

The determination of efficiency of a special obstacle course for training of cadets and rescuers of Public Service of Ukraine on emergency situations

Baybak A..¹
Baybak I..¹
Buhors'kyi V..²
Pyatisotskaya S..²

¹National University of Civil Protection of Ukraine, Kharkiv, Ukraine
²Kharkov State Academy of Physical Culture, Kharkov, Ukraine

Purpose: to determine directions of the improvement of the educational and training process of cadets and retraining of rescuers of Public Service of Ukraine on emergency situations (PSES) for carrying out the search-rescue works in highlands.

Material & Methods: the contingent – cadets (25), rescuers (25) and officers (25) of Public Services of Ukraine on emergency situations took part in the research. The following methods are used for the solution of objectives: the theoretical analysis and generalization of scientific and methodical literature, pedagogical methods of research (poll and questioning).

Results: the main requirements to a special obstacle course were defined on the basis of studying and analysis of biographical particulars with the purpose of the improvement of rescuers of PSES for carrying out the search-rescue works (SRW) during the emergency situations (ES) of a natural character.

Conclusions: the need of modeling of weather conditions on a special obstacle course is defined for the purpose of the improvement of the level of preparedness of staff of the search-rescue groups in highlands.

Keywords: special obstacle course, wrecking, educational-training plan, modeling.

Introduction

There are several climatic zones (regions) with natural disasters, characteristic of them in the territory of Ukraine [2; 6]. Carrying out wrecking during natural disasters in each separate case demands certain skills and abilities. Efficiency of carrying out wrecking by search and rescue groups is defined by the level of preparedness of fighters of PSES of Ukraine to a performance of work in the mountain district [1; 2; 7; 9].

Training of future rescuers of PSES of Ukraine has to be carried out taking into account a possibility of effective carrying out wrecking by search and rescue groups in various climatic conditions, land relief, at influence of a large number of factors of the environment [1–5; 7–11].

The analysis of total of the natural disasters which occurred in Ukraine for 2011-2013 showed that the meteorological dangerous phenomena prevailed (pic. 1). Also the geological and hydrological dangerous phenomena (DP) were observed. Besides, the growth of the emergency was noted, which is connected with fires in natural ecosystems – in 3,75 times [2].

The data set of the facts makes increased requirements not only to special preparedness of cadets and employees of PSES of Ukraine [2; 7], but also to the level of the most educational-training process, in particular to a special obstacle course. The correction of the educational-training process is necessary, including imitation of the natural dangerous phenomena on a special obstacle course for the purpose of formation of necessary skills at cadets and rescuers of PSES, their adaptation to conditions of the future professional activity.

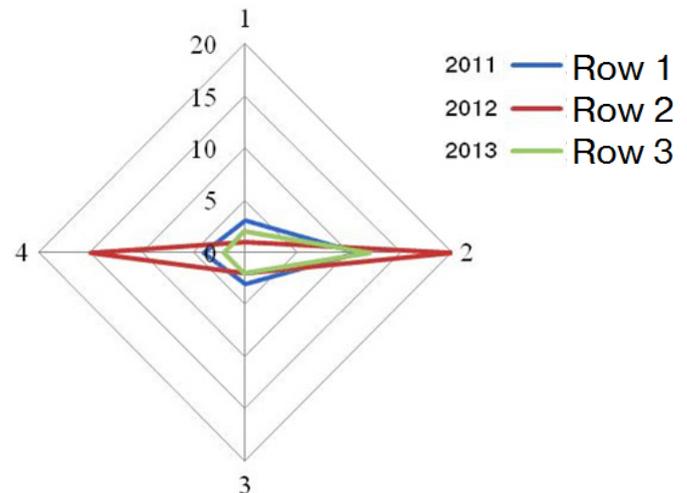


Fig. 1. The emergencies of natural character which happened on the territory of Ukraine for 2011-2013: 1 – Emergency of geological character; 2 – Emergency of meteorological character; 3 – Emergency of hydrological character; 4 – The emergencies connected with fires in natural ecosystems

However the special obstacle course is intended for working off of skills and improvement of technology of fire extinguishing. The experiment made earlier with use of the modules, imitating weather conditions, proved need of correction of the educational-training process of cadets of PSES [9].

Thus, the search of ways of improvement of the educational-training process of cadets and students of PSES is relevant.

The purpose of the research

To define the directions of improvement of the educational-training process of cadets and retraining of rescuers of PSES of Ukraine for carrying out wrecking in the mountain district.

Research problems:

1. To develop the questionnaire for studying of a problem of the organization and carrying out wrecking at an emergency of natural character in the mountain district.
2. To carry out the analysis of methods and means of training of cadets and rescuers of PSE of Ukraine for actions at an emergency of natural character.
3. To define possibilities of use of special modules in the adapted obstacle course during training of cadets and retraining of rescuers of PSES.

Material & Methods

Cadets (n=25), rescuers (n=25) and officers (n=25) of Public service of Ukraine on emergency situations have taken part in research. For the solution of objectives the following methods are used: theoretical analysis and generalization of scientific and methodical literature, pedagogical methods of research (poll and questioning).

Results and discussion

The questionnaire was developed by means of which questioning of cadets and students of PSES of Ukraine is carried out, and also specialists in carrying out wrecking for the solution of the first task [1; 6; 7].

The questionnaire included 10 questions allowing revealing opinion of respondents on compliance of a special obstacle course on training of rescuers for carrying out search and rescue works in the mountain district. Besides, questions of efficiency of introduction in educational and training process modeling of conditions of carrying out a wrecking in the mountain district were formulated course in the questionnaire during an emergency of natural character by means of a special obstacle.

The questioning allowed to reveal features of the educational-training process of cadets and rescuers of PSES of Ukraine, and also to define the existing problems in the organization of the educational-training process at training of specialists for carrying out wrecking in the mountain district. Questions of the questionnaire were differentiated on an age, a rank and a post of a respondent.

It is revealed that cadets of older years keep the watch in the operating parts of PSES [6]. However the experience of carrying out wrecking by cadets in the mountain district is minimum or it is absent. It is also necessary to note insufficiently effective carrying out the professional development of the acting rescuers for carrying out rescue efforts during an emergency of natural character in the conditions of the mountain district.

So, less than 5% of respondents answered affirmatively a question of experience of carrying out wrecking in the mountain district during an emergency of natural character. According to most of respondents, there are no modules imitating weather conditions on the existing obstacle course.

Tendency is so that more senior experts on age consider a special obstacle course [6] non-compliant to the requirements on preparation and improvement of abilities of rescuers for carrying out a wrecking in the mountain district. Dependence between age of respondents and quantity of affirmative answers a question of need of inclusion of elements of imitation of weather conditions for a special obstacle course (pic. 2) is defined.

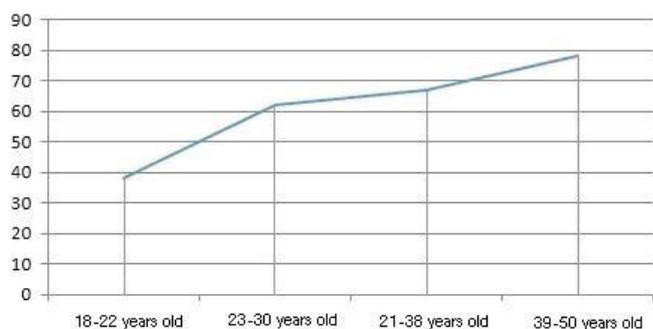


Fig. 2. Results of questioning of cadets and experts of PSES – a question of need of imitation of a wrecking for the mountain district

Depending on a post and a rank, the opinion of respondents on need of imitation of wrecking in the mountain district also differed during the educational-training process (tab. 1).

As the experience of actions in the mountain district was available for the small number of the interrogated rescuers (6%), it is difficult to give the answer about expediency of imitation of weather conditions during training 21% from the interrogated rescuers. Thanks to the gained knowledge, only 14% from the interrogated officers were experienced difficulties with the answer. However most of rescuers and officers, 67% and 78% respectively, consider necessary application of imitation of weather conditions on a special obstacle course.

Table 1

Results of the questioning about need of imitation of various weather conditions, %

Respondents	Answers a question of need of imitation of various weather conditions during training		
	It is necessary	There is no need	It is difficult to answer
Rescuers of PSES (ordinary and non-commissioned officer's structure)	67	12	21
Officers of PSES	78	8	14

Thus, the conducted research allowed to reveal the existing problems and to define ways of improvement of the educational-training program of training of cadets, students and rescuers of PSES of Ukraine for carrying out wrecking in the mountain district.

Conclusions

1. The analysis of the obtained biographical particulars and the tendency to increase in an emergency of natural character allowed defining relevance of the problem of improvement of the educational-training process of training of rescuers for carrying out wrecking in the mountain district.

2. It is revealed that the existing obstacle course doesn't correspond to conditions of carrying out wrecking during an emergency of natural character.

3. The number of the experts increases, who are considering necessary introduction of elements of imitation of an emergency of natural character on the adapted obstacle course with the increase in age of respondents, and also experience of carrying out PSES in the mountain district.

4. As a result of the questioning it is established that use of special modules of an obstacle course imitating various factors influencing rescuers during wrecking in the mountain district, is perspective.

The prospect of further researches

Is connected with optimization and improvement of the educational-training process of cadets and rescuers of PSES of Ukraine for carrying out wrecking in means of a special obstacle course.

Conflict of interests. The authors declare that there is no conflict of interests.

Financing sources. This article didn't get the financial support from the state, public or commercial organizations.

References

1. *Deystviya pri stikhiynnykh bedstviyakh gidrologicheskogo kharaktera*, Sayt GKOU «UMTs po GO i ChS Kurganskoy oblasti» [Responding to natural disasters hydrological]. Available at: http://umckurgan.ucoz.ru/index/deystviya_pri_stikhiynnykh_bedstviyakh_gidrologicheskogo_kharaktera/0-193 (date of the application 15.02.2014). (in Russ.)
2. Ashanin, V. S., Baybak, A. Yu., Baybak, I. V. & Bugorskiy, V. A. 2014, [Correction of the training process of students of the State Service of Ukraine of Emergencies allowing for the natural disasters all over Ukraine] *Slobozhanskii naukovno-sportyvnyi visnyk* [Slobozhanskyi science and sport bulletin]. Kharkiv: KSAPC, Vol. 40 No 2, pp. 15–23, doi: 10.15391/sns.v.2014-2.003. (in Russ.)
3. Kropf, F. 1975, *Spasatelnyye raboty v gorakh* [Rescue operations in mountains]. Moscow: Profizdat, 220 p. (in Russ.)
4. Kursakov, A. & Koshelev, N. 2001, *Alpiniskiye tekhnologii v PSR* [Climbing technology to the FIU]. Moscow: ENAS, 80 p. (in Russ.)
5. *O pogode i meteorologii* [The weather and meteorology]. Available at: <http://meteoweb.ru>. (in Russ.)
6. *Ofitsiyniy informatsiyniy portal DSNS Ukraini* [Official information portal DSNS Ukraine]. Available at: <http://www.mns.gov.ua>. (in Ukr.)
7. *Stikhiynnyye bedstviya meteorologicheskogo kharaktera* [Natural disasters of meteorological origin], 2011. Available at: <http://rudocs.exdat.com/docs/index-366176.html>. (in Russ.)
8. Turkevich, M. M. & Vorobyev, Yu. L. *Poiskovo-spasatelnyye raboty v gorakh* [Search and rescue operations in the mountains]. Krasnodar: MChS Rossii, 2000, 416 p. (in Russ.)
9. Ashanin, V. S., Baybak, A. Yu., Baybak, I. V. & Shishkina, M. V. 2013, [Improvement of training students civil service of Ukraine of emergencies for rescue operations during floods in mountainous regions] *Slobozhanskii naukovno-sportyvnyi visnyk* [Slobozhanskyi science and sport bulletin]. Kharkiv: KSAPC, Vol. 37 No 4, pp. 7–10. (in Russ.)
10. Khromov, S. P. & Petrosyants, M. A. 2001, *Meteorologiya i klimatologiya* [Meteorology and climatology]. Moscow: Izdatel'stvo Moskovskogo gosudarstvennogo universiteta, 528 p. (in Russ.)
11. Shoygu, S. K., Faleyev, M. I., Kirillov, G. N. & Vorobyev, Yu. L. 2002, *Uchebnik spasatelya* [Textbook rescuer]. Krasnodar : Sov. Kuban, 528 p. (in Russ.)

Received: 15.01.2016.

Published: 28.02.2016.

Olexandr Baybak: National University of Civil Protection of Ukraine: Chernishevs'ka, 94, Kharkov, 61023, Ukraine.

ORCID.ORG/0000-0002-0717-3786

E-mail: leus72@mail.ru

Irina Baybak: National University of Civil Protection of Ukraine: Chernishevs'ka, 94, Kharkov, 61023, Ukraine.

ORCID.ORG/0000-0002-0477-7875

E-mail: leus72@mail.ru

Vladislav Buhors'kyi: Kharkiv State Academy of Physical Culture: Klochkivska str. 99, Kharkiv, 61058, Ukraine.

ORCID.ORG/0000-0003-0615-4767

E-mail: ratnick.v@yandex.ua

Svetlana Pyatisotskaya: *PhD (physical education and sport), Associate Professor; Kharkiv State Academy of Physical Culture: Klochkivska str. 99, Kharkiv, 61058, Ukraine.*

ORCID.ORG/0000-0002-2246-1444

E-mail: skharchenko@rambler.ru