Fire in a block of flats – Svenljunga

Coldcutsystems AB. Based on 2010 MSB report 'Cutting Extinguishing Concept', SERF & SP

There is a fire on the second floor in a block of flats in a 60 meter long two-story apartment building with 12 apartments. The building has three stairwells with no partitioning or fire walls in the attic. When the first unit arrives 5 minutes after the initial alarm flames are coming out of a window on the second floor and are licking the base of the roof.

In spite of the intense heat inside, a BA operation is started in the affected apartment while all other apartments are evacuated. External firefighting towards the roof is also started but the effect of this is limited as the fire has now spread into the attic and is increasing under the length of the roof. A unit with a Cobra™ cutting extinguisher arrives on the scene and is applied via a balcony up into the base of the roof. However the effect of this is limited as the angle of attack is too sharp preventing the waterjet from breaking up in the small space between the roof layers.

A second unit with a Cobra™ cutting extinguisher on a skylift arrives and this Cobra™ is applied at the house gable at furthest away from the fire. It is assisted from the ground by an IR camera operator who is scanning the building giving directions to the Cobra™ handler via an intercom. At this stage the fire has broken through the ceiling above the apartment and heavy black smoke is belching out from the top and base of the roof.

During the intervention with the Cobra™ from the gable there is a rapid change from black to off-white smoke and steam. As the Cobra™ operation continues the steam gradually fills the attic and stream out through the various openings.

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After a while a hole is cut in the middle of the roof to gain access to the attic from the outside but when it is ready it was found that fire in the attic was already extinguished by the Cobra™ operation from the gable.

The total operation last for about an hour. It was concluded that the cutting extinguisher had a crucial role in extinguishing the fire although it was not applied properly through the gable until after 27 minutes into the operation. The waterjet, which breaks up after about five meters, was most efficient when used in a long straight beam right into the attic trying to avoid hitting building parts. That the Cobra™ operation was assisted from the ground with instant information from an IR camera was also part of the success.

The Cobra is here applied from the gable furthest away from the fire.

Experiences:

Conditions were favorable for actively using a cutting extinguisher with good result for fighting this fire in an apartment building in Svenljunga. The fire compartment was limited in terms of ventilation and the temperature in the fire room was initially very high which promoted the formation of steam and water vapor. Inertion with water vapor of the fire gases in the 60 m long building was a decisive factor in extinguishing the fire. It is worth noting that the large volume under the roof of this building was not a restriction but the waterjet had to be applied for a longer time to achieve the intended effect.