

Press Release

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Chiltern Fire tests 2000-year-old smoke device for History Channel

Chiltern International Fire (CIF) was again in the television spotlight, testing a reproduction smoke machine for Wild Dream Films, who are making a series called '*Ancient Discoveries*' for the History Channel. The TV company commissioned Chiltern Fire to find out how effective this 2000-year-old device would prove in battle.



The device was of the type used by the Corinthians to deflect the skilled Roman miners who tunnelled under the besieged city of Ambracia in 189 BC. Richard Windley, presenter and re-constructor of ancient technology, explained how the device worked: feathers would be placed on top of burning charcoal in the pot, with a grate placed across the front. Bellows were pumped furiously to make the coals burn hotter and increase the volume of smoke.

For the Chiltern Fire test, the toxicity of the ensuing smoke was measured by a piece of modern technology, the Gas Met FTIR, a Fourier Transform Infra-red Analyser. Andrew Hobson, Technical Sales Support for manufacturers Quantitech, explained: 'Different gases absorb infra-red in different wave lengths. This instrument will measure all of the wave lengths in the spectrum, so can measure any gas absorbing infra-red energy. The reading showed a dangerous cocktail of toxins, including sulphur dioxide, carbon monoxide and ammonia.' The highest peak of carbon monoxide and ammonia was detected only five minutes into the test.

Philip Howard, head of Chiltern Fire's Fire Behaviour Section, donned fire-fighters' breathing apparatus to get close to the smoke in the tunnel-type setting for the test. He was impressed with how lethal the device could prove in battle. 'The toxicity levels were very high. In no time

your eyes would be streaming and your throat tight and sore. The carbon monoxide levels would probably render you unconscious in about ten minutes and dead within half an hour.'

The smoke was thick and spread quickly all across the room, from the bottom to the top, he added, making it impossible to see. 'You would struggle to escape and even if you did, the levels of sulphur dioxide could mean that maybe a day later, your lungs would fill up with fluid which could then kill you.'

Andrew Hobson said, 'The results we've got today are quite surprising in their toxicity. I certainly would have expected high CO and CO₂, simply because they are products of combustion. The surprising component for me was the ammonia. In concentrations such as this, it would be a matter of seconds before it would render somebody virtually incapable of breathing.'

Wild Dream Films is the second TV company this year to take advantage of Chiltern Fire's extensive test facilities. In February, Flame TV made a consumer watchdog programme on fire safety in the home at CIF's High Wycombe headquarters. Philip Howard said, 'One of our strongest selling points is that we work with clients to find solutions to their testing problems. Fire is endlessly fascinating and can be extremely dangerous in the wrong hands, as today's test has demonstrated.'

The programme will form part of the third series of the popular *Ancient Discoveries* documentaries, which will go across the United States in the next few months. It will be shown in the UK probably next year.

- For further information email cif@chilternfire.co.uk or visit www.chilternfire.co.uk