

A lecture on the CD ROM "Operational leader are you ready....".

Lars Høg Schou, Section Commander.
Danish Emergency Management Agency
DK-3460 Birkerød, Denmark
Tel.: +45 45 82 54 00,
Fax: +45 45 82 65 65

In the future, personnel in the rescue preparedness trained as team leaders, fire or operational leaders will, if they possess an up-to-date computer with a CD ROM drive, be given the possibility to maintain their competence by means of a computerbased interactive training programme. The programme trains the operational leaders in the following functions: evaluation, decision making and ordering.

The programme has been developed in cooperation between the Emergency Management Agency and 12 selected students from the University of Copenhagen and the Copenhagen School of Economics and Business Administration, both situated in Copenhagen.

Till now, this CD ROM contains only two different situations which an operational leader could face in his daily work. Later, he can select other situations, but they have not been determined at the moment, it could for example be a fire at a farm, in a plant or a train and so on. The whole idea is to give the operational leader a choice in each situation, having several opportunities. His choice might be right or wrong which he will be told, but it would be far easier that using a training board and it will require far less time.

The programme could be used, not only by the team leaders, but also by the operational leader at a turn-out station if a computer is available.

The future possibilities are endless. Imagine, for example, that the programme is used at the Internet. This means that everybody has a possibility to act as operational leader and to maintain his competence as operational leader at any place and time.

The Emergency Management Agency had the following definition of the target group: a person, who has accomplished and passed a team leader training in the rescue preparedness. Typically, the target group will consist of men in the age group from 30 and up and of users who have never before used a PC. Consequently, both design and system should be easily "available" and reflect a high degree of "real life situation".

To ease the translation of the programme to other languages no text has been used on the buttons or the icons, only symbols. Where text occurs it will be input from the CD ROM at places where it is present as (Windows) ASCII text. No changes should be made in the Tool-book file to create an edition in a foreign language, only in the affiliated data files.

It is important in a training system that the user is given a proper feed-back on his actions and/or answers. The user should also be able to give an evaluation of the situation. One possibility could be

to make a field for the user to fill out. However, this would cause impossible difficulties both for the interpretation of the answers and the feedback. Consequently, it was decided to give the user a number of possible answers. In this way 90% of all errors has been eliminated (typically caused by misspelling or words not known by the system). We know what the user's answer should be and are able to evaluate it.

The structure of the preparedness system:

In case of an alarm via 1-1-2 the operational leader and the turn-out station (fire station) are contacted at the same time; the crew has five minutes from the bell sounds to leave the turn-out station; the operational leader should be ready in only one minute wherever he might be. The operational leader is thus given a possibility for getting an overview at the site of damage before the crew arrives. Based on this evaluation the operational leader should use the resources in the best possible way and estimate if more resources should be requested from a neighbouring municipality.

Pedagogical bricks:

The programme uses pedagogical bricks "tasks" in relation to the level of learning "control". The tasks in the programme are unknown situations that require unassisted analysis and evaluation. In the simulation part "Learning through Exploration" or "Trainee Initiated Interaction" was chosen as programme architecture. The user is the basis for any interaction between the system and the user.

Another procedure was chosen for Decide, Order and Evaluation, namely "System-Initiated Interaction", where the user must interact from points on the screen.

Means:

The following means were chosen: text, speech, stills, and video.

One possibility was not to use text at all in the simulation part; as an operational leader you will not be presented for any text, for example when questioning witnesses in real life cases. On the other hand, speech which only is reproduced as sound will raise problems if it is not possible for the user to have the speech repeated. This problem could be solved if the speech is reproduced as text. Another point is that the programme also needs to introduce the user to the many possibilities of interaction, for example an answer to a witness. It is more practical to be able to read the possibilities on the screen than only to have them read. The user shall not spend energy at both listening, understanding and relating himself to the specific possibilities.

The video is only used to give the user information without stressing if the information is of special importance, for example the colour of the smoke. The video also presents a potential solution. But as any situation can be solved in many different ways it is important to stress that the video only presents a potential solution - also to avoid that the user gets a negative experience of the solution.

Description of the situation:

Situation no. 1 - Fire in a dwelling house.

A pyromaniac builds a fire in a heap of old newspapers in a basement store, number Y in X street, situated in a large provincial town. The building was erected in 1910. The building has a completely built-out basement, six occupied floors and unoccupied attics. The access roads in the building are the main staircase to the street and the back staircase to the yard, both made of wood. The back staircase is the only access road to the basement and the attics.

The fire is discovered by a passer-by who calls the alarm central dialling 1-1-2. The officer in charge at the police station calls the rescue preparedness and sends a patrol car and an ambulance to the address.

The rescue preparedness sends as standard an operational leader, a team leader and seven fire fighters. They bring along an operational leader van, a fire engine and a turntable ladder.

Both the team leader and the seven fire fighters are part time employees and are called in the current situation at their home addresses.

The operational leader arrives and starts to evaluate the situation. Then the operational leader decides a first action and gives his order to the team leader. Afterwards, the operational leader receives feedback on the entire operation.

Situation no. 2 - Accidents with hazardous substances

A lorry and an oncoming van collide. At the collision, the driver in the van becomes unconscious, but is not pinned in the van. A fire breaks out in the engine room of the van. The lorry had a cargo of ten 200 litres plastic containers, and one of these containers cracks at the collision. From the leaking container a yellowish liquid seeps out liberating a whitish smoke which appears between the tarpaulin and the hatch side.

The accident is discovered by a passer-by who dials 1-1-2.

The officer in charge at the police station calls the local rescue preparedness; it appears that the rescue preparedness in the nearest large town with a level two preparedness has been called in. The officer in charge sends also a patrol car and an ambulance to the address.

The rescue preparedness sends as standard an operational leader, a team leader and seven fire fighters together with an operational leader van, a fire engine with trailer, a tank lorry, and a hose-tender. Further, level two that has equipment for operation against hazardous substances and environmental accidents has been called in.

The operational leader arrives and starts to evaluate the situation including search for information about the hazardous substance. Then the operational leader decides a first action and gives this order to the team leader. Afterwards, the operational leader receives feedback on the entire operation.

Especially for this situation:

If personnel approach the containers without wearing protective equipment during the operational leader's evaluation of the situation the operation will be stopped. A voice (the News) will announce that some of the rescue personnel are sent to hospital because they have breathed in toxic vapours.

Summing up:

Concerning the production of the programme:

The programme is built up in modules which means:

- that new situations can be added,
- that text and speech respectively can be changed to other languages,
- that new/other pictures sequences can be added. This can be done independently which gives:
 - maximum flexibility and
 - optimum resource utilization.

Concerning the utilization of the programme:

The use of the programme is:

- mobile,
- flexible in relation to time, place and speed of learning, and
- very trainee activating during the learning process.

Finally, it should be stressed that the training policy for the rescue preparedness is that computer based interactive training programmes cannot replace the training with material and "full scale" exercises.