

## RESCUING AN UNCONSCIOUS VICTIM

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### ABSTRACT

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In contrast with common belief, in the case of damage events associated with fire a significant portion of victims die not as a result of burn injuries but suffocation. In modern architecture, including hotels, synthetic materials are broadly applied that produce toxic substances when they burn. In addition to toxic substances, the risk of suffocation is also increased by the depletion of oxygen as the fire spreads. Thus, for the successful rescue of the people whose lives are directly or indirectly endangered, their fast evacuation from the scene is of fundamental significance, even by causing material damage.

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### 1. HUNGARIAN REGULATIONS

In Hungary, according to Interior Ministry Decree No. 39/2011 (XI.15) all those people shall be considered being in direct life danger who are in a situation, condition or under circumstances which are capable of terminating or seriously damaging human life functions, and who are unable to escape on their own. All those people shall be considered being in direct life danger who are capable of escaping the life danger on their

own, furthermore all those who may come in life danger without assistance. In the process of lifesaving such method shall be used which poses the least risk to the person whose life is in danger and the person performing the lifesaving<sup>1</sup>. For rescue and evacuation always the safest, most favorable route shall be used. In the absence of such, based on the decision of the firefighting manager, the mechanical equipment of the fire department and other organizations, manual ladders, cable technology and other rescue devices may be used<sup>2</sup>. The safety of rescue routes shall be ensured for the entire duration of the rescue<sup>3</sup>. The fast execution of intervention and rescue largely depends on such facts as the location of the building, the number of floors, the number of guests, their physical condition, the spread of fire and smoke, the rescuers' knowledge of the location<sup>4</sup>.

The decree also mandates that the rescue shall be performed by at least two people. In the case of a hotel fire, when mass rescue must be anticipated, it is extraordinarily significant that the intervening forces must be on the scene in sufficient numbers. But what happens if this is not feasible, meaning that the rescue must be performed by a single fireman? We show a few examples for this.

### 1.1. RESCUE BY THE RAUTEK MANEUVER

During dragging performed by the Rautek maneuver, the fireman grabs the victim by the wrist and the stem of the elbow-bend by reaching under his arm. In the course of rescue performed in this manner, the rescuer – in contrast with most dragging methods – performs the rescue standing straight up, as a result of this he carries most of the victim's weight, which is difficult to do in a space filled with smoke.

## 2. DRAGGING HEAD FORWARD

In this case the fireman drags the victim out of the danger zone by grabbing him by the arms. It can also be performed by grabbing the victim's

<sup>1</sup> 1996. évi XXXI. törvény a tűz elleni védekezésről, a műszaki mentésről és a tűzoltóságról.

<sup>2</sup> 6/2016. (VI. 24.) BM OKF utasítás a Tűzoltás-taktikai Szabályzat és a Műszaki Mentési Szabályzat kiadásáról.

<sup>3</sup> Á. Restás, *A tűzoltásvezetők döntései – elméleti szempontból*, Védelem – Katasztrófa – Tűz – És Polgári Védelmi Szemle 2013, 20:(3) p. 5–10.

<sup>4</sup> L. Komjáthy, *Középmagas és magas épületek tűzvédelmi sajátosságai*, 2011/12, Műszaki Katonai Közlöny (pdf) XXI. évfolyam, különszám 68 pp.

clothing or his wrists. If there is no clothing on the victim's arms or we cannot perform the rescue by grabbing his wrists because of body conditions, the following method can be used. The fireman bends the victim's arms and lays them on each other. He performs the dragging by embracing the victim's two forearms with his own hands from the top and the bottom. If necessary he can increase the force of his grip by pressing them to his chest. In contrast with the Rautek maneuver, here the rescuer carries less weight, since most of the body lies on the floor.

### **2.1. DRAGGING LEGS FORWARD**

If the arrangement of the space makes dragging the victim out head forward unfeasible, for example from a tight room with small floor space, from among furniture, then for the sake of the fastest possible rescue the victim must be dragged out in the position we found him. During dragging legs forward we perform the rescue by grabbing the victim's pants or his ankles. If there is no clothing on the victim's legs or we cannot perform the rescue by grabbing his ankles because of body conditions, the following method can be used. We take the victim's legs in our elbow bends and press them to our body. To increase the force of our grip, we lock our own hands together, if that is possible.

## **3. DRAGGING WITH A HARNESS**

We can increase the efficiency of dragging by using a ready harness or an improvised harness. These dragging methods must be preferred to instrument-free rescue methods. By the application of the harness we can increase the stability of grip, and it makes ergonomically more favorable rescue possible.

### **3.1. DRAGGING WITH A HARNESS HEAD FORWARD**

During dragging with a harness head forward we use a c.a. 250 cm long ring harness. We pull the ring harness on the victim's hands and we throw the lower stem of the harness over the upper stem of the harness in the direction of the victim's head. The loop formed in this manner tightens around the victim's wrists and grabbing by the harness the victim can be dragged in a stable way.

### 3.2. DRAGGING WITH A HARNESS LEGS FORWARD

If the arrangement of the space makes dragging the victim out head forward unfeasible, for example from tight hotel rooms with small floor space, from among furniture, then for the sake of the fastest possible rescue the victim must be dragged out in the position we found him. During dragging with a harness legs forward we use a c.a. 250 cm long ring harness. We pull the ring harness on the victim's legs and we throw the lower stem of the harness over the upper stem of the harness in the direction of the victim's body. The loop formed in this manner tightens around the victim's ankles and grabbing by the harness the victim can be dragged in a stable way.

### 3.3. DRAGGING WITH AN IMPROVISED HARNESS

If the victim's position makes it feasible, we must prefer dragging by the shoulders. In this case we lay a c.a. 250 cm long ring harness on the victim's chest after slipping it through both arms (figure 1).

FIG. 1. DRAGGING WITH AN IMPROVISED HARNESS



We throw the lower stem of the harness behind the back of the neck and grabbing the other stem of the harness we drag the victim to safety figure (2,3).

FIG. 2,3. DRAGGING WITH AN IMPROVISED BODY-HARNESS





### 3.4. DRAGGING WITH AN IMPROVISED BODY-HARNESS

During dragging with an improvised body-harness we use a c.a. 700 cm long ring harness. The ring harness is folded up in the left thigh pocket of the deployment pant, so its portions can be used easily. As the first step we loosely place the victim's head into the ring harness. We start walking around the victim progressing to the right. Lifting the victim's left leg we continue to lay the harness between his legs. When we reach chest height on the victim's left side we take the ring harness off his head and loop it under his back. We drag him to safety grabbing the thus formed handles on his chest.

### 4. SUMMARY

For the sake of effective intervention and lifesaving in hotels and spaces suitable to accommodate crowds, it would be necessary to conduct as many lifelike exercises as possible, concurrently with the inspection of escape routes, such as staircases and corridors. While the physical condition required to endure extreme bodily stress could be improved by running up the stairs at the time of the exercises<sup>5</sup>. Because, for lifesaving theory is not enough, it also requires lots and lots of exercises, as you can also see on the illustrations.

<sup>5</sup> Firefighter Advanced Survival Techniques (FAST) course Coral Springs Fire Academy Coral Springs FL, USA, (2015).

REFERENCES

1. 1996. évi XXXI. törvény a tűz elleni védekezésről, a műszaki mentésről és a tűzoltóságról
2. 6/2016. (VI. 24.) BM OKF utasítás a Tűzoltás-taktikai Szabályzat és a Műszaki Mentési Szabályzat kiadásáról
3. Restás Á., *A tűzoltásvezetők döntései – elméleti szempontból*, Védelem – Katasztrófa – Tűz – És Polgári Védelmi Szemle 2013, 20:(3).
4. Komjáthy L., *Középmagas és magas épületek tűzvédelmi sajátosságai*, 2011/12, Műszaki Katonai Közlöny (pdf) XXI. évfolyam, különszám 68 pp.
5. Firefighter Advanced Survival Techniques (FAST) course Coral Springs Fire Academy Coral Springs FL, USA, (2015)

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