Emergency management research   topic:

An integrated emergency response network:

A solution to New Zealand's Hazard environment.

Submitted as a requirement for the M. Phil. Degree, Massey University 1998.

Mark C. McGill   id. #07770031
35 Guppy Rd.
Napier

All Hazards- Major transport accidents. Vehicle accidents. Urban fire. Rural fire. Hazardous substance emergency. Marine search and rescue. Land based search and rescue. Medical epidemic. Special services (minor flooding, lockouts etc.). Weather related emergencies (drought, flooding, cyclones, snowstorms, tidal waves etc.). Geographical emergencies (earthquakes, volcanoes, tsunamis). Building collapse. Mine cave-in. Trench collapse. Drowning in river or ocean.

TABLE OF CONTENTS:

Abstract:

By analysing the various response agencies presently operating in NZ and internationally, with an *All Hazards* approach in mind, is the development of a fully integrated emergency response structure the best option?

Research would indicate that it would have positive outcomes.

In a weighted comparison of the advantages, the opportunities and the disadvantages of merging the response agencies, the positive implications of merging outweigh the negative aspects.

A main theme that arose from the research is the philosophical base of the emergency services and emergency management. The macro-philosophy and therefore the inherent value system of all the response agencies is to save life, protect property and render humanitarian services. If a merged response service enhances these values, while being cost effective and benefitting the public it should be pursued. Although it is human nature to protect what you have, it is essential for these organisations to take a holistic view of emergency management. There are other opportunities and advantages that exist that support the concept of a combined emergency response agency. Some of the perceived disadvantages are misnomers and the others can be eliminated if the right model is adopted and the necessary resources supplied. However one of the major problems highlighted by the research, were the barriers to change: people (perspective), politics (power) and patch protection (position).

Abstract

If there is to be a successful merger, the barriers must be neutralised. A possible approach is to merge the services and blend the cultures, thereby creating a perceived, singular, unified social identity. Those involved in the new organisation must feel part of this culture and be able to categorise themselves as being in the group of integrated response professionals. There has to be transference of expertise from the existing agencies to the new agency in such a way that a holistic multi-disciplinary response organisation is generated and guaranteed. Field notes indicate that any change should be open change, a change based on the core values of emergency management and not political ideology. In addition, those who are going to use the operational systems, the emergency response teams, should develop them. This is very important for success in the initial phases, along with the appropriate training to new and existing personnel. To minimise prejudice in system development the change process should be lead by a transitional management team. This team must have an international perspective with a sound knowledge base in the emergency management field, social psychology and team development. The aim is to evolve through from a multi-disciplinary team concept, to a trans-disciplinary and trans-cultural (social identity) response agency.

1. Introduction

What plagues and what portents, what mutiny
What raging of the sea, shaking of the earth,
Commotion in the wind, frights, changes, horrors,
Divert and crack rend and deracinate
The unity and married calm of states
<div align="right">

Ulysses in Troillus and Cressida
Act 1, Scene III
William Shakespeare (1564-1616)
</div>

1.1 Background and significance

The history of the emergency response agencies in New Zealand reveals three main first tier agencies. It is comprised of those organisations that respond to routine emergency activities, which include accidents, fires and minor emergencies. These are fire (rural/urban), ambulance (land and air) and police (search and rescue). Before 1990, they have mainly operated independently of one another. They have their own culture, management structure, operating procedures, terminology, social identity, chain and command and dispatch control centres.

The agencies also operate under separate legislation. - The Fire Service Act 1975, Forrest and rural Fires Act 1977, Police Act 1958, Civil Defence Act 1989 etc. This creates problems with duplication and the boundaries of responsibility although there is a distinction between them in a legal context.

In some cases, the services providing for a specific risk have been duplicated. (The fire service commission has two agencies that respond to rural fires. The fire service and the local territorial authority.) The rural and urban fire environment is an area where there are two organisations responsible for the same event. Urban fire normally arrives first because they are manned

Introduction 1.

twenty-four hours a day with permanent fire fighters. Rural fire will then respond, and because of the legislation and funding mechanisms, will take responsibility and control of the incident, even though in many cases they do not have the same practical experience and firefighting knowledge. This can lead to areas of conflict.

Since 1990, there has been an increased interest in the operational integrity of the emergency service structure in New Zealand. This has been advanced by political ideology, emphasis on government funding priorities and the major changes in the direction of emergency management (disaster management) in New Zealand and internationally. A significant amount of work has been carried out on various components of the emergency services,

(For example:

* Law Commission Report No.22 "final report on emergencies."

* Civil Defence Review Panel report, April 1992.

* Fire Service Independent review, Dec. 1993.

* Fire Service Report of the Internal Review Team, March 1994.

* NZ Fire Service Commission CEO review of the NZ fire Service and National Rural Fire Authority Feb. 1994.

* Final Report of the National Fire Service Levy Working Party, June 1994.) culminating in the report on emergency services, Nov. 1995. The review identified a number of concerns with the current structure. The concerns highlighted that are of relevance to this research are:

(1) The need for greater Co-operation between emergency services, or horizontal integration.

(2) The need for continuity of management throughout the life of any

emergency event.

Vertical integration is highlighted in sect II. Part 4 (29) of the review.

" Generally each service has developed their own outlook on emergency management. They work to their own standards and have their own operating cultures". (Emergency Review Task Force, 1995, p.29).

(3) The need for an all hazards approach to the emergency services structures.

(4) Look at the option for a green-fields approach to emergency management.

There is one area the review failed to identify in the response arena, national and international response networks for major disasters. This is extremely important because of the limited resources and skills inventory within the New Zealand hazard environment at a local level. In the case of a major disaster, it is unlikely that a local community will be able to return to 'normal' without outside assistance. This was highlighted in the Edgecome earthquake of 1987. It also highlighted the need for community based structures and liaison mechanisms, along with analysis of training needs and the development of simulation/exercises that extend and aid in the cognitive processes of adaptation. Paton, (1994) suggests that to achieve this, training and simulation should take place in and under different contexts, away from the normal resource and support base.

Although there has been a number of initiatives before and since the review, there is still a need for the analysis of the concept of a fully integrated, emergency service in the area of response. The review points out the need for more formulated co-ordination between the emergency services organisations

Introduction 1.

with a stronger momentum towards shared facilities, common protocols and integrated communication and dispatch centres.

The initiatives so far appear to be agreements either on district bases or between selected agencies. Recent examples of this are:

a. The Shared Information Technology Environment (SITE) system between the police and fire service.

b. Co-responder to medical emergencies in the Wellington area between fire service and Wellington Free Ambulance.

c. Co-location of fire and ambulance services in Lumsden, Invercargill.

These arrangements have had both positive and negative implications. There is scepticism by firefighters that the SITE concept will cause delays in response with the loss loss of local knowledge. However, the positive side is that all agencies required for an emergency event will respond simultaneously. The co-responder service in Wellington has highlighted inter agency conflict and patch protection. Any future progress and development in inter-agency cooperation and co-responder programs will require a process of management assimilation. The positive aspects are, the public is receiving basic life support and emotional support in specific locations quicker than in the past.

The emergency services review indicates that integration would improve efficiency and effectiveness. The United States, Canada and Australia appear to be taking a similar path, which indicates an international intent to improve the emergency service systems. However there does not seem to be a National directive from government on integration as at 01/01/97. It has been left to the various agencies to proceed where management sees a need.

Another issue that has risen over the past decade is funding for the

Introduction 1.

emergency services. For example on the 07/01/97, the conservation department made public that they were unable to pursue mountain search and rescue because of insufficient funding and they were retreating to their core business roles. The police during 1997 have repeatedly stressed that they are both under staffed and under funded. Will this impact on their search and rescue roles in the areas of finance and manpower? The fire service were turned down for an additional $84 million dollars in March 1997 to fund their five year strategic plan. The Fire Service in late 1996 put forward a proposal to government for changes in their funding structure, to create a more equitable system of charging for all New Zealanders, in the area of response. On Saturday 20th December 1997 Mr Estall indicated that the present funding process would continue. The levy would be reduced moreover to 4.5% of sum insured. This would in essence reduce the funding by $45 Million dollars annually.

These various public sector groups are competing for a diminishing level of funding. This itself leads to an attitude of 'We will only do what we are legally required to do. Our core business'. This aligns emergency response to legal responsibility, which in turn reduces co-operation and creates conflict over who is responsible for what and is counter to the international trend towards integration.

Looking at the events of the past seven years with public sector reforms, funding issues, emergency service review, emergency response agency conflict and the development of the principles of CEM and IEM, it appears that the New Zealand emergency service structure is on the verge of a renaissance. It is at the crossroads and needs a positive direction, so that NZ can lead the way in the field of emergency management. It is extremely timely to look at an

Introduction 1.

integrated emergency response structure.

1.2 RESEARCH METHODOLOGY

The research employed a modified-grounded research methodology aligning to the qualitative approach. The initial phase of research utilised grounded theory until a series of themes rose out of the data. The aim was not to verify an existing or established theory, but to highlight concepts and, through a comparative analysis of literature, questionnaires, interviews and field notes, establish whether a model for integrated emergency response would evolve.

Thematic interviews and questionnaires were used to acquire an understanding of the different attitudes, procedures and culture within emergency management. They also highlighted the political complexities involved with the integration of response agencies that have a history of independence. However, they did establish the positive aspects of integration, along with strategies for change, the benefits and disadvantages of integration in relation to routine emergency and disaster events, and the different approaches to integration.

International and National trends in relation to emergency management are Comprehensive Emergency Management (CEM) and Integrated Emergency Management (IEM). CEM is a systematic way of ensuring all aspects of a community emergency programme are considered and implemented. It moves away from a purely response orientation to include all phases of activity. Classed as the four Rs, Reduction, readiness, response and recovery, it applies to all the risks, environmental, technological and natural.

One of the major components of CEM is IEM. This is where all community

groups and their applicable resources are incorporated into a community emergency programme. The relevance of IEM to the merger of the response agencies is twofold.

(1) The total emergency response resources are available for all risks and during the development and implementation of CEM programmes.

(2) The merged response service can be a focal point for the wider community IEM programme.

The study discusses emergency response to "all hazards"; (*The concept of an All Hazards approach suggests that all the hazards faced by the community should be assessed collectively rather then in isolation. This allows a comprehensive and adaptable response to be formulated.*) except the emergencies created by criminal offending, (homicides, armed defender incidents, major disorder etc.) where the non-police/law enforcement emergency services have little or no role. However, this may change when these events threaten the life or property of innocent individuals. For example, when people are injured in building collapse from terrorist activity, or property is threatened by fire from rioting or domestic disputes. When we analyse the hazards that threaten the community, they fall into two main categories.

a. Routine emergency events. **b.** Disaster events.

1.3 Routine Emergency

A "routine emergency event" is a relative concept. It is very subjective, depending on the place and time and the state of mind of the individual involved. What may be threatening to one person may be merely an inconvenience to another. An elderly invalid may view their washing machine overflowing as an emergency. It does threaten to damage his/her property and

appears to be out of their control. To a twenty-four year old, it may only be an inconvenience that could be remedied by a little effort. The second main factor that defines an emergency as routine is that, one or a combination of first tier response agencies can control it.

Therefore, the three important factors of a routine emergency are

(1) The event appears to be threatening to the individual's life or property.

(2) To the individual, the event is perceived as being beyond their control and they require assistance.

(3) The event can be controlled by the local response agencies.

The routine emergency can be divided into two categories.

(1) Accident

(2) Emergency

The difference between these two events is, an emergency involves a wider segment of the community, a greater number of victims, and the demands on the responding agencies are more complex and greater then with an accident.

1.4 Disasters:

A disaster event however is defined around four main elements and an additional element based on an historical perspective.

(1) Scope: "A substantial proportion of the people in the community must be effected" (Baum, 1991)

(2) Sudden: The event and effect is sudden and results in substantial damage (Harshbager, 1974).

(3) Disruption: Severe disruption of physical and social and/or psychological functioning. (Quarantelli, 1985, Taylor, 1990)

(4) Demands: Severe demands on the resources of individuals and

communities. A sense of helplessness. (Taylor, 1990)

(5) Retrospect: Will the event be historically significant? Will it be remembered in that community by future generations? For example the Wahine disaster.

A disaster can only be determined as such when all the above elements are present, and only within the relative context of community size and make-up. The elements in context to this research are also related to events directly effecting human kind and human psychology, as apposed to environmental events that have a negligible effect on the day to day existence of mankind. Many events may extensively effect the physical environment without impacting on human kind. For example, in remote wilderness areas, where there may be a major earthquake that destroys rare geographical formations and native flora, but does not effect man directly.

1.5 Literature review

For the literature review, the following sources were used to obtain information about emergency service integration and the other themes that were generated. The Massey University library databases, ABI, Index NZ, Psychlit and Social Science Index were used to source relevant information in the areas of emergency response, emergency management, organisational change and change management, and individual identity and status within organisations. Information was also retrieved from the NZ Fire Service, Australian Emergency Management, Edmonton Emergency Response and Mississauga Fire Department resource centres, along with the NZ Ambulance Board, Eastern Institute of Technology, Hawkes Bay Health, the Department of Research and Labor Issues International Association of Firefighters and Mark

Introduction 1.

Mcgill's personal Libraries. The Internet, national and local newspapers and magazines, TV documentaries, radio interviews, political and ministerial letters and newsletters were also utilised.

The literature review concentrated on five main themes.

Table 1 illustrates these themes along with the various sub-themes associated with them.

Introduction 1.

Themes that were generated from the grounded research.

THEMES	SUB-THEMES
Present and emergent emergency response structures.	**New Zealand** 　　*Ambulance* 　　　*Air ambulance* 　　　*Fire service* 　　　*Police/SAR* 　　　*National emergency management* **International** 　　　*Queensland* 　　　*Japan* 　　　*Canada* 　　　*Finland* 　　　*North America*
Status and identity of the organisation:	**Philosophy** **Emergency services philosophy** **Value systems and the organisation** **Public opinion** **History**
Status and identity of the individual and organisational change:	**Value identity** **Organisational change** 　**Trust**
Advantages of Integration:	**Effective and efficient service delivery** **Contingent capability** **Realise cost savings** **Enhance the co-ordination of the emergency services** 　**National standards** **Reduce duplication and friction between services** **Advantages to personnel** **Merged jurisdictional lines** **Comprehensive emergency management**
Disadvantages of Integration:	**Funding inequity** **Ems/fire/SAR role differentiation** **Resource vulnerability** **Diluted competency** **Barriers** **Loss of historical identity** **Fear that changes would be cost driven and not philosophically driven**

Introduction 1.

The research developed from the methods used. The initial question came from field notes on integration and the particular emphasis that has been placed on reviewing emergency management in New Zealand. The interviews were taped and documented word for word and the resulting themes were again analysed in the literature review. The literature review extended the data on these themes and developed the sub-themes. The modified-grounded thematic approach gave a holistic view of the response agencies and the particular models that could be appropriate to NZ. During the final analysis, five relevant themes were analysed through comparative tables. This highlighted the advantages, the disadvantages, the various hypothetical response structures, the possible funding mechanisms and whether the hypothetical response structure should have multi-skilled or specialist teams.

The benefits of the CEM and IEM have been accepted internationally and any analysis must incorporate these concepts. The philosophy of the emergency services is based on the mission of saving life, preserving property and render humanitarian services. In addition, the public relates very closely to these concepts when discussing the emergency services role. Therefore the analysis of data compared these philosophical underpinning's with the free market approach that has become main stream over the past fifteen years in New Zealand, in private and public organisations. This is not to say cost effectiveness was not a consideration but that one of the prime indicators of effectiveness is based on fulfilling the Emergency Service Philosophy. An Emergency Service Philosophy must also have policy that reflects accepted standards of performance. These standards have a number of inherent factors, which include response time *(rapid response),* survival rates and quality of

Introduction 1.

patient or victim care. It has been shown in fire/rescue and emergency medical care that it is critical to respond in the shortest possible time with adequate numbers of knowledgeable and experienced personnel. These standards of performance can be one of the measures of effectiveness. The Department of Research and Labor Issues International Association of Firefighters (1995) state that a community's system must be adequately staffed and flexible enough to meet acceptable standards of performance. Only by consistently meeting such standards can an EMS maximise a patient's chances of survival. They also suggest that fire/rescue's ability to respond rapidly to unanticipated demands for service, with sufficient numbers of trained personnel will enable stabilisation of time critical emergencies. Like EMS, the effectiveness of fire/rescue department's responsibilities is largely measured by how quickly appropriate resources can arrive at the scene. The critical time intervals of both EMS and fire/rescue response are similar.

There is no single body giving direction and stability to the emergency services and there appears to be no long-term strategic direction. Decisions appear to be formed from political ideology as apposed to the science of emergency management. There is no trust for management and a cynicism for any form of change. Generic managers, with little or no understanding of the fire service culture and values systems, tried to impose the value systems of the business world and only succeeded in demoralising and ostracising staff. The changes have also created conflict between the fire service and the ambulance service due to the fire service move into the areas of emergency medical services. The ambulance in turn has created conflict by moving into the area of air rescue and medical transport. There appears to be a lack of co-ordinated

15

Introduction 1.

planning between the services and the effectiveness of emergency management in the area of response is certainly questionable.

What has to be analysed is how the major barriers to a merged emergency response service can be neutralised. There are many positive aspects and opportunities in merging. Do these positive aspects outweigh the barriers of political ideology, people's fear of change and patch protection?

What is clear is, to implement and develop an integrated emergency management structure, requires processes and interventions that effectively deal with the issues associated with change. The issues of team development, administrative, operational and managerial structures must be managed with the appropriate social-psychological strategies for a merger to be successful

1.6 Research Questions:

By analysing the various response agencies presently operating in New Zealand and internationally, with an all hazards approach in mind, is it the best option to develop an integrated emergency response structure?

If not,

Should the status quo be maintained or is there a

better system?

If yes,

(1) Examine the four main response agencies, (Police SAR, Fire urban/rural, and Ambulance air/land) to identify whether they can be integrated into a single emergency response structure.

(2) Identify the most effective Integrated Emergency Response Structure (IERS) for the New Zealand environments, with an all hazard approach in mind.

(3) Identify the most effective management structure for an IERS.

(4) Identify an appropriate funding mechanism for IERS.

(5) Identify an effective process to manage the process of merging.

(6) Identify the barriers to change within the context of emergency response.

(7) Examine the areas of disaster with specific reference to, national and international response teams.

2. METHODOLOGY

The methodology chosen for this research paper is qualitative. Sarantakos, (1993) says that data collected using qualitative methods involves a dynamic process of gathering, thinking, evaluating, analysing, modifying, expanding, gathering, further thinking and so on. The approach was based on Glaser's and Strauss's, (1967) inductive strategy, where the research discovers concepts and hypotheses through comparative analysis. They advocate theory generation through discovery and call the result grounded theory. They do however align with part of the positivist's position, that the function of theory is explanation and prediction. (Glesne & Peshkin 1992) The approach taken in this research is a modified-grounded theory. The reason for this choice is that, very little research has been undertaken relating to the merging of the response agencies in N. Z. and the grounded approach is appropriate for preliminary, exploratory and descriptive studies. (Glaser & Strauss, 1966) It is a modified-grounded approach in that the generation of basic themes was sought, not basic social process. It is from the grounded study that themes arose and from thereon a thematic approach was utilised. The methodology also provided a more appropriate basis for examining the rapid changes within the emergency management field during 1996-98.

The literature review and analysis were driven by themes that arose from the previous emergency service review and initial ground research. The data provided insights into the organisations, the fears, the history, the advantages and disadvantages and the emergent systems of emergency response. Within the context of the themes generated, the data was compared and analysed to arrive at relevant models, observations and recommendations.

The initial research question arose out of three areas.

(1) The Emergency Services Review 1994 referred to earlier in the introduction.

(2) Insights highlighted by some of the response crews of both ambulance and fire

18

departments. These insights originate from experience in the response field and inadequacies seen in the present emergency service structure.

(3) Overseas experience in integrated response. The review and the insights highlight the need for greater integration amongst the emergency services. These indicators were used as a basis for initiating a comparative analysis of the existing systems.

The evidence generated in the emergency services review may not be completely accurate as it involved only one stratum of emergency management and only looked superficially at the area of response. It appears that the frontline teams of the response agencies were not directly consulted. However, it does discuss integration as a future approach to emergency management. The comparative analysis of the literature review, interviews with senior management, and questionnaires of operational teams aimed to establish a generality of fact across the whole spectrum. In this case, a comparative analysis was an appropriate method to test the relevance of the integrated approach. The three main agencies are presently going through major changes in working environments and operating structures. The Fire Service has been undergoing a review process over the last three and a half years. During this time both employers and employees have engaged in a bitter dispute. Because of the uncertainty there has developed an attitude within the operational ranks of suspicion and fear of change. It is seen as a threat to livelihood and life style. Associated with the review has been talk of expanding into other areas of which one is medical emergencies. This accordingly has been seen by ambulance services as a threat to their core business and therefore has created fear and suspicion in the ambulance service towards the fire service. The police in their turn are under pressure with falling numbers and a new Shared Information Technology Environment (SITE) system being implemented. Some of the replies to questionnaires and interviews were negative towards change. It is a natural phenomenon for anyone under threat to either run or entrench and to become

suspicious towards any variation. However, in saying this, the data collected included topic

specific information, portraying a picture of the present position of the emergency service

staff, along with the relevant stresses and the present fears. This data indicated some of the

human and organisational barriers to change

Through research, a new theory may evolve or the research may confirm the status quo

of the existing emergency response management. "Constantly redesigning the analysis is a

well-known normal tendency in qualitative research (no matter what the approach to

analysis), which occurs throughout the whole research experience from initial data

collection through to the final analysis and writing". (Glaser & Strauss, 1967)

The aim of this study was not to directly test the theory but to discover and develop

theory. To be open to the research data so that a theory springs from the research and not

from preconceived ideas or bias. The objective was to be open to new ideas and to ground

the theory in concepts that have risen from the comparative analysis of the views of

different operational response groups, management and the public. By utilising this

methodology a model can be developed that can be tested.

Kuhn, (n/d) said, " A theory's only replacement is a better theory." In this research,

the approach taken was that the present operational response structure should only be

changed by a response structure where the advantages outweigh the disadvantages and the

costs of neutralising the barriers to its implementation. By comparative analysis between

and among the groups associated with the emergency management field there is capacity to

generate relevant models. The study centred initially on the particular perspective of

integration. This focus enabled either the confirmation that integration is the best option or

the generation of a new system or a reformation of the existing one. To be faithful to the

empirical discipline the study centred mainly in the response and management fields of

emergency management. This was to generate a model through a comparative analysis

between and among groups associated with the same sphere of responsibility. At the end of the day, the model on emergency response has to be applicable to those in the field. The development must enable the people in this arena to have control in the every day situations and to have an overview of where they are going. The variables highlighted have to be a broad guide suited to the every day applications of emergency response and the disaster situation.

The model has to be relatively general to make it flexible enough to the wide range of changing situations and applicable to all areas of emergency management. All sectors must be able to see the worth of such an approach. This is achieved by basing the research on modified-grounded theory that corresponds closely to the realities of the emergency management area. The themes make sense and are understandable to the people working in the field. This is important because it is the personnel in response that will wish to apply the model. They must be able to grasp the model in their own experience. To achieve this there is a need to find out from them, from their experiences, what are the relevant themes and from there develop relevant models. It is only then that the model is applicable to the practical situations. The perceived problems with this approach is, the intrinsic bias from those in existing agencies or the individuals being captives of their own history. The question must be asked however, can anyone be objective? Surely all judgement, all perception is subjective. It is through a wide range of viewpoints and a corresponding comparative analysis that the most appropriate solutions can be found.

For qualitative research to have any credibility, data must be sourced from those who interact within the boundaries of that research field. So in this example I sourced the data from the operational crews and management of the four primary response agencies (*Fire urban/rural, ambulance air/land, police search and rescue.*) and also from an agency outside initial response but deeply involved in command and control structure of disasters,

Civil Defence.

To test the thoroughness of the research Guba & Lincoln's (1985) four factors regarding the test of rigour for qualitative research were used.

1. *Truth value*- they suggest that credibility is the criteria against which the truth-value is evaluated. This was achieved by making it credible to those in the field, where they can recognise from description and interpretation that the findings are part of their own interpretations and descriptions. This does not mean that they will necessarily agree with the findings but that they are grounded in the emergency management response arena.

2. *Fittingness* - A study is fitting when its audience views its findings as meaningful and applicable in terms of their own experience.

3. *Auditable* - Which is where another researcher can clearly follow the research path.

4. *Confirmable* - Guba and Lincoln (1985) suggest that confirmability be the criterion for neutrality in qualitative research. Confirmability is established when research can be clearly followed and truth-value and applicability are established.

The methodology used in this research is qualitative, based on comparative analysis of emergency response agencies. By doing this we can source data from the relevant emergency management fields and a model of emergency response can be discovered and developed. This model is then applicable and credible to emergency managers, response agencies and the wider public. It allows for the rigours of testing under Guba and Lincoln's (1985) four areas of Truth-value, Fittingness, Auditable and Confirmable.

3. M E T H O D

There are four main methods used: Literature review, field notes, interviews and questionnaires. The four methods were used concurrently and continually throughout the study. The aim of using the four methods was to give a degree of integrity to the data, by multiple -data-collection. This triangulation enables those reading the findings to have confidence in those findings. This triangulation is not only through a multi-agency approach but also through a vertical analysis within the various organisations. All information obtained was classified under the organisation from which it was sourced and not the individual, so that all participants remain anonymous.

The literature review included books, journals, articles and all relevant literature since 1980. To source this literature the normal resource centres such as the university library loan and interloan systems, the internet and the emergency services information resource centres, as indicated in the introduction, were utilised. One of the aims of the literature was to justify the initial proposal, demonstrating its importance. In addition, it helped to define and redefine the topic and assist in the method of interviewing and the development of the interview questions and questionnaires. The literature review continued throughout the study, because so many different areas of influence were uncovered throughout the research. It enabled the retrieval of information on the history, development and the various debates in emergency management. A literature review gave the necessary information to compare and contrast various approaches on the issue of integration.

The second method of research was the interviewing the managers of the four main response agencies at seven geographical locations within New Zealand. *(Dunedin, Christchurch, Wellington, Palmerston North, Hawkes Bay, Hamilton and Auckland.)* I travelled to all

23

these centres over the period of a month. The aim was to obtain the management perspective from the various organisational structures of fire, rural fire, ambulance, and search and rescue and air ambulance in municipal and cosmopolitan centres. The areas were chosen because it gave a broad coverage of New Zealand and it was where the majority of senior management carried out their roles. By gathering information and opinion from the primary agencies, the aim was to discover the perceived problems and opportunities with integration.

The co-ordinators of civil defence were interviewed in the same geographic locations. The objective here was to give a perspective that was outside the primary response agencies but with an in-depth understanding of these agency's structures, legislation, culture and procedures. Because civil defence has a co-ordinating role and only a limited response role during disasters, it was perceived that they would have no agendas in the area of response. Therefore, they were initially used as a balance in the research. It was presumed any bias they had would be towards the co-ordinating role.

An interview with the project manager of the police/fire Shared Information Technology Environment (SITE) system was carried out, to ascertain whether there is the technological hardware and software available to control the operations of any response system that may develop. This information was to ensure that the equipment and capability are there to support any system that evolves from the research.

Four weeks into the research, an opportunity arose to interview the 'assistant manager communications' for the Hampshire fire/rescue organisation. This gave the opportunity to examine the attitudes and the systems in the United Kingdom. in relation to integration. The interviewee also had first hand knowledge of the structure of emergency services in Florida. This interview gathered information and enabled a comparison of the structures.in

Method 3.

Florida and the United Kingdom

The objective of this interactive technique was to gather information on what are deemed the positive and negative impacts of an integrated emergency management system in the New Zealand environment and from international experience. By using these agencies, from the context of their particular specialist roles and hazard base, it enabled an overview of emergency service response structure, and possible alternatives.

The third method comprised questionnaires. These were formulated following the initial literature review, the Hampshire interview and field notes. These were sent out to 60% of fire services permanent operational staff, 60% of fire service volunteer staff, (*The volunteer staff are spread throughout New Zealand and many are in rural areas. As there is a large number of volunteers, 60% will give an adequate cover of their views.*) 60% of ambulance staff and a group of police SAR personnel on a SAR course. Because of the large number of operational staff and the broad rural\urban social and geographical cover, it was felt data saturation would be reached even if the response were low. All agencies were asked to answer the questions as a team exercise. There was the expectation of a return rate of 33% of the total questionnaires. To interview the same number of people would be extremely difficult and non-productive due to saturation being reached early in the process. This approach enabled a broad spectrum of data from the operational viewpoint. The sample of permanent fire and ambulance personnel was selected from as many areas as possible. However, when it came to major cities only a random selection were chosen. This still enabled a broad range of feedback from a cosmopolitan perspective. The questionnaires for the rural volunteers were sent to the United Fire Brigades Association (UFBA). The UFBA were requested to post the questionnaires out to a random selection of remote, to moderately sized rural community fire stations. These were distributed along

with the monthly newsletter.

By using interviews of management and questionnaires of operational crews, it enabled a vertical analysis of emergency organisations. This coupled with the horizontal research between organisations and an international perspective enabled the ability to do a comparative analysis of emergency response agencies and their particular perspective about integration. The comparative analysis is illustrated in Fig. (p. 27)

The process of interviews, questionnaires, literature review and field notes ensured triangulation, and therefore integrity in the eventual findings. The findings were grounded in the various agencies, their permanent and volunteer components and the vertical and horizontal comparison between and within agencies. Once all the information from interviews, questionnaires, field notes and literature had been assembled, a comparative analyse was carried out. The comparative analyses assisted in developing relationships and highlighted contrasting and conflicting viewpoints. The utilisation of comparative tables, based on the predominant themes that were discovered during the research, enabled the development of models, and the implications of these models in the present emergency management environment.

Once a model evolved that indicated a merger of the response agencies would have positive outcomes, further research was carried out on existing and supplementary data, to develop a blueprint for change. The opportunities for a merger and additional research questions.

Fig. 1.

4. Analysis and Findings:

There were two main difficulties with the research.

a. There appears to be no examples of other countries attempting to merge all the emergency response services on a national basis. This could be because of the physical and political contrasts, for example the USA, Australia and Canada. With the state funding and various state structures of emergency management, it may be seen as to complicated to pursue a totally integrated approach. Whatever the reasons, no literature on a total merger was located.

b. The state of the emergency response services and emergency management within NZ at the present time is extremely fluid. With the questions on funding relating to the police, the fire service, and the changes taking place in the ambulance (air and land) and the fire service, the research base is in a continual state of flux. However, it is an appropriate time to do a comparative analysis of the present structures both nationally and internationally.

The first point of importance is the worldwide trend to pursue the comprehensive and integrated emergency management model. This has been recognised internationally to be the most effective method of dealing with emergency and disaster situations. Emergency management is a science that embodies many facets of both the social and natural sciences. For example geology, meteorology, psychology, social-psychology sociology, management, history etc.

The following eight questions were asked of the operational crews of the four main response agencies.

1. Taking an all hazards approach, do you feel there should be an Integrated (*combined*) emergency response service set up to replace the existing primary agencies, of

Fire *rural/urban,* Police/ SAR, Ambulance, *Air/road*?

☐   Yes   ☐   No

REPLIES:

Ambulance	Yes 25%	No 75%
Fire	Yes 64%	No 36%
SAR	Yes No reply	No No reply
Rural fire volunteer	Yes 66%	No 34%

2. What are the advantages of an integrated system?

3. What are the disadvantages?

4. If yes what structure do you think would be the most effective and efficient?

5. What could be the funding source of such an agency?

6. What would be the most appropriate management structure?
(Should there be one management and command and control structure for all emergency services?)

7. Would they be multi-skilled or would there be specialised teams to deal with the various emergency situations?

8. Consider other areas such as control centres, station location and other matters that you see as relevant?

* **All Hazards** -- * urban fire* rural fire* vehicle accident * major transport accident
* hazardous substance emergency   * marine search and rescue
* land based search and rescue *medical emergencies * medical epidemic
* weather related emergencies (flooding, drought, cyclones, snowstorms, tidal waves)* geological emergencies
(earthquakes, volcanoes, tsunami)   * building collapse

The questionnaires were sent out to 60% of the fire, ambulance and rural

volunteer stations. The permanent fire and ambulance stations were sent four

copies of the questionnaires and they were asked to answer them on a shift basis.

The volunteers were asked to answer theirs on a station basis. Because SAR is a part time role by the police, the questionnaires were given out at a training course. This course had SAR members from a broad geographical coverage. The nil reply by SAR created difficulty in later analysis and the credibility of the results obtained.

The response rates of the questionnaires delivered are noted below.

SAR   0%

Ambulance   **50%**

Fire   26%

Rural Fire Volunteer   25%

Given the relatively small percentage sample return, it could be argued that it is not a true representation of the emergency service operational crews and therefore the final results are questionable. However, although the returns did not represent a majority, they did give a wide geographical, cosmopolitan, rural and municipal representation, and in doing so enables a broad information base for comparative analysis.

From the interviews, questionnaires and field notes five specific themes became evident, and it was on these themes that the literature review concentrated. The literature review highlighted sub-themes that were then compared back to the questionnaires, field notes and interviews. This method helped to develop correlation's and contrasts within and between agencies and international structures and developments. This form of data generation allows findings to be grounded in the research and allows for any evolutionary developments during research. The following sub-themes that align to the questionnaires were compared through comparative tables,

(Table. 4 Advantages, Table. 5 Disadvantages, Table. 6 Various response structures, Table.7 Funding for a merged service, Table. 8 Multi-skilled or specialist teams.) which are highlighted on the following pages.

The tables compare across the questionnaires (operational crews), the interviews (management) and the literature and within each column the various agencies are compared.

The agencies are indicated by a coloured *

Fire	*
Ambulance	*
SAR	*
Civil Defence	*
Communications manager SITE project	*

The replies were varied but do indicate corresponding relationships between and within the various agencies and the international environment. (It *should be noted that these replies identify the range of data applicable to each theme, and are not necessarily the predominate viewpoints.)* By doing both vertical and horizontal comparisons between the various agencies at an operational level and the management level, and then aligning both with the data from the literature review, structures became apparent.

(Table 2)

Questionnaires - Operational crews		Interviews - Management		Literature Review	
(0)	Relative budget increases *				
(1)	Quicker response*** Synchronised response * First response cross trained staff* Better service to the public** Better coverage**	(1)	Better coverage and response times*** *	(1)	Effective and efficient service delivery
(2)	Better continuity between roles* Utilising the closest resources** Greater co-ordination of resources, cheaper implementation/maintenance/replacement costs** The present system has the disadvantage of each agency doing their own thing with no direction* Integrated training** Closer co-ordination of services*** Closer operational results in the better co-ordination**	(2)	More co-ordinated response** * * Co-ordinated emergency planning* * One administrative body* * Better co-ordination** *	(2)	Enhance the co-ordination of EM delivery
(3)	Ability of employees to change roles and careers** Better training facilities* Better training opportunities for staff*	(3)	Better career development opportunities*	(3)	Advantages to personnel
(4)	Unity of purpose* One stop emergency service*	(4)	Multi-agency approach**	(4)	Comprehensive emergency management
(5)	Cost effective allocation of emergency resources** Streamlined upper management** Less total manpower* Reduced management and building costs***	(5)	Realise cost savings**	(5)	Realise cost savings
(6)	Common communication centres*** Shared information* Better communication between services*	(6)	Shared communications** *	(6)	Merged jurisdictional lines
(7)	Removes duplication of effort and resource**	(7)	Reduced duplication* Future proofing emergency communications*	(7)	Reduce duplication and friction between services
(8)	Role expansion** More manpower - larger pool of trained personnel* Cross training** Shared skills***	(8)	Greater number of multi-trained responders*	(8)	Greater contingent capability
(9)	National standards*	(9)	National standards*	(9)	National standards

When looking at merging of the response services the perceived advantages are:

1. A more efficient and effective service delivery for the public. This includes quicker response times, better overall coverage for the communities hazard environment and geographical area, a co-ordinated response when required and increased knowledge base by the emergency response services.

> **Ambulance** - "Our service believes you cannot argue against a co-responder program if you are doing the best for the patient and not jealously guarding the job, but there has to be safeguards to make sure the right things are being done." "I go along with a merger if the patient gets the benefits."

> **Police (SAR)** - "The multi-agency approach would benefit the public. Quicker response in some cases and a more co-ordinated approach...It doesn't matter who resuscitates a patient as long as they are resuscitated."

> **Fire** - "Maximum use of emergency services.... efficient planning processes...crews have an understanding of how a total emergency service works.... if the various people train together there are obvious and immediate benefits on the incident ground, a mutual understanding of everyone's role...emergency workers have a personal knowledge of each other and build a trust in the others skills it does make them more effective.... there could be cost efficiencies."

> (McGill, 1997b)

2. A totally co-ordinated emergency response structure.

Civil Defence- "The co-ordination and integration is absolutely vital and we are finding more and more that when we have an emergency, for example a chemical spill, the police, fire and ambulance teams have to know what the others are doing, what are the safe areas. There is a greater need for amalgamation... By sitting down and doing co-ordinated planning not only do you get to know the capabilities of one another and the various roles but you get to know the types of resources you need in different circumstances" (McGill, 1997b).

Both ambulance and fire agreed that there needed to be greater co-ordination.

Fire and ambulance- "There needs to be greater co-ordination"

Fire - "The advantages would be better co-ordination, mutual support and better use of the strategic location where the people are sited" McGill, (1997b).

Many agreed that the Incident Management System (IMS) (This system aims to integrate procedural,communication and operating systems between services.) was a start, but as of June 1998, the concept had not been explained to the operational crews. There appears to be a hiatus in this area. The emergency services review highlighted the advantages of a co-ordinated emergency service structure. Others felt one control centre would be advantageous while others felt a full merger was the best alternative.

3. Employees would have better career opportunities, a more interesting working environment and greater job stability.

Fire - "It would be good for career development where you could do a general spread of skills but specialise in one. This would give

them an appreciation of the whole field and they could change fields if they desired" (McGill, 1997b).

It was interesting to note that many of the operational teams saw better personal advantages.

4. A comprehensive and integrated approach to emergency management.

Fire - "Common communications and a seamless emergency service. If you have a workforce dedicated to emergencies, they were structured to respond, and always on call, then you have one organisation managing a wide range of responses and you have flexible staffing arrangements. It is quite efficient to have people gradually developing into a new role. The advantages would be better co-ordination, mutual support and you could make sure that the people were sited in the best strategic location." "You could deal with the whole situation rather then just part of it. If you had the required people to deal with the rescue, the fire and the medical situation you can deal with it as a total package and you could look after the area in total" "One of the problems we have is that we don't work together and if I can I will relate to the Edgecumbe earthquake situation, where we were sitting alongside police, ambulance and civil defence for a number of days and as time went on we worked a lot better together. So if we worked together all the time we would be extremely good at a team approach...If we worked under one common system we can work smarter and if we work out of one place we the people are closer together, we can work smarter still."

Civil Defence - "If you had a management structure of fire and ambulance out working together but having the ability to plug into local government, lifesaving clubs etc. If someone is there on the day and has all those services available to him/her you would have the best unit available to meet the objective." "Yes I have a vision of a total emergency service except for the police criminal activity. A system that combined fire, SAR, ambulance and any other associated services. So even the local coast guard can be part of it and if they are required on the day you can utilise them and they can even support a civil defence emergency" (McGill, 1997b).

5. More cost effective structure. The merged structure is cost effective having one administrative structure to manage the total emergency structure.

Fire- "If for example you merged the three organisations it would cost you approximately half the total cost of the present structures to run the new system" "You could save on training cost with training centres and programs, and also on purchasing. Your purchasing ability would be stronger as you standardised vehicles and the unit numbers would increase as opposed to now where each individual service purchases separately."

Police SAR - "There is a lot of resource wastage. Just to live in the same premises would be a start. You would save money in vehicles, plant and staffing in the communications centres. One power bill, gas bill, fewer phones and administration staff." Also there are savings from shared facilities. Ambulance - " We are doing co-siting in some

fire stations so there will be some cost savings" (McGill, 1997b).

6. Better communication networks for disaster and emergency response. All groups concerned believed that shared communication and control centres would be advantageous. However, there was no agreement on how it should work. Many in the fire service felt that the three groups should be in one control centre. Others believed only fire and ambulance should be together. There appeared to be no firm agreement on what system, how many or what set up should be developed. This emphasises the difference between the present management and operational structures and the social psychology of the various agencies. There is certainly the technology to cater for a combined emergency service.

> When discussing the new SITE system the **communications**
>
> **manager** said, "The system is very capable of supporting the fire
>
> environment the police environment and the ambulance environment
>
> The technology is capable, the problems are business problems"
>
> (McGill, 1997b).

7. Reduced duplication of services. This implies that you don't have duplicate structures to achieve the same end. An example of this is the AHRT and St. Johns helicopters. They both have expensive resources, well over a million dollars, and because of their own objectives will both compete for the same emergency work. This is public money and either both will be under utilised or one will not be utilised at all. This form of duplication is based on power, patch protection and politics and puts the good of the organisation above the public good. Also there would be a reduction in the duplication of resources.

> **Fire** - "If you were going to set up a command unit you would

only need one "(McGill, 1997b).

8. A greater contingent capability. There are two aspects to the concept of a contingent capability. The first and most important is during a disaster situation. To have a combined organisation, with some form of cross training allows for a greater number of emergency response workers with the skills necessary to perform EMS, firefighting, urban search and rescue and hazardous material stabilisation during and after a disaster. History has shown that during a disaster there is a need for a flexibility of skills and an ability to cope with the unexpected. To be multi-skilled allows for this flexibility and increases the ability to adapt with a changing environment. The second aspect is during the routine emergencies. With a greater contingent capability any emergency worker can respond to an incident and perform at a basic to intermediate level. If for example the specialists are already committed to a major event, the other crews have the knowledge to render a situation safe, eg. to stop a fire from spreading or to maintain life support until further help arrives.

> **Ambulance -** "It will, with group co-ordination and it will improve rapid intervention programs especially if we were in the same control rooms. They have some basic knowledge in patient handling which with training will be enhanced."

> **Fire -** " Also during a disaster there will not be enough specialists but an emergency worker will go into the area and draw a team around them from the community. If necessary specialist task forces will be able to move in and assist" (McGill, 1997b)

The other benefit is that of a tiered response. If a team is near an incident they can respond and stabilise the situation until the specialists arrive.

9. National standards of cover and performance for all the hazards in the community. This is an area with particular relevance to the ambulance service.

> **Ambulance** - "There needs to be some form of legislation for the public, so they know that the treatment they are getting is up to a national level. Qualifications of staff, professional levels of treatment. There is nothing there at the present to reassure the public, that when the ambulance comes down the road they know there is a standard that the ambulance has to comply with" (McGill, 1997b).

The fire service already has national standards of performance, which incorporates attendance times and appliance crewing. All groups agree on national standards to ensure an equitable response network for the public.

> **Civil Defence** - "I think that the direction taken in the Resource Management Act and the Hazardous Substances and New Organisms Act, setting national performance levels and insuring that the organisations are meeting these levels. Maybe that could be a solution for the proposed Emergency Management Groups as well, that a national organisation sets standards and the EMG's not only arrange the service that will meet it but prove to government that the standards are meet" (McGill, 1997b).

DISADVANTAGES

(Table 3)

Questionnaires - Operational crews		Interviews - Management		Literature Review	
(1)	Management may direct funding into areas they have a bias for one at the cost of others**	(1)	Funding inequity and priorities**	(1)	Funding inequity
(2)	Problems with command and control priorities Job description of the various disciplines poles apart* Difficulty to co-ordinate incidents that are unrelated* Too difficult to learn all legislative requirements*	(2)	Organisations too different**	(2)	EMS/Fire/SAR role differentiation
(3)	Broadening but weakening skills (Jack of all trades, master of none) *** Communication would be a nightmare**	(3)	Too many eggs in one basket**	(3)	Resource vulnerability
(4)	Not enough time to retrain with present work load, not enough time for fire safety activity* Not enough time to train effectively and respond to calls*** Multi-skilling does not work e.g. police/traffic*	(4)	Lose specialisation**	(4)	Diluted competency
(5)	Power games* We don't want to combine with fire or police, we have a different mind set*	(5)	Patch protection**	(5)	Patch protection
(6)	Resistance from staff***	(6)	Unwieldy organisation**		
(7)	Budget cuts effect all services*** Fear that change would be purely cost driven and not philosophically driven***	(7)	For cost savings not for the benefit of the public**		
(8)	We would be responding to many calls and of the other agencies*				
(9)	What redress with industrial problems*				
(10)	Problems with the distance between the operational side and management*				
(11)	Police involvement does not fit the operational roles*** Many people view the police in a negative way and this could rub off on the emergency agencies*				
(12)	Loss of identity**				

The main disadvantages that are envisaged by merging;

1. Funding inequity was seen as a major problem. It is believed that those who manage a combined response service would have difficulty being objective when it came to apportioning the funding. If a manager has a background in ambulance, SAR or fires s/he would tend to allocate a disproportionate amount to their historical discipline. This is a significant concern and one that is also highlighted in the North American fire service literature. The American system has seen the fire service take responsibility for EMS in many states. What has been recognised in a number of cases is that there has been disproportionate funding given to EMS in relation to fire, irrelevant of the call ratios. If an individual has historical ties with, for example the SAR role, they are more likely to set greater priority to search and rescue then ambulance or fire. This bias will present itself by s/he weighting the resource level in favour of their previous area of expertise, which in turn will impact negatively on the other disciplines.

> **Ambulance** - "A perfect example is the Canadian armed forces. It
> fell to pieces over renewing of equipment, who trained who, who
> takes what recruits. The person in the merger with the most money has
> the most power. If your background is fire, your bias will be fire and
> the same with ambulance. So you will spend more money in your
> area."

> **Civil Defence** - "I think you would have to be careful that with
> amalgamation that the funding goes to the right areas. The problem
> arises as to who sets the priorities of funding. If you have a back
> ground in an area the natural inclination is to lean towards that area"

(McGill, 1997b).

2. The roles are too diverse to merge. Emergency medical work is totally different to firefighting or SAR activities. The disadvantages that are probably most relevant are diluted competency and role differentiation.

Ambulance and fire - "Many people view the police in a negative way and this would rub off on the emergency agency." Ambulance - "We do not want to combine with fire and police we have a different mind set." "The overall point of view is that fire-fighters and ambulance staff come from different planets."

Fire - "Job description of the various roles are poles apart" (McGill, 1997b).

This role differentiation has two aspects. To say that the groups are so different a merger would never work, could be related to patch protection. Alternatively, it could be that certain personality types fit particular roles or that the present employing practises emphasise this. Although from the literature and examples such as Japan, Finland, North America and NZ ambulance personnel do volunteer fire work, and fire personnel doing volunteer ambulance work, there is reasonable evidence to suggest that it is more of a selection and training process then a personality characteristic.

3. Resource vulnerability. If there were a major emergency or disaster, all the services would be vulnerable.

Ambulance-:" To many eggs in one basket" (McGill, 1997b).

During the interviews, a perceived problem with combining was the concern over resource vulnerability. This concept was directed too combined control and communication centres and co-location. The concern was that during a major

42

emergency or disaster, e.g. an earthquake, all the sectors of emergency response would be lost.

> **Ambulance** -"While I cannot guarantee that this building is up to earthquake standards, if we were in one location then all the services will be out of action. At least with the present system, one of the services may be operative" (McGill, 1997b).

However, if we extend this argument, the reverse is probably true. By co-locating, you can spread your emergency response services out across a city. This means that if one building is destroyed, you only lose a percentage of fire, ambulance and SAR. With the present system where ambulance, fire etc. are in their own buildings, you could lose the total emergency medical, or fire response service for a city. Therefore, the belief 'too many eggs in one basket' appears to be a misnomer.

4. Diluted competency. The fear here is that when the additional roles are taken on individuals and the organisation would lose their skill level and specialisation.

5. Barriers. The barriers are the most influential factors that would prevent the merger of the response agencies. They are discussed on page **137**.

6. Fear that the changes would be purely cost driven and not philosophically driven, and in time, the service to the public would suffer. From the research, one of the greatest fears of change is the 'new right', economic and politics of the present government will adversely affect the value structure, resource allocation and decision making within the emergency services. It is feared a government with a value base of deregulation, profit and competition has little regard for the

historical humanitarian ideals of these services and indeed those within these services. Associated with this is the generic managers who have little experience in the field or those in the field who have absorbed the concepts of the 'new right' economics without critical analysis, and are driven by cost efficiencies to the detriment of operational effectiveness. Various comments from questionnaires and interviews indicate this concern.

Fire - "Dollar driven efficiencies would likely reduce staff and the overall efficiency. Fear that it would be purely cost driven with no interest in the philosophy of the services."

Volunteer - "Cut backs would occur if the services combined. Could become a nightmare in that each sector would be clambering for available resources at the expense of the other sectors. The dollars would count not the service." "The new management structure in the fire service are only interested in cost savings, they are not interested in the staff or the public."

Ambulance- "What ever the government decides to do will have a degree of cost saving measures." " Look what happened to the police/traffic merger. It was a cheap way of putting more police on the beat. Traffic safety is just a joke. The police are not interested in it .So I quote this as an example of the problems we are looking at."

Public. -The government doesn't give a shit about the health or public services. They are only interested in cost savings even if the service is reduced" (McGill, 1997b).

Many operational crews perceive the government to have an agenda of privatisation at any cost. They believe many of the appointments, for example

Roger Estall to the Fire Service Commission, are politically motivated, and not for the overall effectiveness of the service. So behind any change in the public sector there is a high degree of mistrust and fear of senior management and government.

(7) Loss of identity. This was a common theme for the ambulance service, more so than the police or fire. This was associated with the loss of historical identity of St. Johns and its links with the community. There was the perception that to merge would mean to lose the support of the community. St. Johns have a long and respected history in the area of EMS.

VARIOUS STRUCTURES

(Table 4)

Questionnaires - Operational crews		Interviews - Management		Literature Review	
(1)	With fire, ambulance and search and rescue* One chairperson with a committee of specialists from the medical-fire-search and rescue field*	(1) &	One administrative structure and control centre with specialist in fire, medical services and SAR but cross-trained to a basic level in the other disciplines**	(1)	One administration dual role cross-trained DR/CT personnel
(2)	Total integration ***	(2)		(2)	Total vertical integration of fire/rescue/emergency medical services
(3)	Mobile cross-trained to perform multi-tasks*	(3)		(3)	Separate organisations with a tiered response
(4)	Co-responder ***	(4)	Co-responding were necessary**	(4)	Fire based fire/rescue and EMS DR/CT
(5)	Keep the status quo but better co-ordination***	(5)	Keep the status quo but more co-ordination**	(5)	
(6)	Combined management*** Each service retains own structure while sharing resources*** One service with different divisions. Personnel would be able to change from division to division to gain experience. Control and operational role left in hands of operational personnel*	(6)	One administrative structure, but would eliminate the turf protection** The Queensland model*	(6)	Separate organisations Merged administration with separate divisions maintaining their historical identity
(7)		(7)	Include civil defence in the merger**		
(8)	Use the Emergency Management model* Ministry at national level combined committee comprising expertise in fire, search and rescue and ambulance at regional level with the specialist operational staff at station level* Pull in civil defence as well as SAR, Fire and ambulance***	(8)	A merged structure with the proposed emergency management groups setting policy and direction - this would eliminate the turf protection and bias**		
(9)	Combined control rooms***	(9)	Combine control rooms**		
(10)	Separate ministry that negotiates outputs and purchases services and audits those services*				
(11)	Police criminal section remain separate***				
(12)	Smaller management structure that is bottom driven*				
(13)	Different agencies absorbed into an existing agency**				

There were six main structures that are seen as a possible option for the New Zealand environment.

1. A merged administration with dual role cross-trained operational crews. Research indicates positive support for a merged administration especially in the areas of policy development, setting standards and reducing costs. The cross training aspect is discussed in the area of multi- skilled or specialist teams.

2. Keep the status quo. A percentage of the sample believed the status quo should remain, although all emphasised a need for greater co-operation in strategic areas, such as communications and resources.

3. Merge the administration but keep the operational structure separate, maintaining their historical identity. Police SAR and ambulance quoted the Queensland model as an example. Some in the fire arena also saw it as an alternative.

4. Having the Emergency Management Groups (EMG's), as advocated by the emergency services review. It is suggested that they set policy and overall direction, with the operational component working as a section of this body as a means to improving co-ordination among the services.

> **Ambulance** - "The emergency services review talks of EMG and I see them as an end of civil defence. I think a Ministry of Emergency Services would be better and I hope it turns out that way. Those EMG's should be given more power to do things. A ministry would have a lot more sway by sending messages out saying we can do things more cost effectively"

> **Civil defence** - "Maybe that could be a solution, for the EMG's as well that a national organisation, sets standards and the EMGs not

only arrange a service that will met it, but prove to the ministry that the standards were met" (McGill, 1997b).

5. Combine the control and communication centres only. All agreed on combined control centres of one type or another but there was a large variance in what system and structures should be adopted. There were two systems that were forwarded as the most appropriate for combining communication and control centres: the Intergraph and the Tritech systems.

The Tritech system is a package specifically designed for ambulance dispatch with a module for fire.

> **Ambulance** - "I think fire should come with us in the communication systems." "There is the technology to run the whole country from one location. Overseas they say they run one control room to cover 12,000,000 people with a geographical cover of 1000 kilometres. In NZ we have a different geographical climate, terrain and locations. What I am saying is that we have to watch we don't move too far and lose local knowledge" (McGill, 1997b).

The police and ambulance are combining information and communication environments and the ambulance personnel agree there is a need for some form of merger in this area. It is an accepted concept for the size and population of NZ. However the system and structures relevant to such a merger are still being debated.

6. An existing agency, such as police, taking over control of all emergency response activity. Raised only by one person but not a popular option by anyone else. Research would indicate this option should be dismissed not only through lack of support from the research group, but because of the arguments over

funding inequity and the perceived failure of the police take-over of traffic.

Ambulance - "The police/traffic merger did not work. It was a

cheap way of putting more police on the beat, but traffic suffered.

Traffic safety is just a joke. The police are just not interested in it."

Fire - "An example is the police and traffic merger, where the traffic

is under funded and accordingly traffic duties have decreased"

(McGill, 1997b).

FUNDING FOR A MERGED SERVICE

(Table 5)

Questionnaires - Operational crews		Interviews - Management		Literature Review	
(1)	Government funding (General Taxation) ***	(1)	General taxation** Rating levy and vehicle registration and taxation**	(1)	Central government
(2)		(2)	Local government	(2)	Local government (rates)
(3)	Combined taxation, rates and RHA***	(3)		(3)	
(4)	Combined taxation, rates, lotto, sponsorship, road user charges and RHA and ACC*	(4)		(4)	
(5)	Levy on the rates but nationally administered*	(5)		(5)	
(6)	Government but user pays where applicable*	(6)		(6)	
(7)		(7)	Same as the present system, RHA, ACC and levy through the insurance industry**		

There were four funding mechanisms highlighted:

1. General taxation

2. Local government funding from the rating system.

3. A combination of the present funding of all the agencies. Taxes, insurance levy, RHA, ACC and sponsorship.

4. A new structure that covers all hazards in a particular community. Through a framework that is equitable to both urban and rural communities.

The feelings on the funding of an emergency response organisation were varied. Many felt it should come from general taxation, that way everybody pays an equitable share. Some of the ambulance personal felt that funding of EMS should remain with the contracting system with the RHA's and ACC,

> **Ambulance-** "The system in operation is good because government does not directly control us" (McGill, 1997b).

While others felt that with a combined service general taxation would be a better option, police thought it should be funded by central government. Civil defence believed local taxation or central taxation or a combination should fund it.

> **Civil defence-** "A share in that the national government has a responsibility to the people and shared with the local government. So it comes down to national or local taxes so it is irrelevant" (McGill, 1997b).

Fire had a varied response but the main systems were general taxation or a rating structure.

From the field notes the public were not so concerned about how it was funded but that it was adequately funded.

> **Public-** "I do not care as long as when my house is on fire or my

child is trapped the fire and ambulance get there as soon as possible"
(McGill, 1997c).

They reflected more on the effectiveness of the system then the funding source.
However most felt that it should be a source that could not be depleted by
government when they saw fit.

> **Public-** "It should be funded so that those running the service can
> be sure that the budget is adequate and will stay adequate" (McGill,
> 1997b).

The research indicated a number of options however no consensus was
evident. One factor highlighted in the field notes is, there is a belief that there
must be a formula for funding an emergency service, that allows for an optimum
level of service. Whether it is based on taxation or a rating system, it should be
divorced of political philosophies and whim. The funding should be based on the
equitable provision of an efficient and effective emergency service for all New
Zealanders.

MULTI-SKILLED OR SPECIALIST TEAMS

(Table 6)

Questionnaires - Operational crews	Interviews - Management	Literature Review
(1) Specialists*	(1) Specialists**	(1) Specialists
(2) Specialists but cross-trained at basic level in others***	(2) Specialists but cross-trained at basic level in others**	(2) Specialists but cross-trained at basic level in others
(3) Specialists in multi-skilled teams***	(3) Multi-skilled*	(3) Dual role cross-trained
(4) Multi-skilled depending on geography and demography***	(4) Multi-skilled depending on geography and demography***	
(5) Specialists but cross-trained at intermediate level in others*		

One of the issues raised was whether the merged structure would be better to have multi-skilled or specialist teams. There were three preferred options.

1. Specialists.

2. Specialists but cross-trained to a basic level in other disciplines.

3. Multi-skilled depending on geography and demography.

The makeup of a hypothetical combined service was an area where the most consensus was reached. There was a belief by the majority, in all groups that the rural and urban environment needed different solutions. The predominate view of the rural areas was that you have cross trained people that can supply a reasonable level of service until the specialists or additional help arrives. Bill Apes of the Lake Tekapo region is an excellent example of this. Bill is both fire chief, ambulance officer and police. This means that he leads a team that deals with fire, rescue, EMS and SAR. In some disciplines, for example fire or SAR he is responsible throughout the incident. In others, he is responsible until the rescue helicopter arrives, for example in EMS. Research indicated that he was well respected for his ability in all the roles by the existing services. This indicates that there are obvious advantages in the smaller rural areas, where resources are scarce, to have an emergency response service that has cross-trained personnel. An advantage of the Tekapo system is that there is a full time policeman on duty. Other areas may not have this luxury. It is not always possible to have people of the calibre of Bill Apes in every community, but it is possible to have various people with a higher skill factor in the different disciplines to be cross-trained and team orientated.

> **Ambulance-** "we actively look for co-responders where we
> don't have adequate resources."

Fire- "Co-responder has its place in the rural communities. You have to be careful that you do not over stress the volunteer component."

Police- "just take the Bill Apes example" (McGill, 1997b).

From the rural perspective it seems that a combined emergency response service would be more efficient and effective and this is supported by the majority of the present services. The system would have to include specialist backup when required and a structure of reimbursement for those activities involving the multi-skilled disciplines. The problem of maintaining skill levels would be difficult unless training time was compensated for in some way. There would also be a need to create the necessary exercise, simulation, training and evaluation programs to develop the appropriate competencies.

With the urban environment, there was also a consensus. There was the belief that no matter what the structure there should still be specialists retained. International experience shows that, in the USA there is the ability to have dual role cross-trained personnel to do both EMS and firefighting. The problem lies in maintaining the skill level. A general view that developed during the research was for personnel to have a specialist role but to be cross-train to a basic or intermediate level in the other disciplines. For example to be a paramedic and have a basic knowledge of SAR fire and rescue activities. Alternatively personnel could be able to co-ordinate SAR activities, and have intermediate knowledge of EMS and hazardous substances. It would be impractical and unsustainable to have personnel cross-trained to a specialist level, in all the activities undertaken by a total emergency response service.

The most acceptable and practical alternative in the urban area is specialists

with cross training to a basic or intermediate level in one or more of the other codes.

> **Civil Defence** - "I do not see any harm at all in cross training. I see the benefits in having more then an appreciation but less than full training in a range of issues. And those groups can benefit themselves in various situations. For instance in the case of hazardous spills, a basic knowledge of hazard control and the risks may save their life and the lives of the public until the specialists arrive. We no longer have to look at co-responder and co-response because we have the same agency protecting the city" (McGill, 1997b).

For the rural area the most practical solution is multi-skilled personnel trained to a specific level. If the incident was beyond their capabilities then respond specialists. (For example with a major vehicle accident, respond specialist medical and rescue teams via air.) These teams could be made up of the urban specialists.

BARRIERS _

There are specific disadvantages, but with the right organisational structure these can be overcome or minimised so that they do not affect the operational efficiency of the new design. Nevertheless, there are particular barriers that maybe too influential for a merger to be a practical alternative. "**People, politics and patch protection**" (McGill 1997b). Other terms associated with these were perspective, power and position.

The first term is people. It has been argued that it is impossible to be objective. We are always tainted by our own perspective. This was emphasised

during this research project. The fire service has been involved in

confrontational change for four years. Morale is said to be lower then at any

other time in the service's history and there is always the fear of change and

job losses in the background for both management and operational crews.

There is tiredness, a fear and a frustration with the process of change. This has

created what has been called the BOHICAN effect. Bohicans say Dunsing and

Matejka (1994) are "old experienced cynical employees with long memories,

misused and unappreciated talents, and have an approach to change

characterised as, Bend Over Here It Comes Again." Operational crews see all

change as being cost driven and not driven by a philosophical approach leading

to effective service delivery. So from the fire service operational staff there is

a strong resentment to change that has become embedded in the culture.

The ambulance service fears change because they feel threatened by outside

agencies especially the fire service. The reasons for this is that St. Johns and

Wellington Free ambulance see EMS as a business and they are contracted for

these services by both ACC and the RHA's.

>   **Ambulance-** "We run a business as a professional provider and
>
>   the only one (Emergency service) that has to run in a professional
>
>   environment" (McGill, 1997b).

They are also regionally based so they are not a nationalised body with

national standards.

>   **Ambulance-** " That is right there are a number of operators of
>
>   the ambulance service in NZ from different organisations." What
>
>   this also implies is that these services are open to any agency that
>
>   can meet the requirements of those contracts. "Yes as there is

57

money in these contracts there are going to be competitors"

(McGill, 1997b).

However they believe that no other group could compete with them for

EMS.

> **Ambulance-** "I do not think the government could sustain a
>
> cheaper ambulance service. Firstly, we are a charitable trust and
>
> non-profit making so we do not have to pay taxes. Secondly we
>
> receive donations from the public so there are cost savings in some
>
> areas of resourcing and we have access to the 111 system" (McGill,
>
> 1997b).

It appears however that they see the fire service as a threat. This may be

because the fire service is also non profit making, has got a more extensive

resource base than the ambulance in the way of humanpower and stations, is

seen as a major supplier of EMS in other countries, has access to the 111

system and has indicated an interest in extending its role into EMS.

> **Ambulance-** "The chief executive of the fire service has said he
>
> wants to move into medical work" "I think after they did the fire
>
> service review they realised they had $60,000,000 surplus and if
>
> they did not use it, it would be taken off them. It takes about
>
> $60,000,000 to run ambulance services, so they thought, oh we can
>
> do it" (McGill, 1997b).

The fire service is already participating in an EMS co-responder program

and has assisted the ambulance in the past whenever the ambulance has

inadequate resources. The fire service is one organisation that could threaten

St. Johns hold on EMS, as long as they had trained personal and the necessary

transportation and equipment. It is clear why the ambulance managers and front line staff perceive the fire service as a threat to their role and eventually their employment.

Alternatively, the Auckland Rescue Helicopter Trust (AHRT) sees St. Johns in the same light. St. Johns have openly indicated that they want to be the sole supplier of air ambulance services in the Auckland area.

> **St. Johns-** "It is a matter of protecting our business. It is a big piece of our business. We provide the communications, the paramedics and the resources and the trust was just sitting around providing just the helicopter, which they lease..... We offered them the rescue role but they tend to take an all or nothing approach. A lot of trusts around the country see it as a threat" (McGill, (1997b).

There is an obvious threat to the AHRT and they have a fear of their role disappearing.

The civil defence views the fire service as trying to take over their role.

The police are in a situation of low morale and reducing numbers. Stress is forcing many of the experienced officers to leave the force. The front line officer feels threatened by reduced numbers and the new communication system, which has not been explained adequately to those who will operate it under this new system.

Patch protection is seen as another barrier to a successful merger of the agencies. It is feared that those in power would be fighting for position and trying to maintain the old structures to the detriment of the overall concept of a merger. The areas of patch protection are human factors associated with the fear of job losses, position and inadequate resourcing. The ambulance has

strong feelings of mistrust towards the fire service and outside private

organisations through fear of a take-over.

> **Ambulance-** "The fire service have caused a great deal of harm
> over their push to take over ambulance work." "We have
> competitors having a crack at our patient transport contracts which
> is a bit of a worry." " I am responsible for over $30,000,000 worth
> of business, even Fletchers would be interested." In relation to the
> ARHT "It is a matter of protecting our own business. We provide
> the communications, the paramedics and the resources and the trust
> was sitting around providing just a helicopter, which they lease."
> "The fire service tried to take over the ambulance service, they
> tried, boy did they try. I personally do not want any thing to do
> with the fire service management." "If there was a merger the fire
> service think they are the Cinderella service and we would get
> dictated to by the bigger organisation" "The bigger services would
> overrun and neglect the smaller services" (McGill, 1997b).

The Auckland Rescue Helicopter Trust (Westpac) mistrusts St. Johns

because the ambulance service wants complete control of the air rescue

services. SAR Christchurch and St. Johns both have a jurisdictional conflict.

> **Ambulance-** "The police are a different breed. They protect
> their SAR role very closely. We have battles over the boundary
> between medical and accident response and search and rescue."
>
> **Police -** " And I can quote examples where both police and
> ambulance have gone and done their own thing and neither are

talking to each other" (McGill, 1997b).

The bulk of these comments come from the senior management level. Even Civil Defence fears a take-over from outside groups with the development of the emergency service's review.

> **Civil defence-** "I know in the Civil Defence arena the fire service is viewed as somewhat arrogant and pinch driven at the moment and want to expand their role. There are a lot of ramifications going on between rural and urban fire competing for contracts" (McGill, 1997b).

This conflict and patch protection is seen as a major barrier for change. However, it can also be seen as a major reason for change, for a merging of these various response services. Once merged there is no such thing as 'one's patch', one's 'core business', and 'our role'. There is one agency that has responsibility for all emergency response, which can concentrate on the core values of that organisation, in a comprehensive and integrated fashion.

> **Ambulance** - "If you could have objective managers at the top who could get outside the square, get outside their own service and were doing the job for the benefit of the public then sure. But that is an ideal world." McGill, (1997b)

Both the internal politics of the organisation and national politics will ultimately have the greatest influence on any change in the emergency services. Many in the present organisation will lose their power and influence. Because of this, they will lobby extremely hard to influence against any changes.

National politics may well agree for the changes if there are cost savings or if it aligns with their political ideology. A merger of all the emergency

response agencies may be seen as too powerful in the area of industrial relations. However this barrier can be overcome with legislation and equitable provisions for conditions of employment or an independent mediation committee to assist in dispute resolution.

The overall emphasis must be based on the service to the public, a service that is based on the core values of emergency management.

International trends:

An analysis of the different international services structures was carried out. Queensland in Australia, Japan, Mississauga and Edmonton in Canada, Finland and North America models were chosen (giving a broad cover of international emergency service structures) to ascertain differences and emerging patterns internationally and to give a base for further developement.

Queensland:

The Queensland model was referred to by NZ emergency response groups as an example of a successful merger of the administration of the emergency servcies. The Northern Region management of the ambulance service were very positive about this structures ability to develop an effective and effecient emergency service based on the principles of CEM and IEM.

The Queensland Emergency Services (QES) was established in October 1993. The QES is made up of the ambulance service, fire service (rural and urban), counter disaster services and support response services. Its philosophy is based on four main indicators: core values, corporate priorities, key services and key performance.

The core values highlight the following areas.

•The recognition of the special needs of a community, following a disaster or emergency.

•To continually improve performance and be accountable for the results.

•To be committed to staff and volunteers involved in emergency service.

•To appreciate the support of the community and to remember the history of the organisations comprising the QES.

The corporate priorities centre on improved service delivery by co-location and joint facilities and improved co-ordination and decision making at the local level. This includes joint training and exercises between outside agencies, improved community education in the areas of natural hazards, fire and first aid training and community awareness. It also enhances equity of access to service and employment opportunity and to benchmark performance against national recognised standards. (Queensland Government, 1996).

Fire:

Goals: To minimise the loss of life and damage to property and the environment from fire and other hazards. (Department of Emergency services annual report, 1995)

Key services: Public education. Operational planning and evaluation. Staff education and development. External training. Fire protection. Resource management. (Emergency services review, 1995)

Ambulance:

Goals: Reduce pain, suffering and loss of life through professional pre-hospital care and specialised patient transport. (Department of Emergency services annual report, 1995)

Key services: Patient care and transport. Staff education and development. Research and development. Community service. (Emergency services review, 1995)

Counter Disaster services

Goals: To minimise the loss of life and property and lessen the suffering and hardship caused by emergencies and disasters. (Department of Emergency services annual report, 1996)

Key services: State emergency services. Government support for volunteer marine rescue organisations. Disaster management policy development, counter disaster operations and planning. Public awareness and communications. (Emergency services review, 1995)

Statewide services program

Goal: .To provide responsive specialised and professional support to all phases of emergency management. (Department of Emergency services annual report, 1996)

Key services: Aeromedical, rescue and emergency aviation services, support and advice to Government aviation committee. Hazardous substances. 24 hour advice on hazardous substances, public education and awareness, research and the co-ordinating of policy development and operational planning. (Emergency services review, 1995)

The emphasis in Queensland is a proactive approach to emergency management with a strong accent on an integrated service. The main values of the department of the Queensland Emergency Services are held in the vision on page one of its annual report.

" To be recognised in the community as an organisation which is effective in dealing with emergencies and disasters so that injury, suffering, loss of life and

damage to property are minimised." (p. 1)

The Queensland model is a move to CEM and IEM systems. They have created a degree of integration so as to be more effective in disaster situations, and have rationalised administration, while keeping the historical perspective of the various agencies intact. They have combined communication and dispatch centres for ambulance and fire and are sharing joint stations. The human resource information systems have also been integrated for the emergency services. The Counter Disaster service and the state-wide services, which are a component part of the Department of emergency services, deal with State Emergency Services disaster response, search and rescue, hazardous substances management and aeromedical and aerial search and rescue services. (Queensland Government, 1996) The Queensland emergency services have an organisational structure that keeps the historical identity of the various agencies intact and yet has created an integrated structure that is comprehensive and integrated.

National context:

The national body for disaster preparedness and response is the Emergency Management Australia (EMA). It has the management function in relation to natural, human-caused and technological hazards. Disaster response is handled at the local level until the event is beyond their capability when the state will assist. There is considerable day to day inter-agency contact. Emergency Management - Australia have planned with the states for the necessary national assistance if it is required. The emphasis has been placed on the local governments to develop their own disaster plans but with the necessary assistance if required.

Canada:

The Mississauga example stresses the capability by all services in co-response. Anecdotal evidence, from individuals that worked under this system, confirm its effectiveness. (McGill, 1997c)

Mississauga

Mississauga has what is called an Allied Agencies Tiered Response Protocol. This is an integrated system for emergency calls between the fire, police and ambulance services. The three agencies are dispatched to emergency calls in a tiered response with the aim of quicker and more effective response. The ambulance will assist other emergency agencies as required, secondary to patient care and transport. Tiered response is activated under the following criteria:

a) Absence of breathing or shortness of breath

b) Unconsciousness

c) Severe bleeding

d) Motor vehicle collision with ambulance responding

e) Real or apprehended heart attack

f) Choking and active seizure

The fire service carries out their historical roles, for example fire, vehicle extrication, hazardous materials etc. as well as first responder to emergency medical calls. They provide basic or advanced life support as applicable until the ambulance service arrives.

The police maintain basic life support of patients including ABCs and CPR if required. At all times the agencies are on integrated communication networks and documentation is completed on each call. (District of Halton & Mississauga, 1994) The funding mechanisms are municipal.

Edmonton

Edmonton provides a recent model of merging fire and ambulance services at the administrative level. This merger is still in the process of development.

Williams (1997) discusses the merger of the ambulance and fire departments in Edmonton. The system advocates a cross-trained firefighter/ emergency medical technician (FF/EMT). The jobs of the ambulance and the fire services had historically been separate and distinct. In 1993, the plan was to merge the administrative functions, including human resources, finance and accounting, training, communications and dispatch. This was to take three years with the objectives being to realise cost savings through the elimination of duplication of facilities and functions and through economies of scale. In addition, enhance the co-ordination and effective delivery of emergency services and the level of quality of services delivered to the public. In 1995, the fire/rescue and EMS operating streams were placed together under the Operations Bureau. As at 1996 they continued to function as separate branches of the department. Williams (1997) says that it was decided to intermingle the operating streams for the full benefits of the merger to be realised. The merger of fire and EMS is a growing trend in the emergency services field throughout the world and North America (Keller & Yameen, 1991).

As at January 1997 the recommendations was to cross train the fire and ambulance staff, grandparenting those who did not wish to pursue the new direction. All new employees would be cross-trained. A two-year study would be carried out to assess the effectiveness of the FF/EMT role. The funding mechanisms are municipal.

National context:

The emergency system in Canada is based on a framework of different

agencies, each with its own responsibilities and jobs to do. There are four levels.

Federal, provincial, municipal and industry. The responsibility is placed at the

lowest level with higher levels in support roles as required. There are joint

emergency preparedness programs with shared costs, which has helped to raise

the national level of emergency preparedness. The funding is a sharing between

the various levels of government.

Finland, Japan and USA all give examples of successful horizontal integration at the administrative and operational levels of emergency response.

Finland:

Finland has had a countrywide emergency service since 1975 when peacetime rescue services and civil defence were integrated. The population is five million people and the Finnish municipalities have responsibility for the emergency services. The country is divided into 52 emergency areas and the command and control centres dispatch fire and ambulance and there are plans to connect the police to the same system. There will be 30 centres when the system is complete. The fire service has 4,600 full time and 4,300 part time workers and their responsibilities include, fire, rescue, fire prevention, ambulance services and oil pollution. The cost of running the Finnish emergency services is 1.5 billion Finnmarks. This is approximately $170 Million US. The future will see a trend towards larger regions for economic and operational efficiency. There is a possibility of national and regional units set up to provide for large-scale disasters (Partanen, 1997).

Japan:

The Japanese emergency response system is based on the fire departments, which are part of the local government structure. They are responsible for all fire rescue and emergency medical activities. (Britton, 1995) Britton says the Japanese system can be regarded as a horizontally integrated in the area of

response as opposed to so called conventional structures, which separate fire, ambulance and rescue work.

National context:

Japan does not have a central government agency to co-ordinate emergency management but responsibility is in the hands of local government. Only when there is the requirement (*disaster or an emergency beyond the local resource base*) do higher levels of the government assist. Funding is both on a local and national level. (Britton, 1995)

North America:

International Association of Firefighters (1996) says that approximately 90% of EMS were carried out by the fire departments. The Department of Research and Labor Issues (1995) in a study on the effectiveness of fire-based EMS discuss the emergence of the American system. The American system for routine emergencies is a municipal based structure. They operate as with the NZ ambulance service under the 'Star of Life' and its principles. The fire departments began their involvement in EMS in the 1930's, so it has become a traditional function for 80% of firefighters in the 1990's. Various states were among the first to implement new techniques. For example cardiopulmonary resuscitation (CPR), oxygen delivery systems, and Miami was the first provider to use defibrillators outside of a hospital. The study refers to the Eisenburg, M.S. paper of 1994,

71

which states that, "A community's EMS system must answer trauma and cardiac arrest calls aggressively with personnel capable of effectively treating and transporting patients in the shortest possible time. The chosen EMS system must be able to respond within their jurisdiction within 4 minutes to initiate CPR, and 8 minutes to provide advanced cardiac life support"(p.6). The IAFF, (1995) say that over the past 30 years rapid intervention has reduced the fatality rate by 54%. The American system is a cross-trained/dual-role structure that is based on the fire services. There are private and independent EMS operating but they are in the minority as at 1st. September 1997. Dittmar (1994) points out that since the 1980's however that there has been potential competitors to the present system. Many hospitals with surplus beds are looking for ownership of the ambulance services as a means to increase the flow of patients to their hospitals. She emphasised that her research found that the EMS began in the fire departments and will always be part of the fire service. They have produced a chart indicating the similarities between effective response times for firefighting and EMS as shown in Fig. 3.

National context:

Britton (1995) gives a brief history and present structure of the USA. He emphasises that the Federal Emergency Management Agency (FEMA) is the lead agency for disasters in the USA at the present time. In 1991, the Petris Bill emerged out of the fires in the San Francisco hills. This was a common framework for a unified response across all levels of government. Key elements were, "Incident command system, multi-agency or inter-agency co-ordination, mutual aid, common disaster planning format, emergency operations centre with trained staff and geographically linked operations areas"(p. 39). Funding is

provided by combinations of local, state and federal funding with the federal government bearing the main responsibility.

FEMA is responsible for the federal emergency response, which has co-ordinated 27 federal agencies. The states negotiate emergency outcomes with FEMA but how these outcomes are achieved, are left up to the states themselves. For example, if a state does not have adequate resources the planning process must utilise a mutual aid component. However Britton (1995). stresses that FEMA as a national organisation has failed to provide the strategic leadership for state and local emergency management agencies and more work needs to be carried out for it to be an effective emergency management organisation.

The similarities between all these countries is that they have or are moving towards some form of horizontal integration in emergency response. It may be a tiered response or cross trained/dual role response. Associated with this is the momentum of change in the field of CEM and IEM.

Summary:

By using a modified grounded theory methodology and the research method of interviews, questionnaires, field notes and a literature review specific themes became evident. These themes were then used for a comparative analysis and the eventual findings. The research data originated from both existing research and literature on emergency management or from people employed in the emergency management agencies in New Zealand and field notes gave insight into the public perception of the emergency response agencies. Most of the data were grounded in the emergency

management arena and therefore has credibility/truth value to those in the field. There was a problem retrieving information off the Police/SAR personnel. Interviews were carried out but there were no replies to the questionnaires. This creates credibility problems concerning data relevant to SAR and in applying the data across the emergency response group. The conclusions may lack some credibility because the data analysed was from interviews and field notes only and no input was available from the operational teams. Another problem was the assumption that civil defence would have a neutral perspective when analysing the response agencies. It soon became apparent that many civil defence co-ordinators also have the responsibility of rural fire. There appears to be some conflict between rural and urban fire in the areas of responsibility at the operational level and therefore this assumed neutrality was incorrect. .

It also has to be emphasised that there was no consensus on one direction or another. Many of the replies to the initial statement were coloured by fear of job losses, losses in conditions of employment, loss of public support, mistrust of management, personal security, instability and the vast transformations associated with significant organisational change. However, these concepts are important when developing change.

The main themes generated through research were the present and emergent response structures, status and identity of the organisation, status and identity of the individual and organisational change, the advantages and the disadvantages. The literature review concentrated on these areas. In the analysis the advantages, disadvantages and funding were again examined, along with relevant organisation and operational structures. The findings also indicate problem areas with the

process of merging and specific consideration necessary if a merger was to be contemplated.

The similarities between the international comparison are that they have or are moving towards some form of horizontal integration in emergency response. It may be tiered response or a cross trained/dual role response. Associated with this momentum of change in the field of CEM and IEM. The countries examined have developed positive emergency management structures that New Zealand could utilise.

Queensland appears to be the most proactive in the areas of the all hazards comprehensive approach. This is supported by central government in the funding for essential resources and the standardisation of equipment, training facilities and personnel. Although there are expectations that each state will be responsible for emergency management in their area, there is assistance available at all levels when required.

The American system highlights that emergency management is an essential part of governance. This is supported by the appropriate legislation regarding CEM and IEM and provisions for funding. The co-ordination of emergency is controlled by the Federal Emergency Management agency.

Japan and Finland have combined response services with the Canadian (Mississauga) system based on a tiered response protocols.

The problem with the development of these systems within the New Zealand environment is our political structure. NZ has a national structure of government with local councils being responsible for cities and districts. Many of the North American and Queensland systems could be utilised if there was a regional division of responsibility. To assimilate these international initiatives, between 5-

10 districts/regions need to be established, with direction and assistance from a

centrally funded national agency. This would allow for an all hazards, CEM and

IEM approach directed at the local hazard environment.

5. Discussion

The research would indicate that combining the emergency response agencies is a viable alternative to the present structures, but there must be care taken in choosing the appropriate model and communicating that model to those affected by the changes. They must be able to see the benefits of change to themselves and the wider public. Only then will they be positive towards change and build a culture around the new organisation.

5.1 Existing and changing structures.

Before discussing change regarding the emergency response structures, there is a need to examine the existing and changing environment of emergency management.

5.11 SAR

The Emergency Services Review Task Force summaries the police emergency functions in their report (1995). Parts of these functions that have reference to this study are disasters and search and rescue (SAR).

Their role in SAR include class I and II. They are defined as:

Class I- Operations using their own resources.

Class II - The police have control and responsibility for SAR but use other organisations and people besides their own resources. They use a high volunteer component such as NZ land search and rescue, coastguard, amateur radio emergency Corp and other radio services. This includes rescue operations on coastlines, rivers etc., where they can give quick effective service. These are part of the police outputs, which are purchased by the minister. Class III SAR is the responsibility of Ministry of Transport, which includes the SAR activities of boats

and individuals lost at sea.

The police SAR role has not changed in some time and is classed as a value for money service by the emergency services task force. This role appears to be in a reasonably stable environment at the present time. However the police are having problems now with recruitment and retention of staff and many of the experienced officers are leaving the force (Watkins, 1997). Greg O'Connor as cited in Watkins (1997) says "There's one common denominator: Low morale and people leaving. Most police don't know where we are going."(p.35) O'Connor also raised, that whenever front line police disagree with the changes they are accused of being dinosaurs. However, the police suggest this is another means of gagging criticism, even if it is correct. If this trend continues, it will affect the knowledge base in the area of SAR in the future. In 1998, the police took industrial action over their conditions of employment. Their strength of feeling was highlighted by a march on parliament.

The SAR operational managers felt there would be advantages from merging, but held reservations relating to the previous merger of police and traffic. They believed that a multi-agency approach, which combined the communication networks would lead to quicker response times, better coordination and community cover and cost savings. However they saw problems with funding inequity and the setting of priorities. They believed the organisations were different in many cultural aspects and therefore changes would have to be implemented in such a way to overcome the problems of patch protection. Loss of social identity was not a major problem for SAR because of the strong volunteer component, and the assumption that the operational and volunteer structure would not change greatly if a merger

eventuated.

SAR perceived that if a merger was to work there should be one administrative structure, which could include civil defence under one control and communications operation. The operational component should be established along rural and urban operational sub-structures. The example used a number of times for the rural sub-structure, was Bill Apes at Lake Tekapo. Bill controls the police (SAR), fire and ambulance operation at Tekapo. He has extensive local knowledge and community involvement and therefore has contact with community resources and the ability to coordinate the three services. The urban operational sub-structure would have to retain specialists in the various disciplines who could be trained to a basic or intermediate level in the other operational areas. A majority said that funding for a combined servcie should be from general taxation.

Some believed, that although there was a need for greater coordination the status quo should remain, because they felt it worked adequately at the present time. The interviews indicated that SAR were more adaptable and accepting of change then the other emergency service groups. Their general attitude was, 'if it is a better system for the public then it should go ahead'. There was one proviso however, as long as it not purely a cost saving exercise and it is done for the right reasons, for effective and effecient service delivery.

(Because of the nil return from questionnaires sent to operational staff, the information reflected in the above is from operational managers only.)

5.12 FIRE

McCaw, Miller, and Auton (1993) gave a broad outline on the evolution of the fire service since nationalisation in 1976 in the fire service independent review. Before this period, there were approximately 300 fire boards. The perceived problems seen in the old structure were a lack of co-operation between brigades and inconsistencies with funding between brigades.

The independent team suggests that between 1976-88 there was a push for the development of national standards to improve efficiency and effectiveness. They include the areas of training, planning, equipment, manning of appliances, rosters and response times.

There is a requirement at present for the service to meet set attendance times for specific risk classifications. This along with minimum shift manning (the minimum number of firefighters on a shift at one time, if the number of firefighters drops below this level then off duty firefighters will be called back on overtime) and appliance manning (a set number of firefighters per vehicle response, usually four) gives the standards of fire cover that are required from operational crews. McCaw, Miller, and Auton (1993) state that between 1988-91 the fire service was under pressure to adapt to the new era of public service reform. These included areas of accountability, the establishment of the National Rural Fire Authority and the cost benefits of fire sprinkler technology.

In September 1993, an independent review team was appointed by the fire service chief executive to assist in an internal review of the fire service and rural fire authority. The review team was made up of Malcolm McCaw, a chartered accountant and company director, Joe Auton, an accountant and company director,

previously executive of Ford NZ and Ford Asia, and Richard Miller, strategic planner and company director with public and private sector management experience. The initial findings were available in December 1993 three months after the review was commissioned.

McCaw, Miller, and Auton (1993) recommended in the review that major industrial relations, recruitment, organisational culture and shift changes take place in the fire service. It was also stated that with these changes there were total potential savings annually of $29 million, $25 million of which were associated with net staff cuts of 560. The fire service pursued most of the recommendations of this review and the fire service budget was reduced accordingly over the next three years by government.

From the beginning of the review period until November 1997, the fire service has undergone numerous changes, which have resulted in a bitter industrial dispute. It was stated also that the paid operational firefighters numbers had been reduced by 265 in this period (Comber, 1997). Part of this dispute included the first public referendum, (on fire service staffing levels) held in December 1995, and became a minor issue in the election campaign of 1996. Trevor Mallard (1996) internal affairs spokesperson for the Labour party, in a letter to the NZ Fire fighters union, replies that they supported the firefighters views and highlighted the inadequacies of the funding mechanisms of the fire service in relation to non-insured property and the rescue role of the fire service. These funding discrepancies were also emphasised in the Emergency services review (1996). Comber (1997), indicated that paid firefighters had not had a wage increase in seven years. Due to the 1997 budget level, there was a need to reduce staff numbers further to remain within budget for 1997/98 and accordingly no wage increases were foreseen. Because of

this position the 'no contract, no co-operation' approach would continue from firefighters. He also stated that because of the situation more direct industrial action might occur which would jeopardise the provision of emergency services.

It states in the independent review that the budget at the beginning of the review in June 1993 was $181 million. (It appears that although there were significant operational staff cuts from 1993 to 1997 the predicted savings were not sustainable). The budget for the 1996-97 year and the following three years was set at $156.2 million by the government. The management told the NZ Professional Firefighters Union (1997) that they could not live within the new budget without further staff cuts. In a letter to Jack Elder on the 23 June 1997, the Chairperson of the Fire Service Commission Comber stated that, "The reductions in expenditure required to formulate a budget of $156.2m, given certain unavoidable and essential expenditure commitments, create very considerable risks and negative consequences. The commission considers that these risks and consequences could be disastrous" (p. 7).

The minister said in the The Dominion (1997) that "increased spending on the fire service and the presumption of the changing role of the service over the next five years was jumping the gun. An agency was being set up to manage the transition from the agencies existing now (eg fire, ambulance and civil defence) into a more rational and integrated system for protecting the public."(p 6) A new commission was appointed at the end of July 1997. Estall (1997) released a press statement that said that all changes to the fire service would be put on hold for six months until a clear strategic direction could be formulated by the new commission.

On 26th August 1997 a memo was sent to fire stations stating that Mr. Jenkins

with a background in the health sector, would undertake a three week review of the management and non operational support services of the fire service. (NZ Professional Firefighters Union, 1997). It appears that the Fire Service commission is returning to what they class as a core business role, fire prevention and fire suppression. By entrenching, this will create barriers to Integrated Emergency Management and will limit the availability of resources to the community and other emergency services. Eventually this could lead to conflict and competition among and from outside the existing emergency groups.

In May 1998, Roger Estall and the Fire Service Commission forwarded a proposal to reduce the full time firefighters by twenty five percent. The approach was to sack all firefighters and ask them to reapply for their positions. It was deemed by many political commentators and the wider public as unethical and extremely harsh. He was to argue it was the only 'way forward' for the fire service. Consequently on the 23rd.May, NZ First gave Jack Elder the ultimatum to find an alternative way for change. The wholesale sackings were not acceptable and another way must be found. The following days saw attacks on Estall's integrity. It was suggested by politicians, the firefighters union and M. Cummings *(the previous CEO of the Fire Service)* that there was a conflict of interest over his appointment as chairperson. Mr. Cummings said at a select committee inquiry into the fire service that Estall was a former director of insurance broking firm, Marsh and McLennan and would return to the firm when the commission ceased. Cummings also said there was enough circumstantial evidence to show a plot by insurance companies to put Mr Estall in charge to stop an audit, aimed to uncover fire service levy avoidance and scrap changes to the method of levy collection. (Dominion, 1998). (This study ended at 29th May 1998 with the direction of the

Fire Service being extremely uncertain)

During the research sixty four percent of the operational staff and sixty six

percent of rural volunteers returning questionnaires were receptive to merging the

response agencies.

Operational crews and management of the fire service listed numerous advantages in

combining the services.

- Quicker response times

- Sychronised response

- Better service for the public

- Better emergency cover

- Greater coordination of resources

- Better training facilities and opportunities

- Relative budget increases

- Common communication centers

- Shared information

- Role expansion

- One stop emergency shop for the public

- Removes duplication of effort and resources

- Better career developement opportunities

- Greater contingent capability

- One adminisatrative body

- Unity of purpose

One major problem with change was the fear that change would be cost driven

and not based on the philosophical ideals of the emergency services. The other

aspect of concern was, the extent of change the fire servcie had undergone over the

past seven years. The change process has been viewed in negative terms and has led to cynical and negative attitudes to any new developments among operational crews. This will be extremely difficult to overcome if a merged service was contemplated. The process of change must have postive implications for service delivery, career opportunities, working conditions, a management process that is integrated, consultative and allows for input from the front line teams. However many also felt that increasing their roles and becoming a total emergency response service would increase job security and satisfaction. This would imply that patch protection was not as important to fire as it was to the ambulance.

There was the belief that funding should be a combination of national and local taxation and the operational structure would have to be different for the urban and rural environments. For the urban areas the specialist roles should be retained but there should be training in the other disciplines to the neccessary level, to maintain a tiered response and extended contingent capability.

The social identity and rank structures would be difficult problems to overcome. This is discussed later in the section called 'A blueprint for change'.

5.13 AIR AMBULANCE

The air ambulance services in New Zealand are still developing but at present are very reliant on substantial public support. The National Emergency Air

Ambulance Network (1996) quoting the Royal College of Surgeons stated "that the pre-hospital component of the trauma system needs to provide a rapid retrieval/primary emergency response ambulance service"(p. 13).

The real cost of the service is not realised through the fee and most air ambulance services are subsidised by sponsorship by organisations such as, Westpac, Trustbank, Tranz Rail, NZ Post, ASB Trust, TV 3, Lowe Walker, Speights and Dominion Breweries. These sponsors supplement the service in excess of $3 million per year. (National Emergency Air Ambulance Network, 1996) The Scoping Report for the Combined RHA's and ACC (1996) suggests that arrangements should be established between other emergency agencies such as SAR, fire and police. "In the final outcome the ACC and the RHAs are responsible for determining service requirements and that purchasing those services will deliver cost effective outcomes" (p. 95). The national trauma system will aim to ensure a co-ordinated approach to trauma management and the integration of pre-hospital emergency service into the system. The system envisaged aligns with the Royal Australian College of Surgeon's guidelines and should take account of the trauma network system relating to the Wellington/Hawkes Bay Trauma Pilot. (The Scoping Report for the Combined RHA's and ACC, 1996). The air ambulance service has fallen under the health reforms, which are very much seen, in commercial terms, focusing on efficiency and effectiveness in terms of ensuring quality outcomes and value for money. It appears that the RHAs and ACC will determine what is value for money as they contract the services from the various air ambulance services. Although the Scoping Report (1996) lays out response protocols for emergency air ambulance helicopters it stresses they are "a guide and require ambulance service staff to take responsibility for the use of expensive air ambulance resources, so that

the best outcomes for patients are achieved, without unnecessary costs" (p.79 Fig.14.)

The proposed contracting arrangements suggest that the RHA and ACC jointly contract for both first and second tier emergency ambulance (air/road) and that all contracts be contestable through a competitive contract.

5.14 Ambulance:

The majority of ambulance services in NZ are run by charitable trusts. The Order of St. Johns operates regional ambulance services in Auckland, Midland, Hawkes Bay, Central Districts and South Island. The Wellington Free ambulance provides services to Wellington Region and the CHE supplies ambulance services to Taranaki, Wairapa and Marlborough.

Ambulance providers are contracted to the RHAs and ACC. There is a variety of contracts within New Zealand depending on the region and the respective RHA. Many of the ambulance services supplement their funding and resource requirements through public donations. The southern RHA and ACC have signed a joint contract with the southern ambulance services. The providers have to meet specific standards regarding crewing components, training and equipment requirements to fulfil their contracts. (National Emergency Air Ambulance Network, 1996) The standards are recommendations of the Royal Australian College of Surgeons (RACS) trauma committee report of 1994 and the contract is composed of a fee for service payment with ACC and bulk funding by the Southern RHA.

The ambulance personnel appeared to be threatened by the concept of merging more than any other group. Only twenty five percent were positive about a merger

with the other response agencies. This was also emphasised by the management

sector. There were four factors that highlighted the negative response.

(1) Contracted services- Because the ambulance view EMS as a business and are

contracted for their services, they are threatened by other groups who may move

into this arena. This was particularly evident in regard to the fire service, who had

indicated an interest in EMS work and associated contracts.

(2) Fear of losing their social identity- Ambulance staff believe that fire and

SAR had vastly different social identities and therefore cultures to the EMS

worker.

(3) Funding inequity- They feared that the bigger organisations would control the

funding priorities which would erode the ability to perform EMS. (This has been

verified by studies into the Canadain armed forces and some of the fire

departments in the USA. The fire departments tended to under fund EMS work,

because historically their main emphasis was fire related.)

(4) Diluted competency- There was the perception from ambulance that EMS

work required total commitment. To train in other avenues of emergency work

would dilute the level of competency, which would result in reduced effectiveness

and efficiency.

However it was interesting that the strongest (management) opponent of a merger

stated , 'if you could have objective managers at the top, who could stand outside

the square, stand outside their own service and do the job to benefit the public, then

sure it would work'. The social-pyschological (social-identity) problems can be

overcome if, those involved in EMS were convinced that the benefits to the public

were evident, and merging with the other services was on an equal footing.

It is clear from the research that the ambulance were threatened by outside

agencies. There appears to be internal conflict between some regions and overt conflict in the area of air ambulance. The greatest barriers to change are, people, politics and patch protection. Even if EMS workers could be convinced that a merger was advantageous it would take a number of years (5-10) before the major fears were neutralised.

5.15 National emergency management:

The emergency services review has culminated in the structure formatted in a draft report on the output specifications for Emergency Management (1997). It is suggested that local emergency management groups (EMGs) be established. These groups will operate in geographically defined areas with "the purpose of co-ordinating all resources in its jurisdiction within an all-hazards, comprehensive and integrated risk and emergency planning program" (Ministry of Internal Affairs, 1997, p.8). The key sectors identified to be part of the EMG are each territorial authority, regional council, ambulance/health service, fire service, police, lifeline utility representatives, volunteer groups and specialist local identities. The changes highlighted in the areas of response are a single Emergency Response Co-ordinator (ERC) who will replace the present regional or local civil defence controllers. This person will co-ordinate the local emergency response planning and its implementation when required. It has been suggested that this person come from one of the existing 111 response agencies. In addition, it is suggested that in each EMG area, an operations centre be developed. The Ministry of Internal Affairs (1997) is advocating the international trends in emergency management, with the need for greater integration and that comprehensive emergency management be

developed in New Zealand.

5.2 The advantages of an integrated (merged) emergency response service are:

Overall, the perceived advantages of merging the emergency response services highlighted in the analysis and findings centre on eight main areas. These are developing effective and efficient service delivery, enhanced co-ordination of emergency service delivery, advantages to personnel, comprehensive emergency management, realise cost savings, better communication networks, reduced duplication and friction between the services, greater contingent capability and national standards.

5.21 A more efficient and effective service delivery for the public.

This includes quicker response times, tiered response, greater number of trained personnel in each discipline, more lives saved and the ability to attend and effectively deal with multi casualty emergencies. Also by cross training staff there is the ability to attend an emergency, assess, and deal with the operation highest in demand.

The (International Association of Firefighters, 1995) highlights the effectiveness of fire based EMS. It stresses that the aim is to produce a system that is the best for patient survival within the community's ability to pay. The emphasis in this paper for patient survival is based on time critical response and transport. A promotional video by the International Association of Firefighters (1996) reflects on a white paper called Accidental Death and Disability the Neglected Disease of Modern Times by Dr. D. Boyd. The paper concluded that to reduce the mortality rate of trauma victims, personnel would need the right training, communications and medical supervision to quickly

assess and stabilise patients prior to, and during the transportation. The author

of this modern systems approach, Dr D. Boyd National director of Emergency

Medical Services 1974-82 and trauma surgeon, believed that the history of the

American Fire Service in cross trained/dual role EMS work is extremely good.

Firefighters pioneered first aid treatment, oxygen treatment and defibrillation

outside of a hospital situation.

He emphasises that a systems status management approach, based on past

demand to adjust to location and availability of EMS services, must account for

distances, getting people out of trapped situations, environmental hazards etc

and a multiplicity of disaster situations. At the operational level, he stresses

that the service has to be time critical. With time critical emergencies the

quicker you are there the better you do. The North American firefighters are

usually on the scene between 3.5 and 4.5 minutes. The American Heart

Association recommends response times of four minutes or less. CT/DR (cross

trained/dual role) EMT and paramedics regularly meet these standards in North

America. Because they are cross-trained they can attend multi casualty

emergencies and will have the ability to perform and stabilise the operation

highest in demand. Firefighting, hazardous material response, rescue and/or

EMS.

Time critical response has also been highlighted in a Scoping Report on a

National Air Ambulance Network (1996). "The pre-hospital component of a

trauma system needs to provide a rapid retrieval/primary response ambulance

service." (p. 13)

Dittmar (1995) reviewed the fire service EMS role in the USA. One of the

stated advantages was improved response times especially in the outlying

areas. She states that fire stations were situated so that response times were often improved, and that the difference in arrival times of ambulance and fire in the outlying areas can be dramatic. The location and the number of stations that fire operate out of seems to be a relevant factor in these findings. Edwards, (1994) highlights that there are 431 fire stations in New Zealand of which 257 are in the North Island and 174 South Island. In comparison, there are 106 ambulance stations in the North Island and 60 in the South Island. The cover and associated response times are obvious.

Edwards (1994) raises the advantage of improved response times by integrating fire/ambulance in New Zealand. He points out that there is a correlation between improved response times and the appropriate medical care and survival rates. Halton and Mississauga Ambulance Service (1996) which have formed an inter-agency protocol that instigates a tiered response of police, fire and ambulance to emergency calls support this. The first arriving agency begins basic life support and defibrillation until the paramedics arrive. Accordingly, in the case of fire or hazardous material incident, the other agencies assist by evacuation and efforts to save life. The concept is based on rapid response and intervention at emergencies. According to the Journal of the American Medical Association (1992), "For cardiac arrest, the highest hospital discharge rate has been achieved in patients in whom CPR was initiated within 4 minutes of arrest and advanced cardiac life support (ACLS) within 8 minutes" (p.2184). Eisenberg, (1993) as cited in Department of Research and Labor Issues, AFL-CIO CLC (1995), linked survival rates of cardiac arrests to the time elapsed before three interventions. They were CPR, defibrillation and advanced cardiac life support. The study produced what is

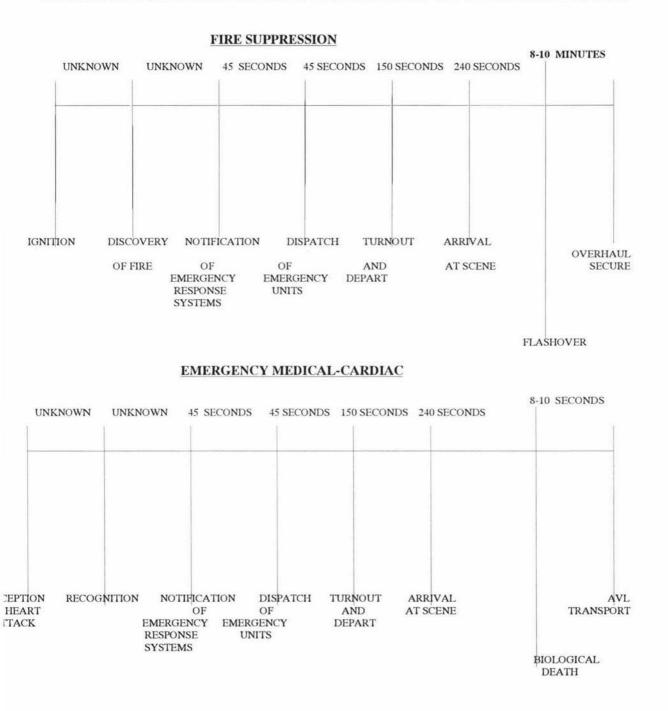known as the Eisenberg model, which indicates that,

> "Survival rate = 67% less (2.3% per minute to CPR)
>
> less (1.1% per minute to defibrillation)
>
> less (2.1% per minute to ACLS)"

(p.6).

They argue that this model linking response times to survival becomes the standard of performance for measuring effectiveness of delivery of prehospital care. However, it does stipulate that staffing, performance and the continuity of care has a major impact on the victim's outcome. The same paper argues that the effectiveness of the fire service in the role of saving life, fire suppression, rescues, and vehicle extrication is time critical. The important factor is how quickly the appropriate resources can be organised at the scene. The Department of Research and Labor Issues AFL-CIO CLC (1995) shows a correlation between the fire and EMS response times. Fig. 3.

(Fig. 3) COMPARISON OF EMERGENCY TIMELINES FOR DELIVERY OF FIRE BASED SUPPRESSION AND EMERGENCY MEDICAL SERVICES BASED ON 8-MINUTE RESPONSE TIME.

FIRE SUPPRESSION

UNKNOWN	UNKNOWN	45 SECONDS	45 SECONDS	150 SECONDS	240 SECONDS	8-10 MINUTES
IGNITION	DISCOVERY OF FIRE	NOTIFICATION OF EMERGENCY RESPONSE SYSTEMS	DISPATCH OF EMERGENCY UNITS	TURNOUT AND DEPART	ARRIVAL AT SCENE	OVERHAUL SECURE

FLASHOVER

EMERGENCY MEDICAL-CARDIAC

UNKNOWN	UNKNOWN	45 SECONDS	45 SECONDS	150 SECONDS	240 SECONDS	8-10 SECONDS
CEPTION HEART TACK	RECOGNITION	NOTIFICATION OF EMERGENCY RESPONSE SYSTEMS	DISPATCH OF EMERGENCY UNITS	TURNOUT AND DEPART	ARRIVAL AT SCENE	AVL TRANSPORT

BIOLOGICAL DEATH

The Department of Research and Labor Issues, AFL-CIO CLC (1995) says

to be effective in both fire suppression and EMS at least four trained personnel

must be on the first responding unit. They would argue that one of the

95

advantages of a merger would be an increase in staffing and quicker response to all EMS calls. Williams (1997) reviewed the documents of The International Association of Fire Chiefs and the International Association of Firefighters. He points out that the model perceived as the "premier system' by these two groups, was the dual role, cross trained emergency worker. However, it must be emphasised that many of the documents reviewed by Williams were fire-related articles. He does record that they were both practical and relevant to research on merging ambulance and fire services.

The fire service in New Zealand are required to respond with a crew of four, within the urban environment, within 6,8,10 minutes, depending on the risk classification, to meet the standards of fire cover. (Edwards, 1994) They have to meet these requirements 85% of the time to fulfil their corporate plan outputs and purchase agreement with the government. (New Zealand Fire Service Commission, 1996). There is no legislative requirement for the ambulance service, but they do have to fulfil the requirements of their contracts with the RHAs and the ACC. These contracts are on the basis of a competitive tender. (National Emergency Air Ambulance Network, 1996). They are regionally negotiated, but because of their perceived business confidentiality, the contracts were not available for public viewing. Therefore, the standards of performance were not obtainable.

The question must be raised whether the public has the right to know the response times they can expect for ambulance services in New Zealand. Moreover, are there equity and ethical questions if there are different response times for different regions? Is it dependent on how much the RHA can afford to or want to pay?

In certain areas of Auckland and Wellington they are not able to meet the full requirements of their contracts with their present level of resourcing. Wellington Free Ambulance and Auckland St. Johns Ambulance services are contracting the fire service to meet the response time requirements in particular districts. It was noted by the Emergency Services Task Force Report (1995), that some submissions had suggested that the Fire Service should take a greater role in emergency medical response. The reason for this was because the location of fire stations means that they can respond more rapidly than the ambulance in many cases, and that the operational requirements for responding to managed medical calls are very similar to their normal fire service roles. Others in the same report have suggested that the ambulance and fire be amalgamated. The task force findings did not support this but did support closer co-operation between the services. The reasons given for not supporting amalgamation were because they thought, "Other advantages are more illusionary; for example the use of apparent spare capacity. It is arguable, at least, that not every ambulance officer is a potential firefighter or vice versa, and therefore the spare capacity, which indeed is often called upon to act in joint capacity, does not really exist." (Emergency Services Task Force, p. 45).

What the literature shows in North America is that fire based EMS is effective because of response times, location, training and manpower available. In Emondton city (Canada), they are pursuing the concept of cross-trained personnel and in Mississauga, they have a tiered response of the three main response agencies. They are using these structures because of the location of stations and manpower and to become more effective and efficient in EMS and emergency response. The Emergency Services Review Task Force (1995)

supports the move to closer co-operation between fire and ambulance, but believe it should not be forced.

Two other emergency events are classed as time critical (Olson, 1985). They are urban search and rescue (E.g. Building collapse) and accident victims. Olson's (1985) research showed that "Victims chances of survival are highest if they are extracted from the damaged or collapsed structure within twenty-four hours of the event. Victims survivability deteriorates rapidly after this period" (p.6). He also refers to emergency medical specialists in relation to accident victims. They speak of the golden hour principle, in which the patient's survivability is relative to the medical attention given in the hour following the accident. (RACS NZ Trauma Committee, 1994). In New Zealand, ambulance and fire both try to work within these guidelines and both operate closely at the scene, although it has been noted that inter-agency training and communications need to be improved. This is where there could be advantages of a merger; ambulance and fire personnel both would be training and working as a team continually and therefore must be more effective in emergencies.

The NZ urban search and rescue team is a multi- agency team of fire, army and ambulance personnel. Overseas experience has shown that a combined team of specialists is effective and efficient for the extrication and treatment of victims trapped in building collapse.

New Zealand, Canada, North America, Japan and Scandinavia use a mixture of response services to meet time critical events. If it is an advantage to the public to utilise fire, ambulance and police or a combination of these in EMS and other emergency activity then it should be acted on. With the location and

number of fire stations and the number of personnel, the need for specialist teams at accident and urban search and rescue incidents and the opportunity for a tiered response, it appears a merged response service would be advantageous for time critical events.

5.22 A totally co-ordinated emergency response structure.

The benefits of a co-ordinated emergency structure were collated in the emergency service review.

"Co-ordination, however can enhance the resource base, increase creativity and enthusiasm amongst members, harness diversity, integrate geographical representation, and enhance the importance of and public support for emergency management. Co-ordination also decreases fragmentation and duplication of services, can overcome competition between agencies, keep down overall expenses, and avoid wasting scarce resources. Any lack of co-ordination, therefore, represents missed opportunities and less than optimum use of resources." (Ministry of Internal Affairs, 1997, p.5.)

The Mission Statement of the Queensland Emergency Services is "To serve and support the Queensland community in preventing, planning for, responding to and recovering from emergencies" (Department of Emergency Services, 1996, p.3). The Queensland government believes it is better to have the emergency response agencies under one department to co-ordinate CEM and IEM systems. One of the main factors emphasised in successful emergency management is inter-agency co-ordination, interaction, training, communications, planning and preparedness (Hinchiliffe, 1992, Auf der Heide, 1989). "The development of common protocols, terminology and

procedures is essential to enhance operational efficiency through more effective co-operation" (Emergency Services Task Force, p. 24). Foster, (1980) states that the disaster plan is unlikely to be effective unless inter-organisational co-ordination is assured. Hawkins (1985) points to five activities important for an integrated approach to emergency management: shared information, frequent contact between agencies, time set aside to build personal relationships, setting of responsibilities in advance and training together.

The Japanese model has the fire departments as units of local government and is the main emergency management agency. The ambulance and para-medical service are combined within the fire department. This system can be regarded as being horizontally integrated with one common command system, training and promotional activities. (Britton, 1995) The Emergency Services Review Task Force (1995) believed that the development of common protocols, terminology and procedures would enhance the operational efficiency of the response agencies. What this raises is, would emergency response planning and preparedness be more effective and efficient through merging the relevant agencies?

The Emergency Services Task Force states that the police and fire services have national organisational structures, which allow for continuity between local, regional and national levels. This in turn allows for co-ordination of response across these levels. They suggest that the ambulance structure which is more local or regional, fails to have this capability, although the NZ Ambulance Board does go some way to improving this area. They also raise the problem of fragmentation in emergency management and how effectiveness has been reduced accordingly. " Emergency response is

fragmented vertically...and horizontally by having discrete agencies undertaking sections of emergency management. This impedes effective and efficient emergency management and can generate turf maintenance" (p.12).

The Emergency Services Task Force (1995) had concerns about the co-operation between the emergency services and the need for continuity of management throughout the period of any particular event. They felt that although there had been efforts towards a co-ordination of activities they were of an ad hoc nature and no formal structures had been created, other then the Emergency Service Co-ordinating Committees. They also suggest that the lack of formal structures inhibited the benefits of co-ordination.

A merger of all the response agencies under a national ministry may alleviate this difficulty. Information sharing, training, contact, communications and relationship building would be more effective under a combined, co-ordinated emergency response service. However the psychosocial implications of merging must be incorporated into any change process before a comprehensive and integrated emergency management model can be realised.

5.221 A blueprint for change:

Three areas were analysed to develop a picture of change and the processes involved: social psychology, team development and organisational change. In this paper, the first area of relevance is social psychology, with specific reference to social identity theory and self-categorisation theory. Social identity theory centres on a fundamental distinction between interpersonal and group processes (Hogg, 1992). Social identity theory argues that part of the individual self-concept is based on his/her inclusion in a particular social category (for example sports team, paramedic, and firefighter). This self-inclusive self-category assigns particular attributes to the individual as a member of that particular group. The individual has a perception and acts in such a way that can be classed as stereotypical of that group. For example, the ambulance officer may act in such a way that is typical of the ambulance officers group. These similarities or norms enable the individual to be in the group. Hogg (1992) calls this in-group stereotypical. Those on the outside however are perceived as out-group stereotypical. Hogg says, "the processes underlying and responsible for the group behaviour are categorisation and social comparison." (p. 91). He suggests that the cognitive process of categorisation highlights the similarities and differences between different groups. In self-categorisation theory, it is the cognitive process of categorisation that explains the basic workings of the group phenomena. The cognitive representation of the defining features of a social category is the prototype of that category. For example, the defining features of a firefighter may be strong, brave, practical and compassionate. The prototype of the category firefighter by the in-group therefore is an individual who is strong, brave, practical and compassionate.

When analysing the merging of the various response agencies, there are particular aspects of these organisations on the macro level that enable us to place them in the group of 'emergency response professionals'. It appears from the research undertaken, that within certain environments there are two levels of self-categorisation. These I will relate to as the **macro** and **micro** levels of social identity within the context of the same environment (emergency management). At the macro level, the response teams perceive themselves as emergency response professionals. They all work under a similar general philosophy and base the emergency operations on the humanitarian ideals of saving life and property and rendering humanitarian services and have similar present day fears to change.

During the research, three sub-themes reinforced this concept of macro social identity.

(1) Organisational philosophy

(2) The perceived philosophical differences between the emergency services and the market driven reforms of the past fifteen year and

(3) Public opinion towards these services.

Certain issues that arose were related to the fear that a merger and change would change the philosophical ideals of the organisations. It was perceived by the operational teams that the free market approach relative to the last fifteen years of economic change, would adversely effect their effective operation and the public's positive attitude towards the emergency services.

The philosophy of an organisation is central to its operational framework. In the emergency services, as with education and health, the main moral issues and therefore effective decision making in the past centred on the welfare of the people or the humanitarian aspect. However over the past fifteen years the New

Zealand people have seen successive governments pursuing a policy of deregulation. Profit and competition are now part of the health system and the management structures operating in these areas.

The values of profit Vs the caring community concept.

A review of literature looked at authors analysing organisational ethics and philosophy of the health system and other public sector agencies to ascertain whether the values were different to those of profit driven business. No literature was located that has analysed the value systems of the emergency response services. To gain some insight into public service values, organisations that the public historically associates with strong value systems and codes of practise were examined, for example health and education. "Moral rules are central to ethical practice and the development of a caring community... The term 'a caring community' may be applied to both educational and health organisations". (Henry, 1995, p. 4.)

Henry (1995) stresses that there should be shared organisational values underpinning professional practice and the organisation's mission. In health care it centres on high quality care and in education it centres on high standards of learning. She highlights that for professionalism and effectiveness these values must be an inherent part of the organisation. She also says that the values must be grounded in ethical theory and endorsed by those working in the fields. Ethical practice should be part of the organisation and the management approach. With this value system comes the principles of operation and the standards of practise. Henry (1995) also suggests that an organisational culture has the ability to provide structure, standards and a value system in which the individual can operate. " The stronger the ethos is in ethical values within the culture of an institution, the more

distinctive the institution will appear" (p. 123) Unless changes to the organisation are based on sound and shared values there is the likelihood of dangerous pitfalls. These pitfalls are usually associated with a reduction in services and standards, and a drop in morale.

Ruggiero (1973) pinpointed three aspects common to ethical systems. Obligations, ideals and effects. An organisation that honours obligation, promotes ideals and helps people can be said to be a moral organisation. The question must be asked, is there a difference between the moral organisation and the business practises?

Kitson and Campbell (1996) suggest that ethics are learnt over time, through education and experience until they become an inherent part of the person and a cultural aspect of society. This can also apply to the value system of organisations. They ask the question in reference to health and other public sector roles, as to whether it is acceptable or indeed socially desirable for supposedly improving economic efficiency, a colonisation by the market of these areas. Sorell and Hendry in Kitson and Campbell (1996) take the view that although profit does not necessarily pollute, there is the risk of profit polluting and moreover profit does not necessarily purify.

Can a manager from a business background pursue change in an organisation with a humanitarian value system? Is it indeed possible for the manager of the **Genus-** business **Subgenus-** Profit/competition to understand the cultural values of such an organisation?

Al Gini (no date) highlights that the terms business ethics and moral leadership in today's world are examples of academic oxymorons. They are seen in popular culture as not being part of the business value system. If the leadership

is not moral then this will eventually permeate the whole organisation. The spirit

of morality, said Aristotle, is the awakening in the individual only through the

witness and conduct of a moral person. Leadership helps to set the tone, develop

the vision and help to shape the behaviour of all those involved in organisational

life.

Midgley (1991) in Henry states that moral rules are central to ethical practise

and the development of a caring community. It can also be said that this can apply

to organisations that have as their objectives the welfare of the community. Do the

philosophical ideals of an organisation developed with the safety of those in the

community as their value base, override the value system of modern governments,

whose ideals lie with competition and the profit motive?

McWhinney (1984) discusses how people experience reality differently and

therefore have different attitudes towards change. This is of special relevance to

organisations that have a culture with their ideals historically cemented in the

humanitarian concepts. The reality systems of the emergency response operational

teams will be vastly different from the business manager. McWhinney uses the

example that for people holding to different concepts of reality, a conversation

among them may be like an English person and a German person arguing over the

meaning of a French word with neither able to translate among the three

languages. "The everyday situation is somewhat worse, because we are not aware

that we cannot translate fully between our reality languages, thus we attribute to

the others all manner of motivations and bad will because they act in ways foreign

to us." (McWhinney, 1984, p. 29).   The problem of change within the

emergency service structure initiated by external leaders has been that they base

their arguments on belief systems that are not comparable. With different value

systems and inappropriate methods of resolution, the responses will be reduced to values of security and job survival.

Corey, Corey, and Callanan (1993) do raise issues, although not directly relating to the emergency services, of peoples rights to a professional service based on the ethics of the organisation. All the response services hold to the ideal of saving life, protecting property and humanitarian service. This would suggest they should hold this philosophy to the fore and the prime motivation of these organisations should be based on these values (Corey, et al., 1993).

Ham (1997) in the British Medical Journal discusses how the health reforms of 1993 have now been modified. He comments that " The new coalition government statements on health policy includes a promise to replace commercial objectives with principles of public service while seeking to make health care business like." (p. 1844) This reflects that the value system of the business world is not acceptable to the NZ public when it comes to health care. He suggests that the vogue of competition seems to have passed and that the politicians seem to be more humble in their ability to improve performance.

Hornblow (1997) Dean of the Christchurch School of Medicine also discusses the health reforms in the British Journal of Medicine with the emphasis on the clash of two distinct cultures. He raises the issue of government advisers from the 'new right' economics in the 1991-93 transition. They were previously in corporatisation and privatisation of the public services. These individuals and their philosophical leanings seemed inappropriate to the public and professionals. Hornblow (1997) highlights that " Colonisation of one culture by another results in major changes in power structures, decision making, resource allocation, social structure and networks, concept and language and dominant values and beliefs."

(p. 1894) The coalition agreement on health places the principles of public service beyond the commercial profit objectives. The emphasis of the agreement was on co-operation and collaboration rather then competition between the services. This was a major value shift, which reflects the feelings of the public and the health professionals.

What has been raised in the literature is the question of the value systems inherent in community based organisations. They are questions central to organisational change in the 90's especially with successive governments pursuing deregulation, profit and competition as their philosophical base. The importance of values has been illustrated with the health reforms and the philosophical changes in this area due to public and professional pressure. The importance of value systems and the inherent philosophical foundation of the emergency service organisations must be paramount considerations when considering change and mergers. These value systems are part of the macro-social identity of the emergency response worker.

Emergency management response philosophy.

The three response agencies studied hold to all or part of the same basic value system: to save life, to protect property and to render humanitarian services. Wenger (1987) talks of emergent disaster values and beliefs. "The value patterns inherent in the community disaster structure are characterised by increased value maximisation and consensus. Value maximisation refers to a process whereby certain core values are emphasised to the virtual neglect of others" (p.32). Wenger's study indicated that the values focused on during disasters were for humanitarian concerns. Such areas included protection of life and property and

care for victims. He suggests that the majority of the population place high value on the activities that benefit the whole community. The field notes in the research indicated that during the emergency or disaster context the values focus of the emergency workers was also humanitarian. At no time when life was at risk did money become part of the equation.

Dittmar (1995) states that she thinks fire and EMS workers are natural partners. She suggests this view from several perspectives. The public perceives both as brave public servants. Both require and respond to rapid intervention. Both are time critical and both have basic operating procedures and dispatch systems. When discussing the North American systems she says that the consensus inside and outside the fire service is that the fire and EMS services have a common function, which is to save life. It appears to be an international consensus that part of the philosophical base of the emergency services should centre on saving life, protecting property and rendering humanitarian services. She also suggests that both EMS and firefighters should work together as a team to ensure that they successfully accomplish the needs of the public. Many of these points also apply to SAR

The duties and responsibilities of the emergency services have been built into in law and the agencies' corporate mission and policies and again highlight the value differential between them and the profit driven business.

It is a legal requirement for the fire service to save life and protect property. Section 28(2) and 28(3) Part III of the Fire Service Act 1975, states that it is the function and duties of the fire service to save life and property in danger from fire and other emergencies. In section B (1) a. of the Manual of operations 8. Part 1 it declares that the mission of the NZ Fire Service (NZFS) is " To protect life and

property from fire and other dangers" (p. B1-B1 (1) (b) (viii)). In the strategic

plan of the NZFS, the mission is to serve the community by providing the best

possible service to protect life, property and the environment from the effects of

fire and other danger. (Advancing to 2000, (p.10)). In a training note on

firemanship for firefighter recruits, from the NSFS college, it states on the first

page one of the duties of a firefighter is to render humanitarian services.

The independent review team states that the fire mission from the 1993/94

corporate plan is best expressed in the terms "To serve the community by

protecting life and well being, property and the environment from the effects of

fire and other dangers." (Sect. 3.2 p. 40)

The police state in their corporate profile that part of their mission is to

enhance public safety. This is highlighted in the section on police services with

relevance to incidents, and response to emergencies and disasters, including co-

ordinating search and rescue operations.

In the Order of St. Johns first aid manual it states the aims of St. Johns are to

preserve life, prevent the patient's condition worsening and to promote recovery.

Williams (1997) refers to the tasks and duties of both firefighters and

emergency medical technicians in Edmonton. Both have a section that is the same

in relation to the humanitarian aspect. " EMT-A tasks and duties- Provides

compassion and support to patients, families of patients and other bystanders at

the emergency scene" (Appendix # 5, p.1)   "Firefighter task and duties- Provide

compassion and support to victims, patients, families of victims and patients, and

other bystanders at emergency scenes" (Appendix #4 p. 2) The ethical values are

not only cultural aspects but are built into policies and procedural directives.

Status and identity of the individuals and organisational change

Part of the research indicated that many individuals with the police, ambulance and fire services have strong feelings about the organisations they worked within. The literature reviewed three areas that the emergency workers felt strongly about. 'Value- identity, organisational changes, and trust.'

Value-identity:

Many individuals in the emergency response agencies take special pride in being part of an emergency service that promotes humanitarian ideals. The fire, ambulance and SAR services have a large percentage of volunteers that respond because of the community values of helping and assisting those in need. In discussing the role this was not the only reason they are volunteers, (example of others were the excitement, the camaraderie etc.) but it is a strong influencing factor. The permanent police SAR, fire and ambulance personnel also stress that, although they are remunerated for their employment they take pride from being involved in agencies that help others.

The literature would indicate that the value systems within an organisation have a strong influence in employees job satisfaction and commitment. Thompson (1990) reflects on how part of individuals identity is based on the individual's involvement in the organisation. He suggests that social, organisational and work group cultures are the arenas in which behaviour is moulded and regulated, and in which we perform identity work. He goes on further to state that work in a caring profession requires that people identify closely with their work.

Beliefs and value systems serve to maintain equilibrium and continuity among workers. Judson (1991) says, "prevailing cultural beliefs and behavioural

norms become an important factor when they influence peoples attitudes to change" (p.31).

Public support.

As quoted earlier there is high public support for the emergency response organisations, for their role and how they perform. A major component of this public recognition and appreciation is directed to the values that these agencies stand for. 'To save life, protect property and render humanitarian services.'

Skinner, as cited in Berger (1983) asserts that praise is a strong social reinforcer. Maslow as cited in Judson (1991) and Berger (1983) refer to the esteem needs of each individual. These esteem or status needs of the individual are part of what Maslow calls a hierarchy of needs. This begins with the lower needs of food and shelter and moves to the higher and more exclusively human needs of esteem and self- actualisation. Part of my research showed that many of the ambulance, police and fire staff, both permanent and volunteer, not only felt satisfaction from being in a helping profession but part of their self esteem was based on their occupational roles, and how well they performed within these roles.

This social identity and self-categorisation based on a strong philosophical base and with a strong reinforcing factor of public support, creates the essence for a macro prototype of the emergency worker. Other practical factors that create this perceived prototype are codes of practice that emphasise rapid response and intervention strategies, interagency (response) protocols and the reliance on community volunteers.

In context of the macro level the police person who co-ordinates SAR, the firefighter who extricates someone trapped in a vehicle, the paramedic who

stabilises the victim of a street stabbing, and the surf lifesaver who resuscitates a drowning child, would perceive their role as emergency response professionals. When operating together in the routine emergency context or the disaster context the stereotyping centres on the emergency response in-group.

Social identity and self-categorisation at the micro level.

However there is also the micro level of social identity and self-categorisation. The ambulance worker will also categorise him/her self as being in the group of professionals that deal with emergency medical services. He/she would say they were more caring, more person orientated and more compassionate then the firefighter. At this micro level he/she would say that firefighters, because they lack these attributes, cannot operate effectively unless they are in a team and directed by an officer. They have created a prototype of the ambo. Anyone not having the qualities of this prototype is in the out-group.

The individual emergency response agencies have concerns over changes because they suggest that the public perception and public understanding of the existing service structures are associated to the ambo, firefighter or SAR prototype which includes an historical perspective. The concern centred on the loss of this micro identity through merging and the loss of public support for fundraising activities and so on. The literature on New Zealand response services was limited to in-house literature but it does highlight the history and background of the services, which could influence the process of merging the response agencies.

Ambulance.

The ambulance workers perceive themselves as caring, compassionate, independent and people centred.

The Order of St John (1994) says that 70% of ambulance services in NZ come under the Order of St. Johns. The history of this organisation dates back to 1113 and the Crusades to the Holy lands. In the next 800 years a number of branches of the original order developed throughout Europe. The order was incorporated by charter of Queen Victoria in 1888. The first St Johns Ambulance association was established in NZ in 1885 in Christchurch. The local health authority as in Taranaki runs the other ambulance services or they are run by trust boards as in Wellington, with the Wellington Free Ambulance service. In 1994 there was 350 salaried and 1500 volunteer ambulance staff. All the ambulance services have as their emblem the 'Star of Life.' This is a six point star with an emblem in the middle which depicts the symbols of healing The star depicts the operational imperatives necessary for effective and efficient life saving and supporting care. Volunteers are an important resource for the ambulance services. These history and operational imperatives are key elements in the ambulance officer's stereotype.

Fire

The firefighter on the other hand may perceive the prototype of a firefighter as strong, resourceful, brave, team orientated etc. The New Zealand public has been protected by statute from fire since the Municipal Corporations Act of 1872. Edwards (1994) explained how specific legislation for fire protection was established under the Fire Service Act of 1906. Since then there have been many amendments and redrafting which have culminated in the Fire Service Act 1975.

The New Zealand Business Round Table (1995) and Independent Review Team (1994) give a brief historical perspective of the NZ Fire Service. As at December 1994 there is approximately 431 Fire stations, 9341 volunteer firefighters and 1941 permanent firefighters. Since the fire service review there has been a reduction in the numbers of permanent firefighters and the instigation of a new team approach called community safety teams. However the fire service appears to be under severe financial pressure in June 1997 and the concept of community safety teams appears to be changing again. The shift also appears to be associated with the ongoing industrial situation and management changes. The fire service is heavily reliant on the volunteer component.

SAR

The SAR professional is seen as a rugged outdoors type with good knowledge of the environment, weather patterns and the terrain.

In two histories of the Wellington SAR (Young, 1992) and Bay of Plenty SAR (Rouke, 1992) it indicates that the police search and rescue role was established in 1964 by L.D. Bridge. Bridge first set up a formal SAR organisation in 1949 and wrote a book on the subject called, Mountain search and rescue. He was appointed a regulation 24 police inspector and co-ordinator of SAR at police HQ in 1964 and he formed SAR squads which were trained specifically for the job.

A volunteer established the SAR role and it still relies heavily on manpower and expertise from its volunteer units. The police have the co-ordinating role for SAR and have responsibility to apportion the funding accordingly. However as at July 1997 the police are under financial and personnel pressure and whether this will affect their role in SAR we will have to wait and see. It is perceived to be the jurisdiction of the police and part of their history and culture.

At the micro level, the individuals of the various response agencies have categorised themselves as a member of a particular in-group. Hunt as cited in Williams (1997) argues that the cultures of the two are fundamentally different and in fact incompatible. Persons from different personality types are attracted to EMS as opposed to fire/rescue. A study was carried out in 1996 that analysed the problem areas of amalgamating emergency medical and the fire services. This highlighted that the different work cultures were the main barrier to successful amalgamation (Belton, 1996). The differences between the two cultures that are relevant to the NZ environment are, the age of the work force, the self reliance versus teamwork approach and the fire culture as opposed to a caring orientation and a strong identification with the medical community. These cultural (micro-social identity) differences must be overcome before a merger is deemed to be successful, otherwise it will be a long-term source of conflict.

Williams (1997) points out that both cultures are undergoing basic changes in the approach to saving life and helping the public. They are moving to a more proactive role. Keller and Yamen (1991) say that the growing trend in North America and the rest of the world is a move from a reactive role to a more proactive approach. Williams in his discussion on the Edmonton City example said, " We don't want to be a fire department that does EMS we want to be a community service and EMS organisation that has the ability to provide fire/rescue services when required."(p.7)

Because there is an international trend towards CEM and IEM based on an all hazards approach, this can be an essential area of focus for change. It is a focus that could change the emphasis of the micro-elements of self-categorisation. It enables a social identity, an in-group characteristic at the micro level that all can

identify with and evolve with, a social identity at the micro and macro level that centres on the principles of emergency management.

Organisational change:

Any change must firstly centre on and emphasise the macro level of social identity based on the emergency service philosophy.

Judson (1991) remarks that anthropologists have known for a long time that to work effectively with any group it is essential to learn their customs. In addition, it is highlighted that although changes take place, fundamental values should remain constant.

"No passion so effectively robs the mind of its powers of acting and reasoning as fear"

Edmund Burke

Judson (1991). proposes that most people confronted with change cannot know with any certainty what is going to happen. Over the past fifteen years in New Zealand the workplace has undergone significant change and in most working environments there is no such thing as job stability. There seems to be strong feelings towards the free market approach. This fear appears to be held by both the public and those working in the field and there is fear that it will influence the operating environment of these services (Hornblow, 1997). This would indicate that if there were to be successful changes in the emergency

services environment there should be a preserving of the fundamental macro value systems in these services.

If a person's needs are threatened this will create insecurity and fear of change. Judson (1991) discusses how many fears in a person are subjective, but many are also a realistic appraisal of the situation. An example in the modern times of industrial change and rationalisation, is the fear of redundancy. This has become a real fear for firefighters with the recommendations of the independent review in 1993 and the proposed budgetary cuts in the fire service in 1997 (Comber, 1997, Independent Review Team, 1994). From the research, the fears of a merger of the emergency response services would be a change in the philosophy towards the new right economics of the present government and job losses. As Hornblow (1997) emphasises, when reflecting on the health reforms, that the people making the changes were previously in corporatisation and privatisation of the public services. These individuals and their philosophical leanings seemed inappropriate to the public and professionals.

In any merger, there is a need for change. With change comes the need for security, understanding and involvement. Judson (1991) says that change can be a threat to any individual if s/he perceives that the change will bring about some form of loss. He refers to Maslow's hierarchy of needs and states that the more basic the need affected, the more threatening the changes are to the individual. For example, if there are fears of redundancies then these will threaten the physiological needs of an individual. Can I afford to pay my mortgage, and clothing for my family? If there are fears that the organisational values will be threatened this may be seen to impact on the status or esteem of the individual. We have seen philosophical (value) changes in the health system where there has

been a move to the free market approach and privatisation of the public services. There has been a strong negative reaction to these changes by both the public and health professionals because it threatens the historical value systems of the service and therefore the needs of the public and health employees. For successful change, those affected must understand and accept the reasons for change (Judson, 1991). raises the issue that beliefs and norms serve to maintain equilibrium and continuity among the organisation's employees and become important factors because they influence people's attitudes toward change. He also emphasises that if change is to be accepted by individuals, it should not threaten any of their needs, unless positive outcomes can be associated with the change.

The point that must be made here is that, to combine the response agencies the problems associated with cultural or social identity must be overcome, so that the different disciplines can work effectively together. The positive aspects of a merger are that all the individuals of the response agencies share the same social identity and self-categorisation at the macro level. This already gives a degree of social cohesion, solidarity, respect and trust between the emergency response agencies. What must be achieved to successfully merge these agencies is to develop strategies that will lead to developing teams, that will deliver a total comprehensive, all hazards, integrated response network.

Indeed, it may be that these strategies could be the catalyst for the changing of the social identity at the micro level.

5.23 A comprehensive and integrated approach to emergency management.

One of the important issues when considering a merger, is the concepts inherent in the science of emergency management. The application of successful emergency management programs has to view emergency planning and preparation in holistic terms. It must consider many aspects but most important is the co-ordination of the community and the agencies involved in emergency planning. It is not the emergency plan that enables the successful management of emergencies and disasters but the planning process. It is the process of bringing together the vital elements of the community that makes for effective disaster reduction, readiness, response and recovery. A merged response service can allow for a united, community centred organisation that can develop the necessary resource inventories, volunteer training and co-ordination, communication networks, interagency networks and education packages necessary for successful emergency management.

Williams (1991) believes that the emergency services should take a proactive as opposed to a reactive approach to emergency management. This involves working with the public in prevention and education programs. In New Zealand the fire service carries out school education programs, (stop drop and roll) while the non-emergency component of St. Johns educates in the areas of CPR, and first aid. A merged service could take a comprehensive and all-hazards approach to the local environment and adapt their programs accordingly. By merging there is the potential to cover all the areas of comprehensive emergency management for all the hazards in the community. It enables a multi-disciplinary team that is capable of dealing with the four phases of emergency management, readiness, reduction, response, and recovery.

The activities the fire service undertakes as at August 1997 are listed below.

These were extracted from the Fire Incident Reporting System (FIRS), (New Zealand Fire Service 1996) and the Non Emergency Action Management system.

(NEAMS) (New Zealand Fire Service, 1997)

The **non-emergency** outputs are as follows. These outputs would fall under the reduction and readiness spectrums of comprehensive emergency management.

•Output class 1. Policy advice and ministerial servicing.

•Output class 2. Reducing the risk and impact of fire and other emergencies.

•Output class 2.1 Safety promotions and public education

•Output class 2.2 Public safety training

•Output class 2.3 Written advice on fire safety, hazardous substances and other non-fire emergencies.

Output class 2.4 Administering legislation on fire safety -inspections - evacuation schemes

•Output class 2.5 Advice in relation to incidents attended by NZFS

•Output class 3.1 Operational readiness

•Output class 3.2 Emergency services co-ordination

The **response and recovery outputs** are as follows:

•Structure fires

•Mobile fires

•Vegetation fires

•Chemicals, flammable liquids and gas fires

•Miscellaneous fires

•Over pressure rupture explosives overheating

•Emergency medical calls

•Rescues

Trapped in lift

In or under machinery

Cliff, roofs or tree rescue

Collapsed structure rescue

Lock-in or trapped within a structure

Underground trench collapse

Drowning

Suicide

Electrocution

• Flammable liquid/gas incident

• Chemical biohazard radioactive incidents

• Electrical hazards

• Special services

Assist ambulance

Assist police

Assist public

Water problem-domestic or commercial

Animal rescue

Repair roof-Sheets to protect property

• Aircraft incidents

• Natural disasters

Earthquakes

Volcanic eruption

Tsunami

Tidal waves

Floods

Wind storms

Tornado

Cyclone

•Mutual aid- assist another district

Although the traditional core role of the fire service was aligned to response, over recent years it has adapted its strategic goals towards a more comprehensive emergency management approach. The New Zealand Fire service (1996) also has focused, in its strategic plan, on comprehensive and integrated emergency management as a means for emergency services to work together effectively.

Because the fire service is in an evolutionary stage of development, these programs are in their infancy and as the hazardscape changes there is a need for development and redevelopment. However the fire service is dealing not only with disaster events but routine emergencies and therefore, its management must also target the reduction, readiness, response and recovery of the day to day emergency events. The fire service still need to enter into programs that will cover gaps that have been identified as needing remedial action.

Emergency management programs of the Fire Service

The fire service has twelve major emergency management programs that range from school education programs through to task force response for major disasters.

1) Education programs:

There are three main school education programs. These are all referred to as FIRSTEP (Firefighters **and students education programs**) programs. The programs target the three levels of education. Primary, intermediate and secondary schooling and are listed below.

1. Fire safety for J1, J2 and J3 junior school age children.

The J1, J2 and J3 programs look at fire safety in the home and the appropriate response if the home catches fire.

J1. Stop, drop and roll gives pupils the necessary skills when their clothes catch fire. Crawling low in smoke assists them to escape from a smoke filled room.

And ringing the 111 number gives them contact with the emergency services.

J2. General fire safety information, such as not to play with matches placement of heaters and the disposal of ashes.

J3. Evacuation from the home if you have an emergency and the concern for other family members.

2. A disaster preparedness programme for intermediate age students. (This programme only appears to be operating in the eastern North Island)

The disaster awareness program is an inter-agency program between police, fire, ambulance and civil defence that highlights the roles of the emergency services and the assistance that teenagers can give in an emergency. It covers routine emergencies but mainly deals with major disasters such as earthquakes, floodings and other associated risks to the community. It aims to prepare the students for their role if they are involved in an emergency.

3. The consequences of dangerous and drunk driving.

The drunk and dangerous driving programme targets six form students who have recently passed a test to obtain their driving license. It is a hard hitting programme that shows the students the consequences of drunk and dangerous driving and emphasises the responsibility they have as drivers on the road for themselves and others in the community. *(Although this programme is operating in some districts, it is not a national programme as such.)*

They are called FIRSTEP Programme because they are the initial learning programmes for students in the various hazard areas of fire, disasters and motor vehicle accidents, where the fire service play a major role.

The other programmes centre on education to community groups and industry. With the community, the emphasis is mainly on fire safety and home safety.

With industrial training, the emphasis is on self-sufficiency until the emergency services arrive. Training is given in line rescue, hazardous substances, first aid firefighting, ship firefighting and emergency evacuation. The programmes aim for a degree of self-sufficiency when a disaster occurs, by giving knowledge of basic rescue and survival skills.

2) Emergency and disaster plan:

The aim of this plan is to set out those operational and co-ordinating measures to ensure the fire service is efficiently used before and during a state of civil emergency. The hazards associated with this plan are floodings, seismic activities, tsunami, volcanic, landslides, hazardous substances, wind storms, cyclones and major health emergencies. (Beale,1996)

3) Task force plan:

This plan aims to provide manpower, resources, and assistance to other areas in case of major emergencies. If a disaster or major emergency occurs, the affected area can request assistance from another area. The request will include the resource requirements, and the task force co-ordinators will in turn organise these requirements and other applicable logistic support.

4) Napier rural fire plan:

This lays out the action plan in the event of a rural fire be it vegetation or structure. The plan highlights prevention procedures, (E.g. fire permits, fire danger rating, restricted fire seasons etc.) and information to personnel about the command structure and standing instructions. (E.g. Priorities, OIC, publicity etc.)

The aim of this program is to prevent and deal with vegetation fires and to provide information about the risks associated with various climatic conditions and preventative measures to reduce the risk. (NZFSa, 1996)

5) Standard operating procedures SOP's:

There are a number of programs that are associated with operating procedures in routine emergencies and major emergencies.

These include-

Aircraft incidents

Bomb threats (To public and the fire service)

Building collapse

Bulk flammable liquid storage and transportation

Civil disturbance

Disaster response

Electrical hazards

Fireground operations and safety

Gases

Hazardous substances

High rise buildings

Hospitals and places of care (geriatric, psychiatric disabled)

Military aircraft

Prisons

Salvage

Vegetation fires

Vehicle accidents

The aim of these procedures is to provide operational instructions in respect of the operational requirements, duties, and scope of the fire service in routine emergencies and major emergencies and an operating guide in a disaster situation. These SOP's go hand in hand with inter-agency liaison, standards of cover and operational readiness. (New Zealand Fire Service, 1994., NZFSc, 1996)

6) The reducing of the risk and impact of fire and other emergencies:

* Advice given on the causes of fires and hazardous substance emergencies.

* Advice on legislative requirements relating to fire safety.

* Buildings identified with faults and reported to the local authority.

* Building inspections to determine hazards within and non-compliance of buildings.

* Building recommended to the local authority as being dangerous.

* Community group presentations.

* Directions and approvals to the siting of indicator panels, sprinkler inlets and valves.

* Evacuation of building advice. Evacuation scheme development and implementation.

* Evacuation monitoring.

* Promotional planning (Fire safety, home safety etc.)

* Investigation of the causes of fires.

* Location boards and rises for building fire protection.

* Standards regarding fire safety

The aim is to reduce the risk and the impact of fire and other emergencies by actively assisting the public, by giving advice on all aspects of hazard identification and elimination. Also by determining the cause of emergencies and through information dissemination and the physical installation of warning systems, (smoke alarms) create safer communities. (New Zealand Fire service, 1994. NZFSc, 1996)

7) Operational readiness:

* Develop and review operational and risk plans.

* Familiarisation of buildings with known risks.

* Resource maintenance and auditing. (The program is aligned to the ISO 9000 quality systems)

* Review the fire service component of the civil defence plan.

* Staff training in all aspects of operational readiness.

* Testing aircraft emergency plan.

* Testing of water supplies.

* Testing oil installation plan.

* Testing the civil defence plan.

* Training programs. Including the regular review of standards. The service is aligning with the unit standards structure under FRISTO (Fire and rescue services industry training organisation.)

The aim of this program is to maintain a high level of operational readiness so as to be effective and efficient as one of the main response agencies and to be able to meet the standards of cover as determined by the fire service commission.

8) Standards of cover:

* The aims of the standards of cover are to provide for the protection of life and property in every urban district 24 hours a day every day of the year.

* To respond to every incident with predetermined resources in a predetermined time. (This is dependent on the risk classification of the area.) (New Zealand Fire service 1994, NZFSb, 1996)

9) Review:

* Reporting of all incidents attended by the fire service and the identification of causes and the areas relevant to risk reduction.

* Debriefing of major incidents from within the service and in conjunction with other emergency service agencies involved, to improve the service delivery to the public in the future. The aim of the review program is to determine any failings in

the system, to eliminate those failings and to improve performance the next time.

10) Risk mapping of buildings zoned for accommodation:

The aim of risk mapping of accommodation structures was to determine the life risk potential of buildings in both fire and disaster situations and implement programs for risk reduction. Also to have a database of buildings that are a possible life risk which will enable early assessment of casualties and rapid deployment of resources during and after an emergency.

11) Inter-agency liaison:

This program is usually between senior managers of the various emergency agencies and its purpose is for a co-ordinated and integrated structure when an emergency arises.

12) Critical incident stress. Peer support program:

The aim of this program is to assist the operational crews of the emergency services in coping with the psychological stresses associated with routine emergencies and disaster events. There are regular training courses for the debriefing teams and when an incident takes place that is classed as traumatic, the peer support process is initiated.

Below the twelve programs are placed under the relative areas of CEM.

Reduction programs:

Risk mapping enables the identification of at risk buildings so that plans can be implemented to reduce the risk of disaster. By gathering hazard information on buildings and their location, inspections can take place and the relevant advice given to eliminate the causes of emergencies and disasters.

By reducing the risk of disaster through the areas highlighted above, evacuation of buildings regulations and giving fire safety advice on specific legislative requirements, helps to reduce the community's vulnerability.

The rural plan has elements that reduce the risk. These are such matters as fire

permits in the dry seasons, information pertaining to the fire risk and advice on firebreaks etc.

Education programs raise the awareness within the community of the hazards and their effects.

Inter-agency liaison helps to initiate hazard analysis and encourages co-ordination, which is an essential component for effective disaster management.

Readiness programs:

Education programs promote hazard management programs to industry and the public. They prepare pupils and adults to be ready for specific emergencies and teach them basic self help measures.

Standard operating procedures are the laid down actions that enhance the effectiveness of operations. (New Zealand Fire service. 1994, NZFSb, 1996)

Standards of cover set the standards for response so that assistance can be given in optimum times. (NZFSb, 1996, New Zealand Fire service, 1994)

Operational readiness insures that the resource base is kept to an effective and efficient level.

The Napier rural plan again aims to reduce the effects of the impact of rural fires. It lays out the resources and their availability and plans for the stabilisation of the event. (NZFS, 1996)

Task force plan is a response plan to other areas affected by an emergency that they can not control with local resources.

Emergency and disaster plans lay out the procedural base for dealing with disaster situations.

Critical incident stress, peer support teams, are trained to understand the psychological effects of disasters and the support methods for peers under stress. The understanding and training enables them to be effective when an event occurs.

Inter-agency liaison aims to enhance the effectiveness of emergency operations and to be prepared as a community.

Response programs.

Standard operating procedures focus on minimising damage from secondary effects of the hazard and assisting the affected public. They lay out the general methods for responding to specific emergencies. (New Zealand Fire service. 1994, NZFSb, 1996)

Critical incident stress-peer support is aimed at reducing the negative psychological effects of stressful situations by responding trained staff, in the support role.

Emergency and disaster plans lay out the necessary resources and methods of dealing with events such as earthquakes, floods etc.

Task force plans are response plans for mutual aid assistance to another area.

The education programs all lay out response roles for the various areas of the public. It may be family support or neighbourhood rescues.

Operational readiness specifically looks at effective and efficient response to any hazard. This includes training for the various risks.

Inter-agency liaison is essential for co-ordinating the operation of the emergency services.

Recovery program.

Education programs teach methods of self-reliance, which can assist in the recovery phase.

Some of the standard operating procedures deal with recovery. These include salvage and special services such as setting up or supplementing water supplies, cleaning up hazardous materials or dealing with the pumping of sewage.

Critical incident stress teams keep contact with stressed individuals and advise additional professional assistance if it is required and wanted.

Task force is initiated for both response and recovery.

Emergency disaster plans also plan for clean up and recovery.

Finally the review process is essential as part of recovery to ascertain where problems arose, where there were gaps in response and how to improve performance in the future. This should eventually flow back to the reduction

programs.

Gaps within the existing program and the possible solutions:

The fire service has been recognised as a response agency but since the review process in 1994-1995, the strategic development of the fire service reflects the concepts of CEM. However, there are still gaps where the fire service could improve its effectiveness in the area of emergency planning. In the area of reduction, the fire service has gaps in resource availability for heavy rescue activities associated with building collapse. It should spend more time on hazard analysis and there should be a hazard ranking established so that more time can be spent on training for the greater risk areas. There should also be a system in place to identify new hazards and the necessary response. It should place more emphasis on developing contractual arrangements with local businesses and drafting inventories of available equipment. It also has to look at human resource availability, training and the organisational networks required to support these risks. These would include structural engineers, skilled machine operators, structural specialists etc. There is a need to do more work in the safety promotional area. This would include promoting a contractual agreement with housing NZ to develop fire safety standards, disaster education preparedness etc., in their residential properties. The area of lower income rental accommodation highlights a higher percentage of fire incidents then other components of the community. (McGill, 1977d)

There are some minor gaps in readiness. There could be development in an international mutual aid arrangement to enhance response and recovery to major disasters that effect a large area of NZ and therefore reduce the national response capability.

Communications is an essential part of dealing with emergencies and the fire service system has limitations in the quality and the quantity of equipment. This will possibly be improved with the joint emergency services system, which will bring a certain amount of inter-agency compatibility and knowledge. This will in

turn enhance the training and skill levels. However, as with all government departments in today's economic environment, it is dependent on funding.

There is a real need for better co-ordination between services. They must work as a team in a major emergency and therefore there needs to be some effort directed towards better liaison and co-training schemes. Part of this team development centres on the individual services re-categorising under the umbrella of a total emergency response agency. This will enable greater interaction and effective incident management. By cross training emergency service workers up to a basic level in other disciplines this will give a better hazard cover during an emergency.

Recovery is an area that the fire service has a limited role in although because the CEM system is a continuum, in most cases response and recovery overlap. The fire service role has traditionally been response. However, with a skills analysis in co-ordination with other agencies, there may be a far greater part for the fire service to play in recovery. The fire service has to define its mission within the community and from their strategic development will be simplified and more effective. (Perry & Nigg, 1986., Rohrsted, 1994)

However, it appears that the fire service must integrate its internal environment before they can pursue a more effective integrative approach with the other emergency agencies. As at August 1997 the fire service appears to be in a relative limbo in the areas of staffing, funding and emergency management as it waits for some influence from government and the new commission. In October 1997, Mr Estall emphasised that the fire service would move back to its core business role of fire. The implications of this are yet undetermined. In October 1997, eight regions replaced the three regions and eleven areas. The national headquarters was cut by two thirds. This has simplified the management structure but if the fire service restricts its role to its 'core business', it will be a move away from CEM and IEM, and a step back from the worldwide trend in emergency management.

Ambulance:

The ambulance service is mainly response orientated. Seventy five percent of NZ ambulance is under the direction of the Order of St Johns and relies on their Community Services division to develop and control the other aspects of emergency management, that are associated with emergency medical services.

There are three primary fields of concentration.

(1) Industrial training

(2) Public Courses

(3) Cadet training.

1 and 2 are user pays and concentrate on the Ist aid activities of EMS.

The cadet schemes have three levels.

a. Badge 6-10 yr. old

b. Youth 8-21

c. Adult

The programmes cover specific skills in basic life support, within the community and industrial situation. Although these courses can be incorporated into the various aspects of readiness, response and recovery, there appears to be no strategic direction aligned to emergency management. Anecdotal evidence would suggest that there is some degree of antagonism between the permanent ambulance staff and the voluntary units of St. Johns. (McGill, 1998) The term 'Wombles' were used as a derogatory term towards the St. Johns volunteer component. There appears to be indications, that over time, "because it isn't cool", St. Johns will have problems with recruiting volunteers into the cadet

scheme.

Gaps with existing programs and possible solutions:

The gaps in the present system involve human nature and the charging aspects. One of the problems with charging for a community education service is that most people will only partake if it is obligatory. For example, most people will only pay for a course if it has direct benefit to them, or it is an employment requirement. The other aspect of human nature is associated with image. If the image of the voluntary St. Johns activity is negative, it is likely that this area of community education will decline. This suggests that the present system of emergency medical education will only encompass a minimum number of individuals. As part of a CEM and IEM program, this component should be included in school education programs, occupational health and safety programs within industry and community based emergency safety programs. To achieve this, there needs to be greater numbers of instructors, a new image and it must be free to the community. Only then, will the community gain a broad understanding of first aid and the basic life support skills necessary for both emergency and disaster situations. By merging into a single emergency service, it will lift the profile, increase the number of available tutors and enable the community to be better prepared in case of a disaster. The promoting of inter-agency co-ordination and partnership will achieve common functional disaster-relevant priorities and implementation strategies (Britton, 1992). CEM and IEM are wider than just the response agencies but an integrated response agency enables dedicated and co-ordinated emergency management. The key to CEM is the integration of the community and the various agencies into a resource network that can adapt to different eventualities.

5.24 Employees would have better career opportunities.

It has been suggested by international experience that cross training and merging services gives the individuals greater skills and depth of knowledge. This allows for a more interesting working environment, better satisfaction and employment security. It can also allow for a wider career path with the ability to specialise in different roles. The individual no longer suffers from the micro/macro dichotomy in relation to their social identity. Their focus can be singular and forward-looking in relation to emergency management and strategic change.

Britton's (1995) study of the Japanese system found that horizontal integration of the emergency response structure gave a greater degree of promotional opportunities.

A study by the Emergency Care Information Centre (1992) as cited in Williams (1991), of 10 different EMS systems found that by working together as part of a team, Fire service/EMS providers are able to act more efficiently, receive more feedback from those in the team with greater knowledge, had lower stress levels and higher levels of job satisfaction (Department of Research and Labor Issues, AFL-CIO CLC, (1995). Williams (1997) concludes that the new model of cross trained/ EMS workers, under a merged emergency service structure, provides long term stability, job rotation, job enrichment and ultimately job security for employees.

5.25 More cost effective structure.

This comes by reducing duplication, economies of scale and one administrative structure to co-ordinate all emergency response.

Williams (1997) in discussing the Edmonton example identified cost savings inherent in a merger. They were through the elimination of the duplication of facilities and functions and through economies of scale. In the Edmonton example, the administrative functions, including such areas of human resource management, finance and accounting, training, communications and dispatch were merged. The Queensland Emergency Services (corporate services division) have combined the fire, ambulance, statewide services and counter disaster services, human resource and financial systems under one department for the same reasons. (Department of Emergency Services, 1996). The Queensland model was the only literature that supplied information on the merger of all the emergency response agencies. The merger however is only at the administrative level, while the operational arms still keep their historical identity. One of the aims of the merger was economy of scale, i.e. greater purchasing power. The Department of Emergency Services do nevertheless co-ordinate the emergency services in the state of Queensland. (E.g. joint communication centres, joint ambulance/fire stations, co-ordinated education programs) "The benefits of co-location are plain to see" (p.22). The Emergency Services Review Task Force (1995) also referred to the economic and operational benefits that come from shared facilities, common protocols and integrated communications and dispatch systems.

5.26 Better communication networks for disaster and emergency response.

By sharing communications all the different teams can network more effectively and can gather a comprehensive illustration of the emergency.

5.27 Reduced duplication of services.

Another problem is duplication of services. A prime example of this is the split between rural and urban fire. The emergency Services Task Force (1995) believes that this arrangement should be looked at. They believe that the responsibility should be given to the fire service alone, as opposed to the fire service/territorial authority split operating at the present time. The merger of these agencies would assist in eliminating the problems of patch protection.

Over the past year, there has been friction between the ambulance and fire services over the co-responder program in Wellington. "Lives could be lost because of the friction between the fire service and Wellington Free Ambulance over responses to 111 calls" (The Dominion, 1997, p.3). Other problems have been between the Auckland Rescue Helicopter Trust (ARHT) and St. John Auckland over the ACC and RHA contracts for air ambulance services (Auckland Rescue Helicopter Trust, 1997). This was emphasised in a meeting held between the ARHT and St John on 1st May 1997 as cited in Auckland Rescue Helicopter Trust (1997).

Malcolm Beattie - ARHT "We should leave here with the intention that Steve, Scotty, Simon Barton and possibly one other person from St John meet to ascertain whether there is any common ground, If there isn't you'll be left with your remedy and we'll be left with ours." (p.4)

Bruce Cole - St. John "Is that a threat?" (p.4)

Malcolm Beattie - ARHT " No, this is not a threat. We would fight for our survival and you would fight for your goals. I feel that the sooner these operations people get together the better, and who knows what will eventuate. However your stance of ownership of the aircraft and us having to work to your rules sounds a

bit difficult, i.e. a gun to our head" (p.4)

Other conflicts have arisen over line rescue in Wellington between the fire service and police SAR /Wellington Free Ambulance and in the South Island over SAR and air ambulance jurisdiction. By merging the services they would be one agency and therefore should operate in a united way for the welfare of the public. This in turn would reduce the duplication of services and resources. This process of patch protection and attempted take-over again highlights the process of self-categorisation, self-importance and the fear of change. By retracting into their own administrative and operational structures (micro-social identities) these agencies fail to perceive the wider picture, the comprehensive and integrated approach to emergency response.

5.28 A greater contingent capability.

The ability to have more people trained in the various emergency disciplines, is an area of debate. The Emergency Services Task force believes that this so-called spare capacity is illusionary. They suggest that there is no guarantee that a firefighter will make a good paramedic and vice versa. Further study would be required to give a definitive answer to this but in North America, most individuals in the various services adapt quickly to the new role.

The Ministry of Internal Affairs (1997) classes contingent capability "as a system's ability to sustain over a period of time, a capacity to perform or provide specific functions that are over and above its normal or routine expected or contracted outputs" (p.17). The merger of the emergency service response agencies would give a greater contingent capability to the emergency response structures then it has at the present time. Edwards (1994) suggests that having

fire service staff trained in EMS work the additional trained personnel permits a more effective regime of advanced care. This applies to routine emergencies but is equally applicable to disaster situations when manpower is stretched by demands.

With cross-trained personnel, this could apply to fire, rescue and SAR activities as well. Even a small percentage of the emergencies services personnel cross-trained, would give a major improvement in the country's contingent capability in the response arena. For example, there are approximately 9500 firefighters and 2700 ambulance officers of varying levels of expertise. (Edwards, 1994) If the two agencies merged and personnel were cross trained the advantages in capacity for routine, major emergencies and disasters are obvious.

5.29 National standards of cover and performance for all the hazards in the community.

This was another area that was highlighted in the emergency service review. One of the output specifications for the proposed Ministry of Emergency Management was to, "identify and promulgate best practices; -developing codes of practice, guidelines, standards and monitoring standards." (Ministry of Internal Affairs, 1997, p.1)

The NZ Business Roundtable (NZBR) in a brief summary of the Fire Service refers to the Fire Service Act 1975 and an amendment in 1990. This saw the creation of a national and standardised fire service in New Zealand and brought rural fire services under the direction of the Fire Service Commission.

The National Emergency Air Ambulance Network (1996) quoting the Royal College of Surgeons stated "that the pre-hospital component of the trauma system needs to provide a rapid retrieval/primary emergency response ambulance

service"(p. 13). The national trauma system will aim to ensure a co-ordinated approach to trauma management and the integration of pre-hospital emergency service into the system. The system envisaged aligns with the Royal Australian College of surgeon's guidelines and should take account of the trauma network system relating to the Wellington/Hawkes Bay Trauma Pilot. (The Scoping Report for the Combined RHA's and ACC, 1996). If this trial is a success, it could establish the necessary standards and guidelines for the emergency medical services in New Zealand.

There was difficulty in retrieving any data on the standards for the ambulance service as they are set by the RHAs in negotiation with the providers. The ambulance providers refused to supply the information because of the business sensitivity. They indicated that they were running a business and did not wish outside organisations to know what the contracts entailed. It appears that they see this as a threat if others had this knowledge and wished to negotiate with the RHA's for the contract in the future. The NZ Ambulance Board did not offer the information and it was indicated by a past employee that the board worked for the ambulance services and would probably wish to protect their confidentiality. However, it was implied in the research during a telephone interview on 28th August 1997, that the standards and benchmarks are being reviewed now. The present standards appear to centre on the ORCON standards, which are a British benchmark and the RACS report. The NZAB suggested that the ORCON standards were outdated and were being looked at especially in relation to New Zealand's geographic variances. In the National Emergency Air Ambulance Network (1996) recommendations they suggest that all contacts be transparent and contestable.

The merger of emergency services would ensure national standards of operation for all the hazards in the community. The Fire Service has national standards for fire and rescue services. (New Zealand Fire Service Commission 1997). The National Emergency Air Ambulance Network (1996) stresses that to achieve optimum patient outcomes there needs to be nationally consistent standards for emergency medical services. The Emergency Service Task Force (1995) says "There are many advantages to be gained from common standards across emergency service disciplines." (p.24). When looking at the SAR role there appeared to be no information on national standards. The National Air Ambulance Scoping report highlighted some key issues in relation to the ambulance services in New Zealand. There are variances of care and response to pre-hospital medical emergencies depending on the region you live in. These variances include, lack of protocols or guidelines for air and road ambulance use, the need for improved training of control room staff, a shortage of road ambulance resources vehicles and staff, lack of training for volunteers, lack of emergency ambulance service contracts with clear delivery standards and a lack of monitoring and auditing. The report recommends that national and consistent standards for all the above issues be implemented. With nationalised standards, the operational requirements of the EMS in NZ would also be transparent.

5.3 The disadvantages are:

The main extent of literature about the positive and negative aspects of merging the emergency response services has concentrated on the advantages. This is an obvious consequence of the present state of emergency management with the modern approach to integrated emergency structures. However, there is some information about the disadvantages, that has arisen from the emergency services review and an analysis of the North American system.

5.31 Funding inequity

Dittmar (1995) highlights a major problem that has been evident with the North American environment when the fire departments have been given the responsibility of emergency medical services. The fire service has not given EMS the same management and training priorities as it has to the other areas of responsibility. An example cited in the text over a typical fire department budget breakdown - 96 percent of funding was allocated for firefighting operations and training, 3 percent on fire inspections and prevention and only 1 percent on EMS. This was despite 64 percent of the total calls being emergency medical calls. The reasons given for the problems, although varying from state to state, is said to be the dichotomy between the old and the new philosophical differences. Alternatively, as Dittmar (1995) expresses it, the traditionalist versus the innovator.

Another disadvantage with funding in the NZ environment is the trend to shifting responsibilities from central government to local government and other agencies such as the RHAs and CHEs. The delegation of responsibility has failed to see the appropriate shift in resources, particularly in the area of funding. As

these organisations become more strapped for resources, they will be less likely to see emergency management as a priority (NZ Ambulance Board , 1996). This is a major disadvantage if there was one emergency response agency, because the limited resources would affect all areas of emergency management and therefore affect the operational efficiency and effectiveness.

5.32 The roles are too diverse to merge. EMS/fire/SAR Role differentiation:

Dittmar (1995) raises associated difficulties such as firefighters and EMS only wanting to do their specific roles. Many are hesitant because of the perceived dangers of the others' role, i.e. increased exposure to communicable diseases or the dangers of firefighting and hazardous materials. Some paramedics or EMS think they are health-care professionals as opposed to emergency personnel.

Another criticism that she said had arisen is that there are significant differences in the training, education and experience required for fire and EMS duties. Along with this is whether EMS work is a health-care issue or a public safety issue. If it is a health-care issue solely then it may well be outside the realm of the emergency services. However Dittmar (1995) does say that many of the experts in the field feel that EMS is a public safety entity charged with delivering a public health service.

Hunt (1996) as cited in Williams (1997) suggests that an appropriate analogy of organisational cultures is of oil and water and therefore they cannot mix. Williams (1995) says that some would say the job characteristics and task demands are very different and furthermore different personality types are attracted to EMS as opposed to firefighting.

Under analysis, the perceived problems of diversity of role and resource vulnerability were seen as misnomers. The present system creates more resource vulnerability for the different response agencies than if they were co-located or

merged. The aspect of role diversity does not seem to apply in other countries. E.g. North America, Canada and Japan. They operate organisations that have combined under different structures with success.

5.33 Resource vulnerability

The New Zealand Ambulance Board (NZAB) suggests that if communication systems were co-located and under a common network infrastructure, there is the potential disadvantage of losing part of the system in a major disaster. For example an earthquake (NZ Ambulance Board, 1996). The Emergency Review Task Force (1995) agreed with these sentiments.

5.34 Diluted competency

Research indicates, to be cross-trained to a specialist level in fire/EMS and SAR and to be able to maintain these skills would be extremely difficult. Even two roles, as emphasised in the literature, is extremely time consuming. "We have fire training in the morning and EMS training in the afternoon. It is just unbelievable the amount of work it is to keep everyone certified" (Gresham, 1994, p.52) Fire and ambulance- " We would be a jack of all trades master of none. " " Not enough time to train effectively and respond to calls." McGill (1997b)

5.35 Fear that the changes would be purely cost driven and not philosophically driven. *(This is discussed in detail in the section entitled, Blueprint for change.)*

5.36 Barriers.

A. The main ones are people politics and patch protection.

During 1997, there have been problems that have surfaced with the ambulance

service. In the New Zealand Herald on April. 22nd 1997 the problems between the St. Johns Ambulance in Auckland and the Auckland Rescue Helicopter Trust (ARHT) were highlighted. It was emphasised by the ambulance that it was more fiscally viable to purchase and operate their own helicopter than it was to contract to the Auckland Helicopter Trust. They had previously purchased their own helicopter at an approximate cost of $1.7 million. In May, the Auckland Rescue Helicopter Trust (1997) produced a report discrediting the St. Johns plans. " It would appear that St. John Ambulance have acted without due diligence and without experience in the aviation industry. They purchased the aircraft at double the current market price... It appears that their venture into aviation is just another example of poor management." (p.17). They go on to claim that "the Trust,s response times have been compromised by the absence of rostered ambulance officers (p.9).... 32 days during a twelve month period (p.10)...Out of 232 road transfers carried out by ambulance for Starship Hospital in the year ended 31/12/96, 57 (24.7%) times St. John were not able to uplift the medical teams in the requested times" (p.10). The trust has subsequently secured the ACC contract for air ambulance services in the Auckland area because the St. Johns helicopter was not operating at the time of the contract renegotiations. St. Johns however will carry out the RHA medical work when it is fully equipped and operating. On 31 March 1998, it was reported that the Commerce Commission had taken the St. Johns Ambulance to task over their use of the 111 system. It appears that they had been using their control of the 111 system to disadvantage the AHRT. By sending their own helicopter, they had in essence taken $70,000 of the AHRT ACC contract. The commission felt they were breaching the Commerce Act by acting in such a manner. The commission warned St. Johns that they were acting in an anti-

competitive manner and must desist. (The Dominion, April 1, p. 18, 1998) This highlights the negative impact of politics and patch protection. A merger would eliminate these problems.

Another example of inefficiency was shown on Sunday 27th. July on TV 3's 20/20 (July, 27th, 1997) program. Questions were asked about the professionalism and the service delivery of the Wellington Free Ambulance service. It emphasised weaknesses in operating procedures and management. It was indicated that a time delay in responding by a paramedic was a factor in the death of a young woman.

     B. The legislative framework of the existing agencies.

     C. The ambulance service is not a national organisation.

5.37 Loss of historical identity.

    (This is *discussed further in the section: Blueprint for change.*)

However, there are two problem areas that could be insurmountable barriers to merging, regardless of the perceived advantages to the public.

(1) The political strength of the St. Johns organisation in their present regional structure. " We are a private organisation, you can say what you like, we are a charitable trust, we have contracts for service, no government department can tell us what to do." McGill (1997b) and

(2) The political agenda of the present government.

No definitive answer surfaced in these two areas.

5.4 The process of change.

The process of change advocated in this paper involves developing a transitional management team (TMT), that would interconnect and balance all the pieces involved in the change process. It would be prudent that the TMT was

made up of individuals outside the present response structures, but with the necessary technical knowledge and background to understand the various aspects of comprehensive and integrated response and the associated response cultures. The TMT should therefore be chosen from an international arena. This would eliminate any past organisational bias and assist in developing equitable solutions during change to areas of funding, resource allocation etc. They would require a knowledge base in change management, human resources, social-psychology, team development and have the ability to communicate the new approach to all levels of the organisations.

The most successful change programs reveal an emphasis on values and feelings. Change must be based on trust. It is significant that trust associated with change has two major aspects. **Predictability** - where we are going and how we are going to get there and **capability** - that the change managers can get things done. They need to have the political backing and the required resources to achieve the required results. People have to know what to predict. The ground rules cannot change half way through the process. If predictability goes, trust will not be far behind. (Duck, 1993)

Trust is a main factor that affects the reaction to change. Judson (1991) emphasises, "Thus anyone's willingness to change depends in part on how s/he trusts management" (p.32). In New Zealand, there is a perceived lack of trust of the government. It would seem that the government has shown a disregard for the people and even the coalition agreement. This has been shown specifically with the health system by the sacking of Mr. Kirton and a return to the competitive purchasing of health services. "In the public mind, National and its health reforms are to blame for most of these symptoms of a deteriorating system" (NZ Herald,

1997). To the emergency service sector, government is seen to direct policy and therefore the individual reacts to any change in today's environment with scepticism. The fire service has seen a drop in trust for management and associated with this, is the drop in morale and the lack of co-operation. The police are also having trouble with recruitment and retention due to dropping morale and lack of trust in management and the government. Judson (1991) suggests that "A manager must recognise that when there is little trust, problems of carrying out change will be far more difficult than when there is considerable trust" (p.33).

Many of the problems of change within the public sector are associated with historical values; threats to basic and higher level needs and trust. The scepticism of those individuals involved has become internalised over time. An example is the fire service review and change process, which has become extended and embittered.

Anecdotal evidence of this was with the Fire Service restructure of 1993. The change management team developed a process during restructure of facilitation to gather information and develop change. The data collection (facilitation) process was communicated as such,

(1) The change management team will ask all staff what they perceive are the problems with the present system

(2) From this facilitation process, all the data will be analysed and the problem areas will be highlighted and communicated back to staff

(3) The change management team will then return to the workplace and ask for solutions and strategies for change.

It was at phase three that problems arose. The management team decided to ignore this phase altogether. They believed that the change management team and

consultants could best develop solutions to management problems. Within the initial stages of restructure the aspect of predictability disappeared, along with the associated trust for management and the change process. This in turn spawned scepticism and any acceptance to change became harder. The management team that began in 1993 had all left the organisation by 1997 and the restructure had failed.

Associated with these changes was the fire service concept of extending their role in the EMS field. New Zealand Fire Service Commission (1996). Which in turn threatens the personnel of the ambulance service. Any merger must take account of the reasons for resistance and the real effects of change on those involved. From the research, and from what Judson (1991) suggests, the fears and lack of trust will make change at the present time in the emergency service environment very difficult.

Change therefore must be predictable for all those involved. It must be spelt out very early in the processes of; what, why, when, where and how the change will take place.

Every strata of the organisation must be informed. That means even if there is going to be job losses in a particular area then people should know. As discussed earlier change should be based on the shared philosophical ideals of the present agencies. These ideals give a shared social identity. They are accepted by the public and emergency service workers as the ideals that emergency management should be based on.

The next element that must be endorsed is that the changes will centre at the practical level on the concepts of CEM, IEM and an all hazards approach to emergency management. It is a holistic approach to emergency management.

This should assist in transcending the boundaries of the present areas of self-categorisation of the individual response workers. They have retained their macro-social identity and the changes if educated correctly to those involved, will be seen to reinforce this macro-identity.

5.41 Developing multi disciplinary response teams.

There are problem areas regarding the merger of the emergency service response agencies that need to be discussed before attempting to proceed along this path. Although there are obvious advantages in a merger, as discussed earlier, specific barriers must be overcome.

The first is the present group cohesion of the various parties and how to build new teams with a shared microculture and social identity. In a paper analysing organisational response to the Ruapehu volcanic eruption in 1995, Johnston and Houghton (1997) discuss group processes and multi-jurisdictional response demands that typify the disaster environment. Their paper looks at a broader perspective of response than this paper. They were looking beyond the first tier response agencies, however many aspects discussed have relevance to the development of a singular agency for response in NZ.

Johnston, and Houghton (1997) say "that a comprehensive response requires the interactive contribution of several organisations and professional groups to tackle diverse, urgent problems. A team approach is required" (p.4). Their analysis leads to two models regarding multi- disciplinary teams. "Collaborative team model' and the 'Metasystem consultation model' (Mullins, Gillman and Harbeck in La Greca, Siegal, Wallander and Walkers, 1992) The collaborative team approach suggests that a person from a particular discipline contributes

his/her perspective and share in the decision making process. The meta-system consultation model on the other hand involves a person or body taking the 'meta' position and co-ordinating the collaborative team externally. The discussion centres on mutli-level interventions which have relevance to the structure of combined emergency response teams.

Because one of the main perceived barriers of change as discussed earlier, was social identity and self categorisation, the aim of this section is develop a model that will bring about a 'new' team identity and cohesion necessary for effective emergency response. The aim would be to evolve within the collaborative team model with the TMT taking the meta-position, to overcome initial problems. Then move towards 'Interdisciplinary teams' ("An interdisciplinary team approach encourages co-operation and reinforcement of each discipline's goals, yet roles often remain strictly defined") (Gillman and Harbeck, p. 391) and finally to 'Transdisciplinary teams'. The transdisciplinary approach encourages the set goals and working relationships and "role release"- that is, letting go of traditional strict role definitions when intervention takes place." (Gillman and Harbeck, p.391). This approach can lead to well-integrated teams where individuals work as equals, with shared values (social identity at the micro level) and share in the decision-making processes.

The transdisciplinary team model may well benefit by accepting the concepts of Interdependence as advocated by Condeluci (1991). The concept of Interdependence is about relationships that lead to a mutual acceptance and respect. "It suggests a fabric effect where diverse people come together in a synergistic way to create an upward effect for all." (Condeluci, 1991 p. 89) Covey, (1989) suggests that independent thinking is not suited to a reality that is

interdependent. This interdependence is highlighted during an emergency or disaster, when the victims, the public and the emergency workers are dependent on one another to control the emergency. The agencies cannot work independently, nor can an individual within the agencies work independently. The ambulance worker is dependent on the firefighter to extricate the victim. The firefighter is dependent on the ambulance to stabilise the victim. Both groups are dependent on the SAR to locate the victim if it is required. Covey (1989) says, "To try and achieve effectiveness through independence is like trying to play tennis with a golf club. The tool is not suited to the reality." (p. 51) By operating under an interdependent paradigm, no area of expertise is de-valued.

The goal of interdependence is:

• Acceptance -Acceptance of others skills, compassion etc.

•Relationships -with others with different micro social identity

•Opportunities -To learn, to change your self categorisation and to become trans-disciplined and to have a trans-social identity.

Merging the emergency services in line with this paradigm emphasises that the different professional groups give up their single focus and evolve towards an IEM and CEM structure.

With change there should be a sense of urgency. There should be a timetable established so that everyone knows what to expect and when. Because the emergency management structure is of police, ambulance and fire, all have regional structures, the change process should be trialed in a particular region and monitored closely for problem areas. This enables a small enough test structure for comprehensive analysis. There should be one administrative structure, and both the administration and front line changes should take place simultaneously.

5.42 Conflict resolution during and after the merger.

Two essential factors must be considered during and after the merging of the response agencies.

(1) Human resource problems are inevitable.

(2) Managers typically undermanage the human resource and cultural problems associated with such change (Williams, 1995).

Therefore, regardless of the reasons for, and how well the merger takes place, there will always be associated human resource problems. Carpenter and Kennedy (cited in Williams, 1995) suggests that there are simple and practical key elements that should be included in the training of line managers to overcome day to day conflict situations.

(1) Background to the problem. Meet on neutral ground and develop strategies to gather the facts and listen to employees in a congenial and equitable manner.

(2) Understand the problem. Listen to the problem in a non-judgemental way and provide leadership and compassion.

(3) Research the problem. Line managers should be trained in research methods so they can analyse the problem and formulate the solutions.

(4) Develop and implement a solution. Line managers need the ability to find a creative solution and to implement the solution in a multi-disciplinary team.

Training and development of staff should be initiated prior to the merger. Staff should fully understand the concepts of CEM and IEM and an all hazards approach to emergency management. Although there will be cost savings, the

emphasis should be placed of effectiveness, efficiency and the vision that is being implemented. A vision that should centre on the macro ideals of the present emergency response agencies. " Team effectiveness may depend on having a clearly defined purpose..."(Sundstrom, De Meuse and Futrell, 1990, p. 123).

However once the merger is under way team development should be pursued with a sense of urgency. The process needs to be dynamic. Those involved need to see positive progress and continued improvement brought about by the new structure.

5.5 Avenues of opportunity when discussing a merger.

- All services utilise the 111 system.
- All services are dependent on a large volunteer representation.
- The technology for combined communication networks and systems is available. The fire service will co-locate their control and dispatch activities with the police in June 1998. This has been titled the Shared Information Technology Environment (SITE) agreement. This will reduce the centres for police and fire to three within NZ (New Zealand Fire Service Commission, 1997). The ambulance could join with this system or alternatively the three agencies could operate under the ambulance system.
- The operational teams interact extremely well in the existing environment. Ambulance says "The coal face firefighters are great, we work as a team." (McGill, 1997b).
- There is the ability to reduce costs without reducing the number of present ambulance , fire and SAR operational personnel.
- By merging it reduces the perceived threat of one agency taking over another. All agencies would merge on the same foundation.
- The fire service is in a state of upheaval and needs some form of strategic direction.
- The ambulance has no national standards.
- The police have problems with low morale and staff retention.

Practical steps could be:

(1) Create a new name that all can associate with, but that does not reflect any of the pre-agency titles. The name should be associated with the new direction.

'Emergency Response'

(2) Have one legislative framework and a ministry of emergency services to set policy and direction. Because the ambulance service do not have a legislative framework to operate under, there is the need to develop law that covers the existing Fire Service Act, the Rural Fires Act, and parts of the Police and Civil

Defence Act. The new act could be part of an Emergency Services Act.

(3) Create a national EMG that identifies and promulgates best practices develops codes of practice, guidelines, standards and monitoring standards as suggested in the draft report on the detailed output specifications for proposed Ministry of Emergency Management. (Ministry of Internal Affairs, 1997)

(4) Develop control rooms that deals with the total emergency response network, including the aspects of EMS, SAR, fire, rural fire, rescue, air rescue and civil defence when required.

(5) Create new teams immediately that operate out of the same location, work on the same shift system, have the same uniform, share the same remuneration packages, share the same titles and all participate in operational systems design.

(6) Commence training immediately to bring individuals up to a basic level in the other disciplines. They should undertake the training in the teams. This will assist in team collaboration and cohesion.

(7) Have a regional/area structure that aligns with regional council boundaries or emergency response boundaries. The fire service has recently revised its regional boundaries down to eight in New Zealand. This could be effective in the sense that the regions are large enough to have the necessary resource base for most eventualities. It could also assist in providing the resources for other regions when required without depleting the existing regions capability.

(8) Utilise existing fire and ambulance resources and look at a tiered response system for all hazards.

(9) Ensure the new emergency response network would develops CEM and IEM structures that deal with all the hazards in the community, plan for emergency and disaster situations and extend their roles in risk reduction readiness and recovery.

(10) Ensure that the region/area structures are given the responsibility and authority for hazard management. They have the local knowledge of the hazard environment and resource base and are in the best position to develop the planning process for emergency response.

(11) Establish a timetable to ensure that change is carried out with

urgency and momentum is maintained.

(12) Have one administrative arm that supports the operational teams.

(13) Line managers must be capable of explaining the important concepts of emergency management and the benefits of merging. Nevertheless, the concepts must be understandable in practical terms. The goals must be obtainable.

(14) Develop disaster teams that can be utilised nationally by other regions or internationally by other countries when appropriate.

(15) Include emergency management within the organisation.

(16) Do not include the police criminal section in the new organisation. All existing agencies agree on this matter, including those consulted in the police force. The police are already over extended.

(17) Any merger would have to allow for the continuation of voluntary support. This includes the areas of fund raising and community involvement and the large operational volunteer component of all the services. Utilise other volunteer agencies, such as coast guard and surf lifesaving clubs when required. This would allow for additional skill and expertise and contingent capability.

(18) Replace the present regional and local controllers of civil defence with a single Emergency Response Co-ordination (ERC) as suggested by the Ministry of Internal Affairs report,. This ERC will, have the responsibility of co-ordinating emergency response planning and implementation following the declaration of an emergency. This person(s) would work out of the merged emergency response agency. It would allow for close liaison with all those involved in emergency and disaster response and an integrated approach to planning.

(19) Keep the management structure as flat as possible. Many of the problems with the emergency organisations in the past have been the hierarchical bureaucratic structures. They have created empires that failed to provide support to the operational teams and stifled bottom driven initiatives and direction.

(20) Always consider the human aspect.

(21) There should be adequate resourcing available to give the necessary training development and equipment during and after the process of merging.

(22) There should be different operational structures for the volunteer/rural and urban environment. A consensus believed that if there was a merger, there should be specialists in the urban areas that are cross-trained to a basic or intermediate level in the other disciplines and in the rural areas, a cross-trained

staff to the basic/intermediate level was required. Specialists from the urban sector would support them when required.

5.6 Further research would have to be carried out into the following areas:

• The best method of funding a combined emergency service?

The present funding structures:

The contracts for Air ambulance and ambulance services are funded on a 'fee for service' basis by ACC and bulk funded by the RHAs based on historical data. The real cost of Air ambulance is not realised through the fee and most services are subsidised by sponsorship by organisations such as, Westpac, Trustbank, Tranz Rail, NZ Post, ASB Trust, TV 3, Lowe Walker, Speights and Dominion Breweries. These sponsors supplement the service in excess of $3 million per year. (National Emergency Air Ambulance Network, 1996) The Scoping Report for the Combined RHA's and ACC (1996) suggests that arrangements should be established between other emergency agencies such as SAR, fire and police. This they suggest would give greater efficiencies. However the RHAs and ACC view the air ambulance very much in terms of a cost effectiveness approach while fulfilling the objectives of the national trauma system. "In the final outcome the ACC and the RHAs are responsible for determining service requirements and that purchasing those services will deliver cost effective outcomes" (p. 95).

The majority of ambulance services in NZ are run by charitable trusts. The Order of St. Johns operates regional ambulance services in Auckland, Midland, Hawkes Bay, Central Districts and South Island. The Wellington Free ambulance provides services to Wellington Region and the CHE supply ambulance services to Taranaki, Wairarapa and Marlborough. Ambulance providers are contracted to the RHAs and ACC. There is a variety of contracts within New Zealand depending on the region and the respective RHA. Many of the ambulance services supplement their funding and resource requirements through public donations. The southern RHA and ACC have signed a joint contract with the southern ambulance services. The providers have to meet specific standards, including crewing components, training and equipment requirements to fulfil their contracts.

(National Emergency Air Ambulance Network, 1996)

The funding of the fire service is by a levy which insurance companies collect

from policyholders. The NZBR quote the levy "at 1 May 1993 was 0.062 percent of sum insured" (p. 12) In 1994/95 the chargeable expenditure was $170 million or approximately $50 per person. As at 30 June 1997 it stood at $156 million.

Mark (1983) as cited in NZBR (1995) says:

> "If a single philosophical principal underlies ...[the history
> of funding fire services in New Zealand] it is that the
> provision of fire services should be subject to the so-called
> "user-pays" principle, and that this particular public service
> should be charged upon those that benefit from it." (p.1)

The Internal Affairs and local government Committee (1997) referred to a new approach for funding the fire service in the future. The scheme they suggest should be a property based one, which would incur a compulsory annual charge on all properties and buildings. It has been emphasised in this scheme that discounts should be made available to those who take preventive measures, such as sprinklers and fire protection. The levying of the charge would be done directly by the Fire Service using the Valuation NZ databases. There would also be a charge on vehicles through the vehicle registration system. The system is deemed more equitable because all those owning property would be charged for the service as opposed to the present system where by not everybody insures their property. In addition, the cost would be related to whether the property was urban or rural. Urban property owners would be charged $40 and rural property owners $20.

Motor vehicles owners would be charged $11. This would in essence eliminate the need for the percentage of government funding of the fire service. However on Saturday 20th. December 1997 Mr Estall indicated that the present funding process would continue. The levy would be reduced moreover to .05 percentage of sum

insured. This would in essence reduce the funding by $45 million dollars annually.

•The SAR activity class I and II are funded out of the police budget. It would be simpler for a combined emergency response service to have one funding base. Many believed general taxation or a rates based system was the most equitable system. However, under the present political and economic environment this is unlikely to be acceptable. More research into equitable funding structures needs to take place.

Should there be a standardised system for the delivery of the emergency services and should these standards be independent of political motivated decisions?

5.7 Summary:

The analysis of the research data suggests that a merger of the emergency response services of fire (urban and rural) ambulance (road and air) and police/SAR would be the best option for the New Zealand environment. It is the best option for the public, for effective and efficient service delivery during routine emergencies and disasters, for career development, for job security, for cost benefits and for an all hazards, integrated and comprehensive approach to emergency management. However, the development of one emergency response agency is dependent on neutralising the barriers of people, politics and patch protection.

There are however inherent aspects of the present organisations that would simplify the process of merging. The two main factors are:

•the organisations have the same philosophical base, 'to save life, protect property and render humanitarian services', and they

• share in the same macro social-identity.

These are very positive aspects for change including cohesive factors that place the emphasis on the interests of the victim (public), not the organisations. It is these factors that must be emphasised for any change to be accepted.

The change process for many New Zealanders has become a very negative concept over the past fifteen years. This is due to the market approach to all aspects of NZ society, the employment laws, the fear of job losses and the loss of existing working conditions. The fear associated with the protection of one's place, one's position and one's past, may be too strong to successfully develop a singular emergency response service.

If, however, the appropriate integrative processes are developed, most of the barriers to change can be neutralised. The process must be directed by a change management team that has a broad knowledge base in the areas of conflict resolution, social-psychology, emergency management and emergency response. They should be from outside any of the present national response organisations, with the ability to be objective.

There was agreement that the operational component should be based on two sub-structures, urban and rural. The rural system should be adaptable to the community and response crews should have a basic/intermediate knowledge in all disciplines. A specialist response from the nearest urban system should be available when required. It was envisaged that the urban environment would have specialists who were trained to a basic/intermediate level in the other areas. This will allow for an evolutionary phase from multi-disciplinary, to trans-disciplinary teams. From a multi-cultural or multiple social-identities to a singular social-identity.

The main factor that was raised during the research was, change should be done for the right reasons. The importance of the inherent philosophical foundation of the emergency service organisations, must be a paramount consideration when pursuing change.

If the barriers to change are too great for a totally integrated response service and NZ desires an efficient and effective emergency response structure, then it should seriously look at a tiered response system, as an alternative.

BIBLIOGRAPHY

Al Gini "n.d." Moral leadership and business ethics. Loyola University, Chicago, http://academy.umd.edu/KLSP/klspdocs/agini_p1.htm

American Medical Association. (1992). Guidelines for cardiopulmonary resuscitation and emergency cardiac care. The Journal of The American Medical Association Vol 268, No.76; October 28, 2184.

Auckland Rescue Helicopter Trust. (1997). The reality of operating an integrated air ambulance service in the Auckland region. May 1997, Auckland.

Auf der Hiede, E. (1989). Disasters are Different. Disaster Response Chapter 4, St. Louis, C.V. Mosby Co.

Baum, A. H. (1991). Toxins, technology, and natural disasters. In G. R. Vanden Bos and B. K. Bryant, (Eds.) Cataclysms, crises and catastrophes: Psychology in action. Washington D. C.: American Psychological Association.

Beale, B. (1996) Hawkes Bay task force plan. Napier, NZFS.

Belton, G. P. (1996). Oil and water. An important perspective on the proposed amalgamation of fire and emergency medical services in the city of New York. A report prepared for the EMTs and paramedics of local 2507. New York. *Information obtained from the Edmonton emergency services library.*

Berger, K. S. (1983). The developing person through the life span. Worth Publishers, Inc. New York.

Brandt, R. (1992). On rethinking Leadership: A conversation with Tom Sergiovanni. Educational Leadership, February 1992, 46-49.

Britton, N. (1992). Uncommon hazards and orthodox emergency management. International Journal of Mass Emergencies and Disasters, 10, 329-348

Britton, N. (1995), Consultative report on emergency management. Ministry of Internal Affairs, Wellington.

Britton, N. (1996). Need for a new breed of emergency managers. N.Z. Local Govt. 32(5): 12-14.

Bibliography 6

Carter, P. & McGoldrick, A. (1994). Delayering the police force: A structural response to cost, quality and public accountability. Management Research News: Mrn. 17(7,8,9): 63-67.

Comber, K. , Letter to Jack Elder, Minister of Internal Affairs. 23 June 1997, Fire Service Commission.

Condeluci,A. (1991). Interdependence: The route to community. Paul Deatsch Press, Colarado.

Corey, G., Corey, M. S. & Callanan, P. (1993). Issues and ethics in the helping professions. (4Th. Ed.) Brookes/Cole Publishing Co. USA.

Covey,S. (1989). The 7 habits of highly effective people. The Business Library, Australia.

DeForrest, B. (1989). Developing a participatory decision-making model. The police chief, April 1989, 110-113.

Department of Internal affairs. (1993). Fire related activity and hazardous substances, Wellington.

Department of research and labor issues, AFL-CIO CLC. (1995). Effectiveness of Fire-Based EMS. International Association of Firefighters, USA.

Dittmar, M.J. (1995). Fire service EMS: The challenge and the promise. An overview. Rescue March 111 Vol.1, No. 4, 29-33, cont. 139-141.

Drabek,T.E. (1990). Emergency management. Strategies for maintaining organisational integrity. Springer-Verlag, New York, 1990.

Duck, J. (1993). Managing change. The art of balancing. Harvard Business Review, Nov. Dec.

Dunding, D. & Matejka, K. (1994). Overcoming the BOHICA effect. Business Horizon, July-August 40-42.

Dynes, R. R., (1994). Community emergency planning: False assumptions and   inappropriate analogies. International Journal of Mass Emergencies and Disasters, 12, 141-158.

Edwards, M. (1994). Fire/ambulance Services integration in New Zealand-The issues. Rescue 111 Vol. 1. No. 3 December. 26-29

Bibliography 6

Eisenberg, M. S. (1993). Predicting survival from out-of-hospital cardiac arrest: A graphic model. Annuals of Emergency Medicine, Nov. 1`652-1658.

Emergency services review. (1996). Officials committee working papers prepared as the basis for reporting to Cabinet state sector committee in August 1996. Wellington.

Emergency service review. (1996). Briefing for local government and emergency services in Wellington, 12 December. Wellington.

Emergency Review Task Force. (1995). Report of the emergency review task force, Wellington.

English, P. (1997, Tuesday, April.22nd). Battle over air rescue. New Zealand Herald, p. A14.

Fire service-ambulance friction 'risking lives'. (1997, Tuesday, June 3rd.). The Dominion, p. 3.

Fire Service 'needs $83m'. (1997, Saturday, April 19th) The Dominion, p.2

Foster, H. D. (1980). Disaster planning. The preservation of life and property. Springer-Verlag, New York, 1980.

Glaser, B. G. & Strauss, A. L.(1966). The purpose and credibility of qualitative research. Nursing Research, 15, 56-61.

Glaser, B. G. & Strauss, A. L.(1967). The discover of grounded theory: Strategies for qualitative research. Aldine De Gruyter, New York.

Glesne, C. & Peshkin, A. (1992). Becoming qualitative researchers. l

Gresham, R. (1994). Does EMS belong to the fire service? Journal of Emergency Medical Services, March, 47-55.

Hagner, D. C. & Helm, D. T. (1994). Qualitative methods in rehabilitation research. Rehabilitation Counselling Bulletin, 37(4), 290-303.

Halton & Mississauga Ambulance Service. (1996). Allied agencies tiered response protocol. Operating Procedures-C23, 2-6, Mississauga, Canada.

Ham, C. (1997). Reforming the New Zealand health reforms. Big bang gives way to incrementalism as competition is abandoned. British Medical Journal Volume (314), June, 1844-1845

Harshbarger, D. (1974). Picking up the pieces: Disaster intervention and human ecology. Omega, 5, 55-59.

Hawkins, T. (1985) Integrated Emergency Management System. The Police Chief, March 1985, 92-94.

Bibliography 6

Henry, C. (1992). Reasonable care: approaches to health care research. Journal of advances in Health Care 1 (4).

Henry, C. (1995).Professional ethics and organisational change in education and health. Edward Arnold London.

Hogg, M. A. (1992). The social psychology of group cohesion: From attraction to social identity. New York press, New York.

Hornblow, A. (1997). New Zealand health reforms: a clash of cultures. British Medical Journal Volume (314), June, 1892-1894.

Hughs, J. (1990). The philosophy of social research. 2nd.ed. Longman, London, 1990. International standard book number: 0-942920-18-x.

Independent Review Team. (1994). New Zealand Fire service independent review (2nd. ed.), McDermott Miller Ltd. Wellington.

Johnston, D. & Houghton, B. H. (1997). Organisational response to a volcanic eruption. Massey University, Palmerston North.

Judson, A. S. (1991). Changing behaviour in organisations. Minimise resistance to change. Cambridge, Massachusetts USA.

Keller, R. & Yeman, J. M. (1991). How fire departments administer EMS. Fire Chief. Nov. 53-55.

Kitson, A. & Campbell, R. (1996). The ethical organisation. Ethical theory and corporate behaviour. Macmillan Press Ltd. London.

McCally, T. Fire Service cut slammed. The Daily Telegraph, Dec. 20th, 1997, p 4, Napier.

Mccaw, M., Miller, R. & Auton, J. (1993). New Zealand Fire service independent review , McDermott Miller Ltd. Wellington.

McGill, M. (1997a). [Interview with assistant communications manager fire and rescue services: United Kingdom .] Unpublished raw data.

McGill, M. (1997b). [Interviews with the management sector and responses to questionnaires of the emergency response agencies regarding merging the services.] Unpublished raw data.

McGill, M. (1997c). [Data recorded from the public and through observations.] Unpublished raw data.

McGill, M. (1997d). Emergency management programmes of the Fire Service.[Unpublished Special Project in Emergency Management 30704, Massey University, Palmerston North]

McGill, M. (1998). [Data recorded during an interview with a St. Johns instructor and auxiliary ambulance officer.] Unpublished raw data.

McWhinney, W. (1984). Alternative realities: Their impact on change and leadership. Journal of Humanistic Psychology, Vol. 24 No.4 7-38.

Mallard, T. (1996). Letter to the firefighters union on behalf of the Labour Party. Parliament House, Wellington.

Marriner-tomey, A. (1994). Nursing theorists and their work. Third edition. Mosby-Year Book, Inc., Missouri.

Maslow, A. H. (1954). In Judson, A. S. (1991). Changing behaviour in organisations. Minimise resistance to change. Cambridge, Massachusetts USA.

Massey University, Dept. of Psychology (1997) Emergency Management: Conceptual Issues for emergency management. Study Guide 1. Massey University.

Midgely, M. (1991). In Henry, C. (1995).Professional ethics and organisational change in education and health. Edward Arnold London.

Ministry of internal Affairs. (1984).New Zealand Fire Service Act 1975. No.42. P.D. Hasselberg, government printer Wellington.

Ministry of internal Affairs. (1997). Detailed output specifications for proposed ministry of emergency management, Ministry of internal Affairs, Wellington.

Mississauga Fire and Emergency services. (1996). More then smoke and flames. Video, Canada

Mullins, L., Gillman, J. & Harbeck, C. (1992). Multi-level interventions in paediatric psychology settings: a behavioural systems perspective. In La Greca, A. M., Siegal, J., Wallander, J. C. and Walker's, C. E. Stress and coping in child health. 377-397. The Guildfords Press, N.Y.

National Emergency Air Ambulance Network. (1996). A national air ambulance network for New Zealand. A scoping paper for ACC and RHA's . Dec. 1996.

NZ Ambulance Board, (1996). Report of the emergency services review task force. Letter to Department of Internal Affairs, Wellington.

New Zealand Fire service. (1994). Manual of operations. Policy and instruction to commanders. F.S.M.8 Part 1. NZFS national office. Wellington.

New Zealand Fire Service. (1996). Fire incident reporting system. Instruction and coding manual. Wellington.

NZFSa (1996) Napier rural fire plan. Napier, NZFS.

Bibliography 6

NZFSb (1996) New Zealand Fire Service Commission Manual of operations, Part 2. Fire Service Manual 8: NZFS national office. Wellington.

New Zealand Fire Service, (1997). Non emergency activity management system. 1997/98 year pocket guide. Version 2.1. Wellington

New Zealand Fire Service. (1997). New Zealand Fire Service risk management model. Star newsletter, Issue 19,June.

New Zealand Fire service college. (1979). Training note- firemanship. D/79/45N, Wellington.

New Zealand Fire Service Commission. (1996). Advancing to 2000. New Zealand fire service commission strategic plan. NZFS national office. Wellington.

New Zealand Fire Service Commission. (1997). 1995/96 Review of performance and current operations of the New Zealand Fire Service Commission, Wellington.

New Zealand Police. (1996) Corporate profile. ISSN 1173-5546 , Wellington.

New Zealand Professional Firefighters Union, (1997). New commissions directives, another review. Newsletter to Members,27 August, Petone, Wellington.

New Zealand Business Round Table. (1995). The provision and funding of fire services. Some broader perspective's. Wellington.

Olson, R. (1985). Urban heavy rescue: The weak link in earthquake response planning. Working Paper 103. Dept. of Political Science Arizona State University, California.

Order of St John. (1994). New Zealand first aid manual. Penguin books (NZ) Ltd. Auckland.

Order of St John. (1996) Letter to the Ministry of Internal Affairs commenting on the Emergency Services Task Force review. Wellington.

Paton, D. (1994). Disaster relief work: An assessment of training effectiveness. Journal of Traumatic Stress. 7, 275-288

Paton, D. (1997).Emergency Management: Conceptual issues for emergency management. Study guide one, Massey University.

Partanen, P. (1997). Scandinavia's fire brigades & fire industry. Fire and Rescue. Jan. 1995, 48-50.

Perry,R & Nigg,J. (1986), Emergency preparedness and response planning:

Bibliography 6

An intergovernmental perspective. Working paper 109, Office of Hazard Studies. Arizona State University. 1986.

Police foundation and policy studies institute. (1994). Independent committee of inquiry into the role and responsibility of the police. Copyprint(UK) Ltd. London.

Quanrantelli, E. L. (1985). What is disaster? The need for clarification in definition and conceptualisation in research. In B.J. Sowder (Ed.), Disasters and Mental health: Selected contemporary perspective's , 41-73. Rockville, Md: US Depart. Of Health and Human services.

Queensland Emergency Services (1995). Queensland Emergency Services. Emergency Services Review, Vol. 2 No. 4 Nov. 47-50.

Queensland Government. (1996). Annual Report 1995/96. Department of Emergency services and office of sport and recreation. Brisbane.

RACS NZ Trauma Committee, (1994). Guidelines for a structured approach to the provision of optimal trauma care. Trauma project for the Ministry of Health. Wellington.

Rohrsted, Tue. (1994) (Chairperson for the task force) Strategic Action Plan for the Danube River Basin 1995-2005. Buchharest.

Rouke, J. (1992). Policing two peoples. A history of the police in the Bay of Plenty. NZ Police, Wellington.

Ruggiero, V. R. (1973). In Henry, C. (1995).Professional ethics and organisational change in education and health. Edward Arnold London.

Sandelowski,M. (1986). The problem of rigour in Qualitative research. Advances in Nursing Science. 8(3), 27-37.

Sarantakos, S., (1993). Social research., MacMillian, Melbourne.

St. Johns found to be taking rivals work. (1998, Wed, April 1) The Dominion, P. 18.

Shirvata, P. (1986). Postmerger Integration. Journal of Business strategy, 5; 103-111.

Shute, R. H. (1997). Multidisciplinary teams and child health care: Practical and theoretical issues. Australian Psychologist. 32(2), 106-113.

Sorrell, T. and Hendry, J. (1994) Business ethics, Butterworth Heinemann, Oxford. in The ethical organisation. Ethical theory and corporate behaviour. Macmillan Press Ltd. London, 1996.

Sylves,T. & Waugh,W.L. (1996), Disaster management in the U.S. and Canada. The politics, policymaking, administration and analysis of emergency management. Second edition. Charles Thomas Publisher Ltd. USA. 1996.

Sunday Star Times, September 7th, C2.(1997). NZ First health imprint getting fainter by the day. Wellington.

Sundstrom, E., DeMeuse, K. P. & Futrell, D. (1990). Work Teams. Application and effectiveness. American Psychologist, Feb. 120-131

Taitoko, M. (1993), The implications of the all hazards approach for civil defence planning. Massey University Paper 30.603. Palmerston North.

Taylor, A.J. (1990). Disasters, distress and stress. Community Mental Health in New Zealand, 5, 60-68.

Thompson, P. (1990). Work organisations: a critical introduction. MacMillan Education Ltd. London.

Young, S. (1992). With confidence and pride. Policing the Wellington region 1840-1992. NZ Police, Wellington.

Walker, B. (1997) Life, injury and property performance indicators and targets for the New Zealand Fire Service. Aspen Consulting, Wellington.

Watkins, T. (1997, 7 April). The thinning blue line. New Zealand Herald, A:11,

Wenger, D. E. (1987). Community response to disaster: Functional and structural alterations. In E.L. Quarantelli (ed.) Disasters: Theory and research. London: Sage.

William, B.E. Development of a strategy for conflict management during fire/ems department amalgamation. International Association of Firefighters. May 1995.

Williams, B.E. An assessment of the benefits of cross-training firefighters and EMT's: A job design approach. International Association of Firefighters. Jan. 1997.

Whiteley, A. (1995). Managing change. A core values approach. MacMillan Education Australia Pty Ltd. Melbourne.

20/20 (1997, Sunday July 27th). Wellington Free Ambulance. TV 3.