Evaluation of the **E-tutor for humanitarian demining tasks managing staff**

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Abstract

E-tutor is an e-learning tool for humanitarian demining tasks managing staff. This tool is designed for checking the knowledge and try to solve tasks from area of site preparation. The tool is builded in two parts, one for Instructor and another one for trained. Trained person after 100% correct answered the test can try to solve exercise on map which is prepared by Instructor in his part of the tool. Tool for trained is divided in two parts: checking the knowledge from area of humanitarian demining procedures, knowledge from area of task site preparation and second part which is work on the map. Exercise on the map is designed as graphical tool for dislocation of necessary facilities. Training assessment is performed by comparison of the prepared proposal with the reference values of necessary distances between facilities.

Introduction

Most important part of humanitarian demining task commanders is knowledge about Standard Operation Procedures which are part of every HD handbook. Another very important skill without which commander can not proceed is planning of task site preparation [1],[2]. E-learning will be use for improve this skills, this paper describe a tool designed in Institute of Mathematical Machines for this purpose. Tool consists of two part: checking the knowledge from area of humanitarian demining procedures and knowledge from area of task site preparation and second part which is work on the map.

First Part – Test

In the test correct answers for all questions have to be given to pass the exam. Without passing the test proceeding work on the map is unavailable.

Graphical layout of the test is presented in figure 1.

![Figure 1 test graphical layout](image-url)

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Examples of used questions from the area of safety and demining procedures:

(only answers "a" are correct)

The wide of demining line during manual demining is:
- a - 1,2 m including two overlaps on each side of 0,1 m
- b - 0,7 m
- c - from 1 to 2 m depends on used demining method.

The overlap outside the demining line must be:
- a - 10 cm on each sides
- b - at least 10 cm on the right side
- c - at least 0,2 m on the left side.

Efficiency of deminers using manual mine detection is:
- a - 50 m²/day
- b - 500 m²/day
- c - 150 m²/day.

If demining operations can be conducted when it is raining?
- a - no
- b - yes, if the rain intensity is low
- c - it does not matter.

If demining operations can be conducted in low-light conditions, at the dusk?
- a - no
- b - yes, but appropriate lighting equipment must be ensured
- c - it does not matter.

Is it allowed to conduct the demining process at low air temperature?
- a - no, if temperature drops below 0º
- b - yes, it has no influence
- c - yes, but work efficiency decreases

How should deminer proceed after detection an unknown mine?
- a - to call on EOD Operator by Section Leader
- b - to try defuse the mine
- c - to leave the mine on site of detection and to continue demining

Whether have the protection suites to be certified?
- a - yes, must be capable of withstanding the blast effects of 240g TNT detonated at 30cm from the nearest part of the armour and shards within the velocity of 450 m/s
- b - it is sufficient manufacturer's declaration of suitability for this type of work
- c - it is not required

Minimum working distance between demining staff for the AP blast mines and HE containing more than 200g of explosives is:
- a - 15 m in conditions of normal risk and 20 m in increased
- b - 25 m
- c - 60 m

Minimum working distance between demining staff for the AP fragmentation mines is:
- a - 20 m in conditions of normal risk and 25 m in increased
- b - 30 m
- c - 60 m

Which distance to the base-line may rest-areas be placed if not all deminers rest at the same time?
- a - safety distance - defined on the basis of recognized hazards
- b - triple working distance
- c - 100 m

If deminers can take off PPE in rest areas?
- a - yes, because CP should be far enough from the working areas
- b - yes, during the break
- c - no, he should wear PPE

Knowledge test from the area of task site preparation:

The purpose of this test is to confirm the acquired knowledge which is necessary to appropriate planning of the demining task and preparation of the technical-administrative facilities supporting demining process.

Confirmation of the knowledge from this area is essential to begin next education level - planning of the demining. First level should enable learning - to acquire all essential information. The question and at least three answers (a, b, c) should be shown but correct answer (highlighted) is in random place. Acceptance of the highlighted answer is requisite in order to go the next question. The questions are not in thematically related blocks. Trainees can repeat test unlimited times.

Final verification of acquired knowledge will be conducted within qualifying examination. The questions
from whole thematic range are shown randomly and the time for answer limited to 30 s. Correct answers for all questions have to be given to pass the exam.

**Examples of used questions from the area of task site preparation:**

(only answers "a" are correct)

**How wide must Access-lanes be?**
- a - at least 2 m
- b - at least 5 m
- c - at least 1 m

**Where should Paramedic Post be positioned?**
- a - not be further than five minutes walk away from any working deminer by the Access line in safety distance from Working area
- b - in Administration area
- c - by the main access road

**What should be provided in Rest area?**
- a - plenty of drinking water, latrine (if Administration area is far), simple seating and, when possible, racks to hold PPE and tools above the ground
- b - TV, refrigerator, soft drinks and food preparation space
- c - there are no special requirements defined

**Which basic facilities should include Administration area?**
- a - a shelter with a table, means of communication and a display board with a Task map
- b - social and office container equipped with fax and computer
- c - basic office facilities and food preparation space

**In which way should Access-lines be established?**
- a - should be straight whenever possible and use existing communication structures
- b - parallel and perpendicular to the Start-line
- c - existing roads should be avoided

**It is necessary to conduct the demining of set out Access-lines**
- a - always if there are reasonable doubts
- b - no
- c - yes if there are in Platoon some not involved forces and means . [3]

**Second Part – Exercise on map**

The purpose of the practice test is to prepare the proposal of dislocation all necessary facilities in Task site and Access-lines, Start-line, areas of responsibility (Worksites) for each Sections. Theoretical knowledge of from the area of task site preparation should be applied. Training assessment will be performed by comparison of the prepared proposal with the reference values. The exercise tasks are prepared by instructor using specially developed tool named “Builder”. Instructor prepare map with demining Task using OpenStreetMaps for choose place for exercise. After define DHA instructor can sketch some additional roads, obstacles or informations. Prepared task must have defined some additional information like “Safe distance” for this type of DHA, all of this necessary informations have to be given by instructor. Trainees using application named “Checker” can try to dislocate all necessary facilities in Task site. Trainees can look at the mission help which contains all important informations about task.
Conclusion

Presented tool can be successfully use for improve knowledge and skills trainees for humanitarian demining tasks commander. Trainees will have ability to try solve problems from area of task site preparation using electronic map in convenient way. Instructors can prepare tasks which will be most useful from their point of view.

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Bibliography

