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Observations of the artillery tactical/combat control exercise carried out with the „HUTOPCCIS”¹ computer-aided control system, in the training process of the Operational Support Department of the National University of Public Service

A „HUTOPCCIS”² számítógépes vezetési rendszer alkalmazásával végrehajtott tüzér harcászati-harcvezetési gyakorlat tapasztalatai a Nemzeti Közsolgálati Egyetem Műveleti Támogató Tanszék oktatási folyamatában

Abstract

A tactical/combat control exercise was held at Csobánka Exercise- and Training Base in the framework of the practice-oriented artillery training conducted by the Operational Support Department of the Military Science and Officers Training Faculty of the National University of Public Service. The subject of the exercise was: „Preparation and command of the fire support for a Tank Battalion and of the combat operations for a field Artillery Battery during counter-attack”

The participants of the exercise were the artillery-specialized instructors and 16 of the 3rd-4th-year artillery Officer Cadets of the Operational Support Department. The exercise was planned to last two days. On the first day the cadets, serving in different positions, prepared the combat operations of the Artillery Battery; on the second day they carried out the forming-up of the Artillery Battery to battle order, performed fire support and combat control of the Artillery Battery.

Absztrakt

A Nemzeti Közsolgálati Egyetem Hadtudományi és Honvédtisztképző Kar Műveleti Támogató Tanszéken a gyakorlatorientált tüzér szakirányú képzés keretében, a tantárgyprogramban leírt követelményeknek megfelelően, harcászati-

¹ HUTOPCCIS - Hungarian Tactical Operational Command and Control Information System

² „HUTOPCCIS” – Hungarian Tactical Operational Command and Control Information System (Magyar fejlesztésű Harcászati Hadműveleti Vezetési és Irányítási információs Rendszer)

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harcvezetési gyakorlat került levezetésre a csobánkai gyakorló és kiképző bázison. A gyakorlat tárgya: „A harckocsi zászlóalj tűztámogatásának és a tábori tűzérűteg harctevékenységének előkészítése és vezetése az ellenlökés végrehajtásakor”

A gyakorlaton részt vett a Művelési Támogató Tanszék tűzér szakirányú oktatóinak teljes állománya és a tűzér szakirány 3-4. éves honvéd tisztjelöltjei 16 fővel. A gyakorlat 2 nap időtartamra volt tervezve. Az első napon a honvéd tisztjelöltek a tűzérűteg harctevékenységének előkészítését végezték el különböző beosztásokban, a második napon pedig a tűzérűteg harcrendbe történő előrevonását, és a tűztámogatás végrehajtását, a tűzérűteg harcvezetését hajtották végre oktatói irányítással.

PRECEDING ACTIVITIES

Students had learnt the theoretical aspects described in the syllabus and in subject programs before the exercise. The 3rd-year Artillery Cadets had learnt the attack operations related joint- and artillery theories and - in frames of the "Combat Control" topic - started to process with the practical task in the second semester of 3rd year, in accordance with the educational plan and the "Combat Control" program. Everyone received the tactical mission and the "tactical situation" (overlay), as well as the superior's Task Order. Under the leadership of an instructor, the cadets drew the Battery Commander's outline map (on a hard copy map), and the same on the digital map of the "HUTOPCCIS" computer-aided combat control system.

The Operational Support Department have achieved excellent training development by directly applying the results of scientific research & development in the training. Therefore, the "HUTOPCCIS" command system is taught both as an individual subject and as part of other subjects, such as artillery intelligence, and combat control. That is how Artillery Cadets processed the tactical mission both by the conventional method (on a paper map) and on a computer combat control system.

As a closure of the class-room processing of the mission, the instructor evaluated each student's work, that is the situation evaluations (METT-T) and the Task Orders written by them.

DESCRIPTION OF THE GENERAL TACTICAL SITUATION

The 3. RED Army is conducting an attack operation with a two-echelon operational formation – with the 2. and 3. Mechanized Infantry Division in the first echelon and the 1. Mechanized Infantry Division in the second echelon. In the early evening of 27 October, on the fourth day of attack operations, the first-echelon divisions reached the second (corps-level) defensive line of the BLUE 6th Mechanized Corps, where their attack was blocked due to the damages caused by the tough defence of first-echelon brigades and the allied air strikes.

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At 0700 on 28 October, following a fire preparation, the 1. Mechanized Infantry Division, as the second echelon of the 3. RED Army – having the 12. and 13. Mechanized Infantry Regiment in its first echelon – was thrown into battle against BLUE 35. Mechanized Infantry Brigade located on the Division's defensive line. 14. Tank Regiment, which is in the second echelon of the 1. Mechanized Infantry Division, is situated in a "Departure Zone" 20 km from the line of contact, ready for advancement.

- 1) 35. Mechanized Infantry Brigade – having the reinforced 1. and the 2. Mechanized Infantry Battalions in its first echelon, and 3. Tank Battalion (- 1 tank platoon) in reserve – is located at the second defensive line of BLUE 6. Mechanized Corps and has set up for defence and prepared to reject an attack by 1. Mechanized Infantry Division.

DETAILED DESCRIPTION OF THE SITUATION

- 1) At 0700 on 28 October the first-echelon battalions of the RED 12. and 13. Mechanized Infantry Regiment – by the results of fire preparation – carried out an assault and broke in the defence of BLUE 35. Mechanized Infantry Brigade, where the attack was blocked by 0900 due to artillery fire and the tough defensive operations of the first-echelon battalions.
- 2) The BLUE allied air force delivered strikes against the second-echelon tank battalions of the RED 12. and 13. Mechanized Infantry Regiments and the 14. Tank Regiment of the 1. Mechanized Infantry Division.
- 3) Having evaluated the situation, the Commander of the BLUE 35. Mechanized Infantry Brigade decided that the 3. Tank Battalion shall carry out a counter-attack to re-establish the original situation. After that he tasked subordinates as follows:
 - 3–35. Tank Battalion will advance on the paved road BUDAPEST, PILISVÖRÖSVÁR, and then carry out a counter-attack from the area: 288,6 trigonometrical point (8044) SE 1 km grapes, bridge (7943) SE 500 m, to the direction: Fehér Hill (7747), 213,9 trigonometrical point (8141), in order to re-establish the original situation. Defeat the enemy situated before the line of combat and in the direction of counter-attack, and seize the target zone: Recreation Area (8243) SW edge, 198,8 trigonometrical point (8142), Keréktanya (farm) (8041). I realloc 4-35. Howitzer Battery to the 3-35. Tank Battalion for the execution of the counter-attack; and this counter-attack shall be supported by 35. Howitzer Battalion (- 4. Howitzer Battery) and 3-6. Howitzer Battalion (general fire support reinforcement). The „H” ("War") **time is: 1330**
 - 2-35. Mechanized Infantry Battalion shall hold its current defensive positions, destroy the stopped enemy, prevent them from gaining ground, secure the combat assault of 3-35. Tank Battalion, and detach a part of its forces on the right flank to the tank battalion. After the re-establishment of the situation, restore the order of battle and the fire system, and prepare to reject another assault by the enemy.

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- 4) The Brigade Fire Support Cell has planned the artillery preparation and support of the counter-attack, and sent the tasks to the designated artillery elements.
- 5) The Commander of the 3-35. Tank Battalion has decided to execute the counter-attack from the assigned area into the dedicated direction at 1330. He will engage the 1. Tank Company on the right flank, the 2. Tank Company on the left flank, and the 3. Tank Company as reserve. He has ordered that the Company Fire Support and Fire Observation Groups shall take observation posts behind the line of counter-attack by 1030 and carry out reconnaissance of the enemy and the clarification of reconnoitred targets.
- 6) The Commander of 4-35. Howitzer Battery received the following order from the Battalion Commander at 1000:
4-35. Howitzer Battery shall directly support 3-35. Tank Battalion in carrying out the counter-attack in line with the superior's plan. The battery shall take firing positions by 1200 at the area: Tanya (farm) (7846), Halastó (fishpond) (7745), Kőgödör (stone pit) (7846/8). The Battery Commander shall report to the Commander of 3-35. Tank Battalion at his command post at 1030 to receive tasks.

ADDITIONAL DATA ABOUT THE RED FORCES

- 1) The RED 12. Mechanized Infantry Regiment, not having ready reserves, has its first-echelon battalions prepare to reject the attack of the reserves of 35. Mechanized Infantry Brigade on the currently taken area, using the available ground cover.
- 2) The losses of the first-echelon battalions are 20-25%. Due to the losses, the RED artillery battalions have only two batteries, with 4-5 guns per battery.
- 3) The 3. Tank Battalion of the RED Mechanized Infantry Regiment has had 35-40% losses due to air strikes. It is currently restoring its forces, and its engagement is not expected within 4-5 hours.
- 4) The battalions have composite armour-piercing batteries (4 x SPG-9 grenade launchers, 4 x FAGOT guided armour-piercing rockets), and have had 15-20% losses

INFORMATIONAL DATA ON THE ISSUED TACTICAL MISSION

- 1) The organic artillery battalion of the BLUE 35. Mechanized Infantry Brigade (with BTR combat vehicles) is a 152 mm howitzer battalion (4 x howitzer batteries, with 6 x D-20 howitzers per battery).
- 2) The 4-35. Howitzer Battery is located in its firing positions taken for the defence combat of the artillery battalion.
The losses of the battery: 1 gun and 1 ammunition vehicle.
The battery possesses 1.5 x basic ammunition load. The battery is ready to receive further ammunition supplies.
- 2) The 3-35. Tank Battalion is located at Csúcshegyi dűlő (hillside) (7348) E 2km. The 4. Tank Company of the tank battalion reinforces 1-35. Mechanized Infantry Battalion.



1. *Image: Tactical situation display on the digital map of the „HUTOPCCIS” command system (own source)*

PREPARATION FOR THE COMBAT OPERATIONS OF THE ARTILLERY BATTERY

The real-life execution was to be organized after the adequate theoretical training. The requested and used equipment: at the firing position: 2 pcs. 152 mm D-20 howitzers; the equipment of the firing position recce group: PAB-2A – periscopic artillery compass device, hand compass, aiming post, measuring tape, gun marker poles, marker flags, map, and elaboration tools; at the battery fire control post: PUO fire control device, computer, elaboration tools, and the forms and charts for the calculation of fire data, manual books; the command post of the Battery Commander was located next to the fire control post. The Battery Commander used the "HUTOPCCIS" computer command system for the planning of the combat operations of the battery and for the processing of tactical situation reports and messages during combat control activities. The Company Fire Support and Fire Observation Group possessed the fire intelligence devices necessary for the operation of the observation post, that is: PAB-2A periscopic artillery compass device, hand compass, 1D11 laser range-finder, EDF hand binoculars, hand-held computer, intelligence log, fire support matrix, and target list. All troop elements had hand-held radios.

In the morning of the first exercise day, the Battery Commander issued the preliminary order, describing the mission assigned by the superior. He described the mission of the battery, which was basically the allotment of the battery from the artillery battalion to the tank battalion which would execute the counter-attack. The battery would carry out direct

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fire support for the tank battalion during the counter-attack. The Battery Commander defined the recce group's composition, equipment, tasks, and the deadlines of tasks, submission of reports, and combat documents. He defined the tasks of the Fire Control Post commanded by the Deputy Battery Commander with regard to fire data calculations for the planned targets, processing of METEO weather data, pre-registration of planned targets for Firing Platoon Commanders and Gun Commanders, as well as the preparation of fire control. Finally, he defined the order of command. The Battery Commander contacted the Fire Support Cell of the tank battalion and the Commander of the Company's Fire Support and Fire Observation Group supporting the fire control of the battery, in order to establish cooperation.

The Commander of the Artillery Battery and his staff has begun the preparation of their combat operations. "The preparation and command of the artillery combat operations is the combination of activities of Commands and Staffs of different levels, and the planning-, organizational-, control- and practical activities of artillery units; aimed at ensuring the conditions for the efficient combat engagement of artillery and successful implementation of the defined tasks."³

The preparation of the artillery combat operations includes:

- the organization of offensive (defensive) operations;
- the preparation of artillery units for the assigned missions;
- the preparation of the firing post (firing post areas, firing posts, deployment areas, assembly areas) and posts of technical recce units;
- facilitation and supervision of preparedness for the execution of tasks;
- other measures as necessary.

The 4th-year cadets usually work in battery commander, deputy battery commander, drafter, artillery platoon commander, company's fire support and fire observation group commander, as well as fire support NCO positions. On the first day of the exercise the Battery Commander planned and commanded the battery's activities at the Command Post established next to the Fire Control Post, by use of the "HUTOPCCIS" system. The Deputy Battery Commander and the drafters - working at the Fire Control Post - processed the METEO weather reports; calculated fire data for the planned targets; took over the Observation Post- and Firing Post (rotating firing post) coordinates from the Firing Post Recce Group which prepared troop elements, and from the Observation Post personnel; and made the Artillery Platoon Commanders and Gun Commanders pre-register the calculated fire data of the planned targets.

1. and 2. Artillery Platoon Commanders, being the Recce Group Commanders for the 1. and 2. Firing Posts, have each prepared a Rotating Firing Post within the Firing Position Area of the battery, together with their personnel. The 3rd-year cadets – in line with their

³ Dr. Attila Furján: The basics of fire support, as well as combat use and command of the artillery, university notes, National University of Public Service, Budapest, 2009.; p. 93.

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prior training – have been posted to the Firing Post Recce Group as gun crew. The Company's Fire Support and Fire Observation Group Commander and the Fire Support NCO was a 4th-year cadet, and the Fire Observer was a 3rd-year cadet. Their task was to prepare the planned Observation Post, organize reconnaissance, clarify the terrain location of the planned targets and the terrain situation of enemy and own positions.

The cadet groups carried out their tasks under direct control of the instructors. The instructors evaluated each action, and made the cadets repeat the tasks in case of faults. Every exercising group completed their tasks until lunch, after which the Battery Commander issued a Task Order, based on the tactical situation processed by use of the "HUTOPCCIS" system.



2. *Image: The Battery Commander is issuing the Task Order based on the tactical situation displayed through the „HUTOPCCIS” command system (own source)*

After issuing the Task Order, the cadets completed the preparation of combat documents and prepared for the combat control tasks of the next day.

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EXECUTION OF THE FIRE SUPPORT OPERATIONS OF THE ARTILLERY BATTERY

On the second day the Commander of the Artillery Battery deployed to the Command Post of the Battery and commanded the battery's operations. He maintained continuous radio connection with the Battalion's Fire Support Cell Commander, with the Deputy Battery Commander (Fire Control Post), and with the Fire Support and Fire Observation Group Commander (Observation Post). He received the tactical situation reports and processed them by the "HUTOPCCIS" command system; then informed subordinates and reported to the superiors. He planned the battery's fire support operations, manoeuvres, ammunition supplies and resupplies. In order to ensure continuous supply of ammunition, he kept contact with the Commander of the Artillery Battalion. He maintained a reliable cooperation with the Commander of the Tank Battalion and the Battalion's Fire Support Officer.



3. *Image: Battery Commander during combat control (own source)*

The Deputy Battery Commander, being at the Battery Fire Control Post, maintained radio communications with the Battery Commander and with the firing echelon of the battery; as well as with the Company Fire Support and Fire Observation Group and the battalion- and brigade-level Fire Support Cells through the fire support net. He took over calls for fire from the Company Fire Support and Fire Observation Group, and had them approved by the Commander of the Battalion Fire Support Cell. He also took over Fire Orders from the

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Commander of the Battalion Fire Support Cell. They processed Fire Orders, elaborated the calculated data, and gave Fire Orders to the firing echelon; and controlled the battery's firing in cooperation with the Company Fire Support and Fire Observation Group. At the beginning of combat operations (counter-attack) the elements of fire for effect were defined by full preparation; during combat operations by transferring fire from fix points.



4. *Image: The Deputy Battery Commander controlling the battery's fire at the Fire Control Post (own source)*

The (real) firing echelon of the Battery – considering the number of cadets – was made up by two D-20 howitzers. One gun was deployed at each firing line in the firing posts of the 3. and 4. guns; and PAB-2A compass devices were placed in lieu of the other guns, to practice the calculation- and setting of protractors. The Artillery Platoon Commander received Fire Orders from the Deputy Battery Commander via radio, kept record of the platoon pre-registration and gave Fire Orders to the gun commanders. He supervised the accuracy of the gun commanders' protractor settings and the opening-closing calculations of the fan-tail direction. He monitored the activities of the gun sections, the aiming- and element setting work, and corrected errors. The instructors evaluated the work of each Cadet individually. Faulty actions had to be performed again.



5. *Image: The Battery's Firing Post during combat control (own source)*

The Company Fire Support and Fire Observation Group took the Observation Post prepared on the previous day. They oriented their devices and started reconnaissance. They clarified the front-line and situation of the enemy (RED party), the terrain locations of planned targets, the front-line and situation of own (BLUE) troops, and the planned area of counter-attack of the 4. Tank Battalion. They continued target intelligence. They maintained continuous contact with the battalion's Fire Support Cell and with the artillery battery's Fire Control Post. They pre-evaluated the reced targets on the "HUTOPCCIS" system and forwarded them to the battalion's Fire Support Cell. They monitored the front-line and situation of own troops and any changes thereto; and the advancement, deployment, and engagement of the 4. Tank Battalion executing the counter-attack; and reported to the battalion's Fire Support Cell and the battery's Fire Control Post about that. If the execution of the attack operations by the tank battalion were hindered by newly reconnoitred targets, they would clarify the target intelligence and submit calls for fire to the battalion's Fire Support Cell. If the battalion's Fire Support Cell Commander approved the call for fire, he also informed the battery's Fire Control Post. The battery defined the fire data of the target and delivered fire at the target. The Company Fire Support and Fire Observation Group observed the fire for effect and reported the observations to the battery's Fire Control Post,

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where they made corrections and the battery continued firing with the corrected data, until the desired degree of destruction was achieved.

In the process of Artillery fire support, the Battalion Fire Support Cell Commander also gave fire orders to the artillery battery, for the success of the attack of the tank battalion. He appointed the Company's Fire Support and Fire Observation Group for fire support tasks.



6. *Image: Company Fire Support and Fire Observation Group performing target intelligence and fire observation at the Observation Post (own source)*

CLOSING OF THE TACTICAL EXERCISE

The combat control exercise was closed at 1330 on the second day. In the afternoon the instructors evaluated the activities of each group and individual. The cadets received concrete evaluations, highlighting both the deficiencies and excellences. They also confirmed the evaluations by notes, which would be taken into account in the "Combat Control" subject for the 4th-year and "Combat Service" subject for the 3rd-year cadets.

The instructors' general opinion is that the 4th-year cadets have made a significant step ahead in the field of practical knowledge and experience by the tactical / combat control exercise conducted in the framework of practice-oriented training. The 3rd-year cadets have gained basic practical skills in the operator posts.

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In the frames of the artillery training at the Operational Support Department and by use of the "HUTOPCCIS" computer command system, the cadets are able to carry out the planning and command of the combat operations of artillery units, and the collection and processing of target intelligence information not only by the conventional methods but also by modern geospatial information systems and computer-aided processing, which greatly improves their creativity.

The lessons are evaluated in the training system and built into the plans of next year's tactical / combat control exercise.

Key words: fire support, preparation for combat operations of the Artillery Battery, tactical operational command and control information system, target intelligence, fire mission, firing position, counter-attack, fire observation, Task Order.

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