Separate brigade of territorial defence level of training organization assessment methodology

Oleksandr Heorhadze [*] [A]; **Anatolii Barhylevych** [A]

[A] The National Defence University of Ukraine named after Ivan Cherniakhovskyi, 28, Povitroflotskyi Ave., Kyiv, 03049, Ukraine

Received: August 30, 2020 | Revised: September 12, 2020 | Accepted: September 30, 2020

DOI: 10.5281/zenodo.4399732

Abstract

The need to introduce new approaches to the organization of a separate brigade of territorial defence training is generated by the challenges and threats to the sovereignty and territorial integrity of Ukraine. This requires a well-grounded approach to the improvement of the training system, which is not possible without the use of appropriate scientific and methodological apparatus of the training organization level assessment. The article describes the method of assessing the level of organization of a territorial defence separate brigade training, which allows to take into account the influence of training subjects on the carrying out the training by the training objects. Indicators that have a direct impact on the level of a territorial defence separate brigade training organization include: the level of training planning by the training subjects, the level of comprehensive training support and the level of training management of the training subjects. This technique allows you to quantify the level of a territorial defence separate brigade training organization, as well as to identify "weaknesses" in the training subjects activities during its organization, which necessitates the development of recommendations for improving their work.

Key words: assessment indicators, activity of training subjects, organization of training, separate brigade of territorial defence.

Introduction

Recent events in the world have shown the manifestations of new challenges and threats to Ukraine, in particular, the reality of the threat to the territorial integrity and sovereignty of the country. Today, along with the fact that the Armed Forces of Ukraine take part in the Joint Forces operation in certain districts of Donetsk and Luhansk regions, there are still potential threats of the armed conflict spreading to the rest of the country. In these conditions, the training of territorial defence brigades becomes relevant. The direct influence on the solution of the tasks facing the territorial defence brigades is exerted by their training – the result of training which largely depends on its organization by the subjects of training.

This encourages the search for and implementation of the new approaches to the organization of territorial defence brigades training. Therefore, there is a need for scientific substantiation of the method of assessing the level of organization of the separate territorial defence brigade training. This indicates the relevance of the topic which is under consideration.

Material and methods

Analysis of the previous research and publications in this area (Heorhadze, O., Horbenko, S., Kharabara, V., 2015; Kovch, V., Horbenko, S., Makalish, O., 2015; Heorhadze, O., 2016; Kazan, P., 2013) shows that there is no unique method to assess the level of organization

[*] **Corresponding author:** Candidate of Military Science, Professor of the department of troops (forces) management in peacetime, e-mail: alexx0508@ukr.net, ORCID: 0000-0002-9306-6660

of the separate territorial defence brigade training. The available approaches mainly concern some components of the organization of combat training and they do not take into account the changes that have occurred in the training system with the introduction of new doctrinal documents (The doctrine of training, 2020; Doctrine on the organization, 2020).

Thus T., in the previous article the author (Heorhadze, O., Horbenko, S., Kharabara, V., 2015) considered the methodical approach to assessing the quality of the program of the individual servicemen of artillery units training. In this article (Kovch, V., Horbenko, S., Makalish, O., 2015) the methodical approach to assessing the state of training material and technical base of a separate mechanized brigade for tactical training was also considered. The analytical dependences offered in the article (Kharabara, V., Repilo, I. (2020) allow taking into account the trainers' influence on the combat training quality of a tank brigade to re-establish the operational readiness. In the previous author's studies (Heorhadze, O., 2016) the approach to estimate the level of resources supply for combat training of the military units was defined. In this scientific work (Kazan, P., 2013) the influence of logistics on the provision of military units training was considered.

At the same time, the scientific and methodological apparatus developed by the predecessors becomes the fundamental basis for the further improvement and can be used as a part to assess the level of organization of the separate territorial defence brigade training.

Thus, the aim of the article is to develop a methodology for assessing the level of organization of the separate territorial defence brigade training which is based on the multicriteria dimensionless assessment estimates.

Results and discussion

It is proposed to assess the level of organization for the separate territorial defence brigade training $M_{OP}(t)$ by an indicator that takes into account the activities of training subjects (commander, commanding officers, commanders and chiefs of structural units directly responsible for training), which aims at well-thought-out, planned, systematic and comprehensive training of the objects of training (militaries, reservists, conscripts, structural subdivisions of territorial defence brigades).

The most important measures for the organization of training by the subjects of training are training planning, comprehensive training and training management.

Thus, the indicators that characterize the level of organization of training of a particular brigade of territorial defence are proposed to include: training planning by the subjects of training, comprehensive training and training management.

Given that training planning by training organizations is independent of integrated training provision and training management, and therefore their indicators are independent of each other, for the calculation of the training level of an individual territorial defence brigade $M_{OP}(t)$ we use additive aggregation:

$$M_{OP}(t) = \mathrm{C}_{\text{пл}}(t) \cdot q_{\text{пл}} + \mathrm{C}_{\text{вз}}(t) \cdot q_{\text{вз}} + \mathrm{C}_{\text{к}}(t) \cdot q_{\text{к}}, \quad (1)$$

where $\mathrm{C}_{\text{пл}}(t); \mathrm{C}_{\text{вз}}(t); \mathrm{C}_{\text{к}}(t)$ are indicators, characterizing the level of training planning, the level of comprehensive training provision and the level of training management at a discrete point in time;

$q_{\text{пл}}; q_{\text{вз}}; q_{\text{к}}$ are weighting factors of indicators of training planning by training subjects, comprehensive training provision and training management.

The calculation of the weighting coefficients of the indicators is carried out by the method of expert evaluation.

The assessment of the level of training planning $\mathrm{C}_{\text{пл}}(t)$ is proposed to be determined by an indicator that takes into account the completeness and quality of planning for the training of an individual territorial defence brigade.

Indicators that characterize the level of planning for a separate territorial defence brigade include:

Training programs $L_{\text{пп}}(t)$ and the Brigade Training Plan $L_{\text{плп}}(t)$.

Since the content of training programs does

not depend on the scope of combat training tasks, which is defined in the Brigade Training Plan, and therefore their indicators are independent of each other, for the calculation of the planning level $С_{пл}(t)$ we use additive aggregation:

$$С_{пл}(t) = L_{пп}(t) \cdot q_{пп} + L_{плп}(t) \cdot q_{плп}, \quad (2)$$

where $L_{пп}(t); L_{плп}(t)$ are indicators, characterizing the quality of training programs and the volume of combat training tasks to be performed by brigade units according to the Brigade Training Plan;

$q_{пп}; q_{плп}$ are weighting coefficients of the indicators of the Training Program and the Brigade Training Plan.

The procedure for calculating the Training Program indicator by the author was discussed in a previous article (Heorhadze, O., Horbenko, S., Kharabara, V., 2015).

The Brigade Preparation Plan indicator $L_{плп}(t)$ characterizes the activity of training subjects in determining the scope of combat training tasks to be performed by the brigade's structural units according to the Brigade Preparation Plan.

It is proposed to calculate it according to the dependence, which takes into account the volume of training and combat tasks planned for implementation by the brigade's structural units to their total number:

$$L_{плп} = \frac{\sum_{i=1}^{I} \eta \cdot q_i}{\mu}, \quad (3)$$

where η is an indicator characterizing the number of combat training tasks that are planned for implementation by the brigade's structural units;

μ is an indicator, characterizing the total number of training and combat tasks defined by structural units;

q_i is a weighting factor i -structural subdivision in the brigade staff;

I is the number of structural units in the brigade.

Assessment of the level of comprehensive provision of training activities $С_{вз}(t)$ is proposed to be determined by an indicator that takes into account the sufficiency of the training activities of the material and technical base and logistical means.

As the provision of training material and technical base does not depend on the provision of material and technical means, and therefore their indicators are independent of each other, it is proposed to use additive aggregation to assess the level of comprehensive training provision:

$$С_{вз}(t) = К_{нмтб}(t) \cdot q_{нмтб} + К_{мтз}(t) \cdot q_{мтз}, \quad (4)$$

where $К_{нмтб}(t); К_{мтз}(t)$ are indicators that characterize the provision of training activities with training material and technical base and means;

$q_{нмтб}; q_{мтз}$ are weighting coefficients of indicators $К_{нмтб}(t); К_{мтз}(t)$.

The indicator "provision of training activities with training material and technical base" characterizes the capability of training objects (training means) to ensure the training of objects of training to meet training standards (combat training tasks.) The training material and technical base that is used during the training of a separate brigade of territorial defence includes the field $Q_{пол}(t)$, barracks $Q_{пр}(t)$, and company training material and technical base $Q_{р}(t)$, and the base of combat coordination $Q_{бзл}(t)$, which are taken as indicators. It is proposed to calculate the indicator "provision of training activities with an educational material and technical base" according to the dependence

$$К_{нмтб}(t) = \sum_{f=1}^{F} Q_{нмтбf}(t) \cdot q_f, \quad (5)$$

where $Q_{нмтбf}(t)$ are indicators that characterize the capability of training objects (training means) of the field $Q_{пол}(t)$, barracks $Q_{пр}(t)$, and company training material and technical base $Q_{р}(t)$ and the base of combat coordination $Q_{бзл}(t)$ to ensure the training of the objects of training;

q_f are weighting coefficients of indicators $Q_{нмтбf}(t)$.

It is proposed to calculate the values of indicators $Q_{пол}(t)$, $Q_{пр}(t)$, $Q_{р}(t)$, $Q_{бзл}(t)$ according to the dependences that take into account their available number from the total

number determined by the relevant regulatory documents:

$$Q_{\text{пол}}(t) = \frac{\sum_{d=1}^{D_{\text{н}}} \text{Н}_{\text{пол}d}(t) \cdot q_d}{\sum_{d=1}^{D_{\text{з}}} \text{Н}_{\text{пол}d}(t) \cdot q_d}, \quad (6)$$

$$Q_{\text{пр}}(t) = \frac{\sum_{d=1}^{D_{\text{н}}} \text{Н}_{\text{пр}d}(t) \cdot q_d}{\sum_{d=1}^{D_{\text{з}}} \text{Н}_{\text{пр}d}(t) \cdot q_d}, \quad (7)$$

$$Q_{\text{р}}(t) = \frac{\sum_{d=1}^{D_{\text{н}}} \text{Н}_{\text{р}d}(t) \cdot q_d}{\sum_{d=1}^{D_{\text{з}}} \text{Н}_{\text{р}d}(t) \cdot q_d}, \quad (8)$$

$$Q_{\text{бзл}}(t) = \frac{\sum_{d=1}^{D_{\text{н}}} \text{Н}_{\text{бзл}d}(t) \cdot q_d}{\sum_{d=1}^{D_{\text{з}}} \text{Н}_{\text{бзл}d}(t) \cdot q_d}, \quad (9)$$

where $\text{Н}_{\text{пол}d}(t); \text{Н}_{\text{пр}d}(t); \text{Н}_{\text{р}d}(t); \text{Н}_{\text{бзл}d}(t)$ are indicators that characterize the number of the d – training objects (training means) of the field, barracks, company training material and technical base and the base of combat coordination for the time t capable of ensuring the training of the objects of training;

q_d is the weighting coefficient of the importance of the d – training object (training means) of the training material and technical base;

$D_{\text{н}}$ is the number of training objects (training means) of the training material and technical base capable of ensuring the training of the objects of training;

$D_{\text{з}}$ is the total number of training objects (training means) of the training material and technical base determined by the relevant regulatory documents.

The indicator "provision with material and technical means of training measures" $\text{К}_{\text{мтз}}(t)$ characterizes the adequacy of provision with material and technical means of training measures. The calculation of the indicator "provision with material and technical means of training measures" is proposed to be carried out depending on the material and technical means used during training activities with their necessary needs, taking into account the importance of x – type of material and technical means:

$$\text{К}_{\text{мтз}}(t) = \frac{\sum_{\text{x}=1}^{\text{X}_{\text{в}}} Q_{\text{Вх}}(t) \cdot q_{\text{x}}}{\sum_{\text{x}=1}^{\text{X}_{\text{н}}} Q_{\text{Нх}}(t) \cdot q_{\text{x}}}, \quad (10)$$

Where $Q_{\text{Вх}}(t)$ – indicators that characterize the number of x - type of material and technical means, which are used during training activities on time t;

$Q_{\text{Нх}}(t)$ – indicators that characterize the required number of x – type of material and technical means for high-quality training activities on time t;

$\text{X}_{\text{в}}$ – the number of available names of types of material and technical means;

$\text{X}_{\text{н}}$ – the total number of names of types of material and technical means;

q_{x} – weighting coefficients of x – type of material and technical means.

Assessment of the management level of training by training subjects $\text{С}_{\text{к}}(t)$ is proposed to determine an indicator that takes into account their activities to perform the main tasks of training management in a separate brigade of territorial defence. It is proposed to calculate it depending on:

$$\text{С}_{\text{к}}(t) = \sum_{g=1}^{G} Z_g(t) \cdot q_g, \quad (11)$$

Where $Z_g(t)$ – indicators that characterize the tasks of training entities to manage training on time t: "generalization of best practices in training and its implementation" $Z_{\text{у}}(t)$; "availability and participation in instructor training activities" $Z_{\text{і}}(t)$; "objectivity of assessment of training objects" $Z_{\text{о}}(t)$;

q_g – weighting coefficients of indicators $Z_g(t)$.

Appropriate rating scales have been developed to assess the values of these indicators. The values of all indicators are reduced to a dimensionless quantity.

Conclusions

Thus, in the article the authors developed a method of assessing the level of training of a separate brigade of territorial defence. The method takes into account the influence of the training subjects on the conduct of training by the training objects. The presented method is

based on the choice of a set of indicators characterizing the level of training planning, the level of comprehensive training support and training management level.

Using this method, the subjects of training in the course of its organization have the opportunity to make the necessary calculations, to provide reasonable proposals to the Commander of the Territorial Defence to decide on its organization.

Prospects for further research in this area are to substantiate the recommendations for the organization and conduct of training in a separate territorial defence brigade.

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