WRITTEN PREPARATION

Subject: Artillery Tactics
Guarantor: CPT Jan IVAN, Ph.D.
Lecturer: CPT Jan IVAN, Ph.D.
Topic: T10: Combat use of the artillery target acquisition (2p + 2c + 2k)
Objective: Explain basic rules of command and control of artillery target acquisition as a part of joint fire support of task forces.

Table of contents:

1) Artillery Target Acquisition

Artillery target acquisition (TA) is an organic element of the system of requiring artillery support. It consists of reconnaissance artillery units separated from the structure of the 13th Artillery Regiment (13th ArtyReg) to support task forces based mainly on mechanized brigades.

13th ArtyReq is the main unit of the ACR artillery, which is based on two artillery battalions - 131st and 132nd. The allocation of artillery battalion is a basic type of support for the brigade task force. The organizational structure of artillery battalions is the same, but different is equipped with technical means of artillery TA.

Artillery TA units are usually assigned to support the activities of combat companies, or battalions, or brigades. Their basic equipment is TA kits (PK) based on vehicle platforms, profitable artillery TA kits and radars for TA of firing artillery. Specifically, these are the following technical means of artillery TA:
- PK LOS and LOS-M, respectively;
- PK LOV-Pz;
- PK Sněžka, respectively Sněžka-M;
- radar for TA of firing artillery ARTHUR;
- Profitable artillery TA kits based on the Stern geographic search engine and the GonioLight digital goniometer.

Artillery reconnaissance is also an important part of fire control. Reconnaissance information obtained by reconnaissance artillery units is one of the basic sources of data needed for the preparation and execution of artillery fire. This information can also be used in a wider range for battlefield intelligence purposes.

According to the nature of the implementation and the technical means used, the artillery survey is divided into:

1. artillery basic reconnaissance;
2. artillery technical survey;
3. artillery aerial reconnaissance.

Artillery basic TA

Artillery basic reconnaissance is the main type of reconnaissance in artillery. It is performed from ground-based observatories using optical and optoelectronic devices, or by free observation. The tasks of basic artillery reconnaissance are performed mainly with the use of reconnaissance sets and profitable artillery reconnaissance sets.

Artillery technical TA

Artillery technical survey is based on the use of technical means, especially artillery radars (radar survey). Artillery technical survey may also be carried out using sound leveling sets (sound leveling survey) and photographic instruments (photogrammetric survey). At present, only artillery radar survey is used in the ACR as part of artillery technical survey, because the units of sound level and photogrammetric survey were canceled without compensation.

At present, the use of photographic material is gaining in importance, which facilitates the planning, coordination and, in particular, the approval process for the use of common fire support resources. At present, it is possible to acquire photographic material mainly with the help of reconnaissance sets and a profitable set using the JIM LR thermal imaging telescope, which is equipped with airborne reconnaissance airborne teams. However, this capability is significantly limited by the possibilities of connecting means with which the reconnaissance sets, or especially the staff vehicles of the fire support coordination groups, are equipped and which have limited capabilities for the transfer of such large data files. The result is a situation where the capabilities of technical means of artillery reconnaissance are reduced by obsolete connecting means of superior workplaces.

For the needs of conducting radar reconnaissance in favor of artillery, the 13th dp has two means - a radar for reconnaissance of firing artillery ARTHUR (ARTillery HUnting Radar) and ground surveillance radars, which are equipped with PK Sněžka and Sněžka-M.

In particular, the ARTHUR radar is a high-performance means of artillery radar reconnaissance, which allows you to search for enemy firing artillery and then control the detected means of anti-battery fire of their own units. However, the ACR currently uses only part of the potential of this radar. One of the main reasons is, above all, the absence of national documents and regulations that would address the combat use of this system.

Although the ARTHUR radar was introduced into the Czech Armed Forces in 2006, no regulation has been issued to date to cover this issue. Members of the radar platoon of the artillery survey thus use foreign publications and company aids supplied by the manufacturer

of this radar, the company Saab, for training and management of their own activities. However, the discrepancy of foreign publications with the level of material equipment of the ACR and the impossibility of applying some provisions to the conditions of the ACR is problematic. The result is therefore a situation where the activity of radars is solved by partial application of specific provisions of foreign publications.

However, the absence of a valid regulation setting out the principles of combat use of the ARTHUR radar has another consequence of ignorance of the principles of combat use across a wide range of command corps of both artillery and combat units and formations. It is the low level of knowledge that exacerbates the inefficiency of the use of this system, the high contribution and combat value of which is evidenced by the knowledge of foreign armies, which are equipped with this tool.

Other types of radars, which are equipped with reconnaissance kits for conducting artillery technical research, are types BR2140E (PK Sněžka) and Squire (Sněžka-M). In both cases, these are ground surveillance radars installed on the upper side of the sensor head of the above reconnaissance sets.

Artillery aerial reconnaissance

Artillery air reconnaissance is carried out using aircraft, which are assigned to the artillery. This type of survey is carried out in the form of observation of a designated survey sector from the deck of an aircraft, or by means of optoelectronic devices with which the aircraft is equipped. In practice, it can be carried out by artillery observers from helicopter decks or by means of aiming containers and sensors, which are equipped with combat aircraft or unmanned aerial vehicles. Artillery air reconnaissance is currently not used due to the unavailability of flight effort, which is often not enough to ensure the basic needs of the combat forces.

Air reconnaissance capabilities conducted for the needs of artillery would allow to cover areas that are not covered by sensors of artillery basic or technical reconnaissance.

A separate area is the observation of targets detected by the ARTHUR radar. This device makes it possible to determine with great accuracy the rectangular coordinates of the stations of the enemy's individual works and to control the anti-battery fire of their own artillery. However, due to its principle of operation, this radar does not allow to determine the effect of its own anti-battery fire on the detected targets, as well as whether the enemy cannons are still in the detected positions, if they do not conduct fire. Adding ARTHUR radars to an aeronautical device enabling optical observation of the target area would thus represent a significant increase in the efficiency of the operation of this device, or to cooperating in the management of anti-battery activities.

2) Technical Equipment of the Artillery Target Acquisition

The ACR has introduced several types of technical means of artillery reconnaissance, which are used for the needs of reconnaissance artillery units assigned to support task forces.

The advantage of the current situation is that all currently introduced devices have been modernized or purchased recently and thus achieve the required capabilities.

Explain each individual type.

Doporučená literatura

Basic

Děl-1-1, 2018. *Bojové použití dělostřelectva armády České republiky*. Praha: Ministerstvo obrany ČR.

WIRTH, Michael, 2017. *Joint Fire Support: Handbook for planning & co-ordination*. Edition 3.2. Austria.

Pub-35-14-01. *Bojové použití dělostřelectva*. Vyškov: Odbor doktrín VeV-VA, 2013. 203 s. – kapitola 4.2.1, 4.2.2, 4.3.

Pub-31-10-01. *Pozemní síly v operacích*. Vyškov: Odbor doktrín VeV-VA, 2011. 294 s. – kapitola 12.

IVAN, Jan, 2019. *Situační značky a zkratky pro dělostřelectvo: (vojenská symbolika a taktické značky pro dělostřelectvo dle APP-6) : studijní text*. Brno: Univerzita obrany v Brně. ISBN 978-80-7582-122-5.

Recommended

AArtyP-1(A). *NATO Joint Fire Support Procedures NATO NSO*.

Pub-31-10-01. *Pozemní síly v operacích*. Vyškov: Odbor doktrín VeV-VA, 2011. 294 s. – kapitola 3.2.1.4.