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INEXPENSIVE DRILL-CONTAINER FOR FIREFIGHTERS

Absztrakt / Abstract

A tűzoltók gyakorlati képzése elsődlegesen fontos terület minden tűzoltóságnál, jogviszonytól (hivatásos, önkéntes, létesítményi) és országtól függetlenül. A gyakorlati képzéshez az éles, tűz közeli lehetőségek biztosítják a legjobb alapot. A már kiépített gyakorlati pályák használata viszonylag magas költséggel oldható meg, ehhez járul a viszonylag kötöttebb szimulációs lehetőség. A cikkben egy, már több országban kipróbált, egyszerű, olcsó, de hatékony gyakorlati kiképzési forma ismerhető meg, házilag építhető szimulációs konténer formájában. Az akár minden tűzoltóság területén kis költségből felépíthető építmény újszerű kiképzési lehetőségeket is kipróbálni enged.

The practical training of firefighters is of primary importance at all fire departments of all employment types (career, volunteer and on-site) in any country. The best basis for practical training is given by opportunities to be in near-fire situations. Use the practice facilities, which have already been built up can only, at a relatively high cost combined with the limited possibilities for simulation. The article describes a simple, cost-effective, yet efficient practical training method that has already been tested in several countries and can be home-built in the form of a container simulator. This facility, which can be built even on the area of all fire department at a low cost, allows the testing of novel practical possibilities.

Kulcsszavak/Keywords: *tűzoltó, gyakorlat, szimulációs konténer ~ fire fighter, drilling, container simulator*

No firefighter organization of any country is overfunded. Of course, there are differences in this regard, yet, resources are never unlimited. Finances greatly influence many fields of the profession including training possibilities; however, a firefighter is essentially ingenious and tries to make the most of less. I will describe below a low cost solution for examining closed area-fires as well as practicing methods of intervention.

There are large-scale, high-standard, high-quality training centers with different training tracks in many countries. The different intervention methods – from technical rescue, fire extinguishing to high altitude rescue - can be taught on these training tracks. Certainly, this is the most expensive and most effective way of training; on the other hand, this is not available all the time on an unlimited basis to the entire firefighter troop of the given country. Therefore, we are faced with a demand.



Pictures 1-2. Container simulators of Hungarian Disaster Recovery Learning Center - outer superstructure and inner area during operation, (Source: www.langlovagok.hu, 2009.)

Today, mobile container fire-simulators have become available (such as Fire Dragon), which are excellent tools for examining closed area fires and methods of intervention. Their use, compared to fixed facilities, are a lot more versatile, have unlimited mobility, and their operation is more efficient, cost-effective.





Pictures 3-6. Container fire-simulators from different manufacturers at Interschutz 2010
(Own pictures)

The systems of exercises ensure the skills-maintenance of the emergency standby troop. There can be no question about their necessity for those who work in the field and as I talk to people in professional circles and read the professional literature, I see that there is a demand for such exercises on the part of those concerned.

All commanders hold the practice of fire extinguishing - and to have fire extinguishing practiced - of primary importance. Similarly significant is the examination of induced fire events and those occurring in real-life. I do not deny that the training possibilities on mobile container simulators or built premises facilitate conducting the largest-scale exercises; however, they take larger organizing efforts to and require greater input of funds.

Here is an alternative:

Home-built training course



Picture 7. “Fire-cell” built for examining closed area fire
(Source: Fire Department, Pécs, Hungary, 2009.)

Those who need to make due with less (especially the carrier and volunteer fire departments of modestly funded local governments) may find the buildable drill-house advantageous which can be built in the yard of any barracks in a few days and can be optionally designed. Fire events can be created and examined within or outside of it repeatedly. Intervention drills can be held applying different methods even for the entire troop any day of the year. Cooperation exercises can be organized with partner law enforcement organizations according to needs in a constructed environment. This does not necessitate major funding.

A great advantage of “home constructed” drill-courses is that the standby personnel will not miss out on the different events either, because even if the building is not put up in the barracks yard, most probably it can be constructed in the vicinity of the fire station.

Members of the Pécs Fire Department personnel in Hungary made great use of the “home built drilling course” in question. A light structure, couple of square meter drilling house has been built and tested there on several occasions. This article was inspired by this simple training possibility (special thanks to lieutenant-colonel Péter Handbauer). Materials recommended for use and other ideas were taken from here. Before someone should embark on the building attention must be paid to environmental concerns during construction and use. However, it may be unnecessary to call the reader’s attention to the importance of environmental considerations in the year of 2011.

Similar solutions are used for drilling purposes by the firemen of the United States of America and drawing on their experience, in a significantly more cost effective fashion, for about 200-300 Euros – not counting living labor – the construction of a smaller, one or two room hut can be implemented. It is easy to build a street section in the environment of the drilling-house using car-wrecks from the salvage yard, fire hydrants and other accessories which do not significantly increase costs, although, largely expand utilization possibilities.

The so called “flashover” phenomena, that is, the almost simultaneous ignition of objects found nearby with very rapid flame-spreading can be simulated at the constructed house.^[2] It is also possible to examine the “rollover” that is, the phenomena occurring before flashover with arching flames.



Pictures 8-9. Light-structure fire drilling facility with initial fire and forming of “fire-blanket” at the Berettyóújfalu Fire Department, Own picture

When creating the fire event using distant reading thermometer and/or heat camera the various stages of fire development can be examined, the different behavior of the pieces of furniture in fire. For those working in the fire-prevention field many possibilities open for conducting different experiments and fire examination methods.

As part of an open day, representatives of fire departments (carrier, volunteer, on-site), partner organizations, institutions involved, students from schools - for recruitment purposes people wanting to join the department - the media and of course the residents living in the nearby area can be invited to practice, analyze and examine events taking place within or in the vicinity of the drilling house. Fire department propaganda can be a very useful tool.

Here are a couple pieces of useful advice from experience for those who are planning on building:

- Prior inquiries about environmental permissions
- Thoroughly treated and protected wood frame can last longer than metal ones.
- During furnishing it is important to keep in mind that the exercise/demonstration should be smooth and realistic. Attention must be paid to positioning and materials of the furniture.
- The facility can easily be built of OSB boards, sheetrock, although, if the facility is intended for repeated use, the protection of heat-exposed areas and screw heads should be taken into consideration.
- Deficient, second class, salvaged materials will suffice in unimportant parts for construction.
- The recommended place for fire ignition is one of the corners, where it is advisable to hide further ignition materials for the sure success of the demonstration.
- The face opening is more than sufficient in case of construction based on the provided data. Cutting further apertures in this kind of implementation is not practical.
- A more spectacular effect can be achieved using wall to wall carpets.
- It is recommended to fill with water the plastic bottles used as furnishing articles.
- Placing pictures and tapestry on the wall also increase the effect.
- In case of a fire examination exercise very visible marks may be left if the facility is realistically furnished.
- For smoke creation use of foam sponge and synthetic materials is justified.
- There can be a great loss of heat if simple sheet walls are used which can adversely affect the exercises, experiments.
- It is strongly recommended to hold a rehearsal before major demonstrations.

SUMMARY

Creating the conditions for closed area “near fire” training of fire department personnel entail very high costs. I recommend the construction of low-cost low-labor drilling house described in this article for all fire departments (whether career or volunteer) which have an appropriate place for this and can implement the construction of the drilling house to a greater or smaller extent, with possible add-ons. This is highly recommended for fire departments located relatively far from the available drilling courses. If all fire departments had similarly implemented facilities local conditions special to the area could be tested, tried at any given time of the year or day without separate outside organizing.

LITERATURE

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