

# FIRE

The trusted voice of fire & emergency since 1908

EFE  
Awards  
open for  
entries

April 2017

[www.fire-magazine.com](http://www.fire-magazine.com)



## Primetech and Cold Cut Systems launch lightweight version of COBRA system for MultiPod

### Westminster Attacks

As terror returns to the streets of London, *FIRE* explores what happens next ahead of our Congress on Facing the Evolving Terrorist Threat

### LGA Exclusives

*FIRE* speaks to the new Chair of the National Fire Chiefs Council and provides a critique of the LGA Fire Conference

Primetech and Cold Cut Systems report on unveiling their latest groundbreaking collaboration by introducing the MultiPod COBRA firefighting system for use in the flexible Primetech MultiPod vehicle storage system. The vehicle was launched and on display at the Local Government Association Fire Conference in Newcastle this year

The Primetech MultiPod vehicle is equipped with the MultiPod® COBRA firefighting system on a 300 bar, 30 litres per minute system, allowing for a safe external attack on a building fire

# Primetech and Cold Cut Systems launch lightweight version of COBRA system for MultiPod

**T**his ultra-lightweight version of the popular COBRA system, which still retains the same firefighting capability as the standard COBRA lance-based model, in addition also provides fire and rescue services with a powerful new weapon for suppressing fires. This new innovation has the added advantage of allowing firefighting to be tackled at greater speed as a result of being reduced in size and weight.

The new lighter weight version of the system can be carried on flexible utility vehicles using the Primetech MultiPod storage system. This allows the benefits of the

COBRA system to be used to respond to fires before larger appliances arrive at the scene of incidents in accordance with Pre Determined Attendance protocols. In more rural communities and less accessible areas MultiPod COBRA will be of significant benefit.

Using a mixture of aggregate and water, the COBRA system first allows a firefighter to penetrate through a building wall and then force tiny droplets of water into the fire space, reducing the temperature of fire gases and extinguishing the fire. Not only does the system give firefighters a powerful tool for faster suppression of fires, but by allowing firefighters to remain outside the building it also enhances firefighter safety.

The effectiveness of the system has been demonstrated in numerous independent studies (see following article).

Henry Walker, Director of Primetech, said: "Speed of response is vital in emergency situations. Getting professional emergency service responders such as firefighters and paramedics to the scene quickly can help save lives and prevent a much larger incident from developing.

"We know what a great job all fire crews do in keeping their communities safe; however there are also times when either a retained crew is not available due to work commitments or the incident is in a remote location and the road network is difficult for a full size fire appliance to reach.

"In cases such as these, it has been shown that a smaller vehicle with a crew of two or three can



The new, lighter weight but fully featured COBRA firefighting system can be carried in the Primetech MultiPod, deployable on fast utility-style vehicles, providing a powerful new weapon for fighting fires quickly and flexibly



**“This new MultiPod COBRA, designed and built in partnership with Primetech, will complement our existing Cold Cut COBRA range. MultiPod COBRA is not a replacement for our existing larger units, it is an ideal alternative should an organisation be wanting to utilise a smaller vehicle, but wanting to have the same benefits of cutting and extinguishing capabilities.”**

**Roland Andersen, Cold Cut Systems**

**‘I believe that the Cobra Method, incorporating as it does both training and the Cobra equipment, will become a really important tool in the Firefighter’s toolkit. The U.K. Cobra Academy can provide high quality consultancy, advising on strategic and operational advantages, plus all aspects of Cobra Method tactical training, for incident commanders, instructors and operational Firefighters.’**

**Dan Moore, UK Cobra Academy Manager and Senior Instructor**

respond to an emergency call far quicker, and can either resolve the incident or can stabilise the situation until reinforcements arrive.

“The Primetech MultiPod vehicle is equipped with the MultiPod® COBRA firefighting system on a 300 bar, 30 litres per minute system, allowing for a safe external attack on a building fire. The MultiPod COBRA can suppress the fire and prevent the incident from deteriorating. This vehicle can also carry medical equipment, allowing a first response to medical emergencies where an ambulance may take longer to arrive.

“This fast response with the use of smaller vehicles has been shown to reduce overall attendance times to incidents; for example, in Gothenburg, Sweden, the fire service management and unions worked together to develop a quicker emergency response using exactly these sort of vehicles.

Roland Anderson, global sales and marketing director for Cold Cut Systems, said: “The MultiPod COBRA system is a 300-bar pressure system, so the pressure is still the same as for our larger systems but with a lower flow rate. It is not for a frontline pumper application, it is a pickup-based system.

“This new MultiPod COBRA, designed and built in partnership with Primetech, will complement our existing Cold Cut COBRA range. MultiPod COBRA is not a replacement for our existing larger units, it is an ideal alternative should an organisation be wanting to utilise a smaller vehicle, but wanting to have the same benefits of cutting and extinguishing capabilities. MultiPod COBRA is an excellent new option for fire and rescue services worldwide.”

One of the unique features of Primetech’s new MultiPod demountable body system is that no vehicle modifications are required. MultiPod can be easily and quickly mounted

on any standard utility vehicles. MultiPod fits in with the drive for increased levels of collaboration between the emergency services, to improve public safety in an era of tighter budgets, along with the need for diversified, expanded and more effective use of service resources.

The combination of the new Primetech MultiPod and the lightweight COBRA system are being looked at as a possible option for Gloucestershire Fire and Rescue Service’s proposed Community Protection Vehicle project. While this is still in its conceptual planning, specification and evaluation phases, certain key features and benefits are starting to emerge. The CPV would have the option to carry medical equipment, including a defibrillator, rescue tools and additional community support kit.

System configurations are designed to provide quick response options for providing collaborative support for paramedics, and for firefighters dealing with small fires which do not require the deployment of a full fire appliance.

Commenting on the development of the new collaborative Community Protection Vehicle concept, Andy Hermiston, Deputy Chief Fire Officer, Gloucestershire Fire and Rescue Service, said: “Fire and rescue services in the UK continue to progressively develop and broaden our community protection role by adding value in what would have been previously perceived as unconventional ways.

“Vehicle such as the Community Protection Vehicle (CPV) allow services the ability to respond quickly to any emergency with the right resources whilst optimising our capacity to deliver lifesaving prevention and intervention responses to meet the new and ever increasing public expectation of the Fire and Rescue Service.’

[www.primetech.co.uk](http://www.primetech.co.uk)

*“Speed of response is vital in emergency situations. Getting professional emergency service responders such as firefighters and paramedics to the scene quickly can help save lives and prevent a much larger incident from developing”*

Henry Walker, Director of Primetech

The UK fire and rescue services have undergone significant changes over the last 15 years and they will continue to evolve in response to the challenging environments in which they operate. These changes have seen services embrace new thinking and new technology where it has been shown to offer organisational or operational benefits. Bernie Higgins reports

# How the COBRA system is revolutionising firefighting and enhancing public and firefighter safety

One of the more recent innovations has seen the Cobra cold cutting system become established as a modern technique for fighting fires and managing operational risk. Cobra utilises an ultra-high pressure water jet that, with the addition of an abrasive additive, can pierce a small hole through the boundary of a room, building or structure involved in fire.

Once a hole has been created, Cobra will apply water mist at a high pressure (up to 300 bar) to suppress the fire and significantly reduce temperature within the fire compartment. This allows firefighters to enter the room or building under much safer and far more permissive conditions.

The methodology associated with Cobra is further enhanced when used in conjunction with external thermal scanning and tactical ventilation (PPV fans).

The equipment was invented in Sweden and has been the subject of scientific research to ascertain the benefits of its use.<sup>1</sup>

The main advantages of the Cobra system are:

- It improves firefighter safety by significantly reducing the firefighters' exposure to hazardous environments and toxic/harmful products of combustion.
- Cobra can rapidly suppress fire and limit fire spread, which will provide the incident commander with a window of opportunity to plan operations and facilitate the most effective resolution to the incident.
- It reduces property and environmental damage by limiting fire spread and reducing water damage. Damage by water in firefighting represents more than 50 per cent of the costs in large fires. Cobra has proved

to be an invaluable tool in reducing the extent of damage in a way that no other equipment can offer.

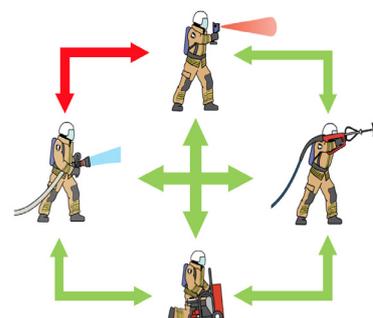
## The Cobra Method

The Cobra Method is defined as an integrated combination of tactics deployed sequentially or simultaneously to minimise risk exposure and improve firefighter safety.

The Method is comprised of four main elements and is designed as a matrix that can be deployed in a dynamic way to achieve a variety of key operational objectives.

The four main elements of the Cobra Method are:

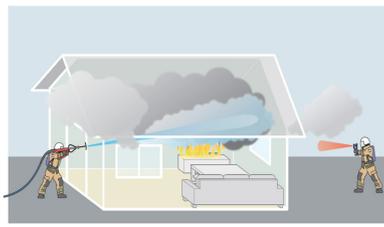
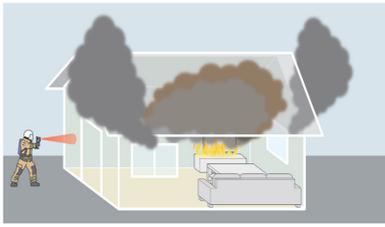
1. Thermal Scanning: the outside of the room, building or structure is scanned using a thermal image camera to gather critical heat signature and thermal streaming information. Information on colour, pressure and flow of fire gases is also captured during this phase of information gathering. The addition of compartment or building thermography supports
2. the quick identification of optimum locations from which a Cobra deployment can be launched.
3. Cobra Deployment: Cobra is used to pierce an initial hole in the exterior boundary and then inject high-pressure water mist into the compartment to cool fire gases and suppress fire.
4. Tactical Ventilation: when Cobra has achieved the desired effect, PPV fans can be deployed to remove fire gases, products of combustion and steam, and replace these with a flow of fresh air.



<sup>1</sup> Cutting Extinguisher Concept - practical and operational use. Scientific studies commissioned by the Swedish Civil Contingencies Agency.

*CFD Simulations of the Cutting extinguisher* Robert Svensson, Johan Lindstrom, Raul Ochoterena, Michael Forsth SP Technical Research Institute of Sweden

*Spray Characterization of the cutting extinguisher* Michael Forsth, Johan Lindstrom, Raul Ochoterena, SP Technical Research Institute of Sweden



5. BA Team Entry: the cooling of fire gases and suppression of fire carried out by Cobra, followed by tactical ventilation of the compartment or building involved, supports and facilitates a much safer entry for BA teams to deal with any remaining fire or carry out other tasks.

From an incident command perspective, periodically scanning the building or structure using a thermal imaging camera while the Cobra Method is being deployed will help with the cyclic review of progress and assist with the risk assessment process of identifying when it is safe to allow firefighters to enter the building.

Cold Cut Systems is the market-leading manufacturer of Cobra, and provides both equipment solutions and the underpinning thermal scanning, fire behaviour and tactical ventilation training that combines to create a complete firefighting Method for Cobra's safe and effective use.

- Cobra offers an efficient intervention from a relatively safe position – the outside.
- A Cobra attack can be fully integrated with a traditional firefighting deployment and can control the internal development of a fire before internal BA crew operations. One to two minutes of Cobra intervention will make a dramatic effect and a safer environment for the BA (rescue situation).
- The Cobra intervenes without ventilating and the need to enter the building.
- The Cobra fits perfectly into traditional appliances and rapid response vehicles.
- The Cobra uses 100 per cent of 60 l/m instead of five to ten per cent of 600 l/m → No water damage and minimised environmental impact.

SP Technical Research Institute of Sweden has done considerable research on the Cobra. Most significantly, the droplets are extremely small compared to other systems in the marketplace. This means that the total surface area is very high from the Cobra, delivering the fire fighting efficiency. When comparing the Cobra droplets to droplets

from high pressure nozzles or fog nozzles, the diameter of droplets is 170 for the Cobra and more than 900 for the other systems.

The water droplet size is one of the critical components of the efficiency and is generated by the very high pressure, but the pressure of 300 bars also generates a very high velocity of the water jet. The research demonstrates that the Cobra jet has a speed of 200 meters per second at the nozzle, but even after 15 meters the Cobra jet will have a speed of five meters per second. This means that the reach is very long, up to 60 meters in compartments according to experienced incident commanders, but also that the Cobra jet will generate a turbulence, hence reaching all the hot gases in the compartment. As a comparison, 40 bar systems such as the high pressure nozzle or the fog nail will only have a droplet speed at 2 meters from the nozzle of about one metre per second.

Cold Cut Systems' proven track record of users in the UK extends to over 30 per cent of brigades using Cobra and thousands of trained operators.

The light weight, comfortable lance lends itself as an enabler to the smaller fighter, with the addition of portability and extended use comfort.

Maneuverability is a further advantage, due to the option of short lances for use in hall ways, stairwells, and other confined spaces. The lightweight hose needs only to be extended as far as operational need, allowing quick deployment and retrieval.

The Cobra system can be simply installed onto a significant number of chassis types, to enable individual fire services to select the best option for their specific operational requirements.

Vehicle driven systems require the Cobra to be driven by either direct PTO, split shaft PTO, belt drive, hydraulic pump or slave drive from another appliance installed with Cobra. This versatility also allows a combination of Cobra with the traditional pump as new build or retro-fit. Additionally, the Cobra can be installed within the chassis of the vehicle, or combined with the traditional pump in the rear locker, utilising a modest amount of side locker space.

Bernie Higgins is a former Deputy Assistant Commissioner in the London Fire Brigade and deputy CFOA Lead for CBRN(E). He is now director of his own company and works as a strategic consultant for Cobra Cold Cut Systems.  
www.coldcutsystems.com

