer training course in Hajmáskér, which provided the staff (officers, NCO's and soldiers) of the further 7 assault artillery battalions. On 5th August 1943 a new, the second officer training course for assault artillery was announced. The first step was to ensure the officer corps of the forming new battalions. As previously, the young volunteers came from the artillery branch. The training course was completely the same like the first one. The assigned infantry divisions granted the material base for the new cadres. The plan was that every Hungarian infantry division would have their own assault artillery battalion.

Training cadre	Number of the battery	Location	Appointed commander	Assigned AFV instructor
2.	20.	Eger	Captain József Henkey-Hőnig	First Lieutenant Imre Kömlődy
3.	16.	Debrecen	Major Pál Bernolák	First Lieutenant Miklós Éder
4.	13.	Csongrád	Major Roderig Launszky	First Lieutenant Géza Rozváczy
5.	10.	Szigetvár	Captain Nándor Dooóry	First Lieutenant Ervin Simon
6.	25.	Kolozsvár	Captain László Makláry	First Lieutenant Roland Hoffmann
7.	7.	Sümeg	Captain Pál Török	First Lieutenant Sándor Martsa
8.	24.	Kassa	Captain Barnabás Bakó	First Lieutenant Tibor Székely

Table 4. The important details of the next seven assault artillery battalion cadres [source own]

The leader of the second training course was Captain József Henkey-Hőnig, the only staff officer in the Hungarian assault artillery at that time. The executive officer was First Lieutenant Dénes Csáthy.[25] The cadres had been filling out continuously since the start. In the beginning, the soldiers had had too much free time, so they requested to modify the training. Soon, they learned how to ride a motorcycle, drive trucks and cars and how to repair and maintain the equipment. The training still used Turán and Toldi tanks, which came from the 1st assault artillery battalion after it got its first Zrínyi II assault howitzers. In addition the 3 iron-armoured Zrínyi II could be used. For the better AFV training, every cadre got an assigned young AFV instructor.

The time schedule of the second training course was the following:

- Basic training: From 1st October, 1943 to 29th February, 1944.
- To raise the battalions, and prepare to the cooperative training with other army branches, in March 1943.
- A military exercise in front most of Hungary's military leaders and staff officers in April 1944, coordinated by the inspectors of the infantry and the artillery branch.

The training was conducted as follows:

- From 18th October 1943 to 18th November, the second training course for officers (25 officers took part)
- From 1st October 1943 to 18th December, the second training course for NCO's (50 NCO took part)
- Zrínyi radio-operator training in Esztergom, in two courses with 105 soldiers per course, from 1st October 1943 to 30th March 1944.
- Zrínyi driver training in Hajmáskér, from 18th October 1943 to 18th December with 280 soldiers.
- Zrínyi gunner training in Hajmáskér, from 6th January 1944 to 16th January, with 280 soldiers.
- In addition there were trainings for reservists, pioneers and mechanics.

The training course included a further training for Hungarian officers and mechanics organized by the Germans in the centre of the German assault artillery: Burg-bei-Magdeburg. 16 officers, 24 gun drivers and 8 mechanics took part in this advanced training.[26] The reason of this was the expected and shortly arriving German AFVs.

The organization of the new assault artillery battalions ended on 1st April 1944. The Minister of Defense, Colonel General Lajos Csatay ordered to adapt the royal Hungarian 7th, 10th, 13th, 16th, 20th, 24th and 25th assault artillery battalions for the Hungarian Defense Forces' order of battle. The code name of the new artillery branch was "Szittya".

Originally planned			**Final strength according to the "Szittya" table of organization**	
Staff of the battalion	officer	16	14	87,5%
	men	200	118	59%
Workshop battery	officer	6		
	men	100		
Transport battery	officer	1		
	men	80		
One assault battery	officer	6	5	83%
	men	110	80	72%
One assault artillery battalion in all:	officer	41	29	70%
	men	710	358	50%
	assault gun	31	31	100%
	various cars	120	57	47%
	motorcycle	70	14	20%

Table 5. Personal strength of an assault battalion [27]

The battalions contained one assault artillery cadre and one training subsection besides the depot and maintenance section in its peacetime garrison.[28] The barracks in the garrisons were designed to store the battalion's armament and weapons. The battalions were independent, but they did not have a replacement cadre yet. In the year of the training, the battalions had not had their prescribed strength, so the field artillery needed assignments to prepare.

According to the plans, the specialized training was being held in Hajmáskér, but the basic training had to take place at the peacetime garrison organized by the battalion, with the nearest field artillery unit's equipment. The recruit training organized and executed by the assault

artillery battalion's replacement cadre. The last step of the training was a cooperated exercise with the assigned infantry division. This remained just a plan, because most of the assigned field artillery units moved to the front from their peacetime garrison.

The assigned artillery replacement cadres had not had the equipment to fulfil their training task – the assault artillery battalion's replacement cadres had more equipment, so Hajmáskér remained the place where the recruit and officer training had been executed.[29]

17th May 1944 the minister of defense had been adapted the HQ of the assault artillery training camp, which added into the Royal Hungarian Defense Force's order of Battle. Hajmáskér was the centre. The assault artillery had to make the necessary reassignment of the staff for the HQ.[30] The authority of the HQ included the integrated training of the assault artillery units, leadership, reserve officer training, cooperated exercises, gunnery, organization and recommendation for modernization.

The creation of the royal Hungarian assault artillery was almost finished. One of the last steps was a big cooperated exercise on 26th May 1944. The subject of the exercise was the cooperation between the infantry and the assault artillery, tactics and employment, and finally the use of the multiple rocket launchers.[31] The exercise was a great success.

The 1st assault artillery battalion soon marched out to the front. Nevertheless this unit was not at its full strength, only the 2/1st and 3/1st batteries were employable. The 1/1st battery followed the two other just two months later, at the beginning of June 1944. Pretty soon the other seven battalions found themselves in the middle of the war. The training ended on 14th April 1944, when the formations moved to their garrisons.[32] Peacetime soon ended.

SUMMARY

Little more than one year was enough for Hungary to create one of the most élite artillery branches of the Second World War, even if it was just a temporary unit. Only the best artillerymen could be part of the assault artillery, whose task was to give a direct support to the infantry in attack or in defense. This élite branch had the best armament and weapons, but only three battalions were equipped with the Hungarian Zrínyi II assault howitzer – the 1st and the 10th fully, and the 20th with one battery. The other battalions were equipped with the German Jgdpz 38(t), except the 7th which had StuG III assault guns. The assault artillery batteries without assault guns fought like the German *panzergrenadiers*, or as anti-tank gun crews.

All the Hungarian battalions fought for their country, till the end of the war. Most of the battalions (rather its remnants) were destroyed during the siege of Budapest. After the war, most of the artillerymen became prisoners of war or left Hungary to avoid the new political prosecution.

The fate of the Zrínyi IIs was also sad. Most of the AFVs were blown up or destroyed by the Soviets. The only survivor is kept in the Russian tank-museum in Kubinka. In the 1950s, one Zrínyi without its gun was used as a factory crane.[33] The Zrínyi II assault howitzer with its modern construction, which involved the possibility of further development was an outstanding type of the Hungarian AFV production.[34] At its age it was kind of a healthy compromise between the capabilities and opportunities.

Rererences

[1] Hungarian Military Archive Budapest (HL) Chief of the General Staff (VKF) 5588/eln. 1. vkf-1943.

[2] HL (Study Collection) SC, 3085. The memoirs of General of Armored Troops Hermann Balck from the Struggle for Hungary and the truce p. 4.

[3] HL AA, 4th folder, An overview of the Assault Artillery, HOHE conference in the Institute for Military History (8th February 1996.) p. 4.

[4] HL AA, 3rd folder, Manuscript of Lieutenant General Billnitzer p. 68.

[5] Szabó, Péter – Számvéber, Norbert: The eastern front and Hungary, 1943-1945. (In Hungarian: A keleti hadszíntér és Magyarország, 1943-1945.) Budapest, 2009. p. 256.

[6] HL VKF 5674/eln 1.-1942.

[7] Supporting respond of the Chief of General Staff, HL VKF 5750/eln. 1. – 1942.

[8] HL AA, 1st folder, The role and creation of the assault artillery (in Hungarian: A rohamtüzérség feladata és megalakulása)

[9] HL VKF 5374/eln. 1. vkf – 1943.

[10] HL AA, 1st folder, Establishment of the assault artillery HQ (in Hungarian: A rohamtüzérparancsnokság megalakulása)

[11] Ibid

[12] http://tortenelemportal.hu/wp-content/uploads/2012/07/barankay2.jpg - 17. 03. 2015.

[13] Kovácsházy, Miklós: The history of the Zrínyi vehicle-family, part 1. (in Hungarian: A Zrínyi járműcsalád története, I. rész.) Haditechnika, 2013/6. p. 10.

[14] HL AA, 2nd folder, Kovács, Vilmos: The Zrínyi assault gun, the weapon of the assault artillery (in Hungarian: A Zrínyi rohamlöveg, a rohamtüzérség fegyvere.)

[15] Kovácsházy, Miklós: The history of the Zrínyi vehicle-family, part 1. (in Hungarian: A Zrínyi járműcsalád története, I. rész.) Haditechnika, 2013/6. p. 10.

[16] HL VKF 5090/eln. 1.-1943.

[17] HL AA 1st folder, Csanády, György: The establishment of the assault artillery (in Hungarian: A rohamtüzérség megalakulása)

[18] HL AA, 2nd folder

[19] HL AA, 2nd folder, Description of the Hungarian assault gun and the process of the development

[20] HL AA, 2nd folder, Kovács, Vilmos: The Zrínyi assault gun, the weapon of the assault artillery (in Hunarian: A Zrínyi rohamlöveg, a rohamtüzérség fegyvere.)

[21] HL AA, 2nd folder, Technical description of the Zrínyi assault gun

[22] HL VKF 5090 eln.1.vkf-1943. p. 7.

[23] HL AA, 2nd folder, 61.241/eln. 1/a.-1944 ministerial decree

[24] http://www.magyartudat.com/wp-content/uploads/Zrinyi-rohamtarack.jpg - 25. 03. 2015.

[25] HL AA 14th folder, Kárpáthy, Tasziló: History of the 20th assault artillery battalion, (in Hungarian: A 20. rotü. oszt. története) p. 5.

[26] HL VKF I. 89. 305. box, 277/3088. 14. folio, 263/eln.

[27] HL VKF 5588/eln. 1.-1943. p. 10.

[28] HL VKF I. 89. 305. box, 277/3087, 13. folio, 224/eln.

[29] HL VKF I. 89. 306. box, 277/3104, 8. folio, 510/eln.

[30] HL VKF I. 89. 306. box, 277/3097, 1. folio, 385/eln.

[31] HL VKF I. 89. 305. box 277/3085, 11. folio 168/eln.

[32] HL AA 14th folder, Kárpáthy Tasziló: History of the 20th assault artillery battalion, (in Hungarian: A 20. rotü. oszt. története) p. 6.

[33] Kovácsházy, Miklós: The history of the Zrínyi vehicle-family, part 1. (in Hungarian: A Zrínyi járműcsalád története, I. rész.) Haditechnika, 2013/6. p. 13.

[34] Kovácsházy, Miklós: The history of the Zrínyi vehicle-family, part 3. (in Hungarian: A Zrínyi járműcsalád története, III. rész.) Haditechnika, 2014/2. p. 44.