SMART Technologies

TECHNOLOGY WITH PURPOSE

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Hampshire Fire and Rescue Service

definte 'modernisation'

Six years ago Hampshire Fire and Rescue (HFRS) were using Incident Command Unit vehicles that were over 20 years old. While paper based premises records were kept on high risk buildings, other locations required a crew member to pace out and draw a plan of the property at the incident. Immersing themselves in technology, means that today things are very different.

"We are now looking to use a satellite link in order to gain a high speed data link from the incident command unit to any suitable receiving centre."

Paul Turner,
Radio Systems Engineer, HFRS

HFRS now maintain a fleet of approximately 243 vehicles. Internally, the Incident Command Unit has been designed to be modular. The 19" rack mounts support numerous software driven information systems which can be re-programmed or developed to support any future changes.

Like the majority of Fire and Rescue Services, all radio and telephone calls that come into the Command and Control Centre are recorded. In 2002 HFRS installed a 32 channel digital recorder, with a 240 Gb storage device giving them 72,000 hours of online storage.

To ensure continuing improvement in HFRS's ability to react to emergency incidents, each Control Operator now has 3 networked PC monitors to work with. One is a touch screen and operates the radio and telephone systems. When a 999 call is received the operator selects the appropriate command on the screen by touch. The second displays the command and control system, "Firecat 2000" - this displays all the information about the incident. The final screen displays a mapping system (GIS) displaying the location of the incident. The system has modernised Command Control by providing an efficient means of receiving emergency calls and eploying and controlling resources by voice radio services.

Coming from a broadcasting background, Paul Turner, Radio Systems Engineer at HFRS took their innovation further by installing multi agency radio channels within their control vehicles. These consist of the normal fire service VHF and UHF radio channels but also police VHF and selected UHF channels. "As we also have to cover a coastal area we also have the MCA (Coastguard) radio channels fitted".

While the two UHF radio sets in the Incident Command Unit enables the Incident Commander and Sector Commanders to relay information between each other, the VHF radio sets ensure high speed information exchange between the Officers attending incidents and HQ Command Control.

Although usually seen in a boardroom, Paul also implemented a Crestron control system with three Crestron touch screen control LCD panels. From within the Incident Command Unit, the Fire crew use the Crestron panels to control all of the radio systems and also the telephone systems which have speed dial facilities. The two VHF radio sets in the Command Unit are used with the LCD panels, enabling communication between the Command Control centre, the mobile command units and even with command centres from other Fire and Rescue services.

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"the most important outcome has been the children's renewed enthusiasm for learning. They really were very apathetic prior to the introduction of PDAs, now they really want to do the things they are asked to."

Sue Morris
Primary School Teacher,
St Albans Primary School.

With CCTV cameras situated in strategic positions on the appliances used, the Fire Service ground crew can use the touch sensitive LCD panels to select any one of the images provided by the CCTV cameras - even altering their angle or tilt. A CCTV camera on the top of a large ALP (Ariel Ladder Platform) for example, relays vital information through a microwave link to those in the unit managing operations. "We are now looking to use a satellite link in order to gain a high speed data link from the incident command unit to any suitable receiving centre. This will give us the ability to download dynamic files, use multichannel voice calls, videoconferencing and enabling the SMART Board™ system to be linked with other SMART Boards".

Visual and audio contact can even be made with the Hampshire Police Aircraft. This enables HFRS to have an aerial view of an incident. The infra red image provides crucial information on the temperatures involved .

To improve their efficiency further, HFRS use the Blue8 Mapping System with a SMART Board overlay which is easy to fasten and secure to plasma displays in the Incident Command Unit. This provides full interactivity with the premise's images. The size and clarity of the screens, and their general presence in the Command Unit, that everyone can see so easily, contribute to the ability of this technology to function as a focal point in the Fire fighting process.

Using the electronic pens or touch enables fluency when manipulating the displayed maps and premises images. The presentation can be annotated over with automatic character recognition. Out-buildings can be highlighted, sections marked out, and marked icons of each fire appliance, can be dragged and dropped into new locations. The added beauty of this interaction is that all information and

annotations are time and date stamped, and can be saved and burnt on to CD for incident de-briefs.

A GSM dial up link between the Firecat 2000 system at HQ Fire Command and Control and the Incident Command Unit enables staff in both locations to see all jobs in action, messages sent in, and the location of each of the other vehicles. This also means that in addition to using the SMART Board overlays to view mapping applications, any information seen by Command and Control, can be displayed on the SMART Board overlay for all to see. Incident Command Unit in remote locations have full Command and Control when ever needed. Access to Command and Control by all parties enables a complete overview of all the resources that are available in Hampshire and the neighbouring counties which can be quickly mobilised if necessary. Ultimately, in the case of a major disaster resulting in the Command Control being disabled, full operations and management of Control could be carried out from the Command Unit.

With a 17" LCD monitor in the front of the vehicle, and a 32 button Crestron control panel the incident commander can also see exactly what is going on at any time. The 32 button panel enables the Incident Commander to switch between any of the networked computers, monitor any of the radio channels, and monitor and switch between any of the external video/camera sources. With a further waterproof 31" Sharp LCD display, ground staff can see images of all the computer screens in the control unit. Again, like the commander, they can also look at any of the video/ camera images. With the current drive for modernisation, HFRS are certainly leading the way with technological innovation. Paul Turner quite rightly believes that HFRS are advanced in their technological infrastructure. However, as someone who has continually driven the evolution of HFRS, Paul is still looking for new areas of innovation and is considering the implementation of a Wireless network and satellite communications to enable the full mobility of the team.