# COMBINED EMERGENCY SERVICES FOUNDATION SCHOLARSHIP SCHEME 1996

## Computer Technology

## The Next Step for Australian Fire Services



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## 1.0 Scholarship Proposal

The purpose of the scholarship was to identify the scope and application of computer technology for the Fire Service beyond the fire stations:

(i) management and administration,
(ii) use in mobile vehicles,
(iii) stand alone portable data terminals,

and make appropriate recommendations for the future direction and implementation of computer technology in the Fire Service.

## 2.0 Study Rationale

Prior to the implementation of the MFB Computer Aided Despatch (CAD) in 1983, the use of computers in the Fire Service would have been confined to micro processors at specific work sites for word processing.

All call taking despatch and alarm monitoring prior to the CAD was conducted manually and verbally. This method was slow and had inherent human error problems.

Automatic alarm monitoring by fire station equipment (F.S.E. computer) was the next innovation in the use of computer technology. This eliminated previously identified problems with the added efficiency of releasing personnel from watchroom duties to man fire trucks.

From 1985 to 1990 also saw the introduction of terminals at selected work sites that were connected to the main frame network, further enhancing communications and efficient emergency response management.

Early 1994 saw the progressive introduction of personal computers connected to the Brigade network installed in fire stations, and along with them came the resources of E-Mail, wordprocessing and FIRECOM enquiries. Gradually the manual and costly elements of fire service communication are being further built out by computer technology.

Specific applications were developed for the fire station computers which changed the way supervisors managed, operated and reported. Their vision became much more global/organisational rather than the traditional local perspective. Fire stations now had access to Vehicle Maintenance Files, Australian Incident Reporting System, Manning Levels at Shift Change and Electronic Diaries.

National competitiveness strategies (Hilmer, 1993) are being embraced at State levels, forcing Fire Services to revisit their service delivery priorities in the market place. Continued economic pressure and funding demands public agencies do more with less and as such, traditional organisational values, philosophies and cultures must be challenged in order to ensure future competitiveness.

The Fire Service must now move forward and capitalise on the efficiencies of further developments in computer technology. This not only applies to the station environment and

they way the Brigade manages and operates, but also mobile in fire trucks and into the field in various operational environments.

## 2.1 Background

In April of 1996 I was granted approval for a Combined Emergency Services Foundation Scholarship.

My original proposal indicated I would intend to travel in August 1996 to the following destinations, viz:

**U.S.A.**

* L.A. County
* Seattle
* Santa Rica
* Fairfax

**England**

* London

After receiving approval for the scholarship I further investigated the departments nominated and others to ensure I could best target those that appeared to be the most advanced in the topic of my study. I also gave consideration to the fact that the scholarship was granted by the combined emergency services and as such which destination would provide an alternative venue that would provide an alternative view to the fire service.

The final itinerary encompassed the final destinations and departments, viz

**U.S.A.**

| | | | |
|---|---|---|---|
| * | Seattle | - | Seattle Fire Department |
| * | San Francisco | - | South San Francisco Police Department |
| * | Kansas City | - | International Associations of Fire Chiefs - Conference/Trade Display |
| * | Baltimore | - | Baltimore City Fire Department |

**England**

| | | | |
|---|---|---|---|
| * | Moreton in Marsh | - | Fire Service College |
| * | Birmingham | - | West Midlands Fire Service |

The total journey encompassed a period just in excess of five (5) weeks this is five (5) days longer than the initial proposal.

## 2.2 International Perspective

### 2.2.1 United States of America

#### a) Seattle Fire Department

Seattle has very similar weather conditions, population and cityscape (including restored Melbourne trams that run on the foreshore).

The fire department is approximately the same size as the Metropolitan Fire Brigade in terms of stations and human resources although the geographical area covered is only one third that of the Metropolitan Fire District.

Research from technical journals indicated Seattle Fire were well advanced in the development of computer applications in the fire service and it would be an appropriate target site in the study tour. However, when I arrived and began my investigation a different situation presented itself.

It would appear as recently as three years ago, the development of "on board" computing applications and automatic vehicle location devices in Seattle Fire were at the cutting edge of technology and application.

Their initiatives at this time involved a pilot program using ex military first generation ruggardised laptops to replace an already established Mobile Data Terminal (M.D.T.) system. The laptop had dedicated keys that performed the same functions as the M.D.T.s button boxes and the screen mimicked Computer Aided Despatch (C.A.D.) information.

Concurrently Pre Fire Plans (P.F.P) with Haschem/Datachem, Dangerous Goods information was being developed with the intention of loading it on to the computer. It was also intended this information would be tagged to despatched calls for retrieval and examination in transit.

The program went for eighteen (18) months but experienced a number of difficulties, viz

- durability of the computers
- political direction (City Hall)
- funding

When all the above factors took full effect the program died to the point where the computers have been removed and button box MDT's returned.

i) Durability of Computers

Not long after installation the computers began to present faults. The Manager, Communications & General Services explained to me, "they (the computers) could not stand the environment of a fire truck, they shook to bits." He was also critical of the original quality of the computers purchased, in particular second hand ex military.

It then became evident there were not sufficient spare units to service the pilot study and therefore continue accurate appraisal of efficiencies. It also meant

when a computer in a pumper went down it effectively put that appliance out of service. This was inefficient and frustrating.

ii) Political Direction

At the time of the pilot a number of natural disasters (earthquakes) diverted the attention of City Hall towards disaster management capability. Upgrading communication became a priority. The base station network and the communication centre for the Police Department was redeveloped and implemented. An Emergency Operations Centre site was procured and fully equipped. Out of this process the Fire Department sought out and were granted new premises and an upgrade to their communications centre. This did not include a financial consideration for the further development of on-board computing ability.

iii) Funding

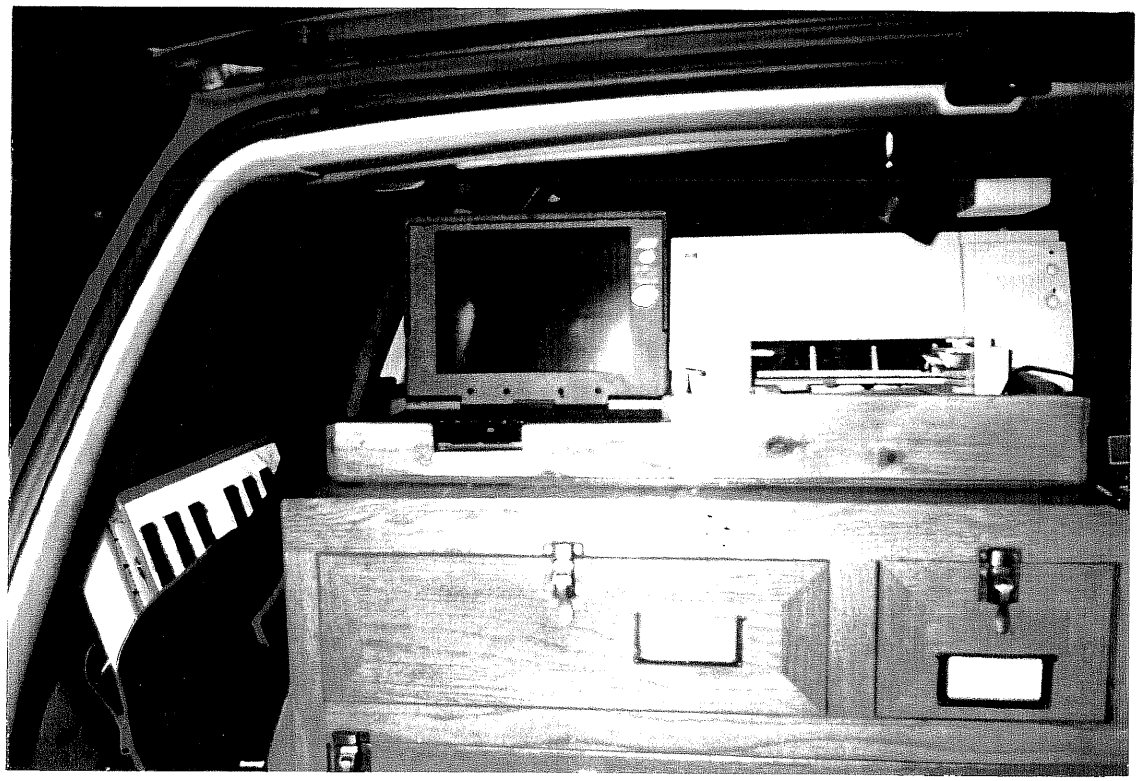
When it became time to address the problems identified in (i) there was no political momentum or support to fund on-board computers as an ongoing initiative due to the affects of (ii).

The frustration encountered with the poor introduction and resourcing, the pilot had soured the taste of any immediate or future efficiencies that had been identified by the program.

When I examined the current state of play in the field all pumpers had reverted to M.D.T.s for transmitting status only supported by voice radio transmission.

Only one on-board computer remains in the Seattle Fire Department. This was fitted to the Shift Commanders vehicle. It was an independent unit ie. not connected to the Communications Centre and only contained P.F.P's and Dangerous Goods information. (Fig 1.)

It was also written the Seattle Fire Department had Automatic Vehicle Locators (A.V.L's). This initiative was implemented at the same time as the on-board computers and unfortunately appears to have followed the same fateful path.



**Figures 1**

The technology implemented at the time was very pioneering but did not progress. The AVL consisted of a "dead reckoning" system that relied on data sent from wheel sensors to a small on-board micro processor computer that positioned the vehicle on a small visual display unit in the engine cab. The dead reckoning and wheel sensor technology quickly became inaccurate due to normal wear and tear of the appliance, it could not be relied upon and was costly to repair. (Fig 2.) The fire vehicles are now not equipped with A.V.L's.

The new Global Positioning Systems (G.P.S) which use satellites has superseded these systems but had not been implemented in Seattle Fire.

I will discuss my observation of other G.P.S. applications later in the report.

**Figure 2**

iv) Seattle Police Department

While in Seattle the East Precinct arranged for a presentation of their current on-board computing applications in a patrol car.

All vehicles are fitted with a M.D.T. Motorola 9100-11 (attachment 1) as described in the specification sheet. (Fig 3 & 4).

The MDT has a radio function incorporated in the unit, it can operate silently or by voice dependent on the nature of the call. All calls can be viewed on the screen showing status, history and availability of attending unit.

The member can access various data banks from vehicle information right through to the National Crime Information Centre (Federal Bureau of Investigation).

The member can also communicate with superior officers, administration and locally with other members, There is a message facility for up to twenty messages.

Management can also interrogate and collate a member's activity status recorded through the MDT network to evaluate eg. traffic incident, out of vehicle, calls attended, arrests etc. This ability impressed me as a very valuable departmental planning tool (manning, equipment, shift strength, discipline).

All vehicles are fitted with A.V.L. The system used in G.P.S and all units can be monitored by the Communication Centre (Fig. 5).

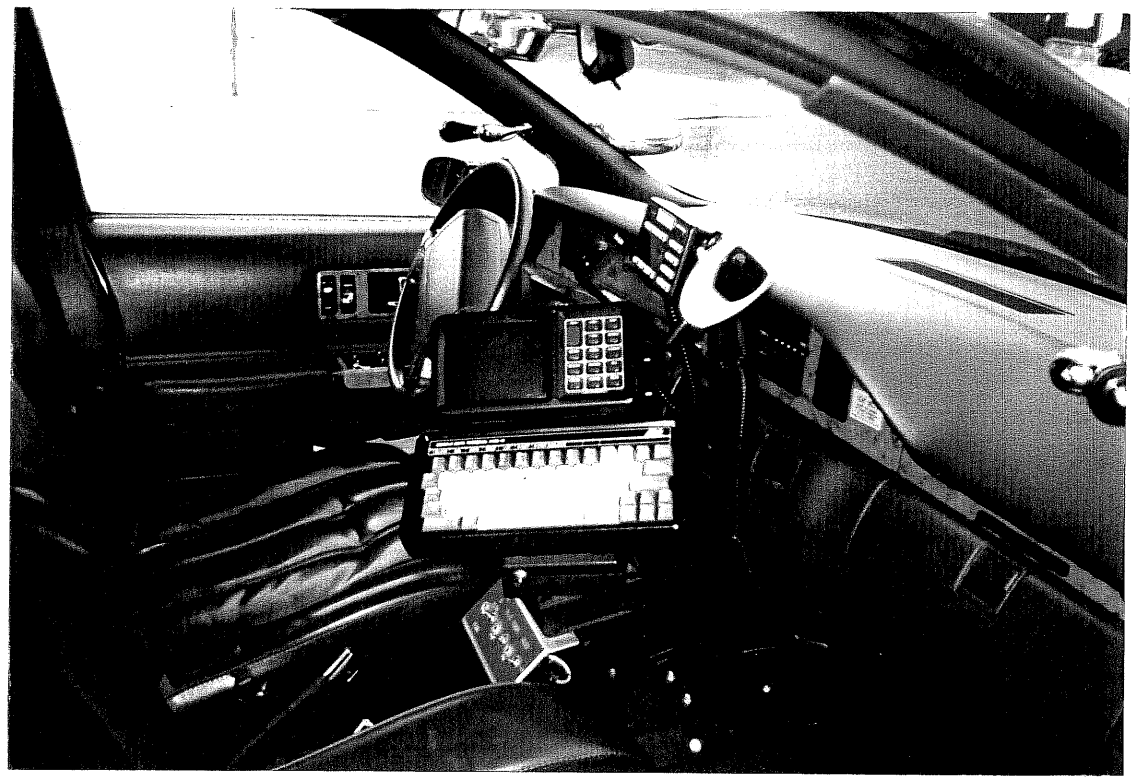


**Figure 3**

**Figure 4**

**Figure 5**

b) San Francisco

South San Francisco Police Department in Australian/Victorian terms this is a small Police Department with a total of sixty five (65) Operational Officers.

All police members are issued with a department satellite Toshiba T2130CS-486 laptop computer and all patrol cars are fitted with a locally manufactured docking station for the computer (Fig 6 & 7).

**Figure 6**

**Figure 7**

The department commenced the initiative approximately three (3) years ago. A generic bid was sought from a number of suppliers for a trial and a pilot program was introduced. At the conclusion of the trial Toshiba was successful and the units, plus spares were purchased to equip the department. Units were costed at US$2000 with a three (3) year warranty agreement.

The specification called for separate data and radio bands. Channels are not shared - 400 Mhz for Radio and 800 Mhz for data.

The personal computers when mounted in the vehicles are converted from twelve (12) volts to one hundred and seventeen (117) volts. I am advised this is done with minimal change to the electrical system and the vehicle retains its consumer grade heavy duty battery.

The network is driven by an IBM, RISC 6000 - Unit operating system, which runs the fileserver microsoft NT (Windows) software, that enables the laptops to communicate with the network.

The hardware items to drive the M.D.T. system were purchased independently and then assembled to form the total system.

An important consideration for the department when undertaking the MDT project was to ensure the fixed system would run with the mobile system without further development, or at most minimal development. (Fig. 8)

**Figure 8**

The Tiburon B system is used to compress data which is a very important factor. All data is encripted. The encription security validates a member logging on three (3) ways, sender/receiver serial number, encription number and the user identification.

One of the factors considered in the development of the system was to purchase major hardware items separately that were stand alone thus avoiding an exposure problem with the one system controlling a sale and distribution monopoly. This decision represented cost and risk management efficiencies. (Attachment 2)

It is interesting to note that every police officer is responsible for the issue of a personal computer and a portable radio.

In the initial stages of the program, use of the personal on-board computer was voluntary. As the value of the computer as a tool of assistance to the member began to circulate the department, the computer usage rate grew to 100 percent. Computer training is via a self paced program loaded onto the personal computer, further support is offered through the Information Technology Department.

Tutorials are provided for the two major programs used:-

i) Remote Electronic Filing System (R.E.F.S.)
ii) Word for Narrative.

Once logged into the system the member can access a number of data bases whilst in the field, quickly, silently, and securely. An example of this is a suspect check. Having entered the information available eg, name, address, licence number, aliases, social security number, one command will run seven checks viz:-

- Checks name details
- Outstanding State warrants
- Parolee
- Restraining Orders
- National Crime Information Centre (FBI)
- Police Info Network (local info on criminals, criminal activity.)
- Drivers Licence.

An example of a licence plate check revealed instantaneously viz:-

- Stolen - vehicle/plates
- Police Info Network
- Current Registration Information - year, make, V.I. number, owner, smog check status even the time and date of payment of registration and whether the payment was made by cheque, credit card or cash.

Every function that would be performed in the office could be performed in the mobile computer in the vehicle viz:-

- Daily Watch Report

- Report Narrative
- Traffic Narrative
- Inter Office Memo
- Communicate from vehicle to station.

A report can be generated in the vehicle, sent to the supervisor, corrected/highlighted for return to officer, officer can amend the report.

All vehicles are A.V.L. equipped and monitored via G.P.S. satellite technology.

Dot points worthy of note:

- Infrastructure 12 months
- Prototype in car 4 months
- Task force of 6 - 7
- Tried all tenders
- Colour vs B.W. - colour better at night, but went with B & W as best day and night.

c) Kansas City

The period of my United States study coincided with the International Association of Fire Chiefs Conference - Fire Rescue International in Kansas City Missouri and I took the opportunity to attend this event.

Words cannot accurately describe the size and scope of the conference.

The enclosed exhibition floor space was as big as a football oval six times over. There were 560 exhibitors and 15,000 delegates from the United States and around the world.

The conference provides the venue for every segment of the multi faceted fire industry to be exhibited.

The opportunity to experience first class presenters, educational workshops and networking were very valuable elements of the conference.

There were a number of portable computer manufacturers/distributors present at the conference. I have placed the Metropolitan Fire Brigade on the mailing lists and collected printed material of product specification sheets for appraisal in the future development of mobile computing applications in the fire service.

While at the conference I shared my room with another fire service officer from Melbourne who was on a self funded study tour. This eased his financial burden and value added the sponsorship of the Combined Emergency Services Foundation by enabling another emergency service worker to be exposed to the experience of this world class conference.

The highlights of the conference were:-

- The Past is Gone, The Present is Full of Confusion, The Future Scares the Hell Out of Me - Chief Ron Coleman, Chief Randy Bruegman.

- Cultural Diversity in the Workplace - Sergeant Gordon Graham. L.L.B, California Highway Patrol.

- The Motorola Display Stand. (Fig. 9 & 10)

**Figure 9**

**Figure 10**

d) Baltimore Fire Department

At the time of my visit the Baltimore Fire Department was undergoing a total upgrade of their Communication Centre Computer Aided Despatch (CAD) system and the environment was rather hectic with people's priorities focussed on propping up the old system while trying to usher in the new.

The new CAD will be Windows based with Geographic Information Systems. This will allow for Automatic Vehicle Location which has been considered essential in the development of the CAD and I have been informed that funding has been allocated to implement this initiative for primary response vehicles.

In the first instance the CAD will intergrate the existing button box MDTs (voice supported) in the vehicles.

The current MDT's in vehicles are "dumb terminals" ie. they only have status button capacity, they do not retrieve/retain information for the pumper/officer. It is reported for normal call operation radio speech is reduced by 70% with the MDT's in the use, however when there is a major involvement or further information on the call is required eg Chemdata, Building Information, this must be done by voice.

Acknowledging the limitations of the MDTs the department has fitted a prototype on board computer in a Battalion Chiefs vehicle. (Fig 11) At present they are evaluating Motorola's "Wavesoft Fire" as the software support to provide Pre Fire Plan, Dangerous Goods and Mapping abilities . Information will be retrieved automatically by sending a despatch message over the radio frequency and will be available for immediate viewing in the fire appliance.

At this stage the prototype is not "live" and information has to be manually accessed pending integration into the new CAD system.

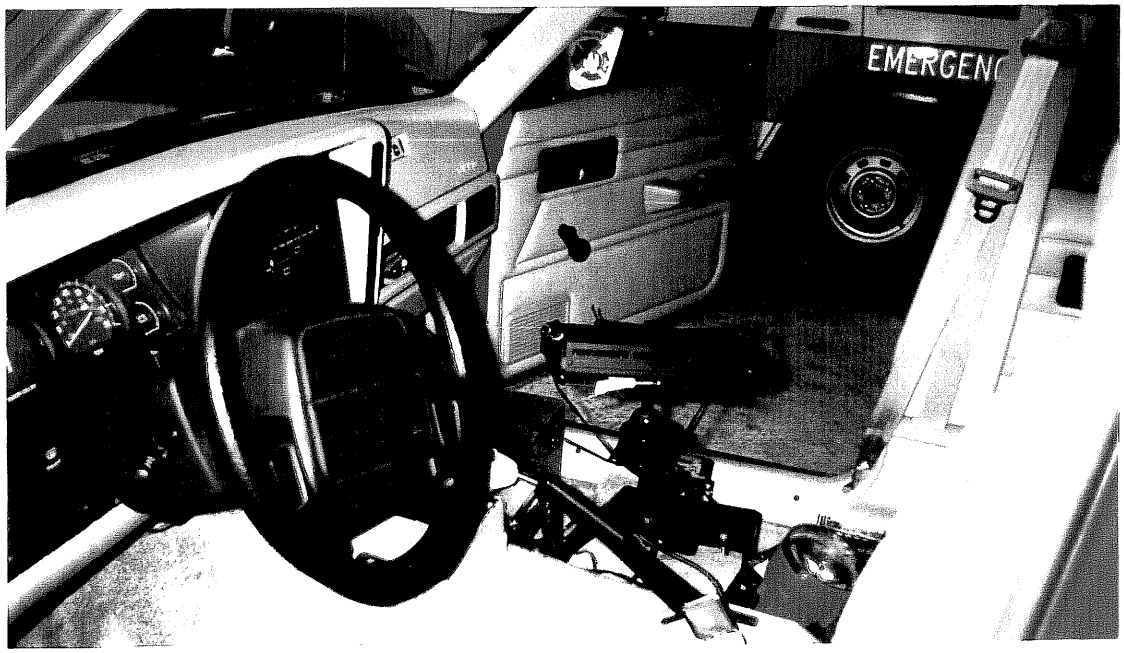



**Figure 11**

The problems being experienced in the prototype's

- mounting of computer (Fig 11)
- integrated approach to development ie. Operations alone - did not appear to be good interaction with Information Technology and the new CAD project.
- not sourcing other departments/fire services for their experiences (normal 486 laptop - survivability?)
- funding - long term on board computer strategy.

While in Baltimore (City) I had the opportunity to briefly interact with the next major firefighting department which was Baltimore County and it is a totally Volunteer Fire Service. This department had trialed an on-board computer pilot but the initiative had been disbanded. The reasons given for failure of the initiative were:-

- software/hardware interface incompatibility
- difficulty with the transmission of information
- power supply - vehicle battery problems
- visibility of the computer screen

2.2.2 England

a) Moreton In Marsh - Fire Service College

Is the national training establishment for the Fire Service in the United Kingdom. It also opens its door to International Fire Services for executive development programs.

Much has been written about the Fire Service College and it is not a new study destination for members of the Metropolitan Fire Brigade, with several of our Senior Officers attending the Brigade Command Course (B.C.C.)

Its reputation as the finest Fire Service training establishment and its continual development demands a visit on any schedule that permits the time.

While at the college I examined all the various practical training command and control scenarios that range from a shopping mall, through to a large passenger jet. The support provided for the academic environment was comprehensive and the residential support facilities were exceptional.

I found the brief exposure to the senior command course (B.C.C.) particularly challenging and I had the opportunity to read and discuss some of the issues targeted in the International Projects et al:

- Improving Organisational Learning and Development
- Fire Services Culture - Asset or Burden
- Social and Physical Constraints that Affect Women in the Fire Service.
- Amalgamation - Emergency Ambulance Service with the Fire and Rescue Service.

- Volunteer Firefighters in Metropolitan Areas.
- Focus - Public Liability - Litigation
- Community Fire Safety Policies and Initiatives.

For the subject Computers in the Fire Service, the college arranged a presentation of Vector - Operational Command Training. This is a training program run on standard P.C. equipment in a Windows environment. The graphics are a high standard, and there are several scenarios being developed that can be replicated and assessed over and over.

There are a number of advantages with computer simulation training e.g. the ability to train practically and train in command and control is becoming increasingly difficult with less fires/incidents, fewer personnel and the high cost of face to face training. Innovative training solutions that involve computers will be the way of the future.

As indicated the Vector system was not fully developed and final scenarios and costs were not available, but nevertheless the potential of this training medium should be monitored and evaluated for local application.

b) West Midlands Fire Service (WMFS) - Birmingham

If there was any truth in the saying "save the best till last" then this quickly became evident with my study tour of the West Midlands Fire Service. The service was established at the time of the Local Government re-organisation in 1974 by the amalgamation of eight Borough Brigades, and areas which were transferred from the adjacent Shire Counties.

The Brigade covers 347 square miles, a population of 2.6 million people and has 41 fire stations which are clustered in five (5) Divisions and 2100 employees.

Fire Control is located at Brigade Headquarters, Lancaster in Circus, Queensway, Birmingham, and they receive approximately 100,000 calls a year, which results in approximately 70,000 incidents annually.

Each primary appliance is fitted with a printer, keyboard, and LCD graphics display. Data is received via a MDT modem/radio and filter from one of the 4 hilltop sites. (Fig. 12 & 13)

The following draws directly from a report to Her Majesty's Inspectorate on the progress of the W.M.F.S. mobile data project viz:

West Midlands Fire Service has been using Mobile Radio Data Systems (MRDS) since the first generation Command and Control went live in October 1987. The Brigade has used three different types of mobile data systems to the present time:

1. Resource Availability Status (RAS)
2. MDT using FM radio channel (1st Generation)
3. MDT using FM and PCN/GSM radio links (2nd Generation)

The Brigade has considerable knowledge of the types of mobile data systems and their associated problems. The major area of effort required for any organisation is in the area of access to the data base's used by them. The Data channels capacity has grown from the initial system of 300 bps increasing to 1200 bps in the FM radio system and now to 9600 bps. This data transmission speed will increase in the future and by the year 2000 may be at 64000 bps from the normal PCN/GSM telephones.

i) Resource Availability Status

The initial system employed by the Brigade was the vehicle encoder (Button Box) which was supplied by Cyfas. This system was interfaced to the AM speech radio systems and directly into the Command and Control system. This system provided the basic Status of resources and their location. The radio system had to be modified to accept this system and the data tones were regenerated back over the speech radio scheme. These tones often blocked out speech transmission but did reduce the radio occupancy from 80% to 30% on the busiest radio channel.

The messages passed over the system were of 20 characters in length and were controlled by a central Data computer which interface directly into the C&C RAS port.

ii) 1st Generation MRDS

This RAS system was replaced by a new Mobile Radio Data System in February 1989 supplied from Dopra Integration Systems Ltd. This system was based upon a single FM radio channel which was dedicated to Data using private circuits to interconnect the four hill top sites and the central site.

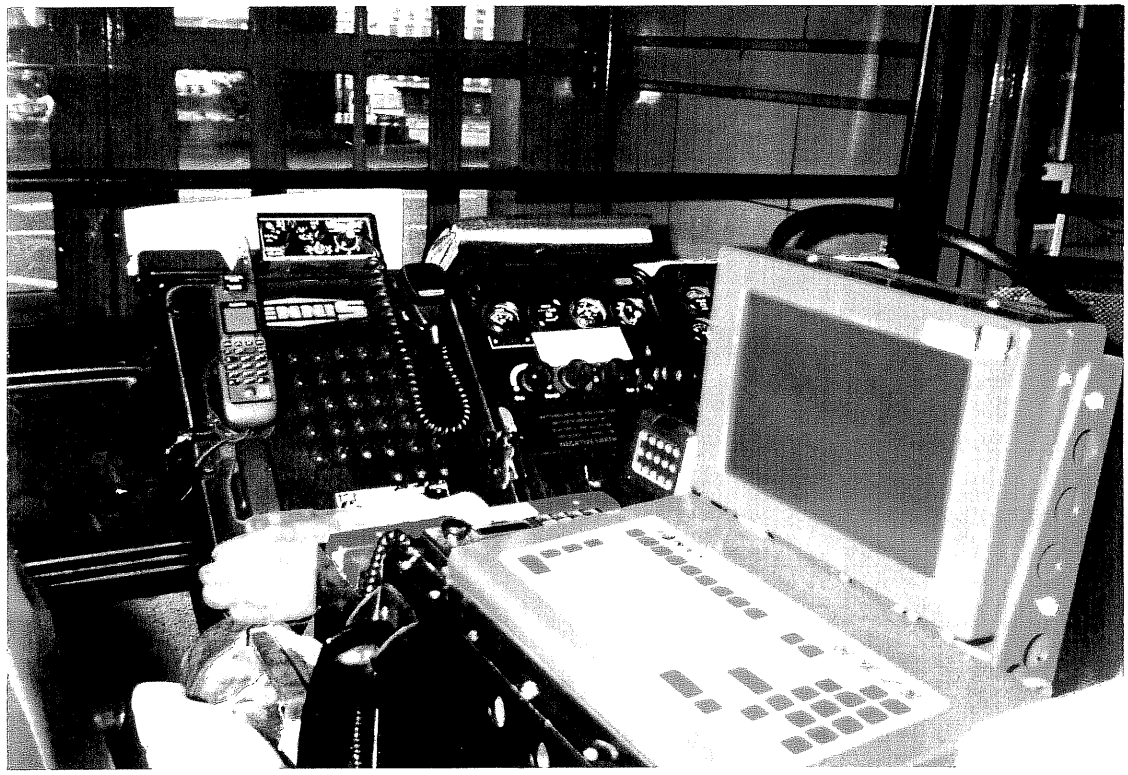


**Figure 12**

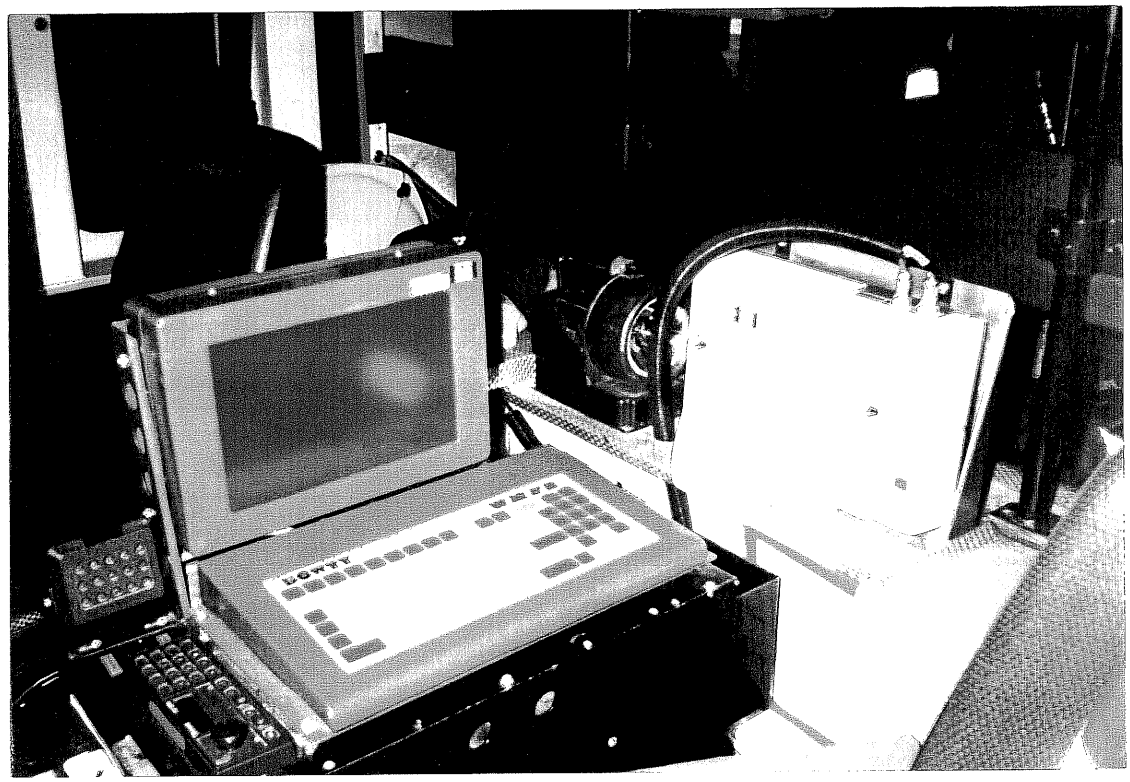


**Figure 13**

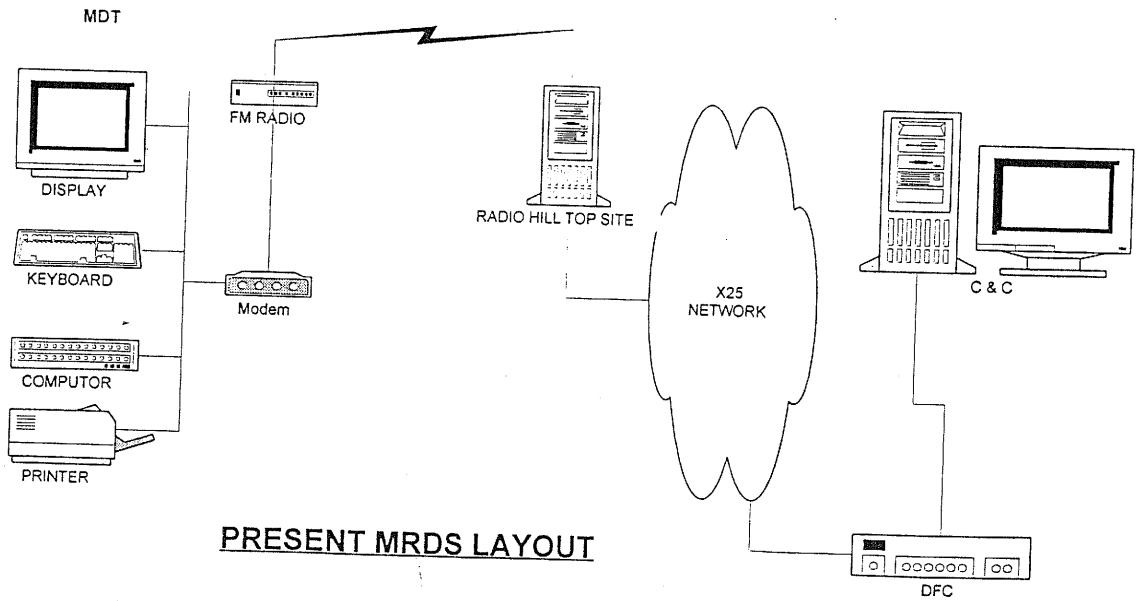
This system was fully integrated into the Command and Control system which provided full mobilising messages, RAS information, Incident codes and a limited chemdata facility. The MRDS was designed to operate at 300 incidents per hour which has been reached at certain time in the past years.

The messages handled by the MRDS are:

1. Mobilising message of 500 characters
2. Status and location messages of 20 characters
3. Admin message of 500 characters
4. Text message of 2000 characters
5. Incident Codes of 20 characters.

The MRDS system is controlled from a Data Flow Control (DFC) which ensures that message to and from Mobile are delivered. The Command and Control (C&C) interface uses a Data Communications Controller (DCC) which also provides access to the Management Information System (MIS) computer.

The mobile data system was further developed to interface to the new second generation Command and Control system. The new C&C system is based upon the GD92 standard, however, the old MRDS system has a propriety architecture. The changes employed removed the Data Communications Controller (DCC) and interfaced the system directly into the C&C router via and Mobile Radio Data System User Agent (MRDSUA) which converted the MRDS to a GD92 standard. A further development of the new C&C was to separate into two sites either of which could be live. The private circuits to hill top sites were replaced by the X25 network which allow the MRDS to interface to each site without loss of service.




PRESENT MRDS LAYOUT

A fifth hill top site was added to the network to overcome a coverage problem in the Coventry area, the initial system being designed to control five hill top sites.

iii) 2nd Generation MRDS

The first generation MRDS has been very successful in providing accurate information to and from the incidents without any interaction from control personnel. This information was being delivered to the appliance faster than by any conventional method. The Brigade has been required to introduce various new operational procedures with additional information to be made available on MDT's at incidents.

A number of other factors have prompted the replacement of the 1st Generation MDT equipment and the introduction of a second data channel:-

(1) 1st generation equipment, although reliable, is reaching the end of its normal working life.

(2) The equipment is proprietary in nature and does not allow changes to be made to the software easily or economically.

(3) An ageing speech radio system which is exhibiting an increasing failure rate together with some elements being irreplaceable on failure, has emphasised the need to find an interim solution prior to the Public Safety Radio Communications Project (PSRCP) or alternative radio replacement "rollout".

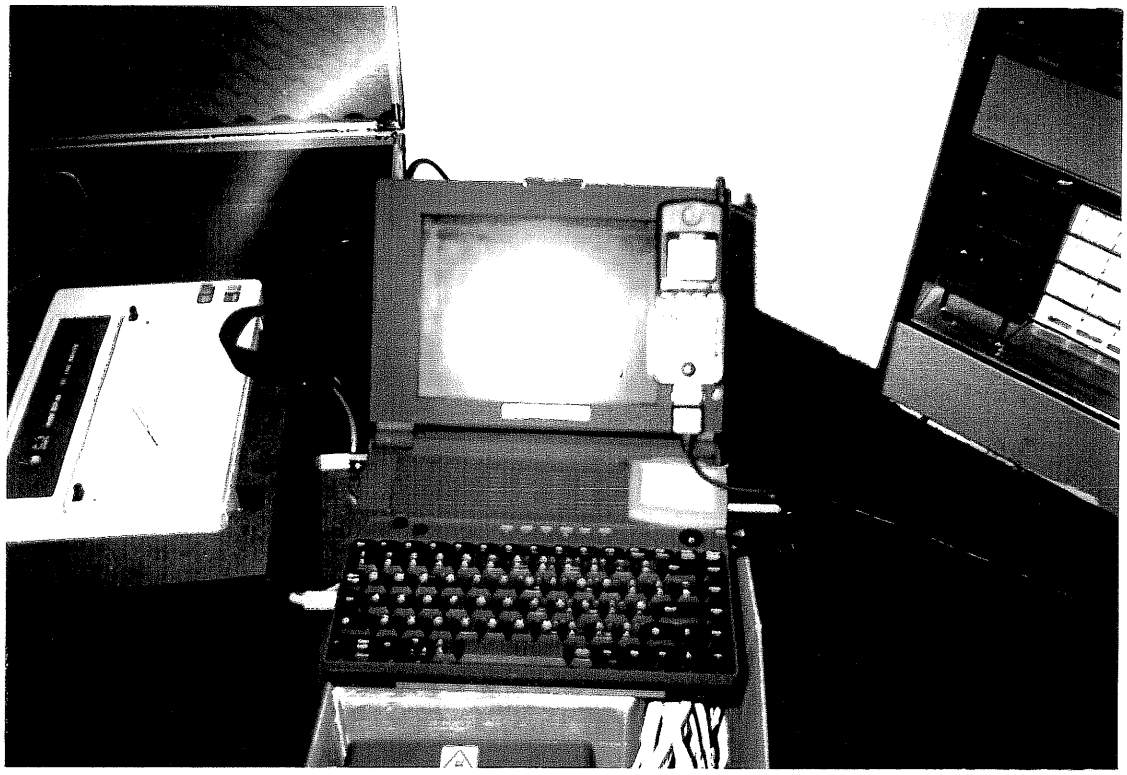


**Figure 14**

It is intended that the 2nd generation of MRDS will address these problems by:

a) Using industry standard PC's based on the 'open system' philosophy. (Fig. 14)

b) Using flexible software which can easily be changed or modified to meet the changing requirements of the Brigade.

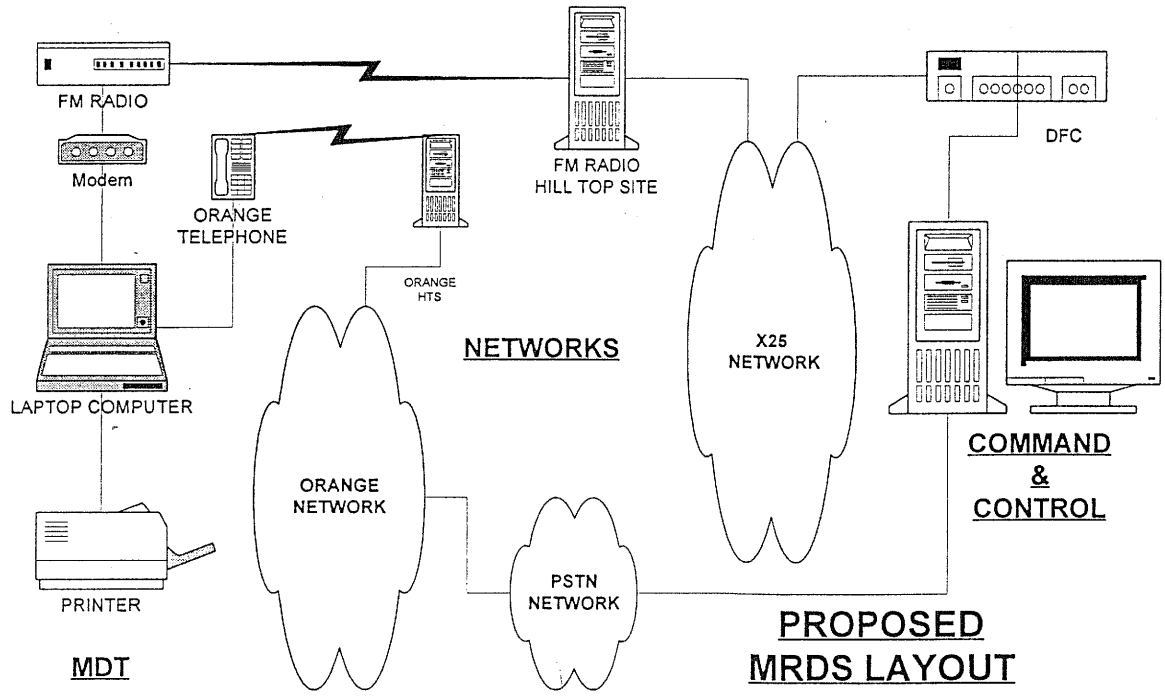
c) Providing an emergency speech facility from Appliances to various locations.

d) Providing a second data channel with transmission speeds currently up to 9600 bps and 64000 bps in the future.

This mobile radio data system will support two radio channels. The initial FM radio data channel will still be employed with the second being supplied from the PNC Orange cellular network. The second channel will be 8 times the capacity of the original channel, however the call set up time is approximately 15 seconds.

This cellular channel will provide backup to the existing AM speech radio scheme.

The layout of the 2nd generation MRDS is as follows:



iv) Appliance MDT's

The existing MDT FM radio and modem will be retained which will allow the existing system to interface to the new MDT hardware. This will normally provide the mobilising and RAS data route between C&C and the MDT.

All operational pumping appliances will be fitted with a ruggedised PC and connected to a printer. The software which resides on this PC will allow message transfer either via the private FM data channel or over the Orange Network. The primary route taken will be determined by message type but the software will allow message transfer via the secondary route in the event of a radio network failure. Investigations into the most suitable type of PC are currently underway and a trial of three different types is being carried out on the Brigades Command and Hazardous Substance Units.

The Orange cellphone will be permanently installed on appliances and will allow the automatic transfer of data as determined by the MDT software. When not being used for data communications, the cellphone can be used for emergency speech communications to Fire Control or other pre-programmed Brigade numbers; thus providing resilience to the speech radio scheme.

v) The Future

The Brigade policy will allow the present AM radio scheme to be supported by cellular telephones in the event of failures. The Brigade will reduce the radio channels from 3 to 1. This will provide spare broadcast equipment. Spare radio link equipment has been purchased from Kent Fire Service, thus allowing the Brigade to keep the AM speech channel working until at least the year 2000 and may be until 2005.

The Brigade FM radio channel should remain operational until the year 2000 and may be to 2005. However if this fails the Orange PCN cellular telephone will be able to support this data facility.

If the 'environment" introduces severe radio interference to the normal fire service operational channels, the Brigade may have to depend upon the Orange PCN telephone facility for its communications (Fig. 15).

It may be interesting to note that even greater problems may be experienced in the future with incident radio channels as a result of the proposed Radio Agency (R.A.) spectrum strategy. This Brigade has produced letters and a report to HMI Phillips identifying these problems.

**Figure 15**

## 3.0 Comparisons

It would appear the sites visited in the United States had lost their way, or by proceeding independently were reinventing the wheel (and duplicating the mistakes) and not achieving the full potential of on board mobile computing applications.

The United States approach to on board computer applications lacked the following:

- Organisational business plan
    - political support
    - funding
    - integrated approach, operations/technical
- Communication/networking with other Fire Departments, nationally/internationally

The results of this fragmented approach have led to such fundamental problems as:

- Crash air bag vs location of computer
- Overloaded vehicle power supplies
- Incompatible inter-face for the receipt/delivery of data
- Robustness of computer in a truck environment (computer/CD rom application)
- Radio base station infra structure.

See typical example in Figure 16.

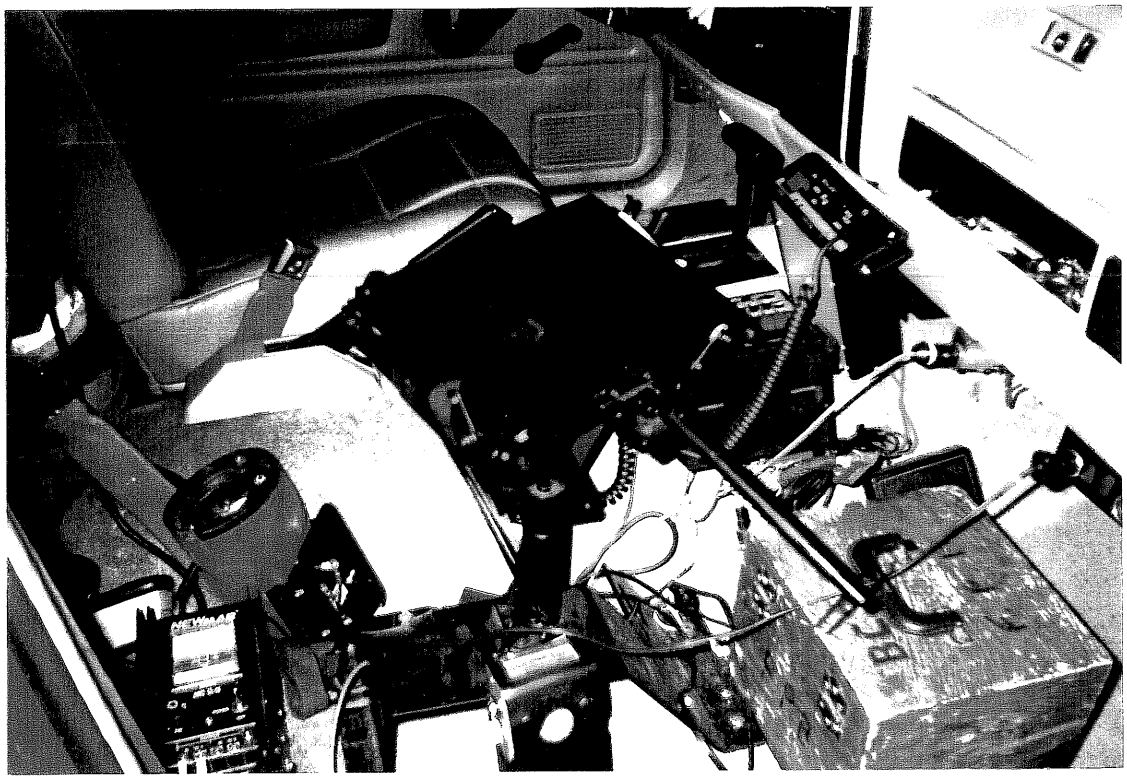


**Figure 16**

From the short exposure that I received to the U.S. Police environment, given it is completely different to a fire environment, they have resolved all the fundamental problems referenced above. They are now implementing on board computer applications on a Statewide basis e.g. **every** California Highway Patrol as of 1 January 1997 will have an on board computer with the same capacity, function and access to those mentioned in this report (South San Francisco).

The results experienced in England were completely different (remembering I only visited two sites).

- National Guidelines have been developed by the Home Office in the form of Public Safety Radio Communications Project.
- On board computing/general computer application has been identified in the WMFS Corporate Plan.
- Funding and implementation strategies have been identified in the Technical Services Business Plan.
- Specification documents for all departments are written and transparent for all stakeholders.

The above points have ensured all the fundamental problem areas have been resolved with the exception of one. The vehicles are not wired to accept mains voltage charging and hence they must rely on continuous battery charges. The continuous load placed on the charger is causing them to fail, this is a problem that requires replacement/repair and it is causing a degree of trouble and cost.

They have also established CD rom is not suitable in a fire appliance environment because of the electrical interference, knocks and bumps and heat making the P.C. prone to losing information or interrupted information from the disc.

It is worthy of note the W.M.F.S. do not intend at this point in time to fit A.V.L's to their vehicles.

The **major advantages** of the on board computer project in the WMFS were:

- Independence of proprietary products eg Dowty-Qwerty printer, keyboard, LCD screen by moving to general ruggardised P.C.
- Information that will be available to the fire officer e.g. water maps, hydrant records, building plans, special risk procedures and hazardous material information.
- Call information connected to a central data base that can be transmitted on mobilisation.
- Reduction in speech on radio channels.
- Reduction of speech radio channels to allow greater use of the radio spectrum for data transmission/reception.
- Less chance of human error through voice transmission.
- Communication Centre Operator has more time to focus on emergency messages (receipt/dispatch).
- Reaction time for firefighters is quicker because of availability of information - safer working environment.

4.0 Proposal

The Metropolitan Fire Brigades Board through Executive Committee endorse a policy for **On-Board Computing Capability for Operational Vehicles.**

5.0 Implementation Strategy

- Secure endorsement in principle at the Corporate level.
- Establish a dedicated combined task force of Radio & Electronic Services, Information Technology and Operations Planning to:

  i) Explore the feasibility of where we are now
  ii) where we want to be in the future
  iii)Cost all options and make recommendations
  iv) seek assistance through the national body (Australian Fire Authorities Council)
- Develop a business plan for implementation.
- Develop the corporate policy for approval by the MFBB.
- Fund the project - capital/recurrent
- Implement the project in accordance with the Business Plan.

Attachments