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**An examination of Scotland's Strategic Coordinating Groups to determine whether they are capable of delivering resilience and enhanced crisis management capabilities**

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**Submitted in fulfilment of the requirements for the Degree of PhD**

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## **Abstract**

This thesis examines whether the introduction of the Civil Contingencies Act 2004 and the establishment of Strategic Coordinating Groups (SCGs) within an integrated emergency management framework provides Scotland with an effective crisis response structure and resilience. A key aspect of resilience is the ability of the SCGs to learn from previous experiences. This research will consider the organisational learning of the SCGs to determine whether it is as effective as it could be. It first focuses on the organisational structure of the SCG and analyses it in terms of network management to determine its crisis management effectiveness. It then considers whether the SCGs are suitably adaptive to crises and learn from the experience of managing them and thereby enhance their preventative capability, as envisaged by the resilience policy. The principal argument is that the current structure does not ensure effective organisational learning and therefore Scotland's resilience is diminished.

## **Design/Methodology/Approach**

A qualitative approach is used. Data is gathered through interviews and non-participant observations, and interpreted by a combination of inductive and deductive approaches. The use of triangulation of data enhances its validity. Systems theory provides analytical frameworks to examine the SCG structure and processes, and to determine whether SCGs successfully achieve the desired outcome of resilience and effective crisis management.

## **Findings/Practical Implications**

Using the systems approach identifies that real world SCGs have a number of variances from the ideal state. The current SCG structure is complex which makes communication and coordination challenging, which undermines the SCG crisis response. The absence of a dynamic monitoring mechanism within the SCG makes it difficult to learn lessons from previous crises and adapt to environmental changes. The thesis concludes by making a number of recommendations for improving SCG crisis management effectiveness and resilience.

**Keywords: crisis management; resilience; integrated emergency management; systems theory**

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## **Acknowledgement**

The completion of this research was made possible with the support and encouragement of many people. Firstly I thank all those who assisted me by graciously agreeing to participate in my research. I would also like to put on record my appreciation of the wise counsel and guidance provided by my supervisors, Professor Denis Fischbacher-Smith and Dr Moira Fischbacher-Smith. But most of all I express the deepest gratitude to my wife Ellen, without whose love and support, I could not have fulfilled this ambition.

## **Author's Declaration**

“I declare that, except where explicit reference is made to the contribution of others, that this dissertation is the result of my own work and has not been submitted for any other degree at the University of Glasgow or any other institution.

Signature: \_\_\_\_\_

Printed Name: Kevin Pollock”

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## Introduction

This introduction sets out the problems that led to the demands for a policy network capable of improving UK resilience and resulted in the establishment of the Strategic Coordinating Groups in Scotland. It also introduces the theoretical and conceptual frameworks applied to the research.

The fuel crisis and floods of 2000 and the foot and mouth crisis of 2001 exposed serious weakness in capability across England, Wales and Scotland, particularly when dealing with wide area emergencies (Cabinet Office, 2004; Walford, 2009). The subsequent terrorist attacks of 9/11, Bali, Madrid and London bombings of July 2005 further emphasised the need to re-examine emergency planning arrangements and to restructure them where necessary (Buckle et al., 2006). These events are illustrative of the array of potentially devastating threats society faces which typically will require government intervention (Boin et al., 2010). Not only is the scope and magnitude of such events increasing (Mitroff, 2004), but their consequences are more problematic because of the complexity and interdependency of technological systems (Rosenthal & Kouzmin, 1997). Society's ability to manage such extreme events depends on its ability to understand, anticipate, prepare for, and respond to them (Comfort, 1999).

The UK Government's response to its perceived capability deficit in relation to its *“experience of severe emergencies in the UK and the changing threat from international terrorism”* (Civil Contingencies Bill para 2), was the introduction of legislation and a national ‘resilience’ policy<sup>1</sup>. The Civil Contingencies Act 2004 formally established Scotland's Strategic Coordinating Groups (SCGs), while the policy of resilience incorporated not just planning, preparation, maintenance, response and recovery but also prevention of such extreme events (Cabinet Office, 2004). **This thesis examines the SCGs to determine whether they provide Scotland with effective crisis management capability and resilience as envisaged by Government.**

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<sup>1</sup> Resilience – a full discussion about the term resilience is included in Chapter 1. The UK Resilience Policy intends through planning and preparation to enable communities to detect, prevent and, if necessary, to handle and recover from disruptive challenges.

The Strategic Coordinating Group (SCG) is the focal point for local resilience and the principal local forum for multiagency cooperation working across organisational boundaries. The Act established an SCG for each Scottish police force area (note that Highland & Islands SCG is in Northern Constabulary area, all other SCGs have the same name as the local police force). There are currently 8 SCGs in Scotland shown on the map below:

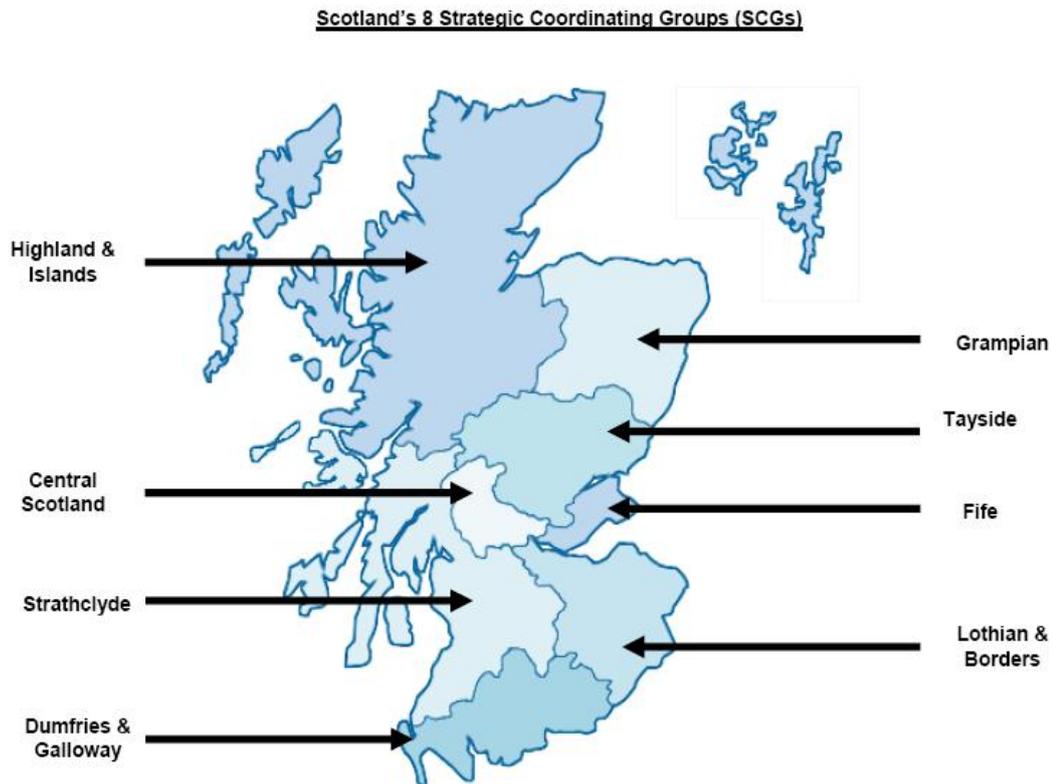


Figure 1 (Source: Scottish Government [www.readyscotland.org](http://www.readyscotland.org))

The SCG is expected to provide clear direction and leadership in developing, maintaining and continuously improving local emergency arrangements, which involves two broad functions. First, SCGs are multi-agency strategic crisis management teams activated to deal with crises which are beyond the capability of individual organisations. The second function of the SCG is, in the absence of crisis, to routinely work to implement the UK Government's resilience policy. The intended outcome of which is the capability *"at every relevant level to detect, prevent and, if necessary, to handle and recover from disruptive challenges"* (Scottish Executive 2007: 15).

The specific meaning of the term crisis<sup>2</sup> is subject to ongoing debate but it is typically used as a catchall concept relating to situations that are unwanted, unexpected, unprecedented, and almost unmanageable and that cause widespread disbelief and uncertainty (Rosenthal, Boin & Comfort 2001). Crisis can be defined more precisely as *“a serious threat to the basic structures or the fundamental values and norms of a social system, which under time pressure and highly uncertain circumstances necessitates making critical decisions”* (Rosenthal et al., 1989:10). The primary role of the SCG is to deal with such crises.

A key aspect of resilience in general and crisis prevention in particular is the ability of organisations to learn from previous experiences. Therefore, in this study particular attention is given to organisational learning within the SCGs. Specifically whether lessons identified during crises are actually learned and subsequently reflected in changes of behaviour, beliefs and culture within the SCGs.

A crisis offers a reservoir of potential lessons for contingency planning and training for future crisis. The crucial challenge is whether it feeds back into pre-existing policy networks (Boin & ‘tHart, 2007). However, organisations often appear to fail to learn (Turner, 1978; Lagadec 1997; Perrow 1999; Clarke 1999; Toft & Reynolds, 2005; Smith & Elliott, 2007) or only learn enough to return to the pre-crisis state, rather than learning how to prevent crises from occurring (Argyris 1982). Wise (2006) suggests information sharing and collaboration would improve organisational learning and facilitate adaptation and improvisation. This research will consider the organisational learning of the SCGs to determine whether it is as effective as it could be.

Focusing on the two functions of the SCGs, namely crises management and improving resilience, the core question this research asks is: *are the SCGs fit for purpose or are they simply an example of ‘mock bureaucracy’*<sup>3</sup>. To answer the question this research first focuses on the organisational structure of the SCG and analyses it in terms of network management to determine its crisis management effectiveness. It then considers whether the SCGs are suitably adaptive to crises and

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<sup>2</sup> A full discussion on the various terms related to crisis, such as emergency and disaster are included in chapter 1

<sup>3</sup> Rules are ignored or not enforced because they are seen as illegitimate or imposed from an outside agency. Concept from Gouldner, A.W (1954) *Patterns of Industrial Bureaucracy* is detailed in thesis

learn from the experience of managing them and thereby enhance their preventative capability, as envisaged by the resilience policy.

### **Rationale & Context of the Research into the Effectiveness of the SCGs**

The establishment of the SCGs and related legislation and non-statutory guidance marked a profound shift in Government policy. Before the creation of the SCGs the UK's crisis management policy and associated legislation evolved in a piecemeal manner; mainly based on civil defence, national emergencies including responding to terrorist attacks, health and safety legislation, and international collaboration. (**Appendix A** details the evolution of the relevant legislation, powers and duties).

During the 1930s, in the approach to World War II, the focus was on hostile attack by an external enemy. However, by the 1980s and 1990s the aim was on promoting improved planning for peacetime emergencies, such as localised flooding and major transport accidents, while achieving best value for money. The outcome was a shift to a multiagency coordinated response to emergencies and the introduction of *Integrated Emergency Management (IEM<sup>4</sup>)*.

However, by the 21<sup>st</sup> Century there was a recognition that crises, such as the fuel strike and severe flooding in 2000, and the outbreak of Foot and Mouth Disease in 2001, were becoming increasingly complex and beyond the boundaries of any single organisation (Cabinet Office, 2004). Collaboration was necessary to effectively manage such problems (Milward & Provan, 2006), which were difficult to conceptualise and analyse because of their complexity (Chisholm, 1998). The crises were no longer linear single cause events but 'ill-structured messes', forming complex systems of interactive problems (Ackoff 1974; Mitroff et al, 2004). Recent examples faced by the UK Government include cyber attacks, financial infrastructure collapse, climate change and health scares. Each example has the potential to impact on Government legitimacy and undermine the state's crisis management capability (Boin, 2004).

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<sup>4</sup> IEM is an approach based on a generic framework applicable to any event, irrespective of size, nature or cause. It focuses on effects rather than causes, and ensures the multiagency response is coordinated and mutually supporting

Consequently, the UK Government recognised the need: (i) for a single framework for civil protection in the United Kingdom designed to meet the challenges of the 21<sup>st</sup> century; (ii) to improve the UK's ability to deal with the consequences of major disruptive incidents by improving the planning process at a local level, building better contacts between agencies and improving the link between local areas and central government; and (iii) clearly identifying the roles and responsibilities of local responders, ensuring consistency in civil protection activity and enhancing performance (Cabinet Office, 2004). (**Appendix B** details the roles, responsibilities and borders of the SCG member organisations).

The new framework resulted in a move from hierarchical structures, characterised by top-down management and command and control relationships (Goldsmith & Eggers, 2004), towards networks characterised by a horizontal style of management, shared leadership and decisions made on the basis of expertise rather than positions. This shift reflected the view that rigid, bureaucratic command and control structures led to an ineffective crisis response; whereas flexible, malleable, loosely coupled, organisational configurations were more effective (Neal & Phillips, 1995).

However, building effective networks is difficult in dynamic environments, especially in response to crisis (Comfort 2002a; Comfort & Kapucu 2006; Waugh & Streib 2006). Network limitations include the difficulties of process, obstacles to performance, and the relationship between bureaucracy and multi-organisational arrangements (McGuire & Agranoff, 2011). Not only were such network structures different from bureaucratic hierarchies but they also had different governance structures (O'Toole, 1997). Therefore in considering whether a network, such as the SCG, is effective or not it is important to consider the nature of inter-organisational relationships, which can be affected by problems of control and coordination, communication, and complex individual and leadership behaviours (Kapucu, 2005).

A key element of a successful network is trust. In this research trust is defined as the ***“accepted vulnerability to another's possible but not expected ill will (or lack of good will) toward one”*** (Baier, 1986: 235). Trust involves a cognitive leap beyond the expectations that reason and experience alone would warrant. Moreover, it is reciprocal, so when people see others acting in ways that imply that they trust them,

they become more disposed to reciprocate by trusting them more. Conversely, people come to distrust those whose actions appear to violate their trust or to distrust them (Lewis & Weigert, 1985). Bartolme (1989) offers six elements for building and maintaining trust: communication (keeping people informed, giving honest and candid feedback); support (through being available and approachable); respect (by delegating and actively listening); fairness (by giving credit and recognition where due); predictability (being consistent); and competence (by demonstrating ability and professionalism). These are essential because trust is a notoriously vulnerable good, easily wounded and not at all easily healed (Baier, 1991).

In addition to establishing trusting relationships, understanding the dynamics of the inter-organisational networks and the patterns of interaction are important for both policy makers and those responsible for implementation (Gidron et al, 1992). The SCG activities in crisis management and its implementation of resilience are outcomes of complex political interactions. The effectiveness of such networks is dependent on the personnel working within the system having a clear understanding of the various inter-organisational relationships and how these affect outcomes. Having such an understanding enables personnel to adapt their activities to ensure they are appropriate to achieve the desired outcome such as resilience. Waugh and Streib (2006) link performance with comprehension. They state:

***“improved performance depends to a great extent on the ability of public officials to fully comprehend the complexities of the policy networks operating in the areas in which they work and to think strategically about how to use or alter them”***  
**(Waugh & Streib, 2006: 138).**

This research examines these complexities to determine the effectiveness of the current organisational form of the SCG in relation to its primary functions, namely crisis response and enhancing resilience. A detailed examination of the SCGs structure and debate regarding hierarchies and network coordination is outlined in Chapter 4.2. The following section sets out the theoretical and conceptual framework of the SCG.

### **Theoretical & Conceptual Framework of the SCG**

The purpose of SCGs is to establish and maintain formal partnerships capable of delivering a joint response to any crisis (Scottish Executive, 2007). SCGs are

integrated multi-agency networks through which the UK Government's policy of resilience is implemented. Such policy networks have been described as representative of the British government, in that they set out the parameters of government policy within which local decisions can be based (Rhodes, 1991). Policy networks have been defined as *“(more or less) stable patterns of social relations between interdependent actors, which take the shape around policy problems and/or policy programmes”* (Kickert, Klijn & Koppenjan, 1997: 6).

In the case of the UK, the policy problem was the increased threats the country faced. The policy solution was to counter such threats by enabling improved resilience across the public, private and voluntary sectors. However, because each network member organisation lacks the individual capability to achieve the policy goal there is a need to share information and resources, and to coordinate action. Therefore, interdependency is an essential element in addressing the policy problem and achieving the outcome of resilience. The concept of resilience is further developed in Chapter 1.

Collaborative policy networks, such as the SCGs, are ideally characterised by reciprocity, representation, equality, participatory decision making, and collaborative leadership (deLeon & Varda, 2009). The success of such networks depends on the ability of their leaders to organise structures, resources, and interactions when bringing together participants with different authority, motivations, interests, skills, and access to information (Moynihan, 2005).

These collaborative characteristics are reflected in the SCG, the effectiveness of which rests upon every member's awareness of not only their own role and responsibility, but also the roles, responsibilities and capabilities of network partners. However, the SCG is not a statutory body and has no legal personality, nor powers to direct its members, replace individual responder's management mechanisms or the authority to issue executive orders. Each network participant retains their own responsibilities; consequently the SCG has to rely on a process of coordination and consensus to secure consistency in delivering the overall strategic intent (Scottish Executive 2007). The outcome is, therefore, dependent on effective organisational structures and collaborative leadership, highlighted by Moynihan (2005) above.

By applying network theory to the SCG it is possible to discern a greater understanding of the effectiveness of its organisational form. Network theory highlights difficulties of process, obstacles to performance, and the relationship between bureaucracy and multi-organisational arrangements, which may undermine SCG effectiveness in delivering resilience. Thereafter, the overarching analytical framework adopted in this research is systems theory, especially the systems approach developed by Checkland (1979; 1993, 2000), which is used to examine the SCGs.

At the core of the General System Theory (Bertalanffy, 1950) is the notion that the whole is made up of interdependent and interacting parts. The interactions of such complex systems are non-linear and asymmetric, so small inputs can produce large results (Dekker, 2011). There is also an inherent unpredictability in the evolution of such complex systems; the synergy and emergent properties<sup>5</sup> may lead to unforeseen outcomes, and the emergent wholes and their component parts are different and cannot be meaningfully compared (Richardson, 2004).

The Systems Theory contrasts with the previously dominant scientific Newtonian worldview of linear causality and rigorous determinism, where the concept in experiments of ‘all other things being equal’ created artificial and simplified realities, as well as an increase in specialisation and reductionism in science (Francois, 2000). Whereas, Systems Theory emphasises that real systems are open to, and interact with, their environments and that in an entity of interacting parts no part can be changed without triggering changes over the whole. Consequently, such systems evolve with the emergence of new properties from the interactions between the system components and their relationship with each other and the environment.

Checkland (1993) built on this and argues that the Systems Approach should not be considered as a separate discipline but rather a meta-discipline that can be applied within virtually any other discipline. In his book *Systems Thinking, Systems Practice*

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<sup>5</sup> Emergence – refers to an entity arising out of another, such as in the process of reproduction. Emergent entities, such as offspring, can influence their parents, i.e. emergence may possess feedback features, but the offspring is a distinct entity from its parents and is therefore irreducible to them

(1993), Checkland highlights the conscious use of the concept of ‘wholeness’ captured in the word system, which can be applied to ill-structured problems of the real world. Such application of systems concepts help to develop tools for thought and the generation of insight, especially to real world problems within organised complexity (Fortune & Peters, 1995).

The systems approach has been applied to crises which can be considered as both social and technical failures within organisational systems (Turner, 1976; 1978; Horlick-Jones, 1990). This research builds on Turner’s (1976, 1978) and Checkland’s (1993) approach (see Chapter 2 Organisational Resilience and the Effect of Systemic Crises). So rather than seeking to reduce the entity under examination that is the SCG, to the properties of its parts or elements, this research analyses the SCG structure and interrelations between the parts which connect them into a whole, using systems models (Formal Systems and Viable Systems).

Fortune and Peters (1995) Formal Systems Model was adapted from Checkland (1981) who had developed the concept of a formal system and ‘other systems thinking’ to check the robustness of the conceptual models for use in his Soft Systems Methodology (SSM). Fortune and Peters (1995) suggested that the Viable System Model could be an additional feature of the Formal System Model. Like the Formal System Model, the VSM applies systems concepts to the organisation. Any deficiency in the functioning of the organisation can be traced back to inappropriate or inadequate subsystems or linkages. These models are further developed in Chapter 2.8 and used to analyse the SCGs in Chapter 6.

The first model, the Formal Systems Model (FSM) (Fortune & Peters, 1994 & 2005), focuses on common areas of failure within systems. By taking a holistic approach it is used to describe failure and explain why it occurred (White, 1995). Thereafter, the Viable Systems Model (VSM) (Beer, 1979, 1981 & 1985) is used as an additional level of organisational analysis of the key processes, communications and information flows within the SCG structure and relationships between them.

Finally, the concept of Mock Bureaucracy (Gouldner, 1954) is used as an analytical lens through which to understand and explain why aspects of the policy and

legislation in relation to organisational learning are not as effective as they could be. Gouldner found that despite organisational rules enforcing regulations, many were not complied with because staff did not consider them legitimate as they were imposed from 'outside' rather than being initiated within the organisation. Therefore the rules were not valued and non-compliance actually enhanced the status of staff who did not comply. Moreover, there were few consequences for failing to comply. Gouldner's findings highlight the importance of organisational culture in achieving and maintaining compliance through shared values embedded at an individual and organisational level. Such a culture is essential in overcoming barriers to learning. Gouldner's (1954) Mock Bureaucracy is considered in relation to systemic crises in Chapter 2 and then used as an analytical lens in Chapter 7.

Therefore the insight of both network and systems theories helps us understand how SCGs, as inter-organisational networks, respond to crises. The former enables a greater understanding of the effectiveness of the SCG as a policy network. The latter provides an analytical framework to analyse structure and processes, and to determine whether SCGs can successfully achieve the desired common outcome of improved local resilience and effective response.

### **Research Aim & Approach**

The research aims to examine the capability of SCGs to determine whether the current civil contingencies infrastructure, including the *Integrated Emergency Management* framework and training arrangements, are effective in ensuring that the SCGs are best prepared for crises. Particular attention is given to the organisational learning ability of the SCGs and whether lessons learned are reflected in changes of behaviour, beliefs and culture. In essence the research asks and explores whether the SCGs are fit for purpose or are they an example of Mock Bureaucracy.

The methodology uses a qualitative approach, with data gathered through interviews, non-participant observations, and related documentation. The data is interpreted by a combination of inductive and deductive approaches. The use of triangulation of data enhances its validity.

The research focuses on a number of specific areas, namely, the various SCG policies in relation to risk, crisis and business continuity management necessary to achieve the outcome of resilience; the organisational structure of the SCG, and its coordination and communication; and the organisational culture of the SCG, and the influence of leadership and decision-making. All of which are underpinned by the provision of training and exercising to enable members to enhance their competencies in dealing with crises. In doing so it seeks to identify whether the SCG adaptive capability is such that it learns lessons from crises experience. If not the research will seek to explain why it does not learn such lessons and what could be done to ensure that it does so in the future.

### **Thesis Outline & Structure**

**Chapter 1** - provides the theoretical concepts which underpin the SCG, namely crisis management, resilience, adaptive capability and organisational learning. Using Pauchant & Mitroff's Onion Model (1992), the chapter highlights the importance of organisational culture in relation to successful crisis management and resilience. It emphasises that learning from crisis is one of the most underdeveloped aspects of crisis management, and that there are a number of barriers to learning which must be overcome to ensure organisations become crisis prepared.

**Chapter 2** – explores systems approaches which can be used to analyse organisational crises and improve organisational crisis preparedness. Gouldner's (1954) concept of mock bureaucracy is linked to the systems approaches, highlighting that rule compliance in relation to safety culture is an important element of an organisation being crisis prone or crisis prepared. The Formal Systems Model and the Viable Systems Model used in chapter six to analyse the SCG are also examined.

**Chapter 3** – explains the adoption of qualitative research methodology used in this research. It highlights that by using an exploratory and flexible approach, together with interviews; observations and documents rich data was gained from which a number of emerging themes were identified.

**Chapter 4** – examines the SCG using first 3 levels of Pauchant & Mitroff's Onion Model (1992), namely the strategies and policies, the structure, and the culture. The

linkages between risk, crisis and business continuity management within the SCGs are explored, and it is argued that resilience is an outcome of these activities. It goes on to consider the literature around policy networks and inter-organisational coordination in crises; highlighting the distinction between the hierarchical organisational form associated with command and control and those of network management. The SCG network structure and mandatory tasks, including information sharing and cooperation, risk assessment and management and business continuity planning and management, are explored. Thereafter, the elements of organisational culture essential to effective crisis management are discussed. The chapter concludes with a summary of the emerging themes identified from the literature in the preceding chapters.

**Chapter 5** – considers the inner core of Pauchant & Mitroff's Onion Model (1992), namely the individual perceptions of those within the organisation in relation to the strategies and policies, the structure, and the culture of the SCG. The data from interviews, observations and the relevant crisis management and resilience literature is brought together and examined. The emerging themes from the data are analysed and variances between the theory and reality highlighted and explained.

**Chapter 6** - applies the Formal System and Viable System models to the SCG. In essence this chapter asks, what is the theoretical solution to the policy problem of creating resilience? In particular it applies 'ideal' systems models to 'real' world evidence of the SCG practice and identifies a number of variances which may result in constraints or even failure.

**Chapter 7** - brings together the emergent themes from the literature (chapters 1, 2 and 4), the interviews and observations (chapter 5) and the systems analysis of the SCG (chapter 6). It uses Gouldner's (1954) Patterns of Industrial Bureaucracy (Mock Bureaucracy) as an analytical lens to explain why there are variances between the 'ideal' systems models and the 'real' world findings of the SCG in practice. Recommendations to improve the SCGs crisis management and resilience capability are made. The chapter concludes with my reflections on learning from the research process.

## **Chapter 1 – The Theoretical Underpinnings of Crisis and Resilience**

This chapter explores the key conceptual themes in relation to crisis, organisational learning and resilience. It distinguishes crises from emergencies and disasters, and also highlights the importance of organisational culture in relation to effective crisis management. In particular how leadership and decision making are essential in managing crises. The importance of learning from crisis as an element of resilience is also introduced, together with those barriers that prevent organisations and individuals learning from the crisis experience. Such barriers to learning diminish resilience, a concept which is explored in detail; especially the importance of an organisation's ability to adapt to its changing environment and willingness to have trained resources to ensure that it is crisis prepared.

### **1.1 What is it we are dealing with - Emergency, Disaster or Crisis?**

In considering crises the concepts emergency, crisis and disaster are rarely defined adequately or distinguished from each other (Borodzicz, 1996). Smith (2006a) suggests that 'crisis' is one of the most misused words in modern society, highlighting that there is ambiguity about the processes which underpin it. Therefore, clarification is necessary otherwise we will *“really be talking of somewhat different phenomena”* (Quarantelli, 1995: 224). Based on previous research a distinction is drawn between emergency, crisis and disaster.

An emergency is a complex and urgent problem, bound in place with no ripple effect, which is routine business for the emergency services that are trained to deal with them (Boin, 2010). Therefore, emergencies can be defined as situations requiring a rapid and highly structured response where the risks for critical decision makers can, to a relative degree, be defined (Borodzicz, 2005). An example would be the response of the emergency services to a dwelling house fire. Their roles are clear-cut, structured and congruent with a command and control model (HMSO, 1994). The inference is that emergency services will have foreseen the risk and planned accordingly.

A disaster, on the other hand, is typically, but not universally, defined in terms of an episode that is collectively construed as very harmful (Perry & Quarantelli, 2005). Disaster has also been described as *“a crisis with a bad ending”* (Quarantelli et al

2007: 23). But not every crisis necessarily turns into disaster (Boin & 'tHart 2007). A disaster is as an overwhelming situation, where response requirements exceed resources and capability. The Scottish Government document *Dealing with Disaster Together* defines disaster as “**any event (happening with or without warning) causing or threatening death or injury to property or environment or disruption to community which because of the scale of its effects cannot be dealt with by the emergency service and local authorities as part of their day-to-day activities**” (SOHD, 1998: 2). A key element of this definition is that there were insufficient resources to deal with the circumstances. In this context, the disaster can be seen as lack of capacity (Dombrowsky, 1995).

In contrast to emergencies and disasters, the causes and consequences of crises are unknown and therefore more difficult to manage (Boin, 2010). Moreover, the plethora of events that are routinely labelled crisis makes research into them problematic. Richardson (1994) highlights that there remains confusion and overlap on the issue of crisis types and that the very ‘messy’ and interactively complex nature of the world is a major problem in dealing with potential crises. Crises are becoming more complex in nature and increasingly interconnected and cross boundary (Boin & Lagadec, 2000). For organisations trying to identify and manage such risks, the complexities and interdependencies become evermore challenging. But there is no agreed definition of crises. McMullan (1997) examined various meanings of crisis from 1972 onwards and concluded that a universally accepted definition of crisis had not been developed. This has been described as “**problematic at best**” (Runyon, 2006: 13). However, for a situation to be considered a crisis three elements must be present: a triggering event, which causes significant change or has the potential to cause significant change; the perceived inability to cope with this change; and a threat to the existence of the foundation of the organisation (McMullan, 1997).

Crisis has been described as the occurrence of impossible conditions for those seeking to manage response operations, and for these individuals to have to make urgent decisions while essential information about causes and consequences remains unavailable (Boin & 'tHart 2007). LaPorte (2006: 138) terms crises as “**wicked problems**”, because of the scale and adverse nature of potential consequences together with their vagueness of cause and dynamic nature, which make understanding and

solving them challenging, especially with the media interest that such crises generate. Previously such ‘wicked’ problems or crises were seen as the consequence of luck or divine intervention, but this is no longer the case (Bovens & ‘tHart, 1996; Quarantelli, 1998; Steinberg, 2000). There are, however, many other suggestions as to what constituted a crisis. For example, Heinzen (1996) describes a crisis as a series of events with a diffuse origin rather than a single entity. Lagadec (1993: 45) says that what is missing from a crisis is **“a clear trace that would justify triggering the warning procedures”**. Parsons (1996) introduces a time element when describing crisis as immediate, emerging or sustained. Similarly James and Wooten (2005) refer to sudden and smouldering crises, and comment that the former is usually perceived as being outwith management control, while the cause of the latter is seen as a failure of organisational leadership. Smith (2006a) describes crises as complex non-linear events that have both a sense of space and time and displays emergent properties which, over time, expose organisations’ cultural problems and inherent vulnerabilities. In other words crises over-turn organisational cultural norms and assumptions which had previously been taken for granted.

Others consider that virtually all crises are caused by the simultaneous breakdown in interactions between technology, people and organisations (Pearson & Mitroff, 1993; Mitroff, 2004). Likewise Shrivastava, et al., (1988) describe crisis in the organisation as affecting multiple stakeholders through complex social, organisational and technological processes. In relation to organisational crisis, Pollard and Hotho (2006) highlight that crisis can be either a positive or negative ‘turning point’ for an organisation. Pearson and Clair (1998) describe crises as low probability high impact events that threaten an organisation’s viability. Causes and solutions are ambiguous, but there is a need for quick decisions.

In addition to organisations, the term crisis has also been applied to broader communities of people, such as towns and even nations (Rosenthal, Boin & Comfort, 2001), as well as systems (Boin & McConnell, 2007). Given this research adopts a systems perspective (see Chapter 2), a particularly appropriate definition of crisis is:

***“a serious threat to the basic structures or the fundamental values and norms of a system, which under time pressure and highly uncertain circumstances necessitates making vital decisions”***

(Rosenthal, Charles & 'tHart, 1989: 10)

This definition reflects the role of the SCG in relation to the large scale and serious potential impact of crises it deals with. The SCGs only deal with crises that are beyond the capabilities of a single response organisation and require extraordinary management structures to be temporarily established to deal with them. Crises of that scale generate extensive media and bring political pressures for swift resolutions, to ensure that government's legitimacy and competency are not undermined as a consequence of the crisis. Therefore the SCGs need to be able to coordinate an inter-agency response involving multiple organisations, as well as manage the media and government demands that crises of that scale generate. To be effective, such crisis management capability needs rapid decision making, necessitating decisions being made by SCGs without full information being available (Scottish Executive, 2007).

The discussion here has made a distinction between emergency, disaster and crisis. It is argued that crises are becoming more complex, 'messy' and 'wicked', especially in relation to integrated systems that bring the potential for cross-boundary consequences separate in both time and place from the source. To deal with such crises effective organisational crisis management is required.

## **1.2 Organisational Crisis Management & the Influence of Culture**

In their description of crisis management, Pearson and Clair (1998) recognise the need for organisations to have a systematic approach designed to prevent the crisis from occurring in the first instance, and if that is unsuccessful, enabling them to respond effectively. Such an approach is proposed by Mitroff and Pearson (1993) who argue that there are five phases to virtually every crisis: *signal detection* - in which the challenge for organisations is to accurately identify the signal indicative of crisis from the day-to-day noise of the organisation; *preparation / prevention* - recognising that complete prevention of all crises is impossible so organisations need to prepare to manage those that will occur; *containment / damage limitation* - where organisations seek to prevent an extant crisis escalating; *recovery* - when organisations invoke plans for business continuity and longer term restoration of normality; and *learning* - when organisations conduct a post crisis critical examination of those factors which went well and those which were less successful, in a no blame/no fault environment. The

results of the learning phase are then linked back to signal detection to continue the crisis management cycle within the organisation. The absence of such an approach will increase the likelihood of crises occurring in the organisation. The SCGs crisis management approach is detailed in Chapter 4.1.

Crisis management covers activities rooted in organisational structure, culture and policies (Carmeli & Schaubroeck, 2008). This research adopts the concept of the crisis prone and crisis prepared organisation developed by Pauchant and Mitroff (1992). Between the crisis prone and crisis prepared organisations is a continuum where an organisation's crisis orientation can be described. The crisis prone and the crisis prepared organisations exhibit different characteristics (Weick & Sutcliffe, 2001). Those who manage ***“crisis prepared organisations are more able to confront the anxiety triggered by crises and to act decisively”*** (Pauchant & Mitroff, 1992: 5), while those from crisis prone organisations deflect their anxieties and the need to deal with crisis through defensive strategies. Crisis prepared organisations invest in both crisis prevention and response capability, whereas crisis prone organisations focus on response, not prevention (Mitroff & Alpaslan, 2003). Moreover, crisis prepared organisations have integrated crisis planning, flexible and adaptive structures and low rationalisation and denial about the likelihood of crisis impacting the organisation. Crisis prone organisations, on the other hand, have few, if any, plans, inflexible structures and high rationalisation and denial about the impact of crisis on their organisation (Mitroff et al., 1989). Examples of rationalisations that hinder organisational crisis management include ‘our size will protect us’, ‘certain crises only happen to others’ and ‘crisis management and crisis prevention is a luxury’ (Mitroff & Pearson, 1993).

To determine where an organisation sits on the continuum, Pauchant and Mitroff's Onion Model (1992) identifies 4 sequential layers of an organisation that can be peeled away. The two outer layers represent the visible elements of the organisation, while the two inner layers represent the invisible and unconscious aspects. The outer layer consists of organisational strategies, programmes and procedures to deal with crises; the next layer is organisational structures, which may or may not inhibit the organisation responding effectively in crisis; then there is the organisational culture layer, consisting of the organisation's unwritten rules, codes of conduct and beliefs;

and the final layer is the core of the organisation, namely the subjective experiences of individuals and their anxieties and defence mechanisms in relation to crises. The layers are not separate and distinct; rather each layer influences the others. ***“The strategies implemented in an organisation influence, and are influenced by, the organisation’s structure and culture and the psyche of individuals”*** (Pauchant & Mitroff, 1992: 52). To ensure successful crisis management an organisation must perform well through all layers (Mitroff et al., 1989). Chapter 4 applies the first three layers of the model: strategies; structure; and culture in the context of the SCGs.

The effectiveness of an organisation’s crisis management is influenced by its culture (Mitroff et al., 1989), which is vital in dealing with crises because no organisation can plan for every eventuality (Sheffi, 2005). Schein (1985) refers to perception in culture as the basic assumptions through which organisational members are taught to see problems. Hofstede (1991) considers culture in terms of the collective programming of the mind; whereas, Robbins (2005) opines culture represents the common perception held by the organisation’s members. Pearson and Clair (1998) argue that executive perceptions about risk have a considerable impact on the mindset of the organisation and its approach to crisis management. Turner (1978) refers to cultural and institutional factors and the danger of vital factors being left outside the organisational perception as causes of disruption. Perception is also an important element for Toft and Reynolds (2005), who suggest that work experiences inform perceptions. In essence, not only does culture define the rules of the organisation but it also reinforces perceptions through its assumptions, understandings and implicit rules which govern workplace activity. Therefore, every organisation is marked by its own distinct internal culture, encompassing philosophy, values, beliefs and assumptions, social structure and artefacts, behavioural norms and expectations (Ott, 1989). Failure to comply has an adverse effect on individuals within the organisation because:

***“Until newcomers learn the rules, they are not accepted as full-fledged members of the organisation. Transgressions of the rules on the part of high-level executives or front line employees result in universal disapproval and powerful penalties”*** (Deal & Kennedy, 1983: 501)

However, in the concept of crisis prone and crisis prepared organisations, an organisation is not seen as a separate entity from its people. Individuals and their

actions influence the organisation's crisis management efforts and the organisation's perspective on crises. Therefore, changing the individual's perspective in relation to crisis management can lead to the change of an organisation's position on the crisis prone – crisis prepared continuum. It follows that an organisation's crisis orientation can be changed from that of crisis prone to that of crisis prepared. However, planning, spending and resourcing on mitigation will be ineffective ***“if the espoused resilience culture is only visible within the readily accessible corporate values”*** (Elwood, 2009: 247). It is not enough just to have plans, procedures, policies and structures in place. Effective crisis management must also be embedded in the core organisational values, beliefs and identity, and be reflected in the defensive mechanisms of an organisation. It is insufficient for organisations to have achieved some but not all of these.

A key component in establishing a crisis prepared culture within an organisation is leadership (Smits & Ally, 2003). An important responsibility of organisational leaders is to 'institutionalise' crisis preparedness throughout the organisation (Kelly, 2007). This can be achieved by overtly demonstrating executive commitment to a safety culture while providing sufficient resources, including trained and competent staff (Frederickson & LaPorte, 2002). The combination of safety culture and competent staff enables organisations to empower personnel to take independent action in relation to crisis (Perrow, 1984), which is critical when dealing with the high tempo of crisis demands (Frederickson & LaPorte, 2002). Mitroff (2004) argues that crisis leadership is proactive, attempting to identify crises and prepare the organisation as a whole before a crisis occurs. In his view crisis leaders need to be proactive before, during and after crises; ensuring organisation readiness through vulnerability audits, the development of skills and capabilities to manage a crisis, which can be enacted during the crisis, and after the crisis reassessing crisis performance to design and implement new procedures.

The design and implementation of new procedures following a crisis is indicative of a crisis prepared organisation, which should be able to learn from crises. Mitroff (1988) suggests that crisis management should consist not only of the design and implementation of key plans, procedures and mechanisms to prepare for crises; but having prepared, organisations should have the ability to detect and contain crises

when they occur; and finally make a full recovery, including learning from the experience. Learning from failure can also go beyond the immediate organisation or system that the crisis occurred in. Toft and Reynolds's (2005) view is that failure in one system or organisation will have the propensity to recur in a 'like' system, which although superficially different, if it contains the same or similar components, it too will be susceptible to common modes of failure. Being aware of the likelihood of common modes of failure in similar systems (or organisations) would enable pre-emptive remedial action to be taken to mitigate potential failure.

The double loop learning process associated with such 'isomorphic' learning has been defined as *"the detection and correction of error that requires change in the governing values"* (Argyris, 1980:17). In other words it involves a fundamental shift or movement of mind (Senge, 1992). The first loop occurs when following a crisis lessons are identified by the organisation. The second loop occurs when, as a consequence of the lessons identified by the first loop, the organisational culture is fundamentally changed to take cognisance of them. In other words, as a consequence of the organisation identifying the lesson and then learning from it there will be a manifest a change of norms and operating practices, which not only change but embed the change in the organisation's values, beliefs and defence mechanisms. In contrast, single loop learning only focuses on the technical or structural aspects of the crisis, excluding the social or cultural elements.

It is suggested that the isomorphic approach to crises could improve organisational learning, leading to changes to the organisational practices and a full cultural readjustment (Turner, 1978). However, for an organisation to learn it must have an organisational culture focused on continuous improvement that will reward error discovery and reporting (Frederickson & LaPorte, 2002). Elliott et al, (2002) argues that for such an approach to be successful it requires availability of information and a culture that encourages norms and operational practices to be challenged. If such an organisational culture is absent then explicit knowledge or lessons learned from crises will not lead to changed behaviour. In other words learning will not take place.

The view of organisational learning described (Turner, 1978; Mitroff, 1988; Frederickson & LaPorte, 2002; Toft & Reynolds, 2005) opines the need for

organisations to anticipate, prepare for and respond to crises, and thereafter adjust their practices to reflect the lessons learned from the crisis to ensure greater resilience in future. This approach reflects the UK Government's policy of resilience, which incorporates not just planning, preparation, maintenance, response and recovery, but also prevention through learning from previous experiences (Cabinet Office, 2004). The inference is that failure to incorporate those components essential to effective crisis management will undermine an organisation's resilience. Boin et al. (2005) summarise five critical tasks for effective organisational crisis management, namely sense making, decision making, meaning making, terminating, and learning.

Sense making is the crucial process where those initial signals, which may be weak, ambiguous or even contradictory, are picked up, analysed and recognised as possibly indicative of a potential threat that requires action by the organisation. Being able to interpret the weak signals and to gain an understanding of what it means has been described as situational awareness (Endsley et al., 2003). Organisations that create an awareness of vulnerability by seeking out signals that may indicate unexpected activity are more resilient (Weick & Sutcliffe, 2001). In such resilient organisations situational monitoring and reporting is a notable characteristic (Hale et al., 2006). Failure to heed these signals may result in the incubation of crisis (Turner, 1976) and drift towards failure (Woods, 2005). But successful monitoring is dependent on risk and business continuity management processes being well established; together with an '*attitude of wisdom*' that means that although staff may not initially understand the situation immediately, because they have never seen it in that particular form before, they are aware that the situation may be improvised (Weick, 1993).

In the event of a threat or crisis situation being detected, there will be a need for the crisis manager to instigate organisational action. An important aspect of this action will be to take critical decisions that ensure the effective coordination of all stakeholders (Frederickson & LaPorte, 2002; Grigg, 2003; Kelly, 2007).

There are several models of decision making each is based on a different set of assumptions (Kreitner & Kinicki, 2001). For example, the Rational Model is based on the premise that decision makers optimise when they make decisions. Optimising involves solving problems by producing the best possible solution. Optimally decision

makers want to choose the alternative with the greatest value, in other words maximise the expected utility of the outcome (Huber, 1980). But values are subjective and people vary in their preference for safety or risk when making decisions (Mellers et al, 1998). Moreover, evaluating alternatives assumes: that they can be judged according to some criteria; that valid criteria exist for each alternative to be compared against; and that the decision maker will actually use the criteria.

Another problem with the Rational Model is the potential of information asymmetry. This occurs when one party to the transaction has more or better information than the others, the imbalance in power can distort the transaction and lead to inefficiency in the decision making process. An example of such decision inefficiency is moral hazard. That is, where one person makes the decision about how much risk to take, while someone else will bear the cost if the decision goes badly (for example Krugman, 2009). Notwithstanding these problems, ideally with the Rational Model decision-makers have complete knowledge of all possible alternatives and their consequences, together with a set of preferences for these consequences, and the computational ability to compare and decide which one is actually preferred (Eisenhardt & Zbaracki, 1992).

However, such classical decision making strategies deteriorate when confronted with time pressure, they simply take too long (Klein & Klingler, 1991). Moreover, Simon argues that decision makers do not actually follow these rational procedures in reality:

***“The assumptions of perfect rationality are contrary to fact. It is not a question of approximation; they do not even remotely describe the processes that human beings use for making decisions in complex situations”*** (Simon, 1979: 510).

Simon (1957; 1979) highlights that, in reality, decision makers’ experience ‘bounded rationality’. He describes this as those constraints that restrict decision making, such as personal or environmental characteristics. Examples of ‘bounded rationality’ include the limited capacity of the human mind, problem complexity and uncertainty, amount and timeliness of information at hand, criticality of the decision, and time demands. Consequently, Simon (1979) suggests that decision making is characterised by the limited information available to the decision maker, that to simplify complex

situations decision makers will make use of heuristics and draw on previous experience or training, and that rather than make optimal decisions will *satisfice*. That is, choose a solution that meets a minimum standard of acceptance; one that is ‘good enough’ rather than optimal.

In terms of actual decision making in crisis, Klein (1993) found that incident commanders concentrated on assessing and classifying the situation and once they had done that they applied a typical response from their previous knowledge. Klein (1995) developed this into the Recognition Primed Decision Making Model, which consists of three stages. First, the decision-maker recognises the type of situation knows the appropriate response and implements it. Second, if the problem is more complex the decision maker will consider several interpretations based on a situational assessment before deciding. Third, in cases when the decision maker is less sure of the option before an action is implemented a mental evaluation will be undertaken to determine its viability (Klein & Crandell, 1995). Grint (2005) describes a similar process of moving from command, which is enforcing the answer on followers because the leader has the power and resources to deal with the problem, through management of the problem by organising the processes needed to resolve it, to finally displaying a more sophisticated level of leadership by asking questions of others. Grint (2005) argues that as leaders move along the continuum towards problems of increasing complexity they need to be more collaborative. In other words, as the certainty of the resolution decreases the need for collaboration increases. Given the nature of crises that the SCG is activated for, it is collaborative decision making that is appropriate for its activities.

Another critical decision for the crisis manager will be when to move from crisis mode back to routine operating. Terminating the crisis is closely tied to the organisation being able to provide an acceptable and credible account of the crisis (Boin et al. 2005). However, multiple perspectives in crisis make it difficult to construct common ‘event narratives’ (Vaughan, 1996). Moreover, because causal factors of the crisis may be more obvious post-crisis key actors may seek to protect themselves and generate disinformation as the process of scapegoating begins (Smith, 1990).

The final strategic task in crisis management is identifying lessons to be learned at both the political and organisational level. Cho (1996) identifies how organisations use information to make sense of their operating environment and generate organisational learning. Elements that contribute to an organisation's learning ability include a recognition of an interconnectedness (systems view), the ability to change how the world is viewed (generative learning) and the ability to adapt to changed environments (adaptive learning) (Murray, 2002; Schein, 1996; Senge, 1990).

Organisations that do not recognise and adapt to threats by changing their procedures and policies experience 'failure of hindsight' (Toft, 1992). To avoid these failures, organisations should learn from their own crisis and the experience of others. Such learning should shape the precautionary norms the organisation has in place and help generate organisational resilience (Smith & Elliott, 2007). In other words the organisation will not just change its processes and procedures at the superficial level of the organisation, reflecting single loop learning. The organisation should experience second loop learning. That is embed the lessons identified during the crisis by ensuring that, at both the individual and organisational level, beliefs, values and defence mechanisms are changed to reflect the new understanding of the potential threats now faced and the necessary response capability. These fundamental changes to organisational culture demonstrate that the organisation has actually learned from the lessons identified.

However, learning lessons is one of the most underdeveloped aspects of crisis management (Lagadec, 1997; Stern, 1997) and the challenge is to feedback into pre-existing policy networks and public organisations (Boin et al., 2007). In reality many organisations do not actually address issues identified as critical during the crisis or post-crisis phase or only deal with the most superficial aspects of technical and procedural matters (Elliott & Smith, 2006a; Birkland, 2009). Instead, organisations produce post-crisis debrief reports which purport to identify lessons learned but which in reality are more symbolic (Clarke, 1999). For example, Mitroff (2005) found that despite the impact of 9/11 organisations failed to take lessons from the event. Furthermore, there has been no change in organisational attitudes in relation to the need for crisis management as part of their daily business.

The challenge for effective crisis management is to ensure that any barriers to learning are overcome. Smith (2006b) identifies 3 levels of barriers to early recognition of crisis potential within an organisation. The first level relates to individual issues, such as perceptions, assumptions, core beliefs and processes that shape behaviour and inhibit individual's ability to 'make sense' of the situation. The second focuses on the cultural or group aspects of organisations which create cultural norms and behaviours, such as group dynamics, management style and operating environment. The third exists at the systems level and includes a range of structural and environmental pressures and constraints which the management and organisation operate within.

In their review of organisational learning and crisis Smith and Elliott (2007) collate a number of other barriers to learning that have been identified by a number of authors (including Pauchant & Mitroff, 1988, 1992; Turner, 1976, 1978; Smart & Vertinsky, 1977; Smith, 1990; Toft & Reynolds, 1992, Senge, 1990; Argyris, 1999; Weick, 1988, 1993, 1995 who are referred to elsewhere in this research). The barriers to learning are:

- Rigidity of core beliefs, values and assumptions
- Ineffective communication and information difficulties
- Denial, centrality of expertise and the disregard of outsiders
- Peripheral inquiry and decoy phenomenon
- Cognitive narrowing and fixation (reductionist)
- Maladaptation, threat minimisation and environmental shifts
- Lack of corporate responsibility
- Focus on single loop learning

Smith and Elliott (2007) suggest that many of the barriers to learning are associated with rigid core beliefs, which may result in erroneous assumptions leading the crisis being attributed to another cause in error; in other words a decoy. Or ineffective communications such as incomplete data capture, jargon or impenetrable language used by experts to exclude others. Other barriers to learning include the consequence of organisational culture which shape how managers view threats and respond to

them; an aspect of which could be the rejection or minimisation of the likelihood of a crisis impacting on that particular organisation, and the minimum compliance to safety regulations. Finally, organisations that do not change their core assumptions, beliefs and defence mechanisms to reflect the lessons from crises will not experience double loop learning. They will remain crisis prone because they only consider the superficial aspects of the organisation such as the plans or procedures, rather than experience any cultural readjustment.

One explanation for individuals and organisations failing to comply with organisational rules and regulations, which could ensure effective crisis management, is proposed by Gouldner (1954). Gouldner found that despite organisational rules enforcing regulations, many were not complied with because staff did not consider them legitimate as they were imposed from 'outside' rather than being initiated within the organisation (Jermier et al., 1991; Hynes & Prasad, 1997; Elliott & Smith, 2006b). Therefore the rules were not valued and non-compliance actually enhanced the status of staff who did not comply. Moreover, there were few consequences for failing to comply. He termed this 'mock bureaucracy'. Gouldner's findings highlight the importance of organisational culture in achieving and maintaining compliance through shared values embedded at an individual and organisational level. Such a culture is essential in overcoming barriers to learning.

It is argued here that a key element of crisis management is learning from experience and therefore organisations should ensure that a critical review is undertaken post-crisis. For an organisation to be truly crisis prepared such crisis management activity needs to reach beyond the superficial aspects of the organisation through to its core identity and defence mechanisms. This requires an organisational culture which values crisis management activities, together with leadership which proactively promotes them throughout the organisation, ensuring the appropriate arrangements and resources are in place before a crisis occurs. Moreover, that the organisational leadership is ready to lead an organisation through crisis and ensure that the organisation as a whole learns from the experience. However, there are organisational, structural and political challenges to ensuring that organisations are able to learn lessons, which may reduce resilience.

### **1.3 What Does ‘Resilience’ Mean In The Context Of Crisis Management?**

The term resilience has many meanings in academic discourse (de Bruijne et al., 2010). It has been described as a theoretical concept, a metaphor, a result of interactions between people and the environment, a property of a dynamic system (Carpenter et al., 2001), a measurable social and cultural construct (Mallak, 1998) and a paradigm (Paton & Johnston, 2001). Furthermore, the first use of the term resilience is contested but it can be attributed to ecology, physics or psychology (Manyena, 2006).

Ecologists identified resilience as a way to cope with the dynamics, surprise and complexity in the biological environment (de Bruijne et al., 2010). For example Holling (1973) described resilience as a measure of persistence by which systems were able to absorb changes to the environment while maintaining existing relationships or structure. In physics and engineering, resilience refers to the ability of an entity to rebound to original shape after deformation that does not exceed its elastic limit (Sheffi, 2005). Therefore, resilience may be seen as a measure of a system’s stability or *“the ability of a system to return to an equilibrium state after a temporary disturbance”* (Holling, 1973: 17). In psychology resilience is seen as a personal trait enabling individuals to adapt and overcome adversity (Coutu, 2002).

Traditionally in civil emergencies resilience is viewed as the qualities that enable the individual, community or organisation to cope with, adapt to and recover from a disaster event (Buckle et al, 2000). Resilience has also been described as an organisational characteristic displayed in response to change or pressure, and a tool in crisis management (Hills, 2000). Likewise, Walker and Broderick (2006) describe resilience as the ability of a system or organisation to recover easily and quickly from adversity. The view of resilience as the ability *“to cope with unexpected dangers after they have become manifest, learning to bounce back”* (Wildawsky, 1988: 77) infers that resilience simply means the system will return to the original shape and function after the disturbance. Thus, what is considered resilient in civil emergencies reflects a limited reactive view of resilience, as coping and recovering are both reactive activities.

Defining resilience in such terms as coping or recovering a stable state after a major mishap or event stresses the reactive nature of resilience (Hollnagel, 2006). Moreover, focusing on the ability to recover after an upset suggests that resilience can only be demonstrated after a crisis (Somers, 2009). In addition, highlighting the reactive or ‘bounce back’ capability exposes tensions in at least three dimensions (Boin & van Eeten, 2007), namely the moment of resilience, the severity of the disturbance, and the state of return.

In reviewing each of these dimensions in turn, Boin et al., (2010) point out that in relation to the *moment of resilience*, in disaster studies resilience is situated after the event with the focus on preventing structural demise, whereas in organisational studies resilience is in place before the event and enables the organisation to adapt and survive. Thus the spectrum of resilience is a continuum from speedy recovery and timely adaptation (Westrum, 2006). With regards to the *severity* of the event, Boin et al., (2010) indicate that the focus of resilience could apply only to rare events which can be identified as being beyond the design of the system, or more broadly to routine and foreseeable disturbances. Finally, in considering whether resilience should mean the *state of return*, Boin et al., (2010) highlight that this could mean simply bringing the organisation back to its pre-disruption state (which is impossible as recovery takes an organisation to a new state), or only for the organisation to function again or even a new improved state. They opine that the desired state of return is actually dependent on the organisation’s view of resilience and the severity of the event. Taking the centre ground of each dimension discussed above Boin et al., (2010) define resilience as:

***“the capacity of a social system (e.g., an organisation, city or society) to proactively adapt and recover from disturbances that are perceived within the system to fall outside the range of normal and expected disturbances”*** (Boin et al., 2010: 9)

Others, such as Leveson et al. (2006), also take a wider view of resilience and include prevention, which is incorporated in the system’s capability to proactively adapt to disturbances. In their view a resilient system or organisation must try to avoid failures from occurring but be able to respond appropriately if they do. They describe resilience as: ***the ability of systems to prevent or adapt to changing conditions in order to maintain (control over) a system property***” (Leveson et al., 2006: 95), in

which the property is safety or risk within the organisational system. The resilience definitions which include a proactive element and adaptive capability reflect the UK Government's concept of resilience. It is envisaged that the UK policy on resilience will be achieved through prevention, planning, preparation, maintenance, response and recovery from crises (Cabinet Office, 2004). Therefore, for the purpose of this research, Boin et al's (2010) definition will be adopted.

In summary the concept of resilience has quite different meanings across many disciplines which makes research challenging. The two key aspects in relation to resilience are whether it is about simply responding to a change in the environment when it actually happens with the aim of 'bouncing back' to the pre-disruption state, or whether resilience means being pro-actively alert to potential disturbances and either preventing them from occurring or adapting to them before they occur. It is argued that traditionally civil emergencies tended to adopt a reactive stance. But now it is the intention of the UK Government's resilience policy to develop both proactive and adaptive capability to enable effective crisis response. Having broadly described the concept of resilience the following section will consider resilience in the context of the organisation.

#### **1.4 What is Organisational Resilience?**

Following the 9/11 terrorist attacks in the United States, and the Madrid and London bombings, organisational resilience has been given greater prominence which has increased its use within emergency planning and management (Drennan & McConnell, 2007; Coles & Buckle, 2004). Nevertheless research has found that the majority of organisations, even those that were directly affected by 9/11, were still unprepared for crisis (Hurley-Hanson, 2006). In the UK there were similar findings. For example, Buckle et al., (2006) suggested further research into SCG capability to consider how they could be enhanced. Furthermore, a lesson from the terrorist events in London on 7<sup>th</sup> July 2005 was the need for common training for those in strategic roles (London Resilience, 2006). Currently, while organisational resilience has been identified as an important challenge for future crisis research (Smith 2006), the study of organisational resilience is fragmented (Sutcliffe & Vogus, 2003).

But what is organisational resilience and how would we know whether it was there or not? To ensure resilience, Mitroff (2001) suggests organisations focus primarily on the response to, and management of, man made events or situations that are caused by, or affect organisations; in other words ‘crises’. Organisational resilience has been described as a continuously moving target which contributes to performance during routine business-as-usual and crisis situations (Mitroff, 2005) and requires organisations to be adaptive and highly reliable (Weick & Sutcliffe, 2007), which enables them to be capable of managing disruption (Durodie, 2003). To achieve such resilience capability, organisations must anticipate and mitigate threats to their existence and primary goals (Hale & Heijer 2006; McDonald, 2006). Therefore, resilient organisations are those that quickly capture and adapt to environmental information by changing their behaviours and structures, and are able to disseminate the changes to others and mobilise networks of expertise and support (LaPorte, 2006).

Gibson & Tarrant (2010: 7) argue that “*resilience is an outcome and not a process, management system, strategy or predictive measurement*”. They see organisational resilience as an outcome influenced by a dynamic complex combination of environmental factors. One factor affecting the outcome is the organisation’s risk culture, which may range from being reactive to adaptive to potential threats. Therefore, good risk management, which includes assessment, treatment, monitoring and communication of risks, is the essential foundation needed to ensure organisational resilience (Gibson & Tarrant, 2010). Likewise, Comfort et al., (2010) describe resilience as an outcome of an institutionalised approach. In their view resilience is “*a balancing act between risk and resources, between vulnerabilities and escalating or unmanageable catastrophe*” (Comfort et al., 2010: 273), which organisations can achieve through anticipating and preparing for crisis and their consequences through knowledge, social collaboration and innovation.

Having determined that organisational resilience is an outcome of many environmental factors, key to which is risk management, a challenge for organisations is to establish whether they are resilient or not. One suggested measure of resilience is the ability of organisations to create foresight, in other words, that organisations are able to anticipate and adapt to the changing shape of risk, before failure and harm

occurs (Woods, 2005). A four-phase model is suggested as analytically useful (Comfort, 1988; Rosenthal, Charles & t'Hart, 1989; Boin et al., 2010):

- Mitigation/Prevention – this phase incorporates the systematic assessment of risks and implementation of preventative measures; and recognises there is tension between these components as not all crises can be foreseen and prevented
- Preparation – this phase examines the policies, structures and resources essential to deal with unforeseen crises
- Response/Consequence Management – this phase recognises that coordination and communication in the response network is essential to cope with and prevent crisis escalation
- Recovery/Aftermath Politics – the final phase explores the return to normal and the beginning of the learning process. There is a deeply political aspect to this phase

These phases reflect the components of *Integrated Emergency Management*: Assessment; Prevention; Preparation; Response; and Recovery (Scottish Executive 2007), and the five phases of effective crisis management (Mitroff & Pearson, 1993) discussed previously. It is argued that organisational resilience is an outcome of multiple environmental factors, including effective risk management, collaboration and innovation, which to be effective requires an organisation to be able to adapt to its environment.

### **1.5 Organisational Resilience & Adaptability**

An organisation's ability to adapt is at the heart of its ability to display resilient characteristics and therefore ensure effective crisis management. The adaptive capability of an organisation or system can be described as:

*“...the ability of the system to respond to changes in its external environment, and to recover from damage to internal structures within the system that affect its ability to achieve its purpose”* (Dalziell & McManus, 2004:6)

However, adaptive capability is not a static feature of any system; the components change over time (Folke et al., 2002; deVries, 1985). Kauffman (1993) observed that some biological systems maintained sufficient order for information exchange and storage, while having flexibility of structures and procedures to quickly adapt to environmental changes. Building on this, Comfort (2002b) suggests four conditions for effective adaptive response:

- Articulation of commonly understood meanings or understanding of the threat between a system and its members
- Sufficient trust among leaders, organisations, and citizens to overcome uncertainty and enable members to accept directions
- Sufficient resonance or support of the community between the emerging system and its environment to gain support for action, and
- Sufficient resources to sustain collective action under varying conditions

These attributes are similar to those which are necessary for effective collaborative policy network management, which include reciprocity, representation, equality and participation of those with different skills and experiences (deLeon & Varda, 2009; Moynihan, 2005). In other words, effective adaptive response and collaborative policy networks are dependent on: shared situational awareness among all participants; relationships built on trust and a belief by stakeholders that their activities are for the greater good of the agreed outcome; recognition and support that flexibility is essential to deal with emerging issues which may have been unforeseen; and sufficiently trained resources for all tasks they are expected to carry out under both routine and crisis states. Thus, sharing information, willingness to collaborate, and shared values are important factors for networks (Kapucu, 2006) and the key to successful adaptation is a move towards network organisation that uses many inter and intra-organisational links (Barabasi, 2003).

The network attributes detailed above are essential to achieving an effective adaptive response. Not only is it important to have shared vision within the organisation to ensure an effective crisis response (Weick, 1993; Horne & Orr, 1998) but commitment and productivity during a crisis will be dependent on relationships

(Gittell et al., 2006). Consequently, in complex organisations, such as the SCG, there is a need to have a common and shared view, which Schien (1996) described as culture, to ensure that the organisation's ability to adapt is not adversely affected by a change in personnel:

***“...[an] organisation's capacity to maintain itself and grow, to continue to act effectively in the face of changing circumstances, depends upon the creation of a set of shared assumptions that ... survive in spite of changes in individual membership of subsystems, i.e. the culture”*** (Schein, 1996: 4)

Organisations that do not have a shared holistic view could be said to have a silo or stovepipe mentality. At an inter-organisation level, silo or stovepipe mentality exists where organisations focus internally and exclude any building of external relationships (Fenwick et al. 2009); whereas, at an intra-organisation level, silo working may result in departmental or personal self-interest taking precedence over the wider organisational goals (Wisner, et al., 2004; Stone, 2004). In this research the SCG is considered as a single entity and therefore its holistic view should be shared by all members, even though they are drawn from different organisations. The absence of a shared holistic view in organisations has been described in cultural terms as the opposite of a communication culture (Powers, 2004). The consequence of having no shared holistic view in an organisation like the SCG is a lack of effective communication, which is a common cause of failure in crises (Smith, 1990). During crises, when communications are inadequate, personnel and resources are inefficiently used and activities duplicated (Adams, 1969). Therefore, existence of a silo mentality in the SCG is likely to be a significant barrier to preparedness (Guelke, 2005).

In contrast, Weick (1993) highlighted that to achieve resilience there needs to be 'respectful interaction' between those involved in the organisation. Such partnerships, based on honesty, trust and self-respect, would enhance the conditions for adaptation and innovation. Mulford (1984) suggests that individuals act as 'boundary spanners', linking the various organisations within the network by encouraging and promoting participation and the recognition of mutual benefits, which can result in effective outcomes. Granot, (1999) states that effective boundary spanners need to be systematic and involve the active participation of policy making personnel. Without such partnerships and understanding, there is potential tension because of the

emergent demands of crisis and the bureaucratic procedures of the typical emergency response agencies (Schneider, 1992). Such events usually require inter-organisational cooperation in order to meet the unusual demands of crisis response, which are frequently marked by competition and rivalry over available resources (Sanders, 1966; Warren, 1963). While such disputes can often be left unresolved in normal times, in crisis the conflicts may prevent coordination (Quarantelli, 1982; Mulford, 1984). Comfort (1990) opines that, conflict among organisations seeking to respond to the sudden, extraordinary demands in crisis is a recurring and well-recognised problem. In some cases the cause of the problem is that organisations lack the skill and experience in collaborating (Granot, 1999).

Here it is argued that network attributes, such as effective communication and interactions are essential in achieving an effective adaptive response. However, adaptive capability does not remain static rather it is a dynamic concept, the components of which change over time. Essential elements include shared situational awareness and relationships built on trust, agreed outcomes achieved through flexible approaches by trained staff. Furthermore, resilience can be enhanced through training and exercising people appropriately.

### **1.6 Improving Resilience through Training & Exercising**

Effective training and exercising can improve an organisation's adaptive capability and ensure that people are sufficiently innovative to deal with unforeseeable and unexpected elements of crisis. However, to be effective training and exercising requires motivated individuals and organisations that value the experience and appreciate how essential training is to learning and improving overall capability.

As previously discussed, a key element of collaborative networks and adaptive capability is having sufficient trained resources. Crises are characterised by disruption and uncertainty affecting the availability of existing organisational resources (Boin & Lagadec, 2000; Pearson & Clair, 1998; Mallak, 1998). Stress, surprise, restricted amount of time for response, and threats to high-priority goals characterize a crisis situation (Hermann, 1972), which adversely impact on the effectiveness of performance. To alleviate this crisis teams should use scenario building and exercises

(Smart & Vertinsky, 1977). Resilience can, therefore, be enhanced through adequate resources appropriately trained in the various roles they may be called to perform. According to Weick (1993), if everyone knows the roles and responsibilities of all in the partnership, resilience will be enhanced because even in the event of a crisis the role system remains intact in the individual mind. He referred to this as a 'virtual role system' (Weick, 1993).

Dynes (1986) suggests that crises provide the best opportunity to examine the functioning of roles. Likewise Smith (2005) comments on the importance of crises in assessing team performance; but highlights that such teams must have experience of working together and trained in advance to be effective in containing a crisis. As an example of how training and exercising in a role can lead to improved performance, Ginnett (1990) studied aircraft crew and found that three strangers assigned to fly together for the first time quickly became a high performing group. This is because the strong organisational context and previous training surrounding their tasks provided the rules, task definitions, information and resources needed for the group to perform. Consequently they did not need to develop plans, assign roles, determine and allocate resources, resolve conflicts, and set norms as would be expected with a newly formed group. Conversely failure to have clearly defined and understood roles and responsibilities may result in errors and redundant effort (Crichton, et al., 2005; Cotton, 1993).

In organisations like the SCG, it is expected that all parties understand their respective roles in the combined response and the 'fit' between their organisation and the co-ordinating management structure. This approach is to ensure the flexibility to deal with disparate crises and is achieved through a regular programme of training and exercises (Scottish Executive 2007). The most common means of training UK emergency services is through simulation and role play exercises (Borodzicz, 2005). Such exercises help individuals develop personal skills specific to certain types of incidents (McDonald et al., 1992). They have also been recognised as a means for multi-agencies to practice together and provide *“the opportunity for the development of liaison arrangements in a less stressful situation”* (LESLP, 1992: 37).

However, unlike Ginnet's (1990) research which involved resources undertaking specific tasks in a known environment there are challenges in developing training for crisis responders because crises:

***“...are complex events taking place within complicated environments and resulting in diverse responses. To present those conditions adequately extensive preparation has to be undertaken to provide a training situation in which learning, understanding and added competence can result”*** (Rolfe, 1998: 14-15)

The challenge in providing inter-organisational training programmes is that the skills required for emergency and crisis response are both distinct and different (Rosenthal, 1996). Smith (2005) notes that teams that can cope with an organisation in routine or 'steady' state may not be best placed to deal with it in a crisis. In addition, the ways in which organisations perceive and deal with their risks will differ (Borodzicz, 2005). Crisis requires a level of flexibility in management and decision-making skills distinct from problems associated with ordinary events, so in relation to training 'clarity of goals' is essential (Turner, 1994a; 1996). Furthermore, because of the unique nature of crises, innovation and creativity are critical skills for crisis response (Kendra & Wachtendorf, 2003; Hamel & Välikangas, 2003). Weick (1993) opines that improvisation and bricolage are important elements of resilience. He suggests that *bricoleurs* are able to remain creative under pressure because they routinely act in chaotic conditions. Therefore, they are able to improvise and create solutions with available resources. Those that are successful have a high adaptive capability and are able to cope with change and respond to it quickly and effectively (Denevan, 1983). Such adaptive learning centres on the ability of an organisation to change simultaneously and align itself with its environment (Daft & Weick, 1984; Murray, 2002).

As discussed earlier, a major influence on training crisis management teams and their effectiveness in dealing with crises is organisational culture (Turner, 1978; Mitroff, 1988; Frederickson & LaPorte, 2002; Toft & Reynolds, 2005). In addition, effective training must have clear goals, be relevant, reflect current practice (Roffe, 1997; Storr & Hurst, 2001; Fox, 2002), and incorporate critical self-reflection (Farrugia, 1996). Not only will organisational culture and the environment have a strong influence (Fredrickson & Monsen, 1999), so will the individual's confidence and motivation

(Blair, 2003; Seifert, 2004). More important, though, is ensuring participants are actively involved in the learning process. This allows them to build on their experience and discover the usefulness of the skills themselves (Hickie & Sawkins, 1996; Hughey & Mussnug, 1997). To enable this it is argued that effective crisis training should be modelled on ill-structured and complex events, so participants experience tension, uncertainty, time pressure, a sense of inadequate information and the frustration they would in a genuine crisis (Turner, 1978; Gredler, 1992).

However, it is important to recognise that simulations are not self-teaching (Gillespie, 1973; Petranek, 2000). In addition to realistic crisis simulations, critical feedback is essential to improve training (Black & William, 2002; Schunk, 1990). According to Flin (1996) feedback is important for increasing self-awareness and improving leadership capability. Thus procedures should be developed to include feedback from trainees, which reflect quality, effectiveness and performance in relation to learning outcomes (Glasner, 1997). The feedback mechanism is normally a two-way process involving trainers and trainees enabling individuals to increase their own knowledge as well as contribute to the organisation's (Shaw & Green, 1999). It is usually achieved via formal debriefs. Debriefing is a means of gaining formalised feedback from individuals and organisations in relation to the tasks undertaken and the achievement or otherwise of the learning objectives of the simulation or exercise. The debrief links the exercise realities with real world practicalities:

***“Debriefing allows parallels to be drawn between simulations realities and ‘real’ realities; it allows realities to be examined in a new, more ‘realistic’ light. Participants are then able to export the learning and insights gained from their experience in the simulation exercise to their other ‘real’ (non-simulation) world”*** (Crookall & Saunders, 1989: 18)

There are two reasons for provision of critical feedback through debriefing. First, it allows individuals to learn from their mistakes and extend their range of experience. Second, it results in procedures being improved (Horner, 1976). Nevertheless it should be recognised that debriefs can also have an adverse effect at both an individual and organisational level. For example, participants who perceive personal criticism may blame the unrealistic nature of the exercise (Borodzicz, 2005). At an organisational level, difficulties with holding and acting upon debriefs may be

indicative of a deeper organisational problem indicating that the organisation may be more crisis prone rather than crisis prepared (Lagadec, 1995). Despite these issues and Quarantelli's (1996) warning that past disaster, crisis and emergency trends cannot be extrapolated to predict the future, it is argued that mistakes from the past can be incorporated into new organisational arrangements to deal with crises:

*“What is needed is the proclivity to analyse the performance of the organisation in reacting and responding to the events that it tackles, and an inbuilt self-critical learning process whereby mistakes in the past are used constructively to inform future policy shifts and operational arrangements”*  
(Penning-Rowsell, 1996:135)

## **1.7 Chapter Conclusion**

In this chapter it was argued that there is no universally accepted definition of what actually constitutes a crisis; although three elements are generally present: an overwhelming, triggering event, which threatens the very existence of organisation. Effective crisis management requires a systematic process, a key element of which is learning from experience and therefore organisations should ensure that a critical review is undertaken post-crisis. Moreover, for an organisation to be truly crisis prepared such crisis management activity needs to reach beyond the superficial aspects of the organisation through to its core identity and defence mechanisms.

In relation to the concept of resilience, it was found that it has quite different meanings across many disciplines which makes research challenging. An important aspect in relation to resilience is whether an organisation is reactive or proactive. Currently, organisational resilience research indicates that organisations need to be highly receptive to changes in the environment to mitigate threats. It was also argued that organisational resilience is an outcome of multiple environmental factors, including effective risk management, collaboration and innovation, and that adaptive capability is a key characteristic of organisational resilience. Other essential elements include shared situational awareness and relationships built on trust. Finally, effective training and exercising can improve an organisation's adaptive capability and ensure that resources are sufficiently innovative and creative to deal with unforeseeable and unexpected elements of crisis.

In the next chapter organisational resilience is considered using a systems approach. This approach enables threats to be identified and pre-emptive action taken to mitigate them before they impact on the organisation.

## **Chapter 2 - Organisational Resilience and the Effect of Systemic Crises**

This chapter introduces a systems approach to crises generation within organisations. It describes organisational resilience as an emerging systemic property, which results from a complex interaction of social, technical and managerial aspects of the organisation. Common threats to resilience include organisational cultures which diminish the potential risks faced by the organisation, rather than accepting that failure is the likely outcome of complex tightly coupled systems. Furthermore the underlying similarities of crises are explored and identified as opportunities for organisations to learn and take pre-emptive action to mitigate threats to the organisation. Gouldner's (1954) concept of Mock Bureaucracy is linked to the systems approaches. It is highlighted that the development of mock bureaucracies can precipitate crises. The feasibility of a number of preventative strategies is then considered, together with the potential for High Reliability Organisations; a contrary view to those suggesting crises is 'normal' in complex systems. Tasks considered essential for effective crisis management in resilient organisations are outlined.

It is argued that unless a systems or holistic view of the organisational crisis is taken there is a danger that opportunities to learn from crisis will be missed. Moreover, the use of systems models illustrates that in many cases the strategic decisions and design of an organisation can provide the potential environment for the occurrence of crisis. Adopting a systems approach provides an opportunity for organisations to gain a greater understanding of crisis and, through learning from previous crises, enables organisations to take pre-emptive action to minimise the likelihood of future crisis. The chapter concludes by introducing the two systems models that will be used to analyse the SCGs, namely the Formal Systems Model and the Viable Systems Model.

### **2.1 The Potential for Organisations to Incubate Crises and Learn From them**

Crisis management and organisational resilience are dominated by systems thinking and a general systems approach (Stead & Smallman, 1999). It has been argued that in adopting a crisis management approach, *“an organisation accepts that failure is a basic property of systems and the failure is an outcome of the complex interaction between system elements”* (Swartz et al., 1995: 17). A general systems approach has been suggested as appropriate to assess and measure organisational resilience

(Dalziell & McManus, 2004; Horne, 1997; Starr et al., 2003). In relation to systems theory, organisational resilience has been described as an emerging property of complex systems (Paries, 2006) that enables an organisation to survive crises (Seville et al., 2008). The central concept of systems thinking is to view the properties of the whole system rather than the properties of its component parts (Checkland, 1993). In other words, **“a system has holistic properties not manifested by any of its parts and their interaction”** (Skyttner, 2001: 92). For example a car has the property of speed, but only when assembled as a system; none of its components have speed on their own (Hoverstadt, 2008). Likewise system safety can be characterised as an emergent property. Safety is something that cannot be predicted on the basis of the components that make up the system (Dekker, 2011). Senge (2006) advocated the systems approach as one where it was possible to see the ‘big picture’. A systems approach, therefore, provides a useful technique to analyse the structure and processes of complex organisations in dynamic environments (Foster et al, 2001).

In his book *Systems Thinking, Systems Practice* (1993) Checkland highlights how systems can be applied to ill-structured problems. In dealing with real world problems within organised complexity, application of systems concepts help to develop tools for thought and the generation of insight (Fortune & Peters, 1995). Moreover, the systems approach has been applied to crises, which can be considered as both social and technical failures within organisational systems (Turner, 1976; 1978; Horlick-Jones, 1990).

Dynes and Quarantelli (1968) were among the first to focus on organisational responses, as opposed to individual reactions to disaster, but it was Turner (1976; 1978) who made the first theoretical analysis of organisational vulnerability to crisis emphasising the role of organisational norms and values. According to Turner (1978) disasters<sup>6</sup> were man-made systems failures with long term incubation periods where risks were created in layers across technical, managerial and social contexts. In other words these were organisational crises. He refuted the notion that such crises were unique and caused by singular chains of events. Moreover, Turner (1978) opined that failures provided an opportunity for organisational learning. He stated that:

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<sup>6</sup> Man-made disasters described by Turner are referred to as crisis in this research

***“It is gradually becoming clear that many disasters and large-scale accidents display similar features and characteristics, so that the possibility of gaining a greater understanding of these disturbing events is presented to us”*** (Turner, 1978: 1)

In this sense, failure represents a disruption in how people believe their system operates; a breakdown of their own norms about risk and how to manage it. That is the collapse of precautions which had previously been culturally acceptable as adequate (Turner, 1978). Their belief that the systems precautions were adequate to manage the threats it faces enables unseen vulnerabilities to develop. This is how a successful system produces failure as normal; the imperfect organisational-cognitive processes which conceal growing organisational risks that incubate crises. The crisis is a form of organisational failure. The system vulnerability arises from unintended and complex interactions between seemingly normal organisational, managerial and administrative features (Turner & Pidgeon, 2000).

Turner (1978:85) developed a six-stage model that included an incubation phase, during which inherent small failures in the system would not be recognised as warnings for subsequent catastrophe. These would accumulate and eventually be triggered by an incident within the system resulting in the disastrous event. The incubation phase, in other words the circumstances that had preceded the actual event, was a key element of Turner’s systems approach. Previously, analysis focused on the immediate incident and its aftermath, treating each as a unique event that did not consider the interaction between the social and technical aspects. Consequently crises were described either as solely the result of a technical defect or human error. In contrast Turner examined large scale crises to identify organisational patterns which preceded them in an effort to gain greater understanding of them. His view was that this foresight or prediction of failure would enable organisations to take pre-emptive actions to avoid similar failures in future. Organisations that did not do so would suffer from a ‘failure of foresight’.

However, it should be acknowledged that the variety of perturbations and other emergent properties from complex organisations is extensive and difficult to predict. Moreover, in hindsight it may be possible to identify potential warnings that pre-event were not taken seriously or were not understood because they were ‘weak signals’.

Reasons for failing to recognise such weak signals include organisational hierarchy leading to distrust of the source of the warning and difficulty in separating out the important information-providing event from the mass of irrelevant material and surrounding ‘noise’ (Turner, 1978).

Notwithstanding the foregoing, Turner (1978) suggested that following an inquiry into organisational failure organisations would experience a full cultural readjustment, which would lead to a change of beliefs, norms and precautions, to ensure that they were aligned with the organisation’s revised understanding of the world. In doing so, Turner (1976) identified that organisational culture and faulty assumptions were significant preconditions for crisis generation:

***“Common causal features are rigidities in institutional beliefs, distracting decoy phenomena, neglect of outside complaints, multiple information handling difficulties, exacerbation of the hazards by strangers, failure to comply with regulations and a tendency to minimise emergent danger”*** (Turner, 1976: 378)

A precondition to some organisational crises was ‘sloppy management’ (Turner, 1994b). Examples of which included communication failures, blinkered outlook and groupthink (Janis, 1982), complacency and neglect, together with inadequate assumptions about the vulnerability of the organisation. Turner argued that these management inadequacies and examples of unprofessional behaviour could be addressed by the development of a safety culture, with commitment from the top, which would mitigate the incubation of hazards. However, other organisational crises were outwith the province of management, instead were a consequence of the failures of the normal system (Turner, 1994b). He suggested that instead of trying to design perfect systems, human failings should be taken into account during the design phase of the system. This was a recognition that due to the interaction between extensive, complex technological systems and people there were often unforeseen interactions resulting in organisational failure. Perrow (1984) referred to such events as ‘normal accidents’.

## 2.2 ‘Normal’<sup>7</sup> Organisational Crises - is Failure Inevitable in Complex Systems?

Like Turner (1978), who refuted the notion that such crises were unique and caused by singular chains of events, Perrow (1984; 1999) also eschewed the view that system failures could be explained by single causal factors such as operator error, design faults or inadequate training.

Instead of looking for simple single cause explanations, Perrow (1984) focused on the properties of the systems, in particular the way failures emerged from interactions within the system. He highlighted that new technology increasingly used ‘common modes’ serving at least two other components, which meant that systems were becoming increasingly complex. The results were complex interactions of unfamiliar sequences, or unplanned and unexpected sequences, which were either not visible or immediately comprehensible. Consequently, those systems with interactive complexity which were tightly coupled would be more prone to failure because there would be no slack in terms of time, resources or alternative route in the system to limit its impact:

***“If interactive complexity and tight coupling – system characteristics – inevitably will produce an accident, I believe we are justified in calling it a normal accident, or system accident. The odd term normal accidents is meant to signal that, given the system characteristics, multiple and unexpected interactions of failure are inevitable. This is an expression of an integral characteristics of the system, not a statement of frequency”***  
(Perrow, 1984:5)

Furthermore, Perrow (1984) highlighted the contradiction within tightly coupled and complex organisations. The safety procedures developed for such systems, many of which have been developed in response to a previous system failure, tend to be controlled from the centre of operations and require operators to adhere to them. However, the potential for unexpected interaction and emergent property require operators to interpret the situation and respond flexibly to resolve it appropriately. For interactively complex and tightly coupled system such operator requirements are inconsistent.

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<sup>7</sup> Perrow (1984) defined accidents as a ‘normal’ characteristic of systems interaction rather than in terms of frequency of occurrence

A decentralised approach is effective for operators researching and resolving disruptions in complex systems, but when they are also tightly coupled the speed of the unseen interactions and lack of redundancy within the system will result in emergent properties which were unpredicted and difficult for the controller to effectively manage. Therefore, there is an inherent contradiction in the human and technical aspects of such systems (Perrow, 1984: 332). This reflects Ashby's (1957) *Law of Requisite Variety* which argues that because of the incomplete knowledge managers have of the whole system they cannot have the requisite variety to control it. Control can be obtained only if the variety of the controller is at least as great as the variety of the situation to be controlled.

### **2.3 Resident Pathogens or Latent Conditions in Organisations**

A difficulty of such complexity and the *Law of Requisite Variety* within current technological systems is that operators have become increasingly remote from the processes which they nominally control. Reason (1990) refers to this as the 'Catch 22' of human supervisory control. There is increased variety within the system but reduced variety for the operator. Because operators no longer have familiarity and direct interaction with the system they cannot fall back on mental models gained through previous experience. Reason (1990) argues that the "***active errors of stressed controllers are, in large part, the delayed effects of system design failures***" (Reason, 1990: 183).

However, Reason (1990) distinguishes between active failure, which are unsafe acts committed by people, that include slips, lapses, mistakes and procedural violations, and latent conditions or 'resident pathogens', such as decisions made by designers, procedure writers and strategic decision makers within the system. The former have direct and usually short lived impact on the system, whereas the latter have been integrated into the system and have two kinds of adverse effect. They can translate into error provoking conditions within the workplace; examples include understaffing or inadequate equipment. Or they can create weaknesses in organisational defences, such as unworkable procedures or design and construction deficiencies which may lie dormant in the system for years before being triggered.

Reason (1990) describes how an organisation's defences are in a constant state of flux but may be penetrated by an accidental trajectory through a window of opportunity, caused by an alignment of 'holes' in the system. However, in highly protected systems the various layers of defence will only be breached by the adverse conjunction of several different causal factors, such as latent failures at managerial levels and local triggering events. In crises prepared organisations, the complex interaction between latent failures and local triggers means the likelihood of such a trajectory of opportunity is limited and difficult to foresee. But, Reason (2000) argues that whilst organisations might have difficulty in preventing active failures because 'their specific forms' are hard to foresee, they should be able to foresee latent conditions and remedy them before the defences are penetrated. To achieve this, organisations must take a proactive rather than reactive approach to risk and crisis management.

Importantly, Reason (1990) highlights the difficulties in judging the circumstances after the crisis event, as the knowledge of outcome profoundly influences the way the past is viewed. He cites 'hindsight bias' (Fischhoff, 1975; Slovic & Fischhoff, 1977), which has two aspects. The first where observers exaggerate what others should have been able to anticipate in foresight. The second that historical judges are unaware of the affect that knowledge of outcome has on their perceptions. This is particularly relevant to those who would suggest the failure of foresight or the failure of hindsight.

#### **2.4 The Crisis of Management – How Management Decisions May Generate Crises**

Smith (1990) also highlights the potential for organisational activities to generate crises. He proposes that a crisis has three phases: *crisis of management*; *operational crisis*; and *crisis of legitimation*. Where the potential for organisational failure is incubated in the pre-crisis phase he terms *crisis of management*. In this phase decisions taken may make an organisation more or less vulnerable to crisis. These include the design of the system itself or decisions that result in inappropriate staffing levels or ignoring safety reviews. In other words management decisions generate conditions in which controls are by-passed and conditions for incubation established.

This is similar to Turner's (1978) incubation period and Reason's (1990) latent conditions.

The next phase is the operational crisis or crisis incident, which is where the characteristics of the crisis will be most visible. Contingencies may have been put in place to deal with the most likely potential disruptions or consequences. However, many in the organisation will fail to realise that it is the 'way we do things around here', that is the organisational culture, which contributes to crisis generation.

Richardson (1995) referred to this as *Paradox Management of Crisis Generation*; he found that managerial—come organisational beliefs and behaviour were major causal ingredients of organisational crises. In other words complex and tightly coupled systems, together with latent errors in the design stage, will combine and manifest themselves as an opportunity for crisis.

The final phase is the crisis of legitimation or post-crisis incident. The processes in this phase are visible and often attract external media coverage. Failure to deal with these effectively may push an organisation back into crisis. It is suggested that at this point the organisation re-positions itself after the disruption and begins the process of organisational learning. That is from the post crisis phase of recovery there will be a learning feedback loop to the next crisis of management (Elliott et al., 2005). This would be similar to Turner's (1978) cultural readjustment.

However, the interactions between the phases are not strictly linear and become more complicated and ill-defined over time. Organisations may move quickly through some phases and take longer in others; consequently the process can take place over many years, span different periods of leadership and ownership and therefore become a difficult process to manage (Smith, 2005).

## **2.5 Systems Approaches & Gouldner's 'Mock Bureaucracy'**

The systems approaches describe how crises pathways are generated and incubated, and may emerge through a number of strategic or latent errors that are made by senior managers over time. These may include the generation of a culture in which near misses are not reported, in which communication throughout the organisation is

constrained or where there is a tendency to blame failure on those further down the organisational hierarchy. Each will allow gaps in defences to go unchecked and may under certain conditions actually generate the conditions that will spawn the initiating event for the crisis.

In relation to an organisation's safety culture, Smith (1990) argues that organisations that ignore safety reviews and take actions to by-pass controls experience a *crisis of management*, which makes them more vulnerable to crisis. Turner (1994b) refers to the failure to comply with regulations and lax safety culture as examples of management inadequacies and unprofessional behaviour that incubates crisis. Similarly, Reason (1990) opines that a lax safety culture results in latent conditions which have the potential to create crisis. Furthermore, Perrow (1984) argues that, due to the complexity of systems and Ashby's (1957) *Law of Requisite Variety*, managers cannot have complete knowledge to ensure that a safety culture is established and maintained. Therefore, organisations that fail to comply with safety regulations, especially when there are few consequences for non-compliance, may generate conditions for crisis incubation. Moreover, such organisations will fail to realise that it is their culture of non-compliance that contributes to the crisis generation. It is argued here that the elements identified in the foregoing systems approaches are encapsulated in the concept of Mock Bureaucracy (Gouldner, 1954).

Gouldner (1954) studied a gypsum plant to determine variations in bureaucratic patterns. He focused on 'no-smoking' regulations which were reinforced by bureaucratic cues, such as signs, posters and inspections. However, despite the rules and reminders, most personnel disregarded the no-smoking regulation. Gouldner termed the pattern of overt organisational non-compliance as 'mock bureaucracy'. The reason for non-compliance was due to the lack of legitimacy attaching to the rules. Importantly the legitimacy of the rules determines whether an organisation is crisis prone or crisis prepared (Hynes & Prasad, 1997). Therefore, the means by which rules are introduced and enforced influence how managers and workers respond to them (Elliot & Smith, 2006). For example, in Jermier et al's (1991) study of a police organisation it was found that top management was unable to impose organisation-wide conformance with the traditional command bureaucracy because of

resistant subcultures in the organisation. They subsequently describe mock bureaucracy as *“an organisation with a counterfeit front deceitfully designed to impress key stakeholders with appropriate principles and well-ordered practices, while hiding internal fragmentation and ad hoc operations”* (Jermier et al., 1991: 189). Hynes and Prasad (1997) argued that the formal rules were subordinate to the workplace norms. Moreover, they considered that *“the development and enactment of mock bureaucracies can have serious consequences for organisations, and can easily precipitate industrial crises”* (Hynes & Prasad, 1997: 606).

Therefore, Gouldner’s (1954) findings highlight the importance of organisational culture in achieving and maintaining compliance through shared values embedded at an individual and organisational level, similar to the inner layers of Pauchant and Mitroff’s Onion Model (1992). Such a culture is essential to achieve effective crisis management and in overcoming barriers to learning. Consequently the concept of mock bureaucracy is used in chapter 7 as an analytical lens to determine and explain SCG compliance with the rules and regulations necessary to establish resilience.

## **2.6 The Feasibility of Creating High Reliability Organisations**

An alternative view to failure being a ‘normal’ emergent feature of a complex system described in the systems approaches above (Turner, 1976, 1978; Perrow, 1984, 1999; Reason, 1990, 2000; Smith, 1990) is High Reliability Theory. The High Reliability Theorists argue that the presence of distinctive organisational features can prevent failure from occurring in a system. High Reliability Theory is based on studies of nuclear industry, nuclear aircraft carriers and air traffic control centres, organisations in which because of the potential catastrophic consequences of failure, it must be deterministically precluded. In other words failure simply must not happen (Boin & Schulman, 2008). Those who consider the possibility of developing High Reliability Organisations (LaPorte & Consolini, 1991; Roberts, 1993; Rochlin 1996; Schulman, 1993) consider that it is possible to prevent system failure, which is contrary to Perrow’s ‘Normal Accident Theory’.

The view of High Reliability Theorists is that if appropriate organisational design and management techniques are in place safe operations are possible even when using

extremely hazardous technologies (Sagan, 1993). On the other hand Perrow (1999) argues that serious accidents with complex technology systems are inevitable and that organisational efforts to change the risks rooted in complex socio-technical systems will always be ineffective. Eventually the system will experience failure because it is a 'normal' system characteristic. Consequently no amount of successful system performance can falsify the theory of 'normal accidents'. The system is only as reliable as the first future catastrophic failure, not the many operations already undertaken without failure (Boin & Schulman, 2008).

High reliability is a desirable trait in resilient organisations (Vogus & Sutcliffe, 2008) and Weick (1987) argues that organisational culture determines whether or not high risk organisations can transform into High Reliability Organisations. In such high reliability organisations, Rochlin suggests that safety culture is more important than controlling or mitigating unforeseen or unexpected events (Rochlin, 1999).

Furthermore, according to Boin and Schulman (2008), reliability is dependent on organisational norms, which guide decision making throughout the organisation. Moreover, leaders are responsible for cultivating and protecting those norms and ensuring that the organisational mission is institutionalised in the political setting it must operate in. There are similarities between crisis prepared organisations and those that are reliable. A key element in both is the organisational culture which is proactive in ensuring the safety of the whole organisation.

The research of different High Reliability Theorists has produced similar explanations for positive safety records. In their study of High Reliability Organisations, Weick and Sutcliffe (2001) found HROs experience fewer problems because they have developed ways of acting and styles of leading that enable them to manage the unexpected better than most other kinds of organisations. HROs were able to maintain reliable performance because of certain key characteristics:

- ***Preoccupation with failure*** – treating any lapse as a symptom that something is wrong with the system, encouraging reporting of errors, learning lessons from near misses and being wary of complacency

- ***Reluctance to simplify interpretations*** – knowing that the world is complex, unstable and unpredictable, they encourage individuals to look beyond their own boundaries and to be sceptical towards received wisdom
- ***Sensitivity to operations*** – scrutinising normal operations in order to reveal deficiencies in supervision, safety procedures and training , hazard identification etc., and encouraging continuous adjustments that will prevent errors from accumulating and enlarging, encouraging people to speak out about their concerns
- ***Commitment to resilience*** – developing capabilities not only to detect problems but also to be able to continue working when things go wrong
- ***Deference to expertise*** – decisions are delegated to those on the front line and with the most expertise (not necessarily the most experience) in that field  
(adapted from Weick & Sutcliffe, 2001: 10-17)

Together the five processes produce a collective state of mindfulness. That is a rich awareness of discriminating detail and enhanced ability to discover and correct errors that could escalate into crisis. However, it is important to note that an organisation cannot calibrate its degree of reliability by choosing some features and omitting others; these attributes are a consequence of an evolutionary process. They cannot be imposed on an organisation from outside, as they are tightly knit into the fabric of organisational culture and work processes (LaPorte, 2006).

However, a criticism of HRO theory is that few organisations have the extremely complex technology that is evident in these organisations; therefore the lessons to be learned from them are limited and not necessarily applicable to mainstream organisations (Luo Carlo et al., 2004; van den Eede & van den Walle, 2005). Boin and Schulman (2008) outline other limitations of the High Reliability Theory, including that the research is based on a snapshot of a small number of particular types of organisations. That our knowledge of the origins of the characteristics attributed to HROs is limited and currently it is unclear whether they are imposed by regulatory environments, the outcome of institutional evolution or the product of leadership; but importantly the characteristics have not been conclusively tied to the reliability of their performance. Furthermore, it is not clear how HROs evolve the

capability to avoid catastrophic failure, especially as the opportunities to learn through trial and error are constrained. Therefore, in their view HRT “*stands not as a theory of causation of high reliability but rather as a careful description of a special set of organisations*” (Boin & Schulman, 2008: 1053).

Sagan (1993) also eschews the term ‘theory’, preferring the expression *schools of thought*. In his review of US nuclear weapons system safety he considers both High Reliability and Normal Accidents and compares them through four critical causal factors attributed to HROs:

- The prioritisation of safety and reliability as a goal by political elites and the organisation’s leadership
- High levels of redundancy in personnel and technical safety measures
- The development of a “high reliability culture” in decentralised and continually practised operations, and
- Sophisticated forms of trial and error organisational learning

Sagan (1993) highlights the preoccupation of failure within HROs may result in conflicting organisational objectives. Because of the costs in maintaining significant levels of redundancy and continual operational training, organisations may be less efficient than they could be. Moreover, according to the NAT, the structural factors of interactive complexity and tight coupling significantly increase the likelihood of accidents in such organisations, regardless of the intent of leaders.

In relation to high levels of redundancy in personnel and technical safety measures, Sagan points out this would include multiple and independent channels of communication, decision-making and implementation, which according to HRT can produce a highly reliable overall system even when system components are subject to error. However, according to NAT increasing redundancy means more interactive complexity and common mode failure. Moreover, the increased complexity reduces system transparency and understanding allowing latent problems to accumulate over time. Finally, redundancy does not improve reliability but rather encourages management to maximise production to dangerous levels. As Perrow observes:

***“Fixes, including safety devices, often merely allow those in charge to run the system faster, or in worse weather, or with bigger explosives”*** (Perrow, 1984: 11)

The development of a ‘high reliability culture’ is dependent on strong cultural norms, decentralised decision making and constant training. The result, according to the HRT will enable self-regulating work units empowered to address risks directly. However, NAT argue that this infers a homogeneous organisational culture in which everyone will identify, understand and respond in the same way to an unexpected and unknown situation. Moreover, when a system is both interactively complex and tightly coupled the requirements for decentralisation are incompatible because of time dependent and invariant production processes. Furthermore, it is impossible for an organisation to develop organisational training and experience for every unanticipated and undesirable circumstance. Therefore, potential scenarios that have not been imagined will not be practised and training of extremely dangerous operations will be limited because of the hazards involved. What’s more, organisational politics influence what will be subject to training scenarios because it is implicit in undertaking such training that potential catastrophic outcomes are possible.

Finally in relation to the sophisticated forms of trial and error organisational learning, Sagan (1993) highlights that HROs cannot learn from trial and error to the extent a normal organisation could because of the limited occurrences and catastrophic outcomes of the failures that would present the learning opportunity. Consequently, ***“rather than wait to learn from experience whether their precautions were adequate, researchers and regulators chose to speed up the learning process”*** (Marone & Woodhouse, 1989: 137) by introducing simulations. However, restrictions on learning include the lack of clarity around causes of accidents and near accidents initially. That investigations and findings are subject to ‘hindsight bias’ because of the politicised environment such accidents occur in. Moreover because of the potential for blame to be apportioned faulty reporting occurs making it difficult for organisations to assess performance accurately. This is exacerbated by secrecy within and between complex organisations which limits the opportunity for ‘isomorphic’ learning.

Sagan (1993) broadly summarises the conflict between both HRT and NAT as being around the degree of predictability that is possible in complex organisations. He

acknowledged that HRT provided useful insights but concluded that *“historical evidence provides much stronger support for the ideas developed by Charles Perrow in Normal Accidents and by other authors writing in that intellectual tradition”* (Sagan, 1993: 252). Sagan reached this conclusion as a consequence of having identified *“a long series of close calls with US nuclear weapons systems: serious accidents or near-accidents that could have lead to catastrophes had they occurred in somewhat different, but nonetheless plausible, circumstances”* (Sagan, 1993: 252).

In contrasting High Reliability Theory with Normal Accident Theory, a number of common characteristics of HROs were found but when considered in detail limitations were identified. In particular was the inability of HROs to learn from trial and error because of the consequence of catastrophic failure in such organisations. The findings were that Normal Accident Theory is supported by stronger evidence than the High Reliability Theory and that there are similarities between crisis prepared organisations and those that are reliable. A key element in both is that the organisational culture is proactive in ensuring the safety of the whole organisation. There are a number of practical lessons for organisations seeking to enhance resilience.

## **2.7 What Practical Lessons are there for those Organisations Seeking Resilience?**

Having identified organisations can fail in crises because of latent or incubated errors in the organisation’s socio-technical system, it follows that overcoming organisational barriers to learning will go some way to preventing organisational failure and ensure greater resilience. By applying a systems approach an organisation is able to understand how crises pathways are generated and potentially incubated over time only to emerge as an organisational failure. Therefore organisational culture and learning from crises are closely related. However, there are barriers to learning, which increase an organisation’s vulnerability to crises (Smith, 2005), including rigid institutional beliefs, the tendency to scapegoat or blame something else for the circumstances, the minimisation of danger and the disregard of complaints or signals which may in hindsight be early warnings (Turner, 1978).

To overcome barriers to learning organisations need to be proactive in adopting a ‘safety culture’. An organisation needs to be aware that it is part of a wider system, accept that failure within the system is likely and be prepared to manage its way through the crisis. To do this it should adopt a number of strategies including providing feedback on previous incidents, setting up a formal safety organisation, inculcating safety culture norms and beliefs about the importance of safety, devolving decision making, and providing training and awareness (Davis & Walters, 1998; Shaluf et al., 2002).

However, the training will be based on what the organisation knows at the time. In other words the workplace’s taken for granted assumptions about the world and systems (Hopfl, 1994). These beliefs and norms may be based on erroneous assumptions (Smith, 2005). Furthermore, while devolving decisions to the lowest level commensurate with skill may be desirable, in many organisations it is rank rather than expertise that determines who makes decisions (Weick & Sutcliffe, 2001). With regards to decision making it must also be recognised that crises destroy formal structures, communication generally degrades, and the ‘rule book’ becomes defunct (Smallman & Weir, 1999). While the provision of feedback will assist in identifying underlying trends and assist with isomorphic learning, it requires a no-blame culture to encourage honest reporting and this can be severely constrained by cultural and political factors (Horlick-Jones, 1996). Consequently, there will be some organisational challenges to implementing such strategies.

Moreover, whilst establishing a no-blame culture might prevent risk factors being driven ‘underground’ it’s rarely enough to ensure adequate feedback and proactive risk management (Johnston, 1996). Also while the creation of a formal safety infrastructure may lead to clarity of functions and assist in embedding appropriate norms, leading to changed behaviour, it must be recognised that it is easier to change organisational plans and procedures rather than changing individual and group beliefs. Furthermore, unless the rules in relation to safety culture are considered legitimate non-compliance may result in a ‘mock bureaucracy’ (Gouldner, 1954). Individual defence mechanisms can be used to ‘distort the external reality’ and resist organisational change (Mitroff et al., 1989). It is also difficult to change organisational behaviour if a particular form of hazard has not been experienced

before because the lack of previous evidence in relation to the risk will mean it has no validity (Smith, 2005).

## **2.8 Introduction of the Systems Models Used in this Research**

Having argued that the adoption of a systems approach is a useful means to examine whether an organisation is crisis prone or crisis prepared, two systems models are introduced, namely the Formal Systems Model (Fortune & Peters, 2005) and the Viable Systems Model (Beer, 1979, 1981 & 1985). These are used in chapter 6 to analyse the SCG.

Fortune and Peters (2005) FSM combines the core systems concepts, which are necessary if a set of activities is to comprise a system capable of purposeful activity without failure. It takes a holistic approach to describe a failure and explain why it occurred (White, 1995). The approach has been widely used to study failures in a number of systems (Fortune & Peters, 1990), including design of national curriculum for science (Fortune, Peters & Rawlinson-Winder, 1993), quality management (Fortune & Peters, 1994), risk prevention (Stewart & Fortune, 1995), policing command and control (Pearce & Fortune, 1995), learning (Fortune & Peters, 2001), project management (Fortune & White, 2006), and partnership problems (Ellis, Fortune & Peters, 2007).

In their book *Learning from Failure* Fortune and Peters (1995) suggest that the VSM could be viewed as an additional feature of the Formal System Model. Beer's VSM (1979, 1981 & 1985) models the structures of the organisation and the relationships between them, including key processes, communications and information flows. The criteria of viability require that organisations are capable of adapting appropriately to their chosen environment, or adapting their environment to suit themselves.

The VSM has been used extensively as a conceptual tool for understanding organisations, redesigning them where appropriate, and supporting the management of change (Espejo & Gill 1996). Not only does it provide a model to distinguish right from wrong in an organisation, while being able to cope with the complexity and dynamics of the 21<sup>st</sup> century (Pffifner, 2010), but it can be applied to different types

of organisations. For example Walker (2006) applied it to cooperatives and federations, while in 1970 Beer himself applied the model to the social economy of Chile (Medina, 2006). More recently it has also been used to analyse the role of leadership in viable organisations (Rowe, 2010).

The use of these systems models assist in gaining a greater level of understanding of complex situations. It enables the comparison of the 'real world' problems with the 'ideal' paradigm, which is capable of purposeful activity without failure or problem. The comparison between both states engenders a level of understanding that enables the critical assessment of the real world system.

## **2.9 The Formal Systems Model (FSM)**

The Formal System Model consists of a system, which comprises a decision-making subsystem, a performance-monitoring subsystem and a set of subsystems that carry out tasks of the system and effect its transformations by converting inputs into outputs. The FSM is fractal<sup>8</sup> and each level contains the components listed above.

The decision-making subsystem manages the system and makes its expectations known to the performance monitoring subsystem. It is responsible for decisions about how the purpose of the system is to be achieved, such as which transformations are to be carried out and by what means, as well as providing resources to enable this to happen. This exhibits choice and demonstrates that it is a purposeful system.

The performance-monitoring subsystem observes the transformation processes. It reports deviations from the expectations to the decision making subsystem, so that it can initiate corrective action where necessary.

The wider system, which represents the next hierarchical level up from the system, defines its purpose and sets its objectives. It influences the decision makers within the

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<sup>8</sup> Mandelbrot (1982) coined the term *fractal*. He emphasised the use of fractals as realistic and useful models of many rough phenomena in the real world; highlighting their common properties, such as self-similarity and scale invariance. A fractal structure means that the same mechanisms are replicated at each level and in each of the subsystems. The repetition of patterns and relationships in a self-similar way at different levels within an organisation is called recursion.

system, while monitoring the performance of the system as a whole. It also provides the resources that the system needs in order to function. The environment, which is beyond the system, disturbs the system directly, as well as indirectly through the wider system (Fortune & Peters, 2005). An example of the paradigm is shown in figure 10 below:

## The Formal System Model

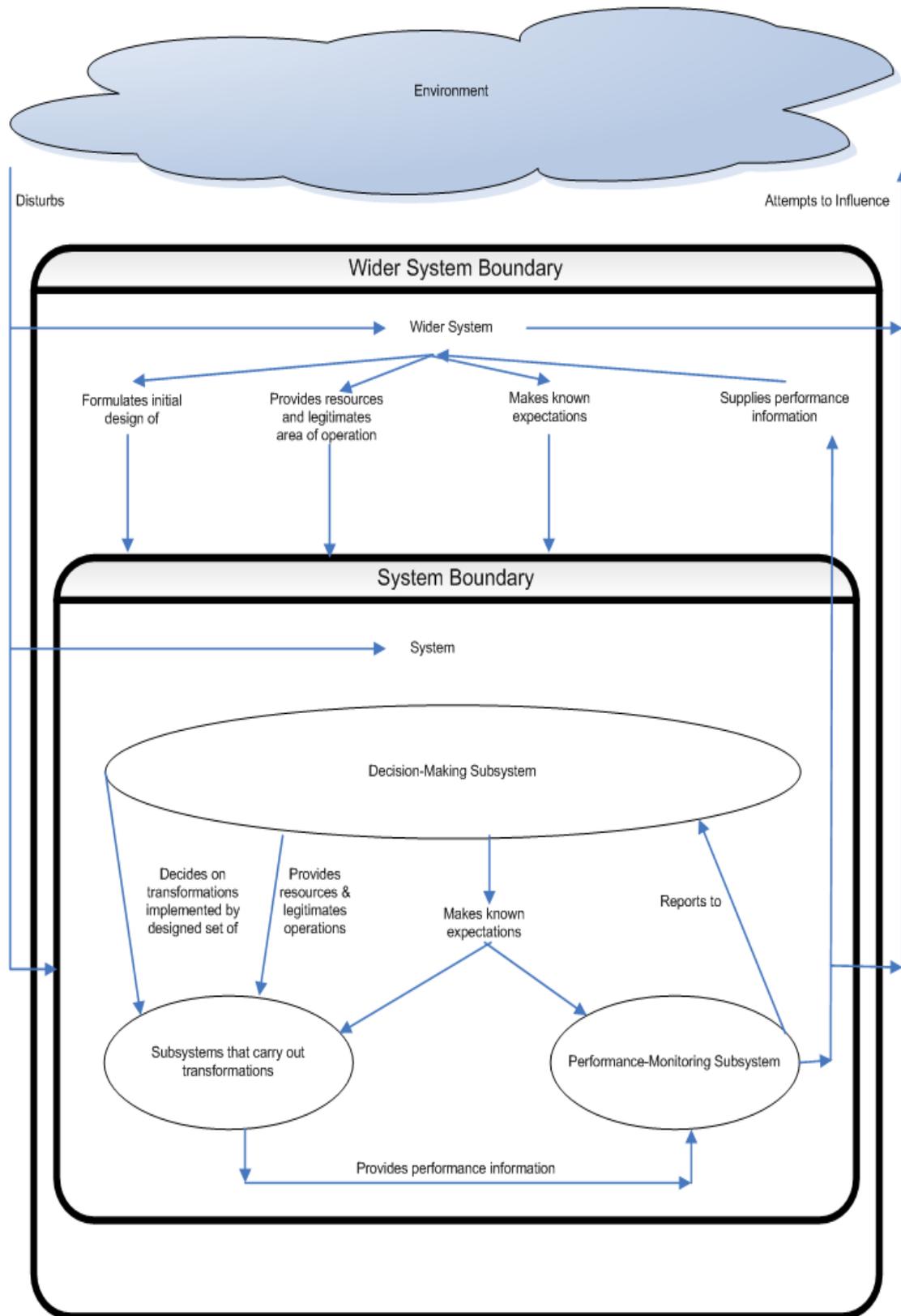


Figure 2 The Formal Systems Model (Source Fortune & Peters, 2005: 121)

Fortune & Peters (2005) highlight two aspects of the Formal System Model, which are relevant to this research, namely control and communication. Control is the system actions that cause or maintain a desired state and is achieved either by modifying activities or changing inputs. Effective control relies on a number of preconditions, including adequate communication between the measuring mechanism and the decision taker, and that the decision taker has an appropriate level of sophistication for the activities and/or processes being controlled. It is suggested that the absence of controllability means that the system is not learning and thus susceptible to failure. The other important element is communication, especially the communication between the system and the environment, the flow of information from the wider system, via the system, to the subsystems and vice versa, and the numerous communication links within the system and subsystems. An advantage of using the Formal System Model is that it is possible to compare the systems representations to ascertain whether the communication links exist or how effective they are.

The strengths of the FSM include that it unites most core systems concepts. It was adapted by Checkland (1981; 1993), who in turn drew on the ideas of Churchman (1971) and Jenkins (1969). It has been used successfully over a long period of time to investigate failures (Fortune & White, 2006). In addition, the FSM is a model of a robust system. By representing an ideal system the FSM can be used to form the basis for comparison with a real system. Thus the FSM can be used to determine the extent to which the components, links and other features necessary for purposeful activity without failure are present (Fortune & White, 2006). Moreover, because the FSM is concerned with the relationships between its components, as well as the components, it is able to deal with the dynamic nature of organisations. It allows the identification of strengths and weaknesses and can, for example, ascertain whether communication links exist or how effective they are. In addition, it shows disturbances from and attempts to influence (or control) the environment (Pearce & Fortune, 1995).

Weaknesses associated with the FSM include the top down influence of its structure. There is also an assumption the wider system will formulate the initial design of the system. However, this may not happen in practice. It is possible for the blurring of boundaries between wider system and subsystem. Moreover, because a

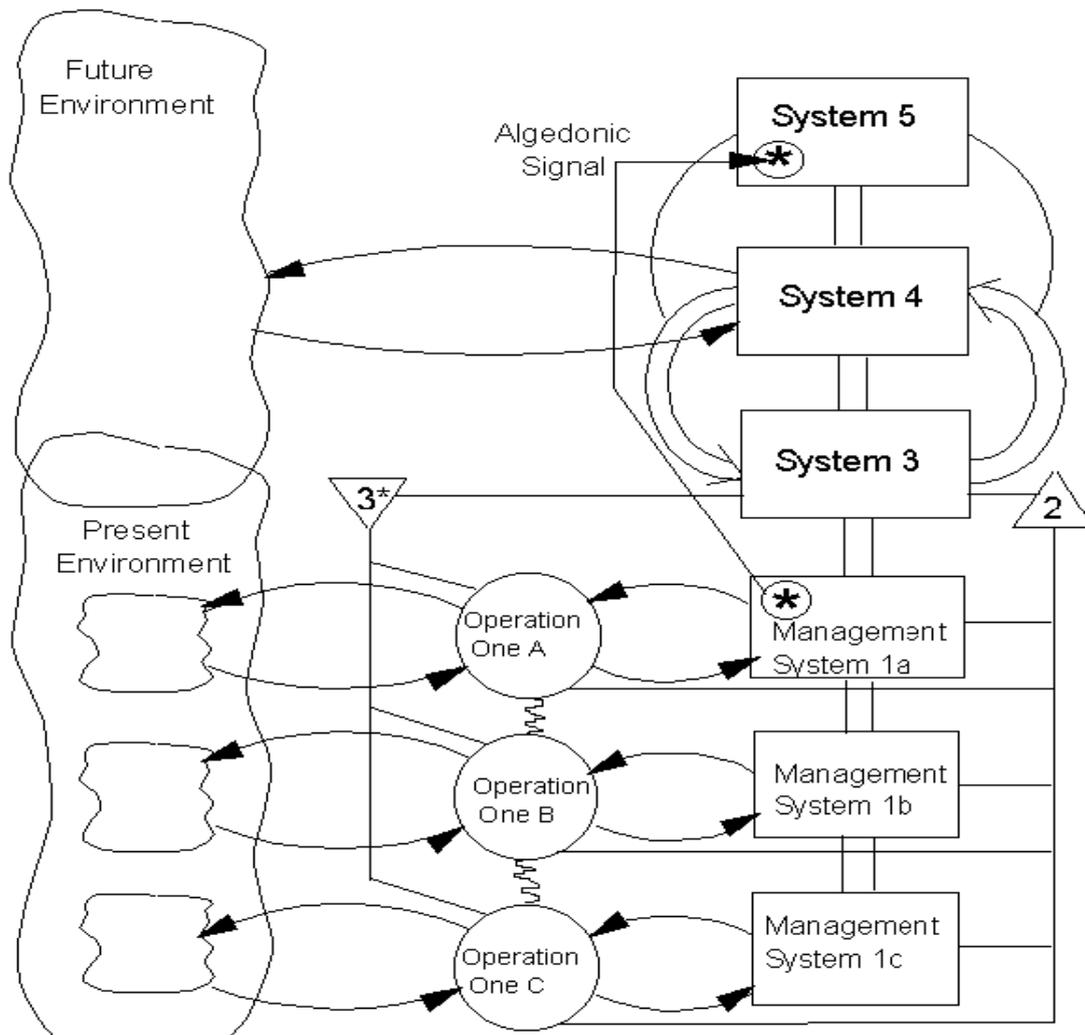
communication structure is in place it is assumed that the system communication is effective. In addition the importance of organisational cultures is not explicit.

However, using this paradigm Fortune & Peters (1994: 248) identified a number of common features of failure in relation to systems, which will be used in this thesis as an analysis framework. The common features of systems failures can be summarised as:

1. Deficiencies in organisational structures
2. Lack of clarity of purpose
3. Deficiency of performance by subsystem(s)
4. Ineffective communication between subsystems
5. Inadequately designed subsystems (which in this research will be applied to training input)

## **2.10 The Viable System Model (VSM)**

In the VSM the organisation is seen as a series of interacting levels of systems which provide a useful template against which to consider alternative structures and challenges a system is facing. The VSM deals with the complexity of organisations by unfolding them in a fractal structure, which means that the same mechanisms are replicated at each level and in each of the subsystems. The repetition of patterns and relationships at different levels within an organisation is called recursion, which enables the same functions to be mapped and compared. Any deficiencies in the capability or functioning of the organisation can be traced back to inappropriate or inadequate subsystems or linkages. The Viable Systems Model represents a viable organisation; one that adapts to its environment to maintain its viability or existence. The model is illustrated in Figure 3 below:



**Figure 3 The Viable Systems Model** (Source: Leonard, 1999)

The VSM contains 5 systems which can be applied to any organisation to determine its viability by identifying the communication and control systems. A feature of the VSM is that its structure and communications channels are repeated from the smallest productive unit to the largest. This allows for a great deal of economy in the analysis as well as easy comparisons among System 1 through 5's activities along both horizontal and vertical lines. The organisation's systems 5/4/3 represents the metasystem of the present activities. The VSM is summarised in Table 1 below:

<b>System</b>	<b>Description</b>	<b>Purpose</b>
<b>One</b>	<b>Implementation</b>	‘primary activities’ which the organisation exists to provide
<b>Two</b>	<b>Coordination</b>	Ensures different primary activities do not conflict with each other and dampens oscillations.
<b>Three</b>	<b>Control/Cohesion</b>	Builds the primary activities into a greater whole by linking subsystems with the system of which they are a part.
<b>Three*</b>	<b>Monitoring</b>	By-passes unit management and engages with the reality of the unit’s activities.
<b>Four</b>	<b>Intelligence</b>	Intelligence looks outside the organisation and into the future.
<b>Five</b>	<b>Policy</b>	The organisational ethos and distinctive identity. Strategic decision making is a process of matching current reality to future needs.

**Table 1 Summary of the Viable Systems Model**

Hoverstadt and Bowling (2002) outline a modelling process which starts with system 1, the identification of an organisation’s ‘primary activities’. That is those products or services the organisation exists to provide. By unfolding the complexity it is possible to analyse where an organisation makes decisions and allocates resources. To comply with the VSM, each System One should contain all of the Systems 1 to 5. But to ensure that each system 1 does not conflict with each other, system 2 coordination, dampens oscillations. Typical coordination mechanisms include common standards, protocols, operations and production scheduling, as well as a common language and shared cultures to ease communication between operational units.

The management processes that build the primary activities into a greater whole are represented by system 3, the ‘inside and now’ of an organisation, which links the various subsystems with the system of which they are a part. To determine whether the activity is effective it is monitored by System Three\*, which to be effective has to be sporadic, in-depth activity that bypasses unit management and engages with the reality of the unit’s activities. In other words, system 3\* ensures that what managers’ think is happening is actually happening.

The ‘inside and now’ of the organisation, represented by system 3, is balanced by system 4 intelligence that looks outside the organisation into the future. The balance between the ‘here and now’ and ‘the future’ is maintained by the three/four

homeostat. Strategic decision making is a process of matching current reality to future needs. To alert the system of a threat or opportunity which has implications for the whole there is an 'algedonic' signal. It signals the need for a rapid response and can come from any part of the system at any level of recursion. Strategic decision making is the responsibility of system 5. Policy reflects the organisational ethos and its distinctive identity. Both are powerful and necessary attenuators of variety for organisations (Hoverstadt & Bowling, 2002).

The strengths of the VSM include its suitability for application to a variety of organisations. This demonstrates evidence of its practicality and usefulness as a diagnostic tool. Moreover, by portraying the organisation as an open system interacting with its environment, the VSM is able to capture the dynamics and determine whether the organisation is adapting sufficiently to maintain its viability.

Furthermore, according to Beer (1979) the organisation is not only influenced by the environment but is also able to influence it. This enables the organisation's process in relation to learning and adaptation to be examined. The success or otherwise in this regard is key to a successful viable organisation. The VSM is also able to consider the entire organisation because of its recursive structure and capture the variety in the control channels. The VSM not only captures the information flows between the organisational parts, but also those between the parts and the environment. Consequently the model enables a holistic view of the entire system.

However, it is important to recognise that there are limitations with the VSM. While the VSM allows the diagnoses of the current and desired state, it does not provide support on how to move from the former to the latter. Moreover, being set at a higher level of abstraction it does not assist in the design of detailed organisational infrastructures regarding personnel, communication and information. Nor does it deal with the content of organisational activity, such as what policies are likely to lead to a certain desired outcome (Schwaninger & Rois, 2008). It has also been suggested that it does not provide ways of engineering the process of negotiation between the different viewpoints of the organisation (Checkland, 1993) and that it could be exploited by an elite group in the organisation (Ulrich, 1981).

## **2.11 Chapter Conclusion**

A number of constraints in organisational resilience were identified and the systems approach useful in analysing organisational crises was introduced. It is argued that organisational resilience is an emergent property or outcome from multiple environmental factors, but that resilience can be undermined by latent or resident pathogens caused by ‘sloppy management’, which may incubate in the system over lengthy periods before manifesting themselves as crises. It is also argued that although difficult to foresee, organisations have the opportunity to learn from crises, and could demonstrate adaptability by changing their culture to reflect the lessons identified and learned from crises; thus ensuring they were more crises prepared. By taking a proactive approach to potential risks and ensuring personnel were suitable trained and capable of taking immediate action to tackle crises it is possible to increase organisational resilience. The chapter concludes by introducing the systems models used in this research. It is argued that these systems models enable the comparison of the ‘real world’ SCG with an ‘ideal’ paradigm, which engenders a level of understanding and critical assessment of the real world system of the SCG. The following chapter explains the methodology used in the research.

## **Chapter 3 – Research Methodology**

This chapter examines how, by using qualitative methodology, I was able to take an exploratory and flexible approach to the research. According to Morison (1986) research is a complex enterprise involving a dynamic interplay between personal values, theories and practical data gathering skills. By adopting a qualitative research methodology, incorporating interviews, observations and documents, I was able to gain rich data from which I was able to identify a number of emerging themes. Moreover, by using a number of interviewees and observations at a number of different types of exercises and training events, as well as reviewing documents, I was able to ‘triangulate’ the data obtained to address potential concerns about its ‘validity’ (Denzin & Lincoln, 1994; Gilbert, 1999; Robson, 2002). I then used a flexible approach to integrate the themes with a number of systems models which enabled a greater level of understanding and analysis in relation to whether the introduction of SCGs has improved crisis management capabilities and the government policy of enhancing resilience is being achieved.

### **3.1 Research Aim**

The research aims to examine the capability of SCGs to determine whether the current civil contingencies infrastructure, including the *Integrated Emergency Management* framework and training arrangements, are effective in ensuring that the SCGs are best prepared for crises. Particular attention is given to the organisational learning of the SCGs and whether lessons learned are reflected in changes of behaviour, beliefs and culture. This thesis examines the SCGs to determine whether they provide Scotland with effective crisis management and resilience capability as envisaged by Government.

### **3.2 Research Strategy**

My research strategy defines how I tackled the whole project and the source data obtained (Trochim, 2000). In this research into the effect of introducing SCGs in relation to their crisis management capabilities and the delivery of resilience, there were no fixed elements or specific hypothesis or propositions to be tested; rather it

was exploratory in nature. I intended to gather data using qualitative methods, interviewing key participants involved in the SCGs, taking observations of members at training and exercises, and analysing related documentation. From my analysis of the data I would identify emergent themes, to which I would apply a number of systems models and subject them to closer analysis in relation to the current theory and concepts associated with crisis management and resilience. My research strategy was, therefore, to explore the topic using a flexible and adaptable approach, and seek to interpret and explain the meaning of the emerging themes from the data.

### **3.3 Why Qualitative Research Data?**

Before initiating the research I considered which theoretical perspective would be most suitable. There are a number of perspectives available to the researcher and each of them may result in widely differing findings. Therefore, it was important that I used the most appropriate perspective and matched the mode of enquiry to my research strategy (Adams & Schvaneveldt 1985). However, I was also aware that the role of the theory is to make things that were hidden visible, to define some patterns and give some meaning to the sorts of observations that researchers continually make when investigating society. Therefore,

***“...by shifting theoretical perspective the world under investigation also changes shape. The components of the world being investigated combine and recombine into new patterns as they are viewed through different theoretical perspectives. Different theories bring different aspects of the world into view”*** (Gilbert 1999:11)

Because I sought to understand the processes and organisations associated with SCGs, I focused on the meanings of the interviews and observations to obtain different perspectives of the SCG. In other words, I was attempting to understand how people interpreted the social world of the SCG that they inhabited and the meanings it held for them. This interpretive approach has been described as phenomenology which, ***“rests upon careful descriptions and analyses of consciousness, with a focus on the subjects’ life world”*** (Kvale, 2007: 148). It has had a major influence on general qualitative methodology and ***“has much to offer in answering certain kinds of research question about subjective experience which may be highly relevant to some real world studies”*** (Robson, 2002: 196).

According to Kvale (2007: x) qualitative research is intended to approach the world “*out there*”, that is in the real world rather than in laboratory settings. It seeks to explain social phenomenon “*from the inside*” by deconstructing people’s understanding of their world, actions and experiences. This was what I sought to do with the SCG. Therefore, I considered that qualitative methods would allow flexibility in the research process and thus the opportunity to pursue emerging insights. With such flexibility I would be able to employ methods “*in response to the changing nature of the context*” (Cassell & Symon, 1994: 4).

Furthermore, Kvale (2007: 19) suggests that the interviewer’s approach to new knowledge will depend on whether the role of miner or traveller is adopted. The former considers knowledge as ‘nuggets’ uncovered by the miner but unpolluted by any leading questions. The latter explores unknown domains and asks local inhabitants questions, the meaning of which he then interprets. The knowledge is therefore either “*objective real data or subjective meaning*”. In this research I felt that the traveller approach was most appropriate because I was seeking to interpret the meanings and emerging themes identified. From which I would gain a comprehensive understanding of the SCG from multiple perspectives.

An alternative and contrasting approach I considered was the positivist perspective, which assumes that there are patterns in society that can be measured, and data about these patterns can be collected in an unbiased and value-free way, preferring quantitative to qualitative data gathering methods (Robson, 2002). However, I was of the view that because the research was exploratory and the research question unknown or ill-defined, qualitative research methods would bring sufficient adaptability for me to respond to any emerging themes from the research. Therefore, the qualitative perspective underpinned my research.

### **3.3.1 Deductive & Inductive Approaches Used to Research the SCGs**

In seeking a comprehensive understanding of the SCG, I used a combination of deductive and inductive approaches. This reflected Mills (1970) who said the researcher should:

*“...try to think in terms of a variety of viewpoints and in this way let your mind become a moving prism catching light from as many angles as possible” (1970:235-6)*

Deductive research starts from the more general and works towards the more specific (Trochim, 2000). The process begins with a general theory, problem or question which needs to be investigated. It is refined to a hypothesis which can be tested (Robson, 2002). Drawbacks of deductive research include the subjective nature of theory which influences the hypothesis and research results, and the need for specificity means the research cannot react to external or unforeseen factors, which were not considered at the start of the process.

On the other hand, inductive research can be seen as a reversal of the process undertaken in deductive research. Inductive research is from the ground up and describes the process of making observations from the research area of interest. From these patterns emerge which can be developed into hypotheses that can be explored before finally ending with the development of general theory (Gilbert, 1999).

Inductive research is also flexible because the research question may change during the study to reflect the types of questions needed to understand the research problem (Creswell, 2007). Reservations about inductive research include the difficulty in drawing conclusions from the observations. To counter these concerns the number of observations can be increased. However they can never be entirely eliminated. Therefore, all inductive research has to come with a caution that its conclusions apply over the period of observation and within the context of that observation (Gilbert, 1999).

In practice deduction and induction often get intertwined and a combination of inductive and deductive reasoning can be used effectively. Initial identification of issues using an inductive and exploratory approach can then be tested against some data using deduction (Gilbert, 1999). This was the approach that I used during this research. The starting point was the introduction of the SCGs and what their effect had been according to those that inhabited that social world. The data I obtained via interviews, observations and documents indicated general themes. My intention was

to identify these emerging themes and subject them to closer analysis in relation to the current theory and concepts associated with crisis management and resilience. Consequently, in line with Miles and Huberman (1994), my research design was neither highly inductive nor highly deductive, rather it was intended that I would incorporate both approaches because:

*“Much qualitative research lies between the two extremes. Something is known conceptually about the phenomenon, but not enough to house a theory. The researcher has an idea of the parts of the phenomenon that are not well understood and knows where to look for these things - in which settings, among which actors”* (Miles & Huberman, 1994:17)

### **3.3.2 Ensuring Reliability and Validity when Gathering Data**

I was aware of the debate regarding the data collection methods that researchers should adopt. Some argue that any single research project should focus on as few data collection methods as possible, preferably one; whereas others are for using diverse collection methods to prevent the data being skewed or adversely affected by any single collection method (Denzin & Lincoln, 1994).

In this research I decided that I would use qualitative methods of interviews and observations from a number of sources, as well as related documentation. My view was that using data from a number of separate individuals and a number of separate observations would lend validity and reliability to the findings and counter the concerns highlighted previously by Gilbert (1999). Validity is concerned with whether the research findings are really about what they appear to be about. Whereas reliability relates to the consistency of the results, that would it be repeated if some one else undertook the research. Generally the concern about validity and reliability are the effect that I, as the researcher, would have on those being observed or interviewed. In particular, the distorting effects of selective perception and interpretation, as well as my limitations, as the observer, to witness all relevant aspects of the phenomena in question.

To ensure reliability, it is suggested that procedures should aim to make the data and interpretation more transparent (Flick, 2007). A standard way in which this form of

reliability is assessed is through triangulation of methods. In this research, triangulation was achieved through interviews, observation and document sources. Such data triangulation is a valuable and widely used strategy which helps to counter threats to validity and reliability (Robson, 2002).

### 3.3.3 Field Work – Accessing Participants

In field work one of the first challenges of the research is access. It has been suggested that this is a two part process (Hornsby-Smith, 1993; Cassell, 1988) of getting in (achieving physical access) and then getting on (achieving social access). Cassell also provides some useful advice to the researcher in what is actually required to successfully access a group:

***“among the characteristics needed to penetrate a closed access group are brute persistence and blind compulsivity...and a certain imperviousness to rejection”*** (Cassell, 1988: 93-5).

One reason preventing access may be that for some closed groups research may be ideologically anathema (Hornsby-Smith, 1993); whereas others may see it as a threat to operational routines or the potential for damaging disclosures (Lee, 1992). Importantly to me as the researcher, where distrust among different parties exists, bargaining about access could take considerable time (Form, 1973). However, this can be overcome by using an appropriate sponsor who can act as a ‘bridge’, ‘guide’ or ‘patron’ to the community (Kvale, 2007) or alternatively, the researcher should spend time in the community forging links to overcome fears of researcher manipulation, that is, ***“one should cease to be a stranger”*** (Wagstaffe & Moyser, 1987: 193-5).

Gaining access is therefore an important process that needs to be actively managed by the researcher. Brannen (1987) describes the management of access as a political process, in which:

***“The observer...has to enter the symbolic world of those he is to observe: he must learn their language, their customs, their work patterns, the way they eat and dress and make himself respectable. There is an initial period when he must understand what expectations are held of him and when he is taught how he can behave. But he also has to teach respondents so he can carry out his observer role effectively”*** (Brannen, 1987: 169)

In my case gaining access was eased because I was a serving police officer and therefore already a member of one of the organisations that formed the closed group. I was also trained and experienced in *Integrated Emergency Management* and was well aware of the response structures of the SCG, having been involved in developing training and exercises for them, as well as participating in them too. Therefore I understood the language and customs, and was also known in other organisations because of my past involvement in emergencies planning and attendance at numerous training events. Not only had I ceased to be a stranger but because of my previous experience I could never have represented myself as a ‘professional stranger’. For me the challenge was not getting access but in ensuring that when ‘writing it up’, I was able to balance or otherwise negotiate, what Van Maanen (1988) describes as a tale of two cultures, namely mine and the research subject.

### **3.3.4 Research Ethics & Confidentiality**

Having established access, it was important that I considered the ethics of the methods to be adopted before continuing with the research. I was aware of contrasting views to research ethics. Some consider it unethical to conduct any research not giving the subjects the right to refuse to be studied, while at the other extreme are those who maintain that ***“any investigation that does not deliberately damage the reputation of those studied is ethically justified”*** (Denzin, 1970: 33). Moreover, interview research is saturated with moral and ethical issues and the importance of the researcher as a person is magnified because the interviewer is the main instrument for obtaining knowledge (Kvale, 2007).

I was of the view that addressing ethical concerns was essential because of the complexities of ***“researching private lives and placing accounts in the public domain”*** (Mauthner et al., 2002: 1). To guide me in my research I was able to draw on my experience as a police officer; as such I was personally subject to the *Scottish Police Service Code of Ethical Practice*, which requires my personal commitment and observance of the following principles: integrity, transparency, accountability, responsibility and impartiality (ACPOS, 2009). Therefore, I used this code as my ethical framework during the research.

The sensitive nature of my research meant that the confidentiality of interview data and the anonymity of the interviewees were essential. Not only would they be discussing potential weaknesses in their own organisational responses to crisis but possibly partner organisations too. The confidentiality meant that private data identifying the interviewee would not be reported (Kvale, 2007). Moreover, to avoid any ethical dilemmas relating to disclosure, all participants were given an assurance that their responses would be completely confidential, limited to use for research by the researcher only.

To counteract any fears about deception I provided full information about the research design and purpose to every subject (Kvale, 2007). It was an important part of my research process that interviewees had complete trust in my integrity and could be confident of my intentions.

Finally I obtained informed consent from each of the interviewees and provided each with a summary of the research and obtained a signed consent form which detailed the conditions of participation and the protection that each would have. (**Appendix C** details the research summary and consent form).

### **3.4 Qualitative Research Interviews**

Having put in place and assured the interviewees of the ethical nature of the research, I then prepared the interviews. The qualitative research interview is a construction site for knowledge and has been defined *“as an interview with the purpose of obtaining descriptions of the life world of the interviewee with respect to interpreting the meaning of the described phenomena”* (Kvale, 2007: 8).

However, with interviews it is also recognised that the *“interview setting, skill, and training of the interviewer, openness and frame of mind of the respondent, the subject under study, and a host of other mood situational factors enter into the process of collecting data via the interview”* (Adams & Schvaneveldt, 1985: 213). Moreover, *“for most researchers, the day-to-day demands of fieldwork are fraught regularly with feelings of uncertainty and anxiety”* (Shaffir & Stebbin, 1991: 1-2).

In my case, I was fortunate to have benefited from extensive professional training and experience in conducting many types of interviews. As part of my professional development I have been trained in conducting investigative interviews, selection interviews, counselling interviews and research interviews, as well as cognitive interview techniques to enhance the quality of information obtained. I have also been trained in taped recorded interviews, the training for which included accurate noting and transcription of the information obtained during the interview. This minimised any anxiety I may have experienced in relation to the interview process. My experience also contrasted with the view that ***“a weekend course and an introductory interview textbook may be considered sufficient to embark on a PhD project based on interviews”*** (Kvale, 2007: 47).

I considered that the use of qualitative interviews allowed the interviewees to respond personally to the questions posed, which gave me the opportunity to note any non-verbal signs apparent during the interview. Additionally, because the interview was mutually arranged with me and respondent there was face-to-face contact allowing more complicated questions to be put. Consequently I felt that this method added depth to the research. Moreover the personal interviews ensured there was scope for the interviewee to locate records and documents as supplementary evidence before my arrival for the interview.

However, I was aware that there are disadvantage with all interviews. For example, the lack of standardisation of personal interaction in any interview raises concerns about comparability and interviewer biases are difficult to rule out. Moreover, the time taken to conduct a face-to-face interview may be problematic. Finally the rich data collected may result in lengthy data analysis (Robson, 2002). However, I felt that these could be countered by the degree of professionalism in the conduct of the interview itself, setting out the guidelines of the interview discussion, and finding ways in which to allow the participant scope without drifting too far off topic.

Having decided upon interviews to obtain data, I then considered which format the interviews should take. The three main varieties, which can be differentiated by the degree of structure imposed on its format, are the standardised or structured interview,



which may have been triggered from a more open unstructured approach. The interviewer's use of supplementary questions or probes is curtailed (Robson, 2002). Consequently the useful data or emergent topics may be missed and this can negate the usefulness and exploratory ability of interviewing (Trochim, 2000).

### **3.4.1.3 Semi-structured**

The semi-structured interview has a set of predetermined questions and the interview process is loosely governed by those. However, there is flexibility to cover emergent subjects as and when participants' raise them (Trochim, 2000). The interviewer has a more proactive role in starting and guiding the interview and can identify emergent areas of interest not previously considered. The order of questions can be modified dependent on the interviewer's perception of what seems most appropriate. Moreover, wording can be changed and explanations given to ensure that the interviewee understands the interviewer's intention and meaning. In addition, if necessary the interviewer can omit questions or add new ones (Robson, 2002).

For the purpose of this research I decided to use the semi-structured interview. This allowed me to gather more subjective views from the interviewees, and enabled greater flexibility and the opportunity to clarify any ambiguity. It also meant that the interviewees could define their own situation and freely express their own opinions and understanding. Moreover, it allowed me, having previously studied the situation, to be alert and sensitive to inconsistencies and omissions of data that might be required to clarify the problem. I was able to change the order of the questions, if necessary to ensure appropriateness to the interview subject; *“as there is evidence to suggest that the order of questions may affect the response rate”* (Moser & Kalton, 1971: 346).

### **3.4.1.4 Telephone Interviews**

However, due to logistical difficulties in being able to arrange mutually suitable times and venues, two of the interviews were conducted over the telephone. These interviews followed exactly the same procedure as the others. Discussions had taken place to arrange access and the subjects were provided with a research summary and

consent form. However, I was aware that during these interviews I would not have the benefit of visual cues. The other disadvantage usually associated with telephone interviews, building rapport, was not a factor in this case. I knew both of the subjects and had discussed the research project with them while making the initial arrangements for the interview, which had the advantage of cutting down on the time required by me and more importantly for the interviewee (Wengraf, 2001).

#### **3.4.1.5 Pilot**

Before commencing any of the interviews I decided to pilot the question set. I felt that this would allow me to refine my data collection plans with respect to both the content of the data and procedures to be followed (Yin, 1994). I did this by identifying a number of subjects who worked in the SCG but would not be taking part in the research and having the question set reviewed by someone with knowledge of multi-agency working and *Integrated Emergency Management* but who had never been a member of an SCG to determine whether the questions would be easily understood and elicit appropriate data. I intended that the pilot would:

*“...see how it works and whether changes are necessary before the start of the full-scale study...It may also indicate the need for additional questions or the elimination of others”*  
(Kidder, 1981: 162).

In this case the pilot tested the quality of the questions to determine any inadequacies or misinterpretation of questions. In particular, whether they could be easily understood in terms of wording and instructions, and how the questions linked together in the interview setting. The pilot also provided me with an opportunity of using the question set and rehearsing the interview structure.

Having piloted the question set the decision of who would form the research sample for interview and observation was taken.

#### **3.4.1.6 Sample**

The use of sampling is dependent on the purpose of the research. Probability samples are best for description of sample characteristics and explanation of the testing of

empirical hypotheses. On the other hand, purposive samples are best when the project includes exploration or theory development, developing and testing survey research instruments and selection of small number units (Arber, 1993).

However, in this research I had no intention of making statistical generalisations to any population beyond those surveyed. Therefore I decided to use a purposive sample, rather than a probability sample. Small-scale surveys commonly employ non-probability samples and they typically involve the researcher using his judgement to achieve a particular purpose. In doing so a sample is built up which enables the researcher to satisfy the specific needs of the project (Robson, 2002). In this case I sought to gain a wider understanding of the social processes and actions related to the SCGs, so using a probability sample would be unrealistic. Therefore, a purposive sample strategy was deemed more appropriate (Arber, 1993).

Consequently I selected the interviewees specifically because of their membership of the SCGs. My selection ensured that Scotland's 8 Strategic Coordinating Groups contributed. The sample included 11 types of organisations, reflecting Category 1 and 2 responders, as well as the military and government, which ensured that the views from each of the partner agency were represented. Table 2 details the sample:

<b>SCGs: 8</b>	<b>Organisations: 11</b>	<b>Interviewees: 41</b>
Strathclyde	Police (inc BTP)	11
Lothian & Borders	Fire & Rescue Service	2
Tayside	Scottish Ambulance Service	2
Grampian	Maritime & Coastguard	3
Central	Agency (MCA)	
Fife	Health Service	2
Highland & Islands	Local Authorities	4
(Northern Constabulary	Scottish Environment	1
area)	Protection Agency	
Dumfries & Galloway	Utilities	2
	MOD	1
	Scottish Government	3
	SCG (coordinator/advisor)	10

**Table 2 – The Sample Distribution**

A total of 41 interviews were conducted lasting between 45 minutes and 2 hours each. Ironically the 45 minute interview was due to the subject being called to an SCG

meeting in relation to the ongoing pandemic flu. The locations of the interviews were mostly at the interviewee's place of work, with 38 being held there and 1 at a mutually convenient hotel (for a subject with responsibility for Scotland and NI). Due to logistical difficulties in arranging personal interview 2 others were conducted over the telephone. Of the 42 subjects contacted originally only 1 declined to participate because he had only recently taken up the post which brought with it automatic membership of the SCG. The subject felt he would not be in a position to contribute to the research because he had not yet been involved in an SCG.

### **3.4.1.7 Interview Schedule**

My initial consideration was to use Pauchant and Mitroff's (1992) attitudinal study as the basis of the question set. They developed a questionnaire for each level of the Onion Model, strategies, structure, culture, and core beliefs and defence mechanisms, with the intention of enabling organisations to compare themselves to an ideal crisis prepared organisation. However, these totalled 100 questions for all four layers, in addition to another 37 questions to make the comparison. Apart from the length and complexity of the questionnaire, I was concerned that the terms used in the attitudinal questions would lead the interviewees in their responses. For example 'we can handle any crisis', crisis management is someone else's responsibility', 'is there a well-established structure for crisis management?' and 'is crisis management integrated into the overall strategic management process?' My objective was not to determine whether each member considered their own organisation was crisis prepared, rather it was to gather a breadth and depth of rich data based on the interviewee's own perceptions of the SCG. This would include not only the component parts of the SCG, but also how they interacted as a system and delivered outcomes.

The key issue with SCG membership is that it post-specific rather than based on crisis management or resilience expertise. Membership of the SCG rests with the chief executives or equivalent of the various member organisations. A condition of the SCGs membership is that they must be able to make executive decisions and commit resources on behalf of their own organisation to support the SCGs response to crisis (Scottish Executive, 2007). Therefore, the question set that was developed sought to elicit data on subjects' experience and knowledge of crisis management and SCGs,

their views on training and skills necessary for effective crisis response, and any other related issues considered important by the interviewees.

I was particularly interested in how the members would describe themselves and their role within the SCG. What their understanding was of the SCGs functions and processes, together with their knowledge of the other members and organisations. Because according to Weick (1993), if everyone knows the roles and responsibilities of all in the partnership, resilience will be enhanced because even in the event of a crisis the role system remains intact in the individual mind (Weick, 1993). Moreover, it is an expectation that all parties understand their respective roles in the SCG and the 'fit' between their own organisation and the SCG (Scottish Executive 2007).

The nature of the relationships in the SCGs was important because conflict among organisations responding to crises is a recurring problem (Comfort, 1990). But conflict can be mitigated through 'Boundary Spanners' that is those who link the various organisations within the network through encouragement and promotion of mutual benefits (Mulford, 1984; Weick 1993). Therefore, I hoped to elicit information from members describing their personal and organisational relationships with the other SCG members.

In addition, I was interested in how they perceived the current SCGs structure and whether they would make any changes to it; and their views on the strengths and areas for improvement more generally of the SCGs. Not only their personal experience, but also their views of what Turner (1994b) described as 'sloppy management'; examples of which include communication failures, groupthink and complacency.

The final element of the question set was in relation to training and barriers to learning. A key element of collaborative networks and adaptive capability is having sufficient trained resources and learning lessons from crisis. Learning takes place at an individual and organisational level. At an individual level crisis training should be modelled on ill-structured and complex events (Turner, 1978; Gredler, 1992). While at an organisational level a number of barriers to learning have been identified, including rigid core beliefs, ineffective communications and defence mechanisms (Smith & Elliott, 2007). The questions around training sought to elicit data from the

interviewees on the value and effectiveness of training at an individual and organisational level, as well as whether there were any barriers to learning. These questions revealed a rich seam of data (**Appendix D** details the question set).

The question as to whether the interviews should be taped was raised during the pilot. The consensus was that there was a reluctance to be taped, given the sensitivity of the material being discussed, which may include criticism not only of the respondent's own organisation but also of other organisations and possibly individuals within them. This together with two separate high profile cases of data loss involving respondent organisations, which had recently been reported in the media, led to the decision not to tape the interviews. Therefore, rather than ask each respondent on a separate interview-by-interview basis I took the decision to adopt a standard approach with every interview and instead of recording them, extensive notes were taken. A similar approach was used by Van Maanen (1983) in his study of the Union City police department during which he used observations and interviews, together with informal interactions, which were not tape recorded.

While it could be argued that to inexperienced interviewers tape recording would ensure everything was captured, accepting the loss of body language and visual cues, and therefore be the more beneficial approach. In my case because of my experience of conducting interviews I decided to use extensive notes, which I personally transcribed within 6 hours of the interview. Kvale (2007: 94) highlights that while interviewer bias may be present, the interviewer's active listening and remembering skills also had the advantage of working as a 'selective filter' where the interviewer could *“potentially retain those very meanings that are essential for the topic and the purpose of the interview”*. My training meant that I was better placed to overcome interview bias and use my experience in retaining meanings and issues mentioned in the interview.

In addition to the interviews observations were taken at a number of SCG training and exercising events.

### **3.5 Non-participant Observation**

Observations have been described as exceptional for studying processes, relationships among people and events, and the organisation of people and events (Jorgensen 1989). Since I was interested in the activities and behaviour of people, and not just what they may have to say in relation to the SCG, I considered non-participant observations to be a highly useful form of data collection, because they centre on the ability to view what the individuals or groups do, record their actions and then find some way to describe their activities and analyse what is observed (Robson, 2002).

I was someone who took no part in the activity under observation but whose status as a researcher was known to the participants. However, this in itself was not problematic as most SCG events have a parallel observer's programme, which is used for shadowing and learning by others. At each of the events I attended there were at least two other observers present.

Observations were taken at a number of events, which were selected to ensure a geographical spread across different SCGs and include different types of events. There was some overlap between interviewees and observations, with many of the interviewees participating in one or more of the exercises. However, given the scale of the exercises observed, there were many more participants involved in them that had not been interviewed. For example, Exercise Castle Rock involved 3 SCGs and almost 1000 people including UK Cabinet level ministers. The New Salesman Exercise involved 160 strategic representatives from across Scotland together with those from the military and Scottish and UK Government. Almost the entire chief police officer cadre in Scotland attended the ACPOS Counter Terrorism Command and Control Workshop. Furthermore, I was conscious that I could not possibly see absolutely everything that happened at the exercises. But I took the view that my collective observations would balance this and provide a realistic representation of all the issues that arose. These observations, together with the interviews and related documentation including exercise debriefs, provided sufficient rich data to make comparisons with the ideal or theoretical position and the real world as experienced by those involved in the SCGs. Unfortunately 2 exercises which I had arranged to observe were cancelled because of the demands on resources in dealing with the

ongoing flu pandemic. Ironically one was a national exercise with a flu pandemic scenario due to take place over 27 April to 22 May 2009. The other a maritime exercise hosted by Dumfries and Galloway SCG scheduled for 6 - 7 October 2009. However, those exercises and events that I took observations at are summarised in Table 3 below:

## Observation Summary Table

<b>Exercise</b>	<b>Subject/Type</b>	<b>Date</b>	<b>Exercise Aim</b>
National Ex Ancient Mariner	Environment /weather	2 & 3 March 2009	Aim: evaluate responders capabilities to deal with the challenges resulting from a severe weather incident impacting on regulated CNI
National Ex New Salesman	Terrorism	7 May 2009	Aim: preparation for forthcoming exercise. Crisis Management phase
Fife Ex Double Six	Pipeline	13 May 2009	Aim: Joint Test of Contingency Plans
Strathclyde Ex Short Sermon	CBRN	2 & 3 Sept 2009	Aim: compliance with the Radiation (Emergency Preparedness and Public Information) Regulations 2001
National Ex Green Gate	Decontamination Integration	16 Sept 2009	Aim: consider Scotland wide arrangements for managing a CBRNE decontamination incident, specifically decontamination, mobilisation, deployment & coordination
ScoRDS Strategic Crisis Management (Pilot)	SCG Consequence Management in Terrorism Incident	7 September 2009	Strategic manager: to ensure top-level managers responsible for their organisation plans can respond to emergencies effectively
ScoRDS Strategic Management (Strathclyde)	SCG Consequence Management in Terrorism Incident	29 September 2009	Using a simulated emergency scenario exercise as a core structure with specific facilitated discussion, direction and learning aimed at key issues.
ScoRDS Strategic Management (Strathclyde)	SCG Consequence Management in Terrorism Incident	30 September 2009	As above but with different participants.
ACPOS CT C&C Workshop	Counter-terrorism command & control	21 January 2010	Aim: to develop a command and control structure for counter terrorist operations in Scotland, which can be tested during Exercise Castle Rock
UK Government Ex Castle Rock	Counter-terrorism	7 – 9 September 2010	Aims: to test and evaluate: (i) Command & Control (C2) arrangements within a multiagency CT structure; (ii) the efficiency of information & intelligence flows; (iii) the interoperability across partner agencies in covert and overt terrorist investigations/incidents; and (iv) regional preparedness in response to a terrorist attack, in particular the consequence management and civil contingency issues

**Table 3 Observation Summary**

### **3.6 Data Gathering and Analysis**

As well as being a police officer with experience of investigating and reporting complex cases, I am also an accredited project manager and have managed large-scale multiagency projects involving many people, documents and tasks. Therefore, my approach to data gathering and analysis was based on my police and project manager experience. I used the same techniques in the collation and management of interviews as I did as a police officer obtaining multiple witness statements. I sought to allow the interviewee to provide me with information, without it being distorted by my knowledge or even writing style; as in a police statement the interviewee's words were noted as spoken, without changing the grammar or correcting slang. Every action was recorded as I would do in an investigation to ensure that there was no break in the evidential chain and that my actions could withstand judicial scrutiny in a court of law.

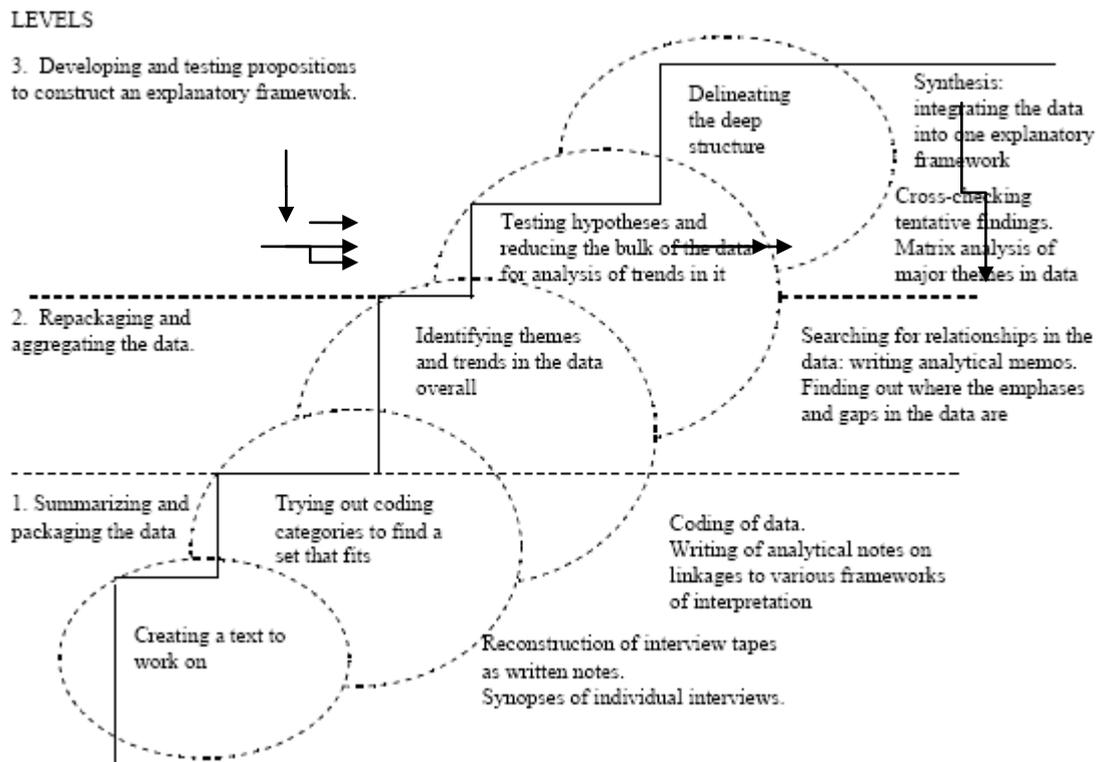
In managing the interviews, having identified the interview sample set, I contacted each of them personally and made arrangements for the interview. I provided them with as much information as I could to ensure that they could prepare and be comfortable for the interview. The intention was not to surprise them or make the interview difficult but to obtain their interpretations of an environment that they knew intimately. I was conscious that my knowledge of the SCG was different to theirs because I did not share their experiences, culture and perceptions. So while I could broadly understand the environment and the context of their responses I knew their view was unique to them. Therefore, at each interview I assumed that the interviewee had information at deeper level that they may not even be aware of and my role was to obtain as much of it as possible without distortion, using the question set as a framework to keep the interview reasonably focused.

In relation to the observations that I undertook, my approach was to maintain a continuous log of all activity that I could see. This reflected my training as a police officer dealing with major incidents. I noted everything I could whether it appeared relevant or not. I assumed that what I saw at any particular point may later become relevant but at the time of noting it I could not know. This is similar to dealing with large enquiries, where numerous sources of materials are initially gathered from

which closer inspection later may reveal a nugget of evidence. Other documentary sources used during the research included the legislation, formal guidance including *Preparing Scotland*, exercise briefings and debriefing reports. These enabled me to triangulate the data obtained from the interviews and observations, and highlight variances between the theoretical ideal world and the real world occupied and experienced by the interviewees and observed by me. All my activity and data gathered was managed as if it was part of a large scale project, which the research essentially was.

One of the key characteristics of qualitative research is that data gathering and analysis should be concurrent activities (Coffey and Atkinson 1996). Consequently my analysis began after the first interview. The starting point for analysing the data was my transcription of the interviews and observation notes immediately after the interview or event. In every case the transcripts were completed within 6 hours. Having completed this process, I re-read the transcriptions highlighting topics or phrases that struck me as interesting or unusual without looking for anything in particular. This allowed me to identify ‘what went with what’ and ‘what was there’ or indeed was absent. Having undertaken a first cut of the data I then began making comparisons to identify underlying relationships and consider any emerging themes. Having worked through the data, I would disagree with the first part of Lee’s view that once qualitative data is collected it is a relatively simple process of analysis, while agreeing with the second part that it is characterised by being time consuming and with the emphasis on the process being clear, concise and repeatable (Lee, 1999).

Rather than adopt a systematic analytical mode such as categorization and conversational analysis, the interview analysis was conducted without following any specific analytical method. This allowed me to move freely between different techniques. Kvale referred to this approach as *bricolage*, that is, **“the use of a multiplicity of ad hoc methods and conceptual approaches”** (Kvale, 2007: 115). The process reflected Figure 5 below, Carney’s (1990) Ladder of Analytical Abstraction, cited by Miles and Huberman (1994: 92):



**Figure 5 - Carney's (1990) Ladder of Analytical Abstraction**

### 3.6.1 Data Gathering - When to Stop?

The difficulty with gathering qualitative data where there is no pre-determined sample size or number of observations, is deciding when to stop gathering data. In this case when it became clear that the interviews and observations were not yielding any new data, I decided to stop gathering data. However, before finally deciding to do no further data collection, I reviewed the empirical evidence which had emerged during the fieldwork phase with documentation such as the Preparedness Scotland Report and Audit Scotland, for example, which indicated that there were no obvious omissions from this study and that the sample was not uncharacteristic.

### 3.7 The Use of Systems Models as Frameworks of Analysis

Having gathered the data and identified a number of emerging themes I then used systems models as frameworks of analysis. The first model I used was the Formal Systems Model (FSM) (Fortune & Peters, 1994 & 2005), which focuses on common

areas of failure within systems. It combines the core systems concepts, which are necessary if a set of activities is to comprise a system capable of purposeful activity without failure. I used this model because it enables the researcher to take a holistic approach and describe a failure and explain why it occurred (White, 1995).

Thereafter, I applied the Viable Systems Model (VSM) (Beer, 1979, 1981 & 1985) as an additional level of organisational analysis of the key processes, communications and information flows within the structure and relationships between them.

The use of these systems models assisted me in gaining a greater level of understanding of complex situations. They enabled me to draw a comparison of the 'real world' problems associated with the SCG with an 'ideal' paradigm, which is capable of purposeful activity without failure or problem. The comparison between both states engenders a level of understanding that enables the critical assessment of the real world system. The analysis is outlined in full in chapter 6.

### **3.8 Chapter Conclusion**

This chapter highlighted that my research strategy was exploratory in nature, without fixed notions, using a flexible and adaptable approach to consider, interpret and explain emerging themes from the SCG. A qualitative approach was adopted, which utilised interview and observation techniques in order to understand the roles and relationships from the point of view of the subjects. It was argued that the qualitative methodology was flexible, allowing emerging themes to be pursued and organisational complexities and changes to be accommodated. Furthermore, because the analysis was both inductive and deductive drawing on an interpretative framework, it enabled themes to be generated from the empirical data. These could then be considered against current crisis management theory.

Importantly, the use of data triangulation through interviews, observations and documents sought to address any concerns regarding data reliability and validity. However, given the sensitive nature of the research and data obtained, a firm ethical framework was established to ensure that no information disclosed by the participants would be attributed to them and would be treated in the utmost confidence. In addition, detailed notes were maintained regarding the purposive sample. Finally the

systems approach used for further analysis of the data was outlined. The systems context of the SCG is considered in the following chapter and emergent themes summarised.

## Chapter 4 - The Systems Context of the SCG

This chapter examines the SCG using the first 3 levels of Pauchant & Mitroff's Onion Model (1992): strategies; structure; and culture. It firstly considers the strategies and policies of the SCGs, namely risk, crisis and business continuity management, and the linkages between them, highlighting that resilience is an outcome of these activities. The structure of the SCG is then explored and the literature around policy networks and inter-organisational coordination in crises expanded. It highlights the distinction between the hierarchical organisational form associated with command and control and those of network management. In particular it identifies why managing a network is different from a hierarchical organisation and introduces specific tasks associated with effective network management. It also considers the challenges of measuring performance within an inter-organisational network. Finally, this chapter considers the culture of the SCG and what is required to deliver resilience through the SCGs network structure and strategies, which include information sharing and cooperation, risk assessment and management and business continuity planning and management.

### 4.1 Strategies, Policies and Functions that enable the SCG to deliver Resilience

The Civil Contingencies Act sets out policies and functions of the SCG. To achieve the outcome of resilience, the SCG adopts an *Integrated Emergency Management* approach to its planning, which reflects the phases necessary for effective crisis management (Comfort, 1988; Rosenthal, Charles & t'Hart, 1989; Mitroff & Pearson, 1993; Boin et al., 2010). The IEM approach does not solely focus on response but includes: assessment; prevention; preparation; response; and recovery. It builds on risk assessment and business continuity planning to ensure crisis response capabilities and the outcome of resilience. The 5 elements of IEM are set out below:

The **assessment** phase forms the basis of common planning and response; although the duty to assess risk rests with each category 1 responder in accordance with their functions. Importantly the SCG is not compelled to take action to reduce the likelihood of threats and hazards. They are only required to maintain plans to deal with the consequences of an emergency caused by the risk. In addition each SCG is required to publish a Community Risk Register setting out its assessments of the risks

it faces. A detailed examination of risk and business continuity management process is in the following section.

The second phase is **prevention**, where agencies identify risk areas and these are addressed with the aim of eliminating or at least minimising the potential outcome. The guidance indicates that SCGs should consider prevention in terms of crises being ‘nipped in the bud’ in the way that fire fighters stop a fire from spreading or highways authorities close a road or a bridge in the face of imminent collapse (Scottish Executive 2007). These particular examples indicate a focus on operational crisis, as opposed to strategic level crisis that the SCG would be activated for, the consequence of which will be considered later. In any event not all crises can be prevented, as this would require a level of foresight and understanding that governments do not have (Wilensky, 1967; Turner, 1978; Kam, 1988; Parker & Stern, 2005). Therefore, there is a need for strategies to deal with uncertain and unforeseen crisis. Here the **“call for resilience increases as managers seek to balance the shortcomings of existing policies with the reality of increasing exposure to risk”** (Boin et al., 2010: 5). However, SCGs cannot be compelled to act or undertake remedial works, such as flood defences, which might prevent a possible emergency at some future date.

The third stage, **preparation**, is where agencies ensure that individually and collectively their systems and structures are sound enough to provide an effective response to any incident. Responders must be trained and facilities ready. This includes the preparation and testing of contingency plans for specific sites and events, as well as readiness for those incidents that are unforeseen, which is the real challenge (Weick & Sutcliffe, 2001). Such planning is an important component of an effective response (Banerjee & Gillespie, 1994; Pearson & Clair, 1998). It not only reduces organisational vulnerability, but assists crises managers to cope with the challenges of response (Chong, 2004). But the existence of a plan is not enough to guarantee success (Paraskevas, 2006), other components required include leadership, competence, preparation, a healthy organisation, equipping of staff, strong relationships and financial commitment (Grigg, 2003).

The fourth phase is **response**. An important aspect of successful response is communication and a clear understanding of roles and responsibilities. But

uncertainty as to the cause of crises, time pressures and confusion about who should make decisions will make coordination a challenge (Brecher, 1979; Drabek, 1985; Janis, 1989). Moreover, conventional policy-making and bureaucratic organisations are not well designed to manage threats that emerge rapidly in unforeseen and often undetectable ways (Boin et al., 2010). During the response phase the SCG will work towards a set of common objectives. These are to preserve life, property and the environment; to minimise the harmful effects of the event; to prevent its escalation; and to facilitate the investigation into its cause. While the initial response aims to deal principally with immediate effects, the response will incorporate suitable collaboration arrangements. The response phase is normally coordinated by the police. However, in the event of slow onset or less localised emergencies other organisations may be required to take the lead, e.g. pandemic would likely be led by health agencies.

The fifth and final stage, *recovery*, addresses the broader impact of the event. During the recovery phase the human, physical, environmental and economic aspects are considered. Lessons must be learned about the causes and effects of the response (Stern, 1997). However, the ‘politics of crisis management’ may affect the learning process (Boin et al., 2010). This phase should not be considered as a discrete and linear element but rather an integral part of the combined response. The aim of the recovery stage is for the agencies to enable a return to normality as safely and rapidly as possible (SECG, 2002).

Having considered the SCG’s 5 stage approach to achieving resilience, key to which is the assessment stage, the following section considers risk assessment and business continuity management in more detail.

#### **4.1.1 An Examination of Risk and Business Continuity Management by the SCG**

The Civil Contingencies Act places risk assessment duties on all Category 1 responders. Each SCG must publish a Community Risk Register, reflecting the individual assessments of the members. The Act also requires Category 1 responders to maintain business continuity plans to enable them to perform their functions in the

event of an emergency and that the impact of the emergency is minimised (Scottish Executive 2007).

#### 4.1.2 Risk Assessment and Management

It is said that “...*risk is ubiquitous and no human activity can be considered risk free*” (Hood et al. 1992:35). Organisational activity can incubate and create the potential for systems failure or crisis (Turner, 1978). One of the main reasons that crises occur is organisations fail to recognise risk warning signs or their significance (Fink, 2002). Consequently, crises are usually preceded by periods where the organisation drifts towards states of increasing risk until the disruptive events occur (Rasmussen, 1997). It is when organisations do not have effective risk management that crises can occur.

Unfortunately, there is no clear and commonly agreed definition of what the term ‘risk’ actually means. It has been described as the exposure to the chance of loss (Leiss & Chociolko, 1994); as a combination of the probability of a defined hazard and the magnitude of the consequences of the occurrence (Warner, 1992); the chance that somebody will be harmed by a hazard (HSE, 2002); as uncertainty of outcome (whether positive opportunity or negative threat) from the combination of the chance of an event and its consequences (OGC, 2001); something that might happen and its effect(s) on the achievement of objectives (Draft BS 31100, 2007); and the combination of the probability of an event and its consequences (AIRMIC 2002). Finally in the official guidance issued by the Scottish Government, *Preparing Scotland*, risk measures “*the significance of a potential event in terms of likelihood and impact; where in the context of the Civil Contingencies Act, the events in question are emergencies*” (Scottish Executive, 2007: 246).

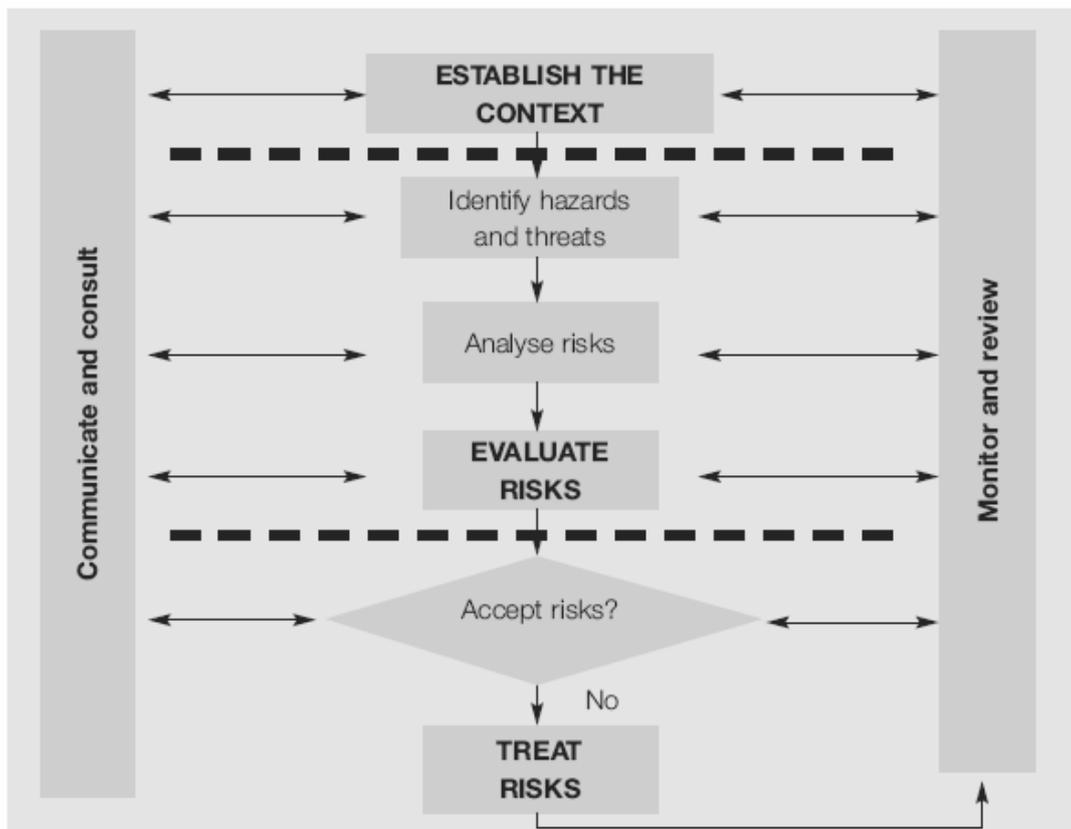
In sum, there is no single definition of risk and it cannot be considered as if it were a single uniform substance (Watson, 1981). According to Turner “*we are now in a situation where no single view of risk can claim authority or is wholly acceptable*” (Turner, 1994b:148). Beck goes further by claiming “*There is no expert on risk*” (Beck, 1992:29). Different cognitive approaches, mental models of risk and communications about risk, all reflect implicit assumptions and convey different

impressions. These collective or shared assumptions have been described as culture (Schein, 1992; Hofstede, 1990; Mitroff et al., 1989), which in relation to risk are those organisational norms, roles, beliefs, attitudes, and social and technical practices concerned with minimising danger to individuals (Toft & Reynolds, 2005). Culture can institutionalise risk in different ways. For example, it has been highlighted that although Public Sector Organisations face the same threats and classification of risks as private and not-for-profit sectors, they are accountable to a wider range of stakeholders and are exposed to greater political and social dimensions in decision making (Drennan & McConnell, 2007).

### **4.1.3 Risk Management Process**

Not only is there a variety of definitions of risk, but the term risk management may mean different things to different people. Risk management within organisations has been described as the establishment of culture, processes and structures to manage potential opportunities and adverse effects (PAS 56:2003). The key elements of a risk management programme are to: communicate and consult with stakeholders, establish the context, identify, analyse, evaluate and treat the risks, thereafter continually monitor and review the findings (AS/NZS 4360, 2004; Scottish Executive, 2007).

Figure 6 below outlines the risk management process advocated by the Scottish Government. The process is consistent with the risk management process used at various levels of government. It is suggested that adopting this process will promote better communication of risk between different levels of government and between local areas (Scottish Executive, 2007:118).



**Figure 6 The Risk Management Process. Source: Preparing Scotland 2007: 111**

Generally the purpose of the risk management programme is to provide a comprehensive appreciation of all the factors that may have an influence on the ability of an organisation to achieve its intended outcomes. Following evaluation of the severity of the risk a number of treatment options may be considered. These options would include transferring the risk perhaps through insurance, accepting the risk and doing nothing, treating the risk by designing it out or reducing it, avoiding the risk by doing something differently, and when strategically viable developing business continuity plans for the residual risks. The risk management strategies adopted will vary depending on the nature of the organisation, including management style and organisational goals (Archbold, 2004).

Smallman (1996) discusses risk management in terms of reactive and proactive. The former identifies current threats using statistical models and past experience. The latter relies on risk assessment based on the situation awareness of the assessor to identify current and potential threats. A key element of the risk management debate is the appropriate point on the continuum between the two. Wildavsky (1988) views

resilience and anticipation as separate and proposes that strategies of anticipation work best against known problems, whereas strategies of resilience work best against unknown ones. Each strategy is appropriate to specific conditions: resilience when there is greater uncertainty and anticipation when the environment is steady state and predictable. However, Comfort et al. (2001) argue that they are complementary.

Boin and Lagadec (2000) also combine both strategies. They acknowledge that resilience is the key to coping but that it is important for organisations to plan and prepare accordingly; thus achieving resilience through an anticipatory approach. Boin and Lagadec (2000) emphasise that preparation not only means planning but requires anticipation of crises and the creation of organisational resilience strategies. In their view organisational preparation should consist of a continuous programme of training, testing and learning from experience, thus ensuring that crisis management becomes embedded in core organisational processes and values. In relation to resilience, organisations require monitoring systems for detecting warning signals together with processes and communication channels to quickly activate appropriate response units with strategic authority to act in all crisis situations.

Having set out the risk assessment and management processes, highlighting how they are integrated in a wider crisis management approach, BCM is examined in detail and placed as part of the risk treatment stage of the risk management process. In the following section BCM is considered in terms of organisational resilience.

#### **4.1.4 Business Continuity Management**

Business Continuity Management is part of the ‘risk treatment’ stage of the risk management process. It depends on the outcomes of a rigorous process of risk identification, analysis and evaluation without which organisational threats would be unclear and plans deficient. Importantly it is acknowledged that the risks could be external to the organisation, such as power outages or severe weather, or from an internal source, such as systems failure or loss of key staff. The Scottish Government defines BCM as

*“a management process which helps manage the risks to*

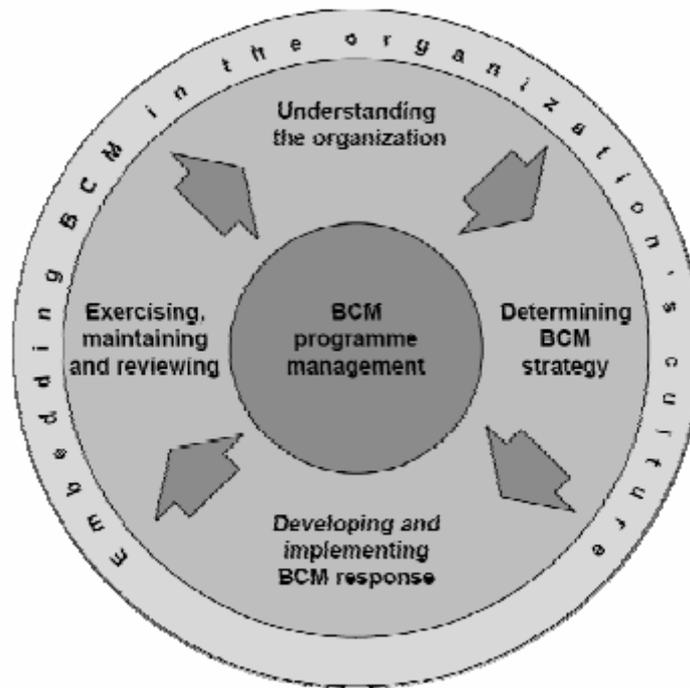
***the smooth running of an organisation or delivery of a service by ensuring that it can continue to operate, as necessary to the extent required, in the event of a disruption”***

(Scottish Executive, 2007: 141)

Waterer (1999) describes business continuity as an ongoing process ensuring the continual operation of critical business processes through the evaluation of risk and resilience and the implementation of mitigation measures. Likewise the British Standard describes business continuity as the capability of an organisation to plan for and respond to disruptions. Its definition of business continuity management addresses broader issues now required to ensure resilience in organisations:

***“a holistic management process that identifies potential impacts that threatens an organisation and provides a framework for building resilience and capability for effective response that safeguards the interests of its key stakeholders, reputation, brand and value creating activities”*** (BS25999, 2006:1).

In terms of the Act, responders are expected to adopt simple generic planning which builds on their day-to-day activity. To assist responders in developing business continuity for their organisations the five-stage process developed by the Business Continuity Institute and subsequently incorporated into the British Standard BS 25999 is recommended by the Scottish Government. The components of which are: understanding the organisation; developing strategies; implementing response; maintenance, exercise and reviewing; and embedding BCM in the organisation’s culture. This is illustrated in Figure 7 below.



**Figure 7 – The BCM Lifecycle (Business Continuity Institute, 2008)**

A key component of understanding the organisation is identifying and evaluating the perceived threats that could disrupt the delivery services and identifying the activities, assets and resources, including those outside the organisation, that support their delivery (BS25999). The risk assessment activity within this element helps to identify potential causes of interruption to the organisation, the probability of occurrence and the impact of the threat being realised and when conjoined with the business impact analysis, which assesses the impact over time, enables the focus to be on the inherent risks identified as most urgent (BCI, 2008). This is similar to establishing the context within a risk management programme, which includes the examination of the internal and external environments, the critical infrastructure and interdependencies of an organisation, the key strategic objectives and the major stakeholders (HB 223, 2006).

At the heart of business continuity is the advance planning and preparations which are necessary to identify the impact of potential losses and formulate viable recovery strategies (Hiles & Barnes, 2001). By thoroughly assessing the threats to it, an organisation will be able to identify the business areas that are important to secure (AXA, 2004). The need for preparation and planning is spelled out by the Scottish Government, which considers BCM to be

*“a continuous process which will help organisations anticipate,*

*prepare, prevent, respond and recover from disruptions, whatever their source and whatever aspect of the business they affect”*  
(Scottish Executive, 2007: 146).

Although the finished plan is important it has been suggested that the actual process of creating the plan is the really important part, as serious thought will have been given to the business and the possible effects on it (Savage, 2002). Notwithstanding that, the aim of the finished plan is to ensure that not only does the organisation survive a disruption, but so far as possible continue normal operations in the event of a crisis. BCM therefore must go beyond the writing of a plan or of a simple process. It must become embedded in the daily activity of the organisation. This requires all levels of an organisation to appreciate that risk is inherent in every decision and activity and has the potential to cause disruption. This understanding, together with the training of staff, exercising plans and reviewing procedures is necessary for effective BCM activity.

It is argued that BCM is part of an organisation’s risk treatment and that the BCM process provides organisations with the ability to plan for and manage disruptions. It also enables prioritisation of resources to implement measures to reduce the likelihood or mitigate the threats which could cause disruption. Therefore, an organisation will be able to gather the necessary data to formulate and implement a coherent strategy for managing risk, if the organisation’s BCM exists in a tightly bound interrelationship with risk management (HB221, 2004). Such a strategy will mitigate the key strategic risk for any organisation that it would be unable to continue with its core functions. In other words, the combination of risk, business continuity and crisis management capability is sufficient to ensure organisational resilience.

#### **4.1.5 Do Risk, Business Continuity & Crisis Management Equal Resilience?**

The relationship between risk and business continuity management is subject to debate. The Department of Trade & Industry (DTI) see a firm link between risk and BCM, but makes the distinction that BCM is more concerned with those threats and risks that can cause corporate catastrophes (DTI, 1999). Others suggest that BCM should be seen as a parallel activity to risk management (Norrman & Jansson, 2004). However, both the BCI Good Practice Guidelines (2008) and the British Standard

BS25999 (2006) describe the relationship as complementary. Likewise Halls (2006), states that risk management at its simplest means identifying the risks to a business, analysing them and managing them. He argues that risk management underpins all of business continuity planning. Therefore risk and BCM could be described as being about managing all types of risk, building resilience into all aspects of an organisation, and having solutions in place when things do not go according to plan (Graham & Kaye, 2006). It is therefore suggested that risk management and BCM should be considered as part of an integrated whole, with BCM being seen as an outcome from the risk management programme.

However, Gibson and Tarrant (2010) highlight that early concepts of organisational resilience, tended to consist of the ‘re-badging’ of business continuity management. In their view, this was a highly prescriptive approach, which had the potential to reduce resilience. Because of the limitations of business continuity plans being based on known potential risks, their concern were that organisations would be unable to respond to ‘black swan’ events (Taleb, 2007). The key difference in dealing with ill-defined and unexpected incidents, such as ‘black swan’ events, is the organisational ability to respond beyond any existing plan. It has, therefore, been suggested that a complete organisational resilience strategy would incorporate a preventative (risk management), coping (crisis management) and recovery (BCM) dimension (Then & Loosemore, 2006). Such a combination of emergency, risk and business continuity management will enable organisations to deal with crisis through enhanced resilience (Scottish Executive 2007). This is similar to the *Integrated Functions Model*, which based on effective risk management can **“be major contributors to organisational resilience”** (Gibson & Tarrant, 2010: 8).

In practice establishing the context of the risk programme would be the basis for the BCM. Similarly the initial anticipation and analysis would be the starting point for a crisis management programme. Therefore, crisis management should be seen in the context of a wider risk management programme. In effect business continuity and crisis planning would be directly linked to the treatment of risks within the risk management programme. For example, an appropriate treatment for a risk would be to implement strategies designed to reduce the likelihood of events occurring that could

lead to the disruption of the operations and produce plans of action for implementation should the disruption happen (HB221, 2004).

In a risk management programme the risk assessment helps to identify potential causes of interruption to an organisation, the likelihood of occurrence and its affect on business objectives. In contrast, BCM uses a Business Impact Analysis (BIA) to identify the urgency of each business activity or process and assesses the impact of its disruption. This information is used to identify the timescale of appropriate continuity and resumption strategies for each activity individually and in relation to each other (BCI, 2008). In other words it provides a means of identifying and prioritising the types of events that could cause disruption to the processes of an organisation. Similarly crisis management anticipates early warning signals and analyses the related scenarios and associated risks in preparation of counter-action plans to use when responding.

There is, therefore, a clear distinction between the risk management programme focus and that of the BCM programme. However, risk, business continuity and crisis management all reinforce the view expressed by Graham & Kaye (2006) that as risk management can lead to a better understanding of an organisation and its business, so BCM (or crisis management) can provide the strategic framework to review the way an organisation provides its services, while increasing its resilience to disruption.

To summarise the debate about risk, business continuity and crisis management it can be broken down into the management of the risk to the organisation while maintaining the continuity of business. Ultimately an organisation's strategies and decisions are based on an assumption of business continuing. Any event that violates this assumption is a significant occurrence affecting its ability to fulfil its business objectives. As Graham & Kaye colourfully described it,

***“if an organisation allows itself to die during a risk incident – the best continuity (or crisis) planning will provide nothing more than a mechanism for trying to revive an already dead horse”*** (Graham & Kaye, 2006:iii).

## 4.2 The Structure of the Strategic Coordinating Group (SCG)

The Civil Contingencies Act 2004 provides a single framework for civil protection and will “*reinforce partnership working at all levels*” (Scottish Executive 2007: 56). It recognises that interrelated systems provide essential services in Scotland and as networks have become more complex the range of challenges in maintaining resilience has broadened. Such complexity requires collaborative partnerships working towards common outcomes. Thus the expectation of the Act is that local authorities, the emergency services and the health sector, along with other key service providers, will collaborate and be able to provide normal services in crises, so far as is reasonably practicable. It is also expected that organisations not detailed in the legislation, such as the Procurator Fiscal and military, or specific organisations within the voluntary and business sectors, will be fully involved as necessary. The Act divides local responders into two categories:

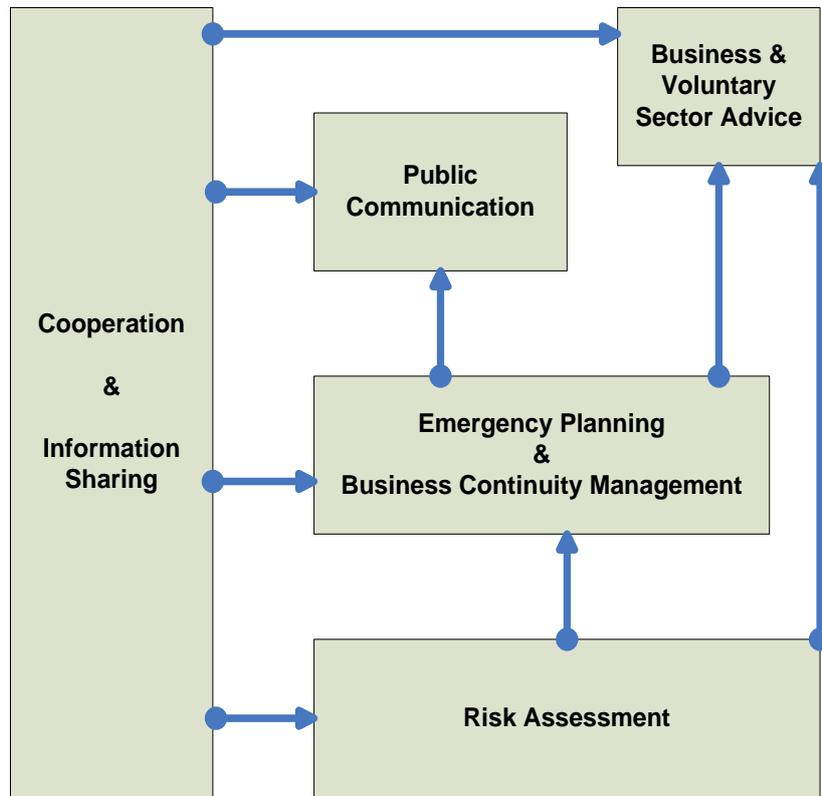
- Category 1 responders are the emergency services, local authorities, health boards, the Maritime & Coastguard Agency and the Environment Agency
- Category 2 responders are the utilities, telecommunications, harbour authorities, rail operators and the Health & Safety Executive

The policy of resilience is predicated on the implementation of specific tasks by the SCG, which are:

- risk assessment
- business continuity management (includes training & exercising)
- emergency planning (includes training & exercising)
- warn, inform and advise the public
- promotion of BCM for business and voluntary organisations
- co-operation and
- information sharing

Exercises must include procedures for evaluation, identifying lessons, establishing improvement programmes, if necessary, as well as monitoring progress on actions taken. The outcomes of all joint exercises are reported to the SCG. The duties of the SCG are illustrated in diagram below:

**Figure 8 - A Systems Model of how the duties of the Act fit together to deliver Resilience:**



(Adapted from Scottish Executive 2007: 52)

This research will focus only on those activities of the SCG related to its crisis management, namely cooperation and information sharing, risk assessment, emergency planning and business continuity management. Excluded from the research is the public communication of the risks in relation to emergencies because that responsibility is discharged by the SCG publishing its Community Risk Register. The advice to the business and voluntary sector is the responsibility of the local authority alone and is also excluded from the research.

The foundation of the Government's crisis management is the concept of *resilience*. This is defined as the ability "*at every relevant level to detect, prevent and, if necessary, to handle and recover from disruptive challenges*" (Scottish Executive 2007: 15). According to the guidance, resilience consists of several key activities: assessment, prevention, preparation, response and recovery; complemented by review of plans and arrangements based on experience of emergencies and exercises.

Scottish resilience is aligned with the principles of *Integrated Emergency Management* (IEM), which establishes a common multiagency planning framework linking the management of the emergency services with local authorities and other agencies. Such integration brings effective coordination between and within organisations and tiers of response; although the guidance *Preparing Scotland* specifically states that the framework is “**generally not a hierarchy**” (Scottish Executive 2007: 109), rather it is functionally based framework, with an ascending order of operational (bronze), tactical (silver) or strategic (gold) responsibility depending on the scale of the crisis. The principle of ‘subsidiarity’ is applied, that is, control of operations is exercised at the lowest practical level and the highest necessary for the coordination and support of local activity (Scottish Executive 2007).

The operational level refers to the on scene coordination of tasks by the Police Incident Officer (PIO), located at the Forward Control Point (FCP). The command of resources belonging to any agency is retained by that agency, which allows them to concentrate on specific tasks within their area of responsibility; although each agency must liaise fully and continually with others employed within the same area to ensure efficient and combined effort. For more serious incidents it may be necessary to establish a tactical level of management to determine priorities in allocating resources, to plan and coordinate when a task will be undertaken, and to obtain other resources as required. The tactical level of management will be situated apart from the incident at the Incident Control Post (ICP). The tactical commander should not become involved in the activities being discharged at the operational level; although the establishment of inter-service communication infrastructure will be established to support the running of the incident at the scene. If it becomes apparent that resources or expertise beyond the tactical level is required, or should there be a need to coordinate more than one incident or scene, a strategic level of management will be implemented. Situated at a Strategic Coordinating Centre, the purpose of the Strategic Coordinating Group (SCG) is to establish a bespoke framework of policy relevant to the current crisis and plan for the return to normality. Tactical decisions are not the responsibility of the SCG and it should not attend the scene (SOHD 1998).

The SCG role also encompasses government interests and media demands. The SCG is not subordinate to central government but if the incident escalates beyond a single

SCG and remains in Scotland, the Scottish Government may activate Scottish Government Resilience Room (SGoRR) to provide an overall coordinated response. In a case which requires the coordination and support from a number of UK Government departments or has other UK implications, the Cabinet Office Briefing Room (COBR) would be opened to provide collective decision making and communication; formal communication channels with the Scottish Government would be maintained through SGoRR (Scottish Executive 2007). Figure 9 below illustrates the various management levels, related components and the linkages between them that form an Integrated Emergency Response to a crisis in Scotland.

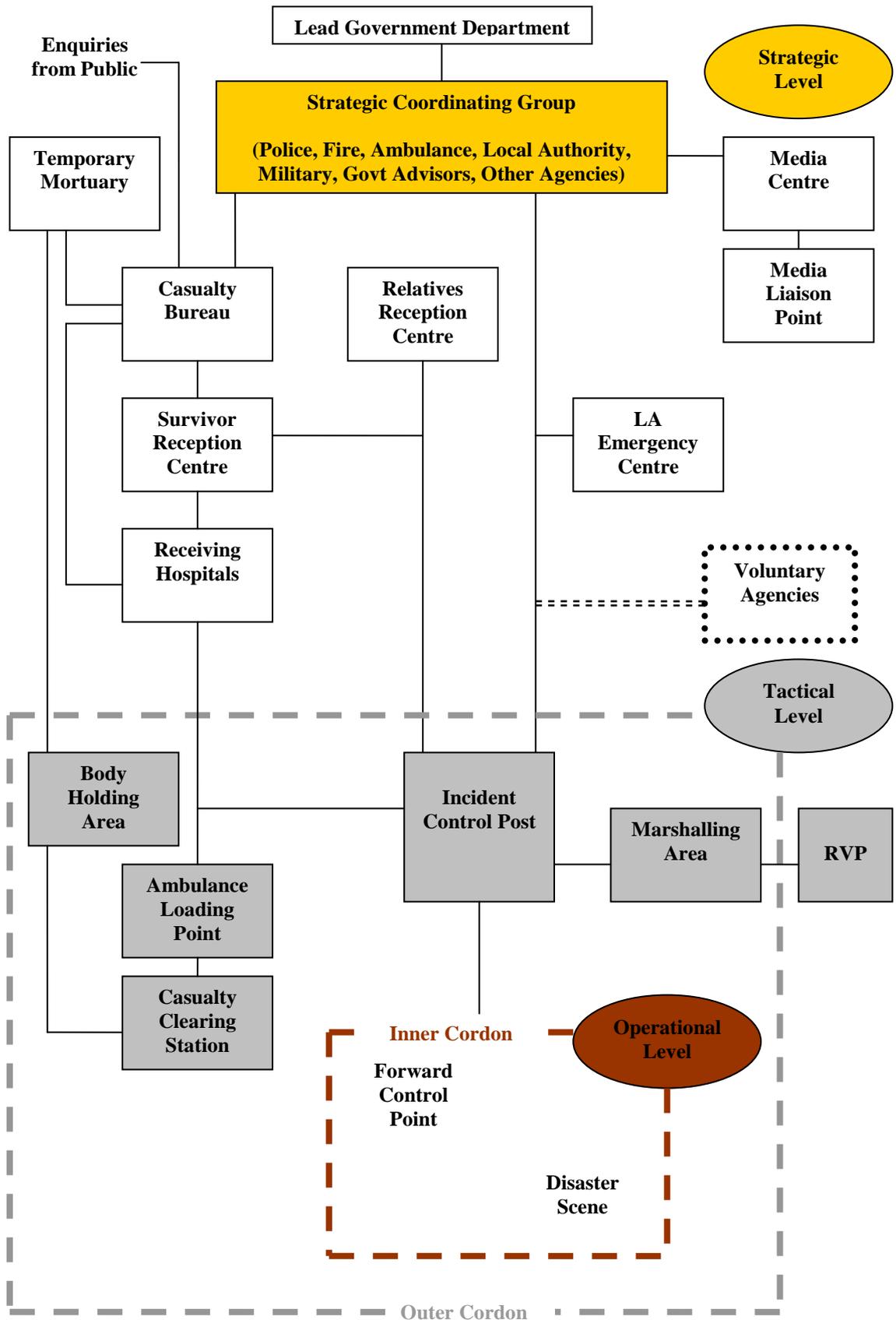


Figure 9 A Schematic Representation of Integrated Emergency Management in Scotland. Source: SOHD 1998:11

#### **4.2.1 An Examination of the SCG Structure**

Currently there is an ongoing debate about what is an appropriate organisational structure to deal with crisis (see Drabek, 2007). The SCG is described as ‘generally not a hierarchy’, although the emergency services normally operate with ‘command and control’ structures which are hierarchical and rank based. This is a key aspect of the research and raises the question, how does the SCG deliver the UK Government’s policy on resilience; operating hierarchically or as a network. The following section will consider both hierarchies and networks as coordinating mechanisms and highlight that in dynamic environments, networks are seen to be more adaptable and therefore appropriate to managing crisis. However, there are considerations that need to be taken into account in relation to network performance.

#### **4.2.2 Which Structure Provides the Most Effective Means of Coordination in a Dynamic Environment - Hierarchies or Networks?**

A traditional hierarchical structure clearly defines each employee’s role within the organisation and the nature of their relationship with other employees. Hierarchical organisations generally have narrow spans of control and centralised decision-making by senior management, which restricts the autonomy of those lower in the hierarchy (Peters, 1998). Hierarchy is closely linked to bureaucracy. Weber (1924) saw the bureaucratic organisation as logical, rational and technically superior to all other forms (Gerth & Mills, 1948). Therefore, he considered bureaucracies to be highly efficient systems of coordination and control (Pugh & Hickson, 1989). The defining characteristics of hierarchical bureaucracy are systematic administration involving the specialisation of functions, objective qualifications and qualities of office, acting only according to a fixed set of rules and a hierarchy of authority; with the process of bureaucratic operation to coordinate the tasks (Frances et al., 1993).

There are clear advantages of hierarchical bureaucracies. Complex problems can be broken down into manageable and repetitive tasks, coordinated by a command structure (Beetham, 1993). Therefore, properly structured it can release energy and creativity, rationalise productivity and actually improve moral (Jaques, 1993). Its rules reduce arbitrariness in decision by treating each the same. It sets out clear lines

of responsibility of management which should assist in consistency of decision making. It can also coordinate large scale complex actions successfully (Frances, et al., 1993). Moreover, it is the only form of organisation that can enable an organisation to employ a large number of people and preserve unambiguous accountability for what they do (Jaques, 1993).

However, hierarchical bureaucracy is often criticised. It lacks flexibility because issues are referred up the hierarchy for decisions to be made by more senior management. In addition, those on different tiers of the hierarchy may have different understandings further diminishing communications (Carroll, 1998). One consequence of such demarcation is that information flows have unnecessary time lags (Ackoff, 1967). It is also suggested that hierarchical bureaucracies are at their worst in unusual situations requiring initiative (Granot, 1999). The criticism being that the use of standardised rules and procedures brings a lack of flexibility in dynamic situations. Furthermore, conformity to the norms of the bureaucracy supersedes the needs of other departments and organisations (Frances et al., 1993). In other words the formal rules of the organisation become subordinate to the workplace norms and ideologies (Hynes & Prasad, 1997). Gouldner's (1954) study of organisational bureaucracy identified a number of bureaucratic patterns in relation to rule compliance. Of particular interest in this study is the term 'mock bureaucracy', by which he describe the collapse of rules in an organisation. The concept of mock bureaucracy is used in chapter 7 as an analytical lens to explain the variances between theory and practice in relation to the SCGs.

Bureaucracies have also been criticised because they do not consider informal aspects of organisations, such as the development of groups with their own goals or internal conflicts:

***“Weber's model of organisational efficiency assumes that all aspects of the individual personality which are not relevant to the strict performance of his or her duties will be cast off as the individual enters the organisation, or suppressed through effective socialisation”*** (Beetham, 1993: 133).

However, this does not consider the reality of relationships, which do not exist in such depersonalised, rigid and predictable terms. In reality individuals have personal needs

and expectations and the way in which they interact socially will impact on their performance. Because of these criticisms it has been suggested that

***“The organisations that get things done will no longer be hierarchical pyramids ... they will be systems – interlaced webs of tension in which control is loose and power diffused”***  
(Cleveland, 1972: 13)

Cleveland’s (1972) description above portrays inter-organisational networks. Networks are often thought of as ‘flat’ organisational forms, which contrast to the vertically organised hierarchical forms associated with bureaucracies (Frances et al, 1993). In contrast to bureaucracies, networks consist of low formalisation, have a comprehensive information network throughout the organisation and involve high participation in decision making (Burns & Stalker, 1961). Networks are generally defined as a type of relation linking a defined set of persons, objects or events (Aldrich & Whetten, 1981; Scharpf, 1978); where mutual dependency is the key (Benson, 1982; Hakansson & Johanson, 1993). Therefore, networks are characterised by mutuality, complementarity, reciprocity, conflict and collaboration and these exist within the totality of connections between various participants (Knoke & Kuklinski, 1993).

In the context of crisis, inadequate resources create powerful motivations for cooperative effort (Granot, 1999). Cooperation requires trust between the networks participants, which Granovetter (1985) argues is most effective at an individual rather than institutional level. The cooperation enhances the organisational development of knowledge (Johanson & Mattsson, 1993) and strengthens individual capabilities, as well as their organisations (Cohen & Levinthal, 1990). The network interactions allow members to jointly consider challenges and create solutions, within their own individual and collective capabilities. Key to this activity is the reciprocal knowledge inherent within network relations. The benefits include increased knowledge, research and innovation; and these justify the continued participation of members within the network. Therefore networks not only integrate diverse and disparate pieces of new knowledge but ***“allow the combination of different kinds of expertise”*** (Alter & Hage, 1993: 28). So not only is the interaction between networks an adaptation process it is also a learning process (Johanson & Mattsson, 1993).

However, the effectiveness of a network as a learning process, as well as its general activity, can be influenced both positively and negatively by the nature of the relationships. Too little may expose networks to an erosion of their supportive tissue of social practices, whereas too much may pervert networks into cohesive coalitions against more radical innovations (Grabher, 1993). Therefore it is important to note that while networks are cooperative they are not characterised solely by collaboration, harmony and concord (Granovetter, 1985; Powell, 1993; Hakansson & Johanson, 1993). Network interactions provide the potential for both areas of common interest and conflict. In this sense network relations could be a cooperative means for dealing with and resolving conflicts between participating members (Hakansson & Johanson, 1993). But the structure of relations among participants and their location in the network has important behavioural, perceptual and attitudinal consequences both for the individual units and for the system as a whole (Knoke & Kuklinski, 1993). So the resolution of such disputes needs the mutual adjustment of at least part of the perceptions of those involved and this may prove difficult because their perceptions are related to their basic beliefs, which define their identity and guide how they select information (Termeer & Koppenjan, 1997).

Another important element in network performance is cohesion. Ouchi (1980) found that highly cohesive groups had lower communication and coordination costs and could thus apply greater attention to problems under time pressure. Cohesion is engendered when members have spent a great deal of time together or the group has experienced external threats that have brought the members close together. However, a danger of extreme cohesion is groupthink (Janis, 1982), a phenomenon in which the norm for consensus overrides the realistic appraisal of alternative courses of action. This can dramatically hinder performance and seems to occur most often when there is a clear group identity; when members hold a positive image of their group that they want to protect; and when the group perceives a collective threat to this positive image (Turner & Pratkanis, 1997). It can also lead to groupshift, when there's a more extreme shift in position within the group than the member would make individually. More often the shift is toward greater risk (Kogan & Wallach, 1967). Causes of such groupshift include membership familiarisation leading them to be bold and daring; although the most plausible explanation is that the group diffuses responsibility so greater risks can be taken because should it fail no single member will be held

responsible (Clark, 1971).

Determining responsibilities and powers in network situations can be problematic. The complexity of networks means it is not always possible to establish cause and effect connections with individual members. Therefore, it is desirable that responsibilities should be allocated as clearly as possible (Bruijn & Ringeling, 1997). Although once a network is established it does not remain static. Ross (1980) considered the dynamic nature of crises and identified emergent factors which could influence interagency networks and relations. First, the number of participating organisations decreases over time. Second, leadership involvement diminishes and responsibility devolves to someone for whom it is just one more responsibility. Third, contacts become less innovative and ever more routine. Fourth, over time there is a tendency to develop greater specialisation with specific aspects of emergency response, rather than considering the overall response. Therefore, effective network management needs to ensure that commitment to the network by the various organisation leaders remains in the long run, even when the network is dealing with routine business.

Notwithstanding, the network performance issues highlighted above, the crisis response in modern society is still best characterised in terms of a network (Boin & 'tHart, 2007), because crisis decisions are not taken by individual leaders or by small informal group of senior policy makers, rather they emerge from various alternative loci of decision making and coordination ('tHart, Rosenthal & Kouzmin, 1993; McConnell, 2003). Although it has been suggested that political leadership is essential for sustaining the appropriate degree of attentiveness to the problem of coordination across many organisations (LaPorte, 2006).

In terms of the SCG, the most closely matched type of network is the Policy Network. These networks are characterised by stability of relationships, continuity of a highly restrictive membership, vertical interdependence based on shared service delivery responsibilities and insulation from other networks (Rhodes, 1991). Klijn defines a policy network as:

*“more or less stable patterns of social relations between*

*interdependent actors, which take shape around policy problems and/or policy programmes”* (Klijn, 1997: 30)

Policy Networks have been described as representative of the all pervasive functionalism in the organisation of British government, in that they set out the parameters of government policy within which local decisions can be based (Rhodes, 1991). However, crisis management should not be viewed just in terms of the coping capability of governmental institutions and public policies; it should be considered a deeply controversial and intensely political activity (Habermas, 1975; Edelman, 1977; ‘tHart, 1993). Peters (1998) concludes that reform of government structures is not enough to improve coordination. Active and sustained intervention by political leaders will be necessary to achieve lasting results.

The policy network approach builds on the tradition of political science of analysing policy processes as complex multi-agency interactions with multiple goals and strategies of participants and uncertainty about information and outcomes (Alison, 1971; Cohen et al., 1972; Lindblom & Cohen, 1979). However, using goal attainment as criteria to judge interaction processes within networks has been described as a fallacy. Goals are appropriate on the operational level, where clearly formulated goals and problems are addressed. Interactions within policy networks, such as the SCG, are strategic; therefore, goals are not given but sought. Consequently it makes no sense to use ex ante formulated goals or policies of the participants, even government, as a measure (Kickert, Klijn, & Koppenjan, 1997). A more suitable success criterion for a policy network is the realisation of collective active action in order to establish a common purpose or avert common threats (Kickert, et al., 1997; Scharpf, 1978; Glasbergen, 1995).

Network management can, therefore, be judged by the extent to which it enhances the conditions for ‘favourable’ interaction and the degree to which the network supports these processes. Thus network management may be seen as *“promoting the mutual adjustment of behaviour of actors with diverse objectives and ambitions with regard to tackling problems within a given framework of interorganisational relationships”* (Kickert & Koppenjan, 1997:44). So how can the SCGs ensure ‘favourable’ interaction leading to effective network management?

### **4.2.3 What Action Must the SCG take to ensure Multiagency Cooperation and Information Sharing?**

In Scotland, SCGs promote resilience and enhanced preparation, response and recovery from crises through effective partnership. To deliver resilience civil protection arrangements need to be integrated both within and between organisations. Multiagency cooperation and information sharing is essential; therefore, local responders must work in collaboration with each other in areas of common interest (Scottish Executive 2007).

Coordination has been defined as “...*those sets of behaviours through which the complex network of interrelated events are maintained*” (Haas & Drabek, 1973: 103). Crisis coordination has been described as the degree to which there are adequate networks for intra and inter-organisational communication to accomplish goals (Dynes & Quarantelli, 1977). A basic process of inter-organisational coordination is communication (Yamamoto, 1981), which can determine the success or failure of a crisis response (Agranoff & McGuire, 1998). However, when public authorities try to impose a sense of order in response to crisis, coordination and cooperation is nearly always lacking (La Porte, 2006). Peters (1998) argues that lack of coordination arises from different responsibilities and legal requirements that place significant barriers between organisations. Drennan and McConnell (2007) identify five difficulties: different political control brings potential conflict of agendas and priorities; individual specialisms such as police and health may bring bureaucratic politics and vested interest protection; coordinating non-government organisations such as voluntary services, who may not have been involved in the planning; bringing together organisations with different values, cultures and goals, especially when dealing with private versus public sector; and involving the local communities in pre-planning. These highlight that whilst an integrated approach is attractive, the difficulty in overcoming professional and cultural barriers, as well as confusions over accountability, make it difficult in practice (Ling, 2002). Rosenthal et al. (1991) refer to this as bureau-politics, which in their view will manifest itself in most crises. Hillyard (2000) argues that bureau-politics can be minimised by establishing a common purpose and culture, together with effective inter-organisational structures

with clear divisions of authority; although, for effective coordination, these need to be planned and exercised before they are actually needed (Granot, 1999).

If successful network coordination is achieved it improves organisational resilience and enables network survival, even in “unfavourable conditions” (Ehrhardt, et al., 2008: 2). However, to achieve such network resilience the network’s member organisations must be capable of understanding the network (Granatt & Paré-Chamontin, 2006). Furthermore, important components of such networks are ‘boundary spanners’ who link their own organisation with its external environment, including partner agencies (Burt, 1992; Williams, 2002). Creating an effective communication network for emergencies is challenging because it may conflict with the organisational structure developed during routine times (Kapucu, 2006) and complex information makes bureaucratic communication dysfunctional (Brown & Miller, 2000). Manoj and Baker (2007) identify three categories of communication challenges in crisis; technological, sociological and organisational. To overcome these challenges, effective crisis coordination requires interoperability, which is having appropriate structure and technology that allow agencies to communicate using a common language and system (Kapucu, 2006).

In relation to the SCG, its effectiveness rests upon every member's awareness of the role, responsibilities and capabilities of its partners. However, the SCG is not a statutory body and has no legal personality. Furthermore, the SCG does not have powers to direct its members or replace individual responders' management mechanisms. Nor does it have the authority to issue executive orders, so each responder retains its own responsibilities. Because of these conditions the SCG has to rely on a process of coordination through consensus to secure consistency in overall strategic intent. Consequently, in the SCG, UK and Scottish Governments there has been a realisation that effective cooperation must be founded on collaborative partnerships (Scottish Executive 2007).

The recognition that a cooperative and collaborative approach is important in delivering resilience reflects the fragility of hierarchical structures in dynamic environments. Moreover, the coordination function is increasingly implemented by those who have come to realise the limited usefulness of “command and control”

(Drabek 2007: 228). While hierarchical communication systems can work efficiently during routine operations, in a dynamic environment such as a crisis they do not (Granot, 1999). A key difficulty with hierarchical command structures is that if top nodes fail, they will isolate large networks from each other (Kapucu, 2006). For example, Dawes et al (2004) argues that the disruption of communications during the initial stages of the response to 9/11 attacks required many to act without information, coordination or leadership. Consequently, the conventional command and control structure used by the emergency services in routine business is inappropriate in emergent environments (Dynes, 1983; 1994, 2003; Neal & Phillips, 1995; Schneider, 1992). Evident in such environments, is likely to be ambiguous authority and responsibility (Waugh, 2000) leading to use of informal *ad hoc* channels for exchange and communication (Granot, 1999). Therefore effective crisis coordination requires a participative and consensual approach to decision-making. This is reflected in the structure of the SCG, which is capable of not only coordination but also resolving jurisdictional disputes and reducing duplication of efforts:

***“...[T]he coordination model is becoming more popular than the traditional command and control structure...The coordination model is also often better for negotiating turf battles among agencies and nongovernmental organisations providing overlapping services”***  
(Haddow & Bullock, 2003: 88)

The SCG presents several conceptual challenges. Firstly, it must be understood as a network of organisations. Secondly, the elements of the network are heterogeneous comprising public and private sector organisations with differing goals and objectives, variable operating environments and funding structures as well as differing degrees of politicisation in the decision making process. As such, understanding the SCG requires both a holistic (or systems) perspective, and an ability to consider the individual elements (organisations) that comprise the network. It is argued that the SCG is a policy network which enables multi-agencies with individual areas of responsibilities to come together and work collaboratively to enhance resilience. The network approach allows the UK Government Policy parameters to be actioned at the local level within each SCG. However, it is recognised that there could be performance issues within a network, which must be addressed through effective network management. Moreover, there are significant advantages in adopting a network approach in dealing with crisis. Networks are less susceptible to disruption of

top nodes that could disable a hierarchy through loss of the decision-making or command chain. Furthermore networks enable multiple channels of communication throughout the organisation which if conjoined with a shared holistic view and shared situational assessment improves understanding and awareness of partner organisation capabilities and constraints. Such levels of understanding enable negotiation and reduce the likelihood of jurisdictional conflicts. In addition, the involvement of multiple partners increases the knowledge available to solve any crisis, and thereby boosts the individual and organisation level of learning. Consequently, the SCG as a network facilitates information sharing, cooperation and coordination

### **4.3 Organisational Cultural Components Influencing the SCG**

An essential element of effective network management of the SCG is the organisational culture, the role of leadership in crisis and the process of decision making, and how crisis decision making differs from decisions made in a routine or steady state environment. Furthermore, leaders' perceptions will influence whether an organisation is crisis prone or prepared. Moreover, organisational performance in relation to crisis management is linked to having processes and trained staff in place to ensure pro-activity in identifying and mitigating risks before they manifest themselves and disrupt the organisation, and is able to learn lessons from crises experience.

#### **4.3.1 Leadership and Resilience in the SCG**

The SCG is expected to provide clear direction and leadership, and leadership is often identified as a critical component of successful crisis management (Smith, et al., 2005; Sheffi, 2006). However, leadership is a socially constructed concept (Grint, 2005) and what is considered effective in one organisation may not be in another. Within the SCG, in addition to providing direction in developing, maintaining and improving crisis arrangements, there are two other aspects of leadership. Firstly, the chairing of routine meetings, the responsibility for which is determined locally by the members and secondly, providing leadership during crises. Where responsibility for chairing the SCG falls during the crisis is determined by the nature of the event

(Scottish Executive 2007). This reflects that steady state and crisis management are distinct (Turner, 1994; 1996; Rosenthal, 1996; Smith, 2005; Borodzicz, 2005).

There are organisations, such as the military and police that routinely operate in dynamic and dangerous environments so develop capabilities to manage crises (Flin 1996; Klein, 2001). They recognise the dynamic nature of crises so continuously review their situational assessments and as new information or evidence becomes available assessments are amended or replaced (Weick, Sutcliffe & Obstfeld, 1999). Such organisations have the organisational culture which enables them to switch from routine steady state management where they are controlled by conventional hierarchical authority and standard operating procedures to crisis management where more informal organisational norms including greater latitude in decision making and communication are appropriate (Reason, 2000; LaPorte, 1996; Rochlin et al., 1987).

The reason that such organisations as the police and the military are able to successfully manage crises lies in three characteristics safety awareness, decentralisation, and training (Rochlin, 1996). Therefore, leaders of organisations, such as the SCG, should seek to ensure that there is a culture of continuous improvement that recognises that safety awareness is not about preventing isolated failures but rather “...*converting these occasional setbacks into enhanced resilience of the system*” (Reason, 2000: 770); that for decentralisation staff must have the skills to deal complex task demands in their system (Roberts, 1989); and are trained to be resilient (Flin, 1996; 2006).

#### **4.3.2 Leadership Decision-Making in Crisis**

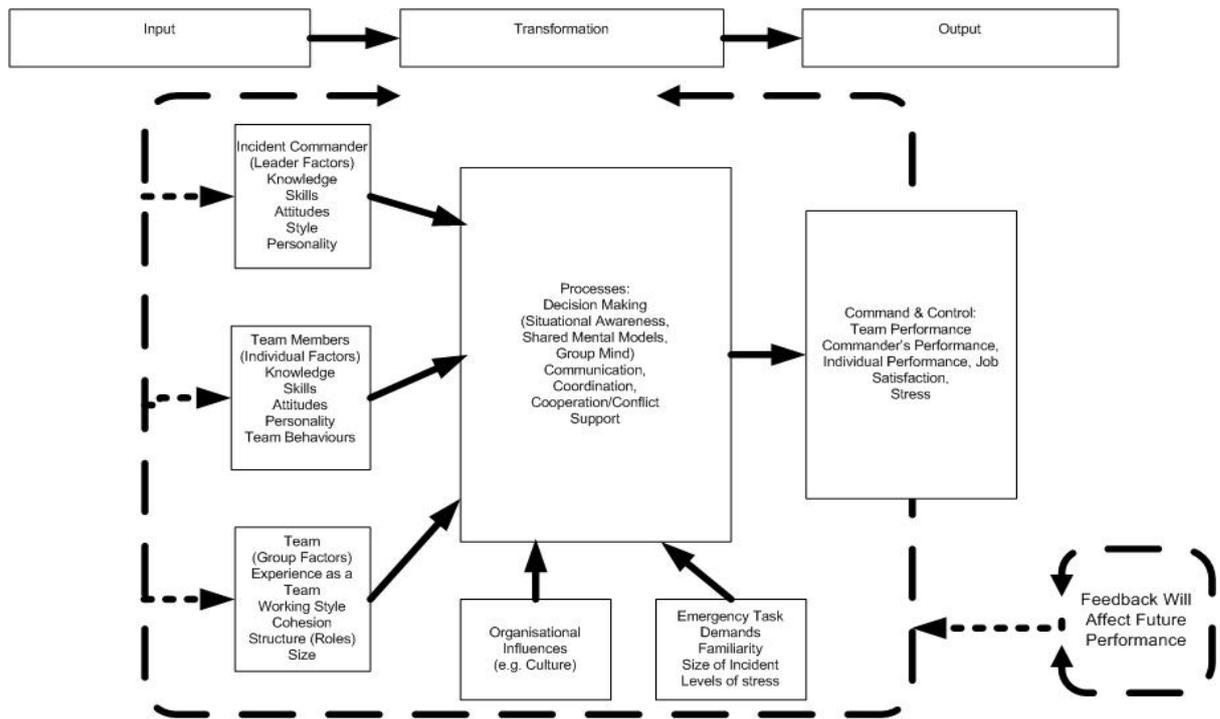
In Scotland, it is recognised that crisis response brings the need for rapid decision making and coordination across multi-agencies by the SCG (Scottish Executive 2007). Therefore, the context for crisis decision making within the SCG is a ‘real world setting’ characterised by time pressure, uncertainty, ill-defined goals, high personal stakes, and other complexities (Orasanu & Connolly, 1993; Lipshitz, et al 2001). Crichton et al. (2005) opines a key leadership skill is gathering information to enable effective decision making. In the context of crisis management, much of the literature discusses decision making as a potential source of error (Pearson & Clair,

1998) because it is timely and often hurried (Smits & Ally, 2003). Moreover, one of the complexities is that in a group setting such as the SCG, individuals differ in their preference for risk when making decisions (Melers et al, 1998) and research suggests that both the cost of information and one's accountability for a decision affect the type of analysis used to solve a problem (Gilliland et al., 1992).

In relation to the SCG, the rapid implementation of arrangements for collaboration, coordination and communication is considered vital in allowing optimum decision making. The SCG consists of those with detailed knowledge of their organisations empowered to make executive decisions in respect of their organisation's resources and activity (Scottish Executive 2007). Therefore, it should be capable of making decisions based on multiple options. Eisenhardt (1989) found those with deep knowledge of their business can maximise decisions within time constraints by considering several alternatives simultaneously, especially when the entire team was conditioned to work with each other in turbulent situations, like SCG members who regularly come together in both routine and crisis response.

The activities and influences on the SCG crisis decision making process are reflected in Flin's (1996) model of command team decision making in emergencies. Flin developed the model by combining components of group behaviour (McGrath, 1984) and decision making (Klein, 1995; Orasunu, 1994; Salas, Cannon-Bowers & Blickensderfer, 1995). The three elements of the model which echo SCG decision making are: first, the input factors comprising of the leader, team and team characteristics, together with the context including organisational culture and task demands; second, transformation processes such as decision making, communication and coordination; and third, output resulting from the combination of the other elements. Notably, a key part of Flin's model is the feedback loop which will improve future performance. Flin's (1996) model of command team performance in emergencies is shown in Figure 10 below.

### Model of Command Team Performance in Emergencies



Source: Flin (1996: 191)

In relation to decision making, the SCG must consider a number of potential issues. For example, a group is superior to an individual when making decisions (Hill, 1982: 535) and groups who know each other are more likely to make better decisions (Winquist & Larson, 1998; Gruenfeld et al., 1996). This highlights the importance of developing and maintaining relationships both informally and formally.

Furthermore, Salas and Cannon-Bowers (1995) found that high performance teams monitor their own performance and remain self-critical, correcting and adjusting their methods as necessary. Therefore, the SCG should continually re-assess its performance against the crisis. In other words continually review its shared situational assessment. However, overall group performance may be affected by the number of participants. Too large a group may result in social loafing, countering the common stereotype that the sense of team spirit spurs individual effort and enhances the group's overall productivity (Kravitz & Martin, 1986). Social loafing could be a consequence of dispersed responsibility or a reduction in efficiency when individual's think their contribution cannot be measured (Robbins, 2005).

Another aspect which may influence the SCG decision making performance is status, which tends to be derived from one of three sources: the power a person wields over others; a person's ability to contribute to a group's goals; and an individual's personal characteristics (Feldman, 2001). High status individuals are often given more freedom to deviate from norms than are other group members as long as the activities are not severely detrimental to group goal achievement (Robbins, 2005). Status also influences group interaction. High status people tend to be more assertive, speak out more often, state more commands, and interrupt more often. This can stifle creativity as lower status members tend to be less active participants in group discussions and their expertise may not be fully utilised. Therefore, to be effective the decision making group will require to be genuinely collaborative, ensuring reciprocity and equal representation to engender participatory decision making (deLeon & Varda, 2009). Achieving such collaboration is a leadership skill, ensuring participants representing different organisations work together to achieve the desired outcome (Moynihan, 2005). The achievement of the outcome of resilience and the conditions for adaptation and innovation is dependent on 'respectful interaction' (Weick, 1993), together with the necessary policies and practices.

#### **4.4 Chapter Conclusion**

The introduction of the Civil Contingencies Act 2004 brought with it the statutory duty of responders to introduce risk assessment and business continuity into their emergency planning process with the intention of making communities more resilient. Consequently, it is argued that there is a clear relationship between Risk, Business Continuity and Crisis Management within Integrated Emergency Management, and that when combined these functions contribute to achieving resilience as an outcome, especially if based on sound risk assessment. However, there are long standing difficulties in defining risk and the underlying assumptions related to its assessment, which are dependent on an individual's experience and values and an organisation's culture. In an effort to overcome such professional and organisational barriers responder agencies need to embed Risk Management and Business Continuity Management into their organisation through exercising and training. Furthermore, the efforts to increase resilience may be constrained unless there is an appreciation that resilience is not specific and measurable, but rather a multidimensional fluid trait,

based on effective risk management and influenced by changes in the organisational environment.

It was also argued that the SCG should be considered as a policy network, rather than a hierarchical structure. The Civil Contingencies Act 2004 intends to provide a single framework for civil protection and will *“reinforce partnership working at all levels”* (Scottish Executive 2007: 56). Therefore, local responders must work in collaboration with each other in areas of common interest (Scottish Executive 2007). To deliver resilience civil protection arrangements need to be integrated both within and between organisations. This is achieved through the establishment of the SCG, a policy network. The use of a network form recognises the fragility of hierarchical structures in dynamic environments and that the coordination function is increasingly implemented by those who have come to realise the limited usefulness of “command and control” (Drabek 2007: 228)

Moreover, it was argued that an organisational culture which encourages the continuous review of situational assessments and the amendment of actions to reflect environmental changes is essential for effective crisis management. In addition that leadership perception is important in influencing whether an organisation is crisis prone or prepared. Furthermore it was argued that crisis decision making was different from routine or steady state decisions, and that collaborative decision making was the most appropriate way to deal with crises. But to do so successfully needs people who have a deep knowledge of the organisation and can consider multiple alternatives simultaneously. There is also a link between effective crisis management and an organisation having suitable processes and trained staff in place. Thus proactive risk management and feedback loops are necessary to enable learning from crises experience, but social aspects of the group, such as status and power, influence its effectiveness. Therefore, the SCG must develop a collaborative environment based on trust to ensure overall effective performance.

The following chapters analyse the SCG in detail, so before continuing it would be useful to summarise those themes which emerged in the previous chapters.

#### **4.4.1 A Summary of the Emerging Themes**

A number of themes relevant to the research have been identified in the proceeding chapters. Although there are interdependencies between the themes, to assist with clarity, they have been grouped together under three broad areas: organisational strategies and policies, such as risk, business continuity and crisis management, which it is argued are necessary to achieve an outcome of resilience; organisational structure, including coordination and communication; and organisational culture, in particular the importance of leadership and decision-making in ensuring an organisation is crisis prepared.

Underpinning each of the groupings is the need for an organisation to learn from its experiences to enhance its crisis capability. Therefore, an essential element of achieving resilience is for an organisation to have mechanisms which not only identifies early warning signals of potential crises but also empowers those within the organisation to take action to avoid the crisis, or if necessary to respond appropriately and manage the crisis. Furthermore, the organisation must then learn lessons from the crises and change not only its procedures but also its way of thinking in relation to the circumstances that resulted in the crisis. In other words the organisation should experience a fundamental shift in culture reflecting how it now understands the post-crisis environment.

##### **4.4.1.1 Organisational Strategies, Policies and the Outcome of Resilience**

Resilience has many meanings in academic discourse. However, in relation to organisations, it was argued that resilience is an outcome influenced by a dynamic complex combination of environmental factors, including the organisational risk culture. Therefore, resilient organisations quickly capture and adapt to environmental information by changing their behaviours and structures.

It is suggested that to achieve the outcome of complete resilience an organisation should incorporate risk management in an effort to foresee and prevent the crisis occurring, crisis management to cope with the disruption should it actually happen, and business continuity to ensure the organisation was able to prioritise its recovery effectively. If such organisational policies for risk, crisis and business continuity management were in place and effective, organisations would be crisis prepared and able to deal with crises through enhanced resilience. However, fundamental to such policies being effective are mechanisms that ensure that learning occurs at both an individual and organisational level.

A key element of collaborative networks and adaptive capability is having sufficient trained resources to deal with crisis. But the skills required for emergency and crisis response are both distinct and different. Crisis requires a level of flexibility in management and decision-making skills distinct from problems associated with ordinary events. Moreover, the unique nature of crises may require individuals and organisations to apply their learning and training in situations which they have not experienced before. Therefore, innovation and creativity are essential skills for effective crisis response.

A crucial element in developing skills for effective crisis response is feedback, together with critical self reflection, both at an individual and organisational level. Failure of organisations to have such mechanisms in place may result in missed opportunities to learn and enhance organisational resilience. In other words, organisations that do not recognise and adapt to threats or changes in their environment by changing their procedures and policies will become crisis prone.

#### **4.4.1.2 Organisational Structure, Coordination and Communication**

The literature review identified that potential tensions were inherent between the two types of organisational structure relevant to the SCG, namely hierarchical bureaucracies and networks. It was argued that rigid hierarchical structures are ill suited for innovative and flexible response necessary to deal with crisis. Instead collaborative policy networks, characterised by reciprocity, representation, equality, participatory decision making, and collaborative leadership were more effective.

However, effective policy networks require leaders to organise structures, resources, and interactions to ensure the multi-agencies worked together successfully. It was argued that interaction within the network was an appropriate measure of the effectiveness of the network. That is the extent the network facilitates interaction between the participants and the degree to which the network supports related processes.

Furthermore, to achieve effective coordination within a multiagency structure it was identified that understanding roles and responsibilities was essential. Otherwise there is potential for confusion and misunderstanding of participants from different organisations or from different parts of the same organisation coming together towards a common cause. In such collaborative networks effectiveness was dependent on shared understanding and situational awareness to achieve interoperability.

Communication and the use of informal channels and ‘boundary spanners’ were identified as a means to potentially improve interoperability, by bringing policy makers together strengthen the organisation and minimise tensions. A key component to overcoming barriers to understanding was use of common language, terminology and structures, together with multi-agencies being willing to shift their own perceptions to achieve shared and acceptable solutions. Such flexibility and common understanding had also the potential to minimise policy or jurisdictional disputes. However this was dependent on the culture developed within the network.

#### **4.4.1.3 Organisational Culture and the Importance of Leadership and Decision-Making**

Organisational culture was highlighted as the most important element in achieving effective crisis management. It influenced organisational norms and values in relation to crisis response. For example it was argued that crisis prepared organisations can be distinguished from crisis prone organisations, by the level of investment to ensure integrated crisis planning, together with flexible and adaptive structures. Moreover, crisis prepared organisations will have a realistic attitude that their organisation will likely experience some sort of crisis and prepare accordingly.

However, the key to an organisation becoming crisis prepared is for organisational leaders to 'institutionalise' crisis preparedness throughout the organisation. This may be demonstrated through overt executive commitment to an organisational culture that values safety and risk management, while ensuring sufficient trained and competent resources.

Resources were directly linked to status within collaborative network structures. It was found that having access to resources could influence both the individual and organisational status within the group. This in turn was related to the influence in decision-making within the network; those with resources, together with power and status had most influence, as opposed to those with relevant expertise. It was also highlighted that in the context of crisis management decision making is a potential source of error and that problems of increasing complexity require more collaboration to resolve effectively. To achieve this crisis decision-makers must have deep knowledge of their organisation and be able to maximise decisions within time constraints by considering several alternatives simultaneously.

The emerging themes identified in the preceding chapters are analysed in the following chapter.

## **Chapter 5 – An Initial Analysis of the Emerging Themes**

This chapter considers the inner core of the Onion Model, the individual perceptions of those within the organisation. It considers data from interviews, observations and the relevant crisis management and resilience literature. The individual emerging themes from the data are analysed and variances between the theory and reality highlighted and explained. The chapter is structured to enable focus on a number of specific areas: first, the various strategies and policies in relation to risk, crisis and business continuity management necessary to achieve the outcome of resilience; second, the organisational structure of the Strategic Coordinating Group, and its coordination and communication; and third, the organisational culture of the SCG, and the influence of leadership and decision-making. All of which are underpinned by the provision of training and exercising to enable members to enhance their competencies in dealing with crises. But the chapter highlights that there are a number of barriers to learning and lack of formal feedback mechanisms diminish the SCG's adaptive capability. These together with poor risk assessments means the SCG is more reactive than proactive and therefore a crisis prone organisation.

### **5.1 Strategies, Policies & Resilience**

The Civil Contingencies Act places risk assessment and business continuity duties on all Category 1 responders. Each SCG must publish a Community Risk Register, reflecting the individual assessments of the members. The combination of risk, business continuity and crisis management will enable resilience (Gibson & Tarrant, 2010). It is therefore argued that resilience is an institutional or organisational outcome founded on effective risk management (Gibson & Tarrant, 2010; Comfort et al., 2010). But a common element of organisational failure is when early risk warning signals are missed (Fink, 2002). Therefore, successful risk management requires components that incorporate: Assessment; Prevention; Preparation; Response; and Recovery (Comfort, 1988; Rosenthal, Charles & t'Hart, 1989;; Mitroff & Pearson, 1993; Scottish Executive, 2007; Boin et al., 2010). Included in the recovery element is learning lessons (Stern, 1997; Pearson & Clair, 1998; Boin et al., 2005) which helps to generate organisational resilience (Smith & Elliott, 2007). However, the challenge is feeding the lessons back into pre-existing policy networks (Boin & t'Hart, 2007).

### 5.1.1 Risk

With regards to whether SCG is able to assess risk there were differing views. Some organisations were seen to have the skills and some did not. However, when specific expertise was necessary, for example in dealing with diseases, the medical risk experts were thought to be highly competent. Others recognised that the Fire & Rescue Service were experts in risk assessment, describing it “*as bread and butter to them*”; similarly those organisations that dealt with sites like Grangemouth Oil Refinery, for example, had also built up “*huge experience*”. This included not only the Blue Light services but also the councils. SEPA was also recognised as having technical skills in relation to risk assessment. However, there was some doubt about other organisations and with general risk assessments; although as one respondent said “*this isn’t empirical, just an impression*”.

The impression that there were deficiencies in risk assessment capabilities was supported by a senior police officer concerned about the lack of specific training: “*the police will do dynamic management so will be fine (with risk assessment). I don’t think the others do*”. This view was reinforced by a respondent from a local authority who said, “*I haven’t had any specific training in risk assessment, other than what would be applied to the council’s general activity*”. The issue was summed up by a respondent and expert in risk management: “*There’s no training provided [for SCG members]. Guidance is handed out. It’s down to who turns up, who’s the most vocal and sometimes, who’ll make a decision. There’s just no training*”.

In practice risk assessment in SCGs was delegated from strategic for consideration at the tactical level, where the relevant working group with appropriate technical skills would map and assess risks, using the support by other experts remote from SCG. What was important to the SCG was agencies have access to risk experts to explain what the situation is. But the critical view was that risk assessment probably was not as good as it could be and would benefit from more professionalism. On at least one occasion, it was reported that a risk assessment completed at tactical had to be completely reconsidered at the strategic level. The assessment process was seen as a “*driven approach, with people working through ticking boxes - It’s mechanistic*”.

There was a widely held view that risk assessment should be the basis of the SCGs planning process, having identified the main risks and capability gaps in relation to them, rather than being produced to satisfy legislative requirements. One respondent highlighted that the Community Risk Registers were done quickly simply to meet a deadline. It was notable that only one respondent was confident that their SCG had all their plans linked to the Community Risk Register. This led one senior fire officer (ACFOS2) to describe the CRR as a *“coffee table companion”*. The implication being that it had no further purpose for the activity of the SCG and certainly did not inform its strategic planning in relation to risk mitigation and response.

It was also suggested that the Scottish Government failed to understand that production of the CRR should be seen as the first step in the risk management process, and should be followed by mitigation and identification of the capability gap, which currently they do not do. Another, from a large SCG, thought that capability gaps should be identified as part of the risk assessment process and action taken to address them.

***“Due to our size we have capacity. We can be fairly self-sufficient for widespread incidents. But it can and should be improved. It goes back to risk assessment and the whole process, especially the capability gaps. Instances (where) capabilities are just looked at as resources levels but they need to be trained” (SCGC7)***

Furthermore, there was a complaint that the UK Government sets the likelihood for use in the CRR which can not be changed. SCG risk assessors are only permitted to change the impact scales. This was described as *“problematic”* because the CRR is more fragmented than the UK risk register, being split into council areas. The example given was that Strathclyde SCG does not have an oil industry but Grampian SCG does so would need to consider it. Consequently SCGs with quite different issues still need to assess risks in a manner set by UK Government. Another anomaly was that all utilities are classified as category 2 respondents under the Act, but the disruption of the critical national infrastructure, which consists of the utilities, is classified as high risk in the UK national risk register.

### **5.1.1.1 Cross border**

Cross border risks were also cause for concern. It was suggested that SCG risk assessment and business continuity need a strategic overview across services. This would assist in the matter of cross border risks, for example pipeline linkages from one SCG area to another.

*“The SCGs tend to work in silos, yet shared risks need to be addressed, e.g. Grangemouth refinery would impact across Central, Fife and Tayside SCGs” (ACPOS2).*

*“With risk assessment ...some have difficulty getting their head round the concept, e.g. pipeline linkages cross border”(ACFOS2)*

There was concern about ‘silo assessments’ which did not track risks from end-to-end. Consequently SCGs might not capture all risk that could impact on them. They may also be inconsistent in their approach to the same risk. Strikingly, only one SCG said that they consider the neighbouring SCG.

One respondent highlighted the difficulties, using the example of a CRR which still had not been officially published after almost two years because they were still trying to get risk assessments and action plans in place.

*“There needs to be uniformity of approach. What’s the point of doing it separately; although that’s easier said than done. For example, [council]came up with their own guidance which was different from the risk assessment guidance that came out from the centre (ACPOS11).*

There also seemed to be an assumption that the SCG coordinator would ensure that everything was assessed the right way. However, this raises questions about the status of the coordinator in the SCG being sufficient to drive the process to a conclusion, besides whether sufficient technical skills are possessed.

### **5.1.2 BCM**

More of the respondents were confident about the business continuity management arrangements because of the multiple drivers on a number of levels pushing BCM. For example, the occurrence of a pandemic was seen as a positive event in that it

drove home the need for BCM. One respondent said ***“there was more done in 6 months than 6 years!”***

However, there were a number of respondents who thought BCM could be better. The general view was that BCM was an organisational issue rather than one for the SCGs. A respondent, who chaired a SCG, took the view that members’ business continuity plans was their organisation’s problem; only becoming an SCG problem if there was an issue that had wider implications for the SCG. Therefore, ***“In such cases the SCG cannot be too intrusive”***. The explicit point made being that it was not the SCG’s role to be inspecting organisational plans.

Many respondents were not convinced that any of the SCGs had robust business continuity plans; although one said ***“we like to think we do”***. Speaking from personal experience a respondent gave the example of an organisation which used to test its standby generator as part of the business continuity, but no longer did so because of the potential impact on the organisation’s computer systems. Another though generally positive about organisations BCM, particularly among the emergency services, health and utilities, thought that in the event of a major disruption or dislocation ***“we’ll all struggle”***; giving the example of the lack of bunkered fuel for the [emergency] service. A number of other weaknesses were highlighted, particularly with the local authorities and health, with one commenting: ***“it was ok, but the council and NHS are a wee bit behind the Blue Lights”***.

The lack of appreciation of consequences of interdependency was a particular weak point in SCGs. It was also highlighted that there is still doubt among business continuity people about whether BCM has any connection with *Integrated Emergency Management*. Highlighting that the links and understanding of them are not as good as they could be. Another significant issue was the lack of confidence in plans because they had not actually been tested. One suggestion was that the SCG should be testing across organisations, which could be done in parallel with wider SCG exercises in which specific Business Continuity plan for a related hospital, for example, could be tested as well. This would ensure that the assumptions and capabilities within the SCG plans were accurate.

However, currently most SCG organisations test inwardly rather than involving partners. Therefore plans may be in place but whether they would be effective is a moot point. One respondent said of their own organisation’s plan ***“in crisis I’m not sure they’d stand up”***. Another who expressed confidence about having plans said ***“as far as having BCM is concerned, we’re good. We spend lots of time doing plans”*** although then goes on to say ***“although I’m not so sure about testing them. I don’t think we’ve tested other agency plans”***.

A challenge identified was keeping BCM at the top of organisational agendas, despite the legislative requirement and sound organisational management reasons for doing so. With many SCG organisations working on business continuity only when a crisis was imminent:

***“The fuel last year and flu this year has made people get engaged. Interesting thing is that incidents have all been ‘slow burn’ events that gave us a chance to bring all our partners up to speed. Some just weren’t up to speed because they didn’t have resources and it wasn’t high enough up their To Do list (SCGC2)***

Fortunately the ‘slow burn’ nature of the crises referred to allowed organisations to improve their capability. However, there were also comments regarding differing approaches to preparation by individual organisations. An example in relation to pandemic preparation was that non Blue Light organisations with 2 years notice and preparation gave assurances to the SCG that they had [Business Continuity] plans. However, ***“when the pandemic occurred most were found wanting”***.

The general view was that individual organisations responsibility to comply with actions agreed at the SCG is weak and an area which could be improved upon. One responder recognised the complacency and the different competencies of SCG membership, saying:

***“When X happens you need to be good at what you’re doing immediately. The police and fire probably deal with it daily, less so the other agencies”***

Although even in relation to those who deal with crisis frequently and have explicit duties under the Civil Contingencies Act do not seem to be overly concerned about business continuity management. Over the 3 days that I maintained observations at

Exercise Castle Rock, business continuity was never mentioned at any SCGs consequence management meeting.

### **5.1.3 Resilience**

Strategic Coordinating Groups (SCG) were established as the as the principal local forum for multi-agency co-operation and the focal point for local resilience building and preparing for response to emergencies. Therefore, it is dependent on SCGs being able to anticipate, as well as respond to, their changing environment. Interestingly despite resilience being a UK policy and key outcome expected from the activity of the SCG, all references to resilience focused on resources being available and not proactively monitoring the environment or learning lessons from events.

There was a view that staff resilience was an issue for the SCGs, with acknowledgement that there is limited strength in depth. A concern was that *“the same people always turn up but sods law they’ll be away when something happens”*. Resilience was also undermined by the ‘churn’ of members involved in SCGs. This was especially so in the police when local commanders changed fairly frequently, which meant there was difficulty in retaining people with experience and knowledge.

*“As a new chief executive I would welcome a chance to meet more regularly for a while. 4 out of the 12 chief executives in the SCG are new in the past year. There is an argument that given the ‘churn’ we should do something different for a year until we’re all up to speed”*  
(LA1)

*“Staff turnover, particularly with the emergency services is another issue. They tend to move on every couple of years. For example at a nuclear exercise we had a new commander who repeated the mistakes of the previous guy”* (SCGC3)

In recognition of the lack of resilience, particularly if a crisis lasted over a prolonged period or that took place over more than one SCG, a responder highlighted that their SCG was collaborating with neighbouring SCGs to ensure adequate resources.

*“Fife, Tayside & Central SCGs are in the embryonic stages of considering how to support each other in case of event which lasts over period of time which would result in resource issues for the SCGs. If there needed to be more than 1 SCG being set up*

***would mean that I would get less than full representation from some national and other agencies” (ACFOS1)***

Another highlighted that to make maximise the available resources from across the SCG they established a joint unit. The rationale of the joint unit is similar to the collaborative arrangements being considered by Fife, Tayside and Central Scotland SCGs above. The need for specialist resources, together with the cross border nature of terrorism and lack of interoperability between SCG agencies was also highlighted.

***“It depends on the nature of events. Different emergencies demand different types of response... We have gaps in some specialist assets ... In Scotland only one force (Strathclyde) can respond. A cadre can be put in place but it needs resources. Interoperability of resources is not in place. Stockwell told us that. Stockwell is driving from the bottom up and the Olympics from the top down. Scotland can't deal with similar demands” (Senior Police Officer2)***

These actions indicate that in terms of SCG resilience there is a perceived deficiency in the current arrangements. It was quite explicitly summarised at the New Salesman Exercise, by a chief police officer who was ***“shocked at the lack of capabilities in Scotland”*** (ACPOS7).

#### **5.1.4 Training**

To address resilience issues in relation to staff and deficiencies in plans and planning, a number of respondents suggested that a formal system of monitoring should be implemented, together with a means to disseminate the lessons learned throughout the SCGs. It was envisaged by the Act that lessons learned dissemination would be part of the formal SCG training programme, designed to prepare resources for crisis response. Because:

***“Working closely allows personal working relationships. ...You get to understand how people think. Playing together in more stressful exercises is very useful as the experience reduces anxieties at real events” (ACPOS7)***

There was recognition that the most effective training combined theory and practical aspects. It should be an extension of the day-to-day responsibilities of the students. The benefits of facilitated learning in a safe environment the lessons of which could be applied in the operational environment provide useful experience for the

participants to draw upon. However, to be effective training needs to be tested and those undertaking it having the skills which enable them to deal with situations that are ambiguous.

***“The whole principle is the extension of day-to-day duties. The exercise environment is key, supported by classroom stuff. On the job, you hope doesn’t happen. It’s much faster moving. They have their own dimensions. Exercise supported by classroom so building up transferable skills, capturing on the job knowledge” (SCGC7)***

***“I think that we need to be more proactive with our training; ensuring that those who will attend the SCG are appropriately trained and have the time to commit to such training” (LA3)***

It was suggested that an effective means of gaining experience before an incident is shadowing experienced people. This not only provided a useful opportunity for someone to benefit from the previous experience of others but also limits the development of inappropriate habits. It also provides the opportunity to view other organisations and enhance understanding of their roles and responsibilities when participating in the SCG. Moreover, for those SCG members who are not first responders it provides them with an opportunity to experience the various considerations that incident commanders deal with. This also enhances the understanding of other organisational roles and the constraints that they work within.

***“I allow others to shadow and attend with me at SCG. The only way you can experience an SCG is sitting at the table and being involved at it. People need to do this to make it work” (ACFOS2)***

To ensure that all members had a similar level of competency it was suggested that accreditation; licensing or even mandatory training should be introduced. The view was that mandatory training would compel participation but there was acknowledgement that there were practical aspects which made this difficult. These included actual responsibility and focus of the training, given that different roles within the SCG had different training requirements, and government crisis teams were not formal components of the SCG. Moreover, the question of sanctions should a SCG member fail to become involved was problematic. But there are no sanctions available to deal with such reticence.

***“People at that level have their own training (in their own organisations) which is valuable. But it is used as an excuse,***

*e.g. at our recent CPD training a chief officer didn't play ball. The others tried to persuade him it's about coming together with others and where the authority of SCG lies and where it doesn't. Training is essential ...Unless it's mandatory within the service, as part of command training in own service plus SCG training it won't happen. People will shy away from it" (SCGC10)*

*"As far as CPD I think it's interesting; the functionality of the role; training and testing. Formalised training? Yes I think all chief executives should either be briefed or trained in functionality and their role in the SCG. They need to know. Because of the infrequency of events people need exposure" (Senior Police Officer1)*

*"I think that there should be mandatory CPD but not necessarily accredited or licensed. It's down to getting the selection process for the role right. We don't need to create an industry around the bureaucracy" (ACPOS5)*

There was strong resistance by some to the suggestion that SCG members should undertake CPD or other forms of accreditation on an individual basis. It was highlighted that as chief executives or equivalent the individuals have skill sets necessary for the role of the SCG. Moreover, the process of accreditation would become another aspect of bureaucracy discouraging participation in the SCG activity.

*"With regards to CPD – it would be another set of boxes to tick. It's not realistic. Sitting on the SCG goes with the job. There aren't many organisations who would assign it to anyone but chief executive. There are skills related to the post. You bring skills to the table. Can't see it being fine to be a chief constable but can't get license for SCG. That's way over the top" (LA4)*

*"What are you saying no accreditation no SCG! I think the SCG is common sense application by strategic members based on advice from experts. Introducing accreditation will be a switch off, just a tick in the box. I think it has to be voluntary, so they recognise the value of the training. You must encourage them to see the value." (SCGC1)*

*"Absolutely not. This is strategic decision making. This is about people at the strategic level in their organisations. It's not about training people to be experts in civil contingencies" (SCGC4)*

Rather than individual accreditation one respondent expressed support for the collective SCG being evaluated, rather than the individual. However, there are no baseline performance measurements or mechanisms to conduct such evaluations.

*"I don't think accreditation or licensing is do-able. It's sod's law*

*that a new chief executive will be in place when something happens. There needs to be a clearer understanding about what's required. ...There should be periodic opportunity to be evaluated but as a collective SCG" (GOV2)*

The observation undertaken provided opportunities to see numerous participants take part in large scale exercises. However, the effectiveness of these exercises for some is questionable. For example, during Exercise Ancient Mariner many from the tactical level which feeds the decision making capability of the SCG were underused. This was also an issue for the many resources during the nightshift at Exercise Castle Rock. Two forces participating raised the issue of redundant or underused resources, expressing disappointment at having arranged their availability at a cost the resources were not used appropriately.

Moreover, at Exercise Green Gate one of the recommendations was the development of single and multi-agency training and exercising requirements. But one of the challenges is that as membership of the SCG is for chief executives or equivalent, so will be competent at strategic decision making. The training at such a level must recognise competency levels for the post and provide awareness. The primary benefit for executives is the opportunity to build relationships and increase group cohesiveness, rather than specific skills development.

### **5.1.5 Learning Lessons & Barriers to Learning**

One of the key responsibilities of an SCG is to ensure that lessons from incidents are captured and incorporated into future activities. However, the evidence highlights that organisational learning and development is something SCGs are not good at. It was recognised that SCGs get consumed by the here and now, by focusing on the immediate activity in the response phase. Once the urgency of the initial phase is over there is a tendency for everyone to shut up shop and go home after the event. The inference was that the SCGs pay lip service to lessons learned.

*"We don't learn lessons. There are repeat events. We go through the same logistical issues, usually equipment and comms. We don't sit down and incorporate them properly" (Senior Police Officer3)*

It was highlighted that SCGs did not revisit previous incidents or ensure that the outcomes from exercises, particularly multi-agency ones, were actioned and incorporated into doctrine timeously. Even when dealing with terrorism the lessons learned took a long time to be acted upon, with one senior chief constable describing the process as ‘torturous’:

***“There’s a general problem with training and exercises that it takes an awfully long time to convert lessons into practice. With CT it’s about 18 months; a long and torturous path” (ACPOS1)***

However it was acknowledged that there were difficulties in determining whether organisations benefited from training and exercising. One respondent highlighted that whether or not the organisation benefited from learning lessons, at an individual level these would improve performances of people whenever involved in responding to a crisis.

***“It is difficult to assess whether the organisation has learned from training certainly in the context of the SCG. But training along with exercises will improve the level of effectiveness of SCG members when they respond to a multi-agency event” (SCGC3)***

Despite the advantages of learning lessons and the frequent use of the terminology only the one Fire & Rescue Service, together with the MOD had formal systems in place for capturing and disseminating lessons learned. Although the MCA had a system that people can send anonymous lessons learned back to the centre. That said there some respondents were explicit about the lack of formal dissemination of such learning:

***“Training is a big issue. It’s not focused enough, not coordinated. The tail’s wagging the dog. The objectives are not clear. Lessons must be fed back in. It’s an issue in every area not just here” (SCGC6)***

Training and planning routinely was described as ***“money in the bank”*** in the event of a crisis and that it needs to be recognised that planning can make one’s response easier. Experiencing a crisis helps with planning and assists with interoperability because training events break down barriers between different organisations. But there was recognition that the infrequent nature of crises and training meant that participants were not able to develop enough experience to confidently deal with the response demands:

***“Generally good but within the organisation and the SCG we need to do more of it. We are currently drip feeding the training. The frequency is not enough to make it second nature” (LA1)***

***“In an emergency you need to get from ‘forming’ to ‘performing’ really quickly. That’s why we need to have regular meetings to get the group dynamics effective. As an illustration of a life and death situation – when I worked in intensive care as part of my training I would stand back and consider the situation. Others would just charge in confidently (with potentially dangerous consequences). I think it’s about ‘appropriate confidence” (NHS1)***

Moreover, it is not always understood that there are different skills needed for training, planning and crisis management which have to be intrinsically linked.

***“Although it’s difficult to maintain levels of commitments, you can’t argue with the SCG philosophy. It should be trained and assessed. But there’s a difficulty in balancing accreditation with experiential learning. It needs instruction, exercising, application... crisis are more difficult than the consequence management phase because of their imprecise situation. Moving from imprecise to precise is where you are tested and there’s not enough training for that” (Senior Police Officer2)***

The lack of reflection or feedback during training events was highlighted. Moreover feedback was closely linked to practice. It was recognised that critical feedback was important to gauge competency levels and improvements (ACFOS1). Without feedback effectiveness was difficult to determine as too often exercises and training were held for the sake of it without having an explicit procedure and action plan linked to the feedback process (SCGC9).

***“It would be useful to have more time to consider strategic decisions and debate topics. The contents of Exercise Debriefs, especially lessons learned would be useful” (MCA2)***

Generally the barriers to learning identified during the interviews reflected Smith’s (2006) levels of barriers to learning, namely the individual, organisational and systems levels. At the individual level there were examples relating to perception, assumptions, core beliefs, shaped behaviour and ‘sense making’. For example:

***“Arrogance; some people think that they know it all. However, we don’t have a means of systemising the learning in [area]. Case of could do better” (NHS1)***

***“There are gatekeepers. Those who don’t think it’s worthwhile”  
(Senior Police Officer3)***

***“needs greater awareness at senior manager level” (NHS2)***

***“Being pulled in many directions at once; they (SCGs) are all double hatted and have got day job” (MOD1)***

***“I think there’s an element of self-protection, we don’t want to admit what went wrong. We don’t want to highlight that there are lessons to be learned. An example is the terrorist incident. We were told it was good but in certain areas wasn’t. It’s mixed messages”  
(ACPOS11)***

The second level of barriers operated at the organisational or group level within the organisation. These highlighted how the organisation works and how it can be affected by management style and organisational culture, especially in establishing the organisational norms. It was noticeable that many of the emergency services expressed the view that they dealt with a crisis and then moved on. For example:

***“There was a culture of just getting on with it. Deal with something and move to the next thing. There’s now an appreciation that we need to learn as an organisation, so we can constantly improve” (ACFOS1)***

***“Not taking enough time to reflect. We move on quickly. Perhaps more focus on reflection. After a successful operation we move on quickly. The key points for improvement we don’t always pick up on them”  
(ACPOS3)***

Other identified aspects of organisational behaviour likely to increase an organisation’s vulnerability to crises (Smith, 2005), include the tendency to scapegoat or blame something else for the crisis. Crucially, the absence of a no-blame culture will discourage honest reporting of potential crisis signals (Horlick-Jones, 1996). Moreover, where the risk has not been experienced before by the organisation it will lack validity and make it difficult to change organisational thinking to pre-empt the crisis (Smith, 2005). In other words, defence mechanisms will be used to ‘distort the external reality’ and resist organisational change (Mitroff et al., 1989). Or the organisations will rationalise that crisis is not that important (Mitroff & Pearson, 1993). For example:

***“There’s a fear of failure being a hierarchical organisation. People will swan about but won’t put themselves up for anything”***

**(Senior Police Officer2)**

***“Sometimes the organisation struggles with information, if it hasn’t happened. If we haven’t experienced it we have difficulty operating from a written report.... The crisis won’t happen. The, it won’t happen here culture” (ACPOS2)***

***“I see parts of the organisation but I think that operationally we learn our lessons more than strategically. It takes events (e.g. UPS failure) before we take things seriously” (ACPOS11)***

***“Complexities of schedules are a barrier. Finding time or priority of those things to get round the table and discuss. Crisis don’t happen every day of the week so unless the organisation gives it importance, e.g. if it’s on the risk register you’ll do it. Perhaps we should make crisis management a single issue on the risk register” (ACPOS6)***

The third level set of barriers exists at the systems level and includes structural and environmental aspects that influence or constrain the organisation. These include technology, complexity and external factors that require the system to adapt. The interviews reflected the view that crises destroy formal structures and communication generally degrades (Smallman & Weir, 1999). For example:

***“There are still issues with communications, so this has an adverse impact on learning lessons” (SAS1)***

Another area for improvement was the lack of energy and commitment showed by some members of the SCG. The lack of buy-in translates into a reduction in the priority of the SCG within organisations. Because chief executives do not make it a high priority and actively engage with it others within the organisation do likewise. The lack of commitment is evidenced by the non-attendance by the chief officers. This leads to general scepticism at other levels of the SCG.

***“There are degrees of competence and interest levels at SCG. The Blue Light people are generally better. It is fairly critical but there’s a lack of understanding. I think the lead is taken from the chief executive representation, it sends a signal. I’ve written two letters (regarding failure of appropriate representation at SCG) it makes it happen. Although I wouldn’t go as far as sanctions, more gently pressed. Government should make it an expectation. After all it’s not a huge commitment when you look at the meetings and exercises” (ACPOS6).***

***“There are different priorities in different organisations. We need coordinated learning points from a multi-agency point of view.***

*Currently, we're not mature enough to sit round the table and have ambulance say we expected police to do that, for example. All dirty washing is done in private, inside each organisation" (SCGC6)*

*"There may be a cultural issue. Getting people to realise that although such crisis/emergency events are rare we still need to get senior management to train. Unfortunately, I think that some senior managers think because it is so rare they do not need to train. However, I'm sure that if you asked them most would acknowledge that it is important. But if you asked them when they last trained they won't have done so. There is a gap but unless it is seen as relevant I think we will get people training under protest" (LA3)*

Moreover, another particularly important aspect in the current economic crisis is the levels of funding that organisations receive to maintain their own resilience and assist in its wider application. This reflects the tensions within organisations about priorities, which reflects the rationalisation that hinders organisational crisis management identified by Mitroff and Pearson (1993: 25) that 'crisis management is like an insurance policy: you only need to buy so much'. The challenge for SCGs is to determine in the current climate, 'how much is enough?'

*"One of my concerns is that this will be really tested over the next 4 to 5 years with budgets getting tighter. There was a growth following the legislation that can't be sustained" (ACPOS3)*

*"I think there's a natural antipathy to change. You know, there's enough going on not concerted opposition. We're fairly healthy. As good as we can be. Barriers (to learning) would be finance and parochialism" (ACPOS1)*

*"I don't think we've ever really looked at the skills people need. There's an assumption that because you're a director you've got it. We're too concerned with budgets" (NHS1)*

The theme that SCGs are not good at organisational learning and development but are focused on the immediate; and experienced barriers to learning was also identified during the observations. For example at Exercise Green Gate a senior detective chief superintendent asked directing Staff

*"This is a familiarisation exercise! Who captures the lessons? Who actions them? For multi-agency participants there should be included in pre-read material: Do you know your role? What do you want from this? Did it deliver?" (Detective Chief Superintendent)*

At the same exercise I raised the use of incident command logs by one of the Fire & Rescue services in relation to their effectiveness in learning lessons. The Assistant Chief Fire Officer from the service involved explained that the service had introduced a process of dip sampling to ensure that the logs were completed. However the results had been disappointing because you get *“101 excuses why they’re not done”* (Assistant Chief Fire Officer).

The inability to learn lessons was also observed at Ex Short Sermon where during the debrief it was highlighted that a key lesson in relation to notifying the appropriate nuclear authorities identified during the exercise had actually been identified at the previous exercise held in 2006. Table 4 summarises the main arguments in relation to strategies and policies within the SCG:

Practice	Consequence
Risk assessment – there are concerns about the lack technical skills, especially at the strategic level. The risk assessment process is seen as a box ticking exercise. The Community Risk Register is not linked to the SCG strategic planning process, and cross border risks are not generally considered.	SCGs have no effective early warning system and also lack clarity about actual threats in its area. Therefore, it is unable to prepare an effective and cohesive response.
BCM – is not considered a core function of SCG. Therefore, Business Continuity Plans not tested routinely by the SCG.	The SCG cannot be confident of member organisations’ resilience and availability to participate in the event of crisis. Nor can it be confident in effectiveness of plans which have not been tested.
Staff resilience – there is a lack of trained staff, exacerbated because SCG member organisations are reluctant to commit resources for mutual aid.	SCGs would struggle with resource capability in the event of prolonged crises.
Training – suggestion that training be mandatory for all SCG members.	SCG members are organisational leaders. Therefore, there are practical constraints regarding mandatory training. But there is still no means to deal with those who do not participate in SCG training.
Learning lessons & barriers to learning – there is a focus on dealing with the immediate crisis. Once the ‘emergency’ phase is dealt with emergency services move on. There is also a lack of formal feedback at individual and organisational level.	Lessons are not learned and disseminated throughout SCG. Therefore, mistakes are repeated from one crisis to the next and organisations and individuals do not improve because there is no critical feedback on performance.

**Table 4 – Summary of the Main Arguments in Relation to SCG Strategies and Policies**

It has been argued here that while a resilient organisation would seek to foresee and adapt to risks before they actually occur, the SCG risk assessment and the related publication of the Community Risk Register was seen as a 'box ticking' exercise completed to meet a deadline rather than assist in improving the SCG crisis management capability. There are concerns regarding the assessment skills available to the SCGs and whether all SCGs considered risks that crossed borders. Generally, there is an apparent lack of urgency and responsiveness in linking the risks identified to the further strategic planning activities of the SCG. Furthermore, there were concerns about business continuity management; especially that such activity was not seen as a core function of the SCG but one for each individual organisation. Consequently, there was very little confidence in the assumptions that such plans were built on. Moreover, most the plans had not actually been tested and so only one respondent was positive that all their organisation's plans were linked to the SCG.

Despite resilience being an outcome of the SCG and a UK government policy, it was found that most references were about the lack of suitably trained staff. There was insufficient strength in depth with knowledge lying with too few people. Consequently, learning and training opportunities were necessary to ensure sufficient personnel. However, some organisations were reluctant to commit such resources and there was a suggestion that training should be mandatory. There were strong views on this issue with many acknowledging that it would assist members' awareness but there were many practical constraints, including the point that SCG members are organisational leaders presumed to have sufficient knowledge to deal with the activities of the SCG.

In relation to learning lessons, it was highlighted that there are challenges within SCGs in ensuring that barriers to learning are overcome. But the focus of the SCG, especially the emergency services, is on dealing with the immediate aspect of the crisis, essentially put the fire out and move on. The consequence is that lessons are not learned and mistakes are repeated. Therefore, the lack of formal feedback mechanisms at both an individual and organisation level adversely impacts on the SCGs adaptive capability. Thus diminished adaptive capability together with poor risk

assessment is likely to result in the organisation being crisis prone, and being more reactive rather than proactive.

## **5.2 Organisational Structure, Coordination & Communication**

The SCG has been described as a collaborative policy network the effectiveness of which rests upon every member's awareness of the role, responsibilities and capabilities of network partners. This requires structures, resources, and interactions which effectively bring together participants with different authority, motivations, interests, skills, and access to information (Moynihan, 2005). In this section the data from the interviews and observations in relation to structure, coordination and communication is considered in relation to the relevant literature.

### **5.2.1 Structure**

A theme from the literature review was the potential tension because of the emergent demands of crisis and the bureaucratic procedures of the typical emergency response agencies (Schneider, 1992; Comfort, 1990). The Civil Contingencies Act 2004 intended to provide a single civil protection framework that is **“generally not a hierarchy”** to **“reinforce partnership working at all levels”** (Scottish Executive 2007). That is collaborative partnerships working in multi-agency networks that were flexible and loosely coupled configurations, and therefore more effective in crisis (Neal & Phillips, 1995).

A number of respondents referred to the SCG structure being proven at live events such as the fuel strikes and flu pandemic, where it proved effective in providing an operational response. Over a third of the respondents identified that the SCG structure and the introduction of specific legislation had created a collective response which was not only effective but had also overcame barriers between organisations.

***“I think it’s an effective structure. The Civil Contingencies Act has led to us collectively tackling disasters and major incidents. We’ve become very effective. It meant that barriers have been broken down and people are working together. It’s still relatively new and will get better” (Police Chief Superintendent).***

However, observations undertaken as part of the research revealed that many members were not particularly familiar with the structure beyond their own area of interest. This was despite the view that understanding the complexities and dynamics of multi-agency networks is important to enable participants to adapt their activities to achieve the desired outcome (Gidron et al, 1992; Waugh & Streib, 2006).

Familiarity with the structure was tested at the Strategic Crisis Managers CPD. The opening session on both days involved the delegates working in groups to identify the component parts of the SCG structure illustrated in the guidance *Preparing Scotland*, as well as provided in the pre-read material for the course. This resulted in much debate between the delegates but unfortunately none of the groups were able to correctly complete the structure. Moreover, there were two recommendations from Exercise Green Gate regarding the structures; specifically to review the multi-agency command and control functions and priorities, as well as the arrangements for the provision of scientific and technical advice.

#### **5.2.1.2 Complexity of Linkages between Partner Agencies**

The main criticism of the SCG structure was the complicated linkages between the various partner agencies, especially for those that do not have hierarchical structures similar to the emergency services, which were also referred to as the 'blue lights'. These comments were interesting and seemed to indicate a lack of understanding that the envisaged SCG structure is that of a collaborative network characterised by equality and representation (deLeon & Varda, 2009) rather than a hierarchy of organisations with differing levels of responsibility, power or influence.

One of the key differences between hierarchy and network, namely spans of control with hierarchy of authority in relation to decision making, is indicated in the following comment from a member of the emergency services. The multiple linkages between the member organisations had previously been like 'a spider's web'. Consequently there had been difficulties working across organisations, especially when trying to determine who should make what level of decision. Another commented:

***“The structure is well established and understood in emergency services. But it doesn’t fit with local authorities or health...Councils work on functional lines and looser hierarchies. It doesn’t necessarily mesh...It’s okay for police, fire and ambulance but needs to be interpreted for others” (SCGC10)***

This tension between network and the apparent desire for the certainty of hierarchy became a recurring theme. It was particularly common in relation to the desire for ‘command and control’ characterised by top-down management relationships (Goldsmith & Eggers, 2004) by the emergency services but especially senior police officers. Examples are provided in later sections of this chapter.

There were also concerns that the government arrangements with regards to the SCGs were unsuitable and required to be updated. It was also suggested that the government should oversee the activities of all the SCGs and impose a level of standardisation to improve their effectiveness.

***“In the past government structures have been found wanting...The role of government needs to be clearer. Partners expect a lead, since government are putting effort to collectively get standardisation” (ACPOS2)***

The imposition of standardisation is obviously contrary to the perceived benefits of decentralisation and devolved decision making for adaptive capability and flexibility in response. That it was a view expressed by a senior police officer may indicate a preference for hierarchies with decision making being made at the top and implemented by those lower down the structure. In other words a ‘command and control’ structure.

Observations from the Strategic Crisis Managers CPD provided evidence of the confusion that SCG members can experience from complex linkages. For example, a chief executive highlighted that multiple boundaries of other organisations had practical implications for the council area. It was highlighted that there were a number of Health Boards in the council area, each of which issued different advice on how to deal with a particular health matter. Consequently rather than devise a single council policy for the topic, the council applied the Health Boards advice separately. So schools in the different health board areas but within the same council got different advice through the council to ensure that it reflected the Health Board policies.

A similar example was also provided by a chief executive of a council. On this occasion it related to schools in the council area receiving two sets of advice in relation to pandemic flu. The school staff, who were employees of the council, were advised by the council. But advice for the pupils was provided by the NHS. Unfortunately the advice for each was different.

Another expected aspect of a collaborative network was mutual dependency (Benson, 1982; Hakansson & Johanson, 1993). However, during observations at the Command and Control workshop chief constables expressed a reluctance to provide resources for the Scottish Police Information Coordination Centre (SPICC), highlighting that once released they had no control over the resources and would have to bid for them if their own force area required them. A similar concern about sharing resources by neighbouring councils was observed at the Strategic Crisis Managers CPD. There a chief executive, in response to discussions about why councils do not share assets, such as salt and road gritters, especially in severe weather conditions stated that:

***“There are challenges with cross border cooperation, for example to salt the neighbouring council roads is not done because of complaints (from council tax payers)” (Chief Executive)***

Another area of difficulty observed in relation to resourcing the complex structures were the additional groups needed to deal with terrorist incidents. For example a Scottish Government representative at the Strategic Crisis Managers CPD highlighted that:

***“There are challenges around who attends the various groups in relation to CT (counter terrorist) incidents. For example chief constable is at CT SCG and DCC (deputy chief constable) is at Consequence Management SCG. There are difficulties for other agencies in resourcing the structure...At a recent SCC (Strategic Coordination Centre) there were 250 people involved. It’s the sheer scale of the structure that brings challenges” (Scottish Government Representative)***

Not only does the comment highlight issues with resourcing, it also illustrates that the SCG has a hierarchical aspect. The fact that the chief constable is at the Counter Terrorist SCG and the deputy is at the Consequence Management SCG immediately indicates different levels of power and responsibility, not to mention access to

resources that each of these ‘SCGs’ has. It appears that not all SCGs are therefore equal.

Existing challenges around resourcing and structures were also heard at the Counter Terrorist Workshop. There another Scottish Government representative highlighted that the structures as set out in the guidance manuals *“had not been agreed”* making reference to the discussions which had taken place between the chief constables and others at the New Salesman Exercise. Furthermore, he reported that:

***“resource issues have been expressed by 4 forces regarding using the doctrine set out in the manual (Preparing Scotland)” (Scottish Government Representative)***

The resourcing issues for counter terrorist operations were exacerbated because of the need for covert as well as overt aspects of investigation and response. Another change is the recent introduction of the Counter Terrorism Police Operation Room (CTPOR), which is chaired by an assistant chief constable to deal with covert direct intervention. This component was subject to discussion at the CPD event and also the Counter Terrorism Workshop, and first implemented at Exercise Castle Rock. I would make the observation that as soon as the CTPOR is activated, the SCG becomes redundant. This point was reinforced when the Exercise Director announced the end of the exercise (ENDEX) almost 35 minutes after a successful intervention by CTPOR. It transpired that CTPOR had assumed that ENDEX had occurred when they stopped immediately after the intervention. Highlighting a key issue about who is actually in overall command.

In fact the issue of overall command structure was subject to lengthy consideration at the New Salesman Exercise. It was recognised that the conventional response should result in each SCG area affected by the incident establishing its own response structure. However, in reality that would be complex and confusing, therefore collaboration would be necessary to effectively manage such problems (Milward & Provan, 2006). Consequently it was decided that the dynamic nature of the event would necessitate one SCG at the first location with other chief constables being responsible for the response in their area but without the need to establish an SCG.

***“It would be dangerous to recreate structures for a series of***

***incidents. The first chief constable is lead. The SCG initially set up remains the primary structure. The chief constable (is accountable) for incidents in area but it is unnecessary to set up SCG for each” (Exercise Director)***

This was supported by the findings of the Counter Terrorism Command & Control workshop where a single strategy and structure was emphasised.

***“Need to link threat and risk to single strategy and avoid ‘stove pipe’ structures. Gold commanding ‘their’ silver etc replicated in a number of areas” (Facilitator)***

The complexities of cross border incidents considered at the New Salesman Exercise resulted in much discussion Highlighting that such cross border arrangements are not already agreed and in place. But the first recommendation from the day was to have:

***“ACPOS to consider the need for a policy or doctrine regarding the governance of cross force command of terrorist incidents”***

Despite the discussions at the New Salesman Exercise about only the first force area establishing an SCG, at Exercise Castle Rock 3 SCGs were established. One SCG was activated in each of the force areas participating, with primacy supposed to rest with the force which had the first incident. However, during Exercise Castle Rock this arrangement led to a number of issues around coordination. At one of the SCGs the chair was asked to establish the parameters of such an arrangement with the chair of the primary SCG because it was adversely impacting on the communication flow.

***“We’re butting against the issue of multiple sites... Does primary mean responsibility?” (SCG Member)***

The arrangements also resulted in 3 Scientific & Technical Advisory Cells (STAC) being established, one for each of the SCGs in play. This was despite the agreement at the command and control workshop that chief constables should ***“avoid ‘stove pipe’ structures”***. As predicted by Kapucu (2005) the inter-organisational relationships adversely affected the coordination and communication between the STACs, because each STAC was making decisions without consulting with the others. The result was each provided parochial advice based on the circumstances of its particular SCG area, and not on the wider aspects involving the other areas. This resulted in one STAC lead saying, ***“Should be one big meeting rather than bastardised version – it’s not working”***.

Another element of complexity in the SCG structure was the distinct and separate Scottish legal system, headed by the Lord Advocate. In relation to the Lord Advocate's role there was a debate at the Counter Terrorism Workshop; in particular with attending the Executive Liaison Group. It was apparent that there was a lack of understanding about the role of the Lord Advocate, which undermined the resilience associated with Weick's (1993) 'virtual role system'. The representative for the Lord Advocate indicated that the office of Lord Advocate has a constitutional position regarding investigating deaths and directing investigations and therefore would attend the meeting of the ELG for a specific input but would not wish to be involved in the decision making process.

The reluctance of the Lord Advocate or other members of Crown Office & Procurator Fiscal Service (COPFS) to become involved in specific decisions was reiterated at Exercise Castle Rock. There the SCG COPFS representative was asked about precise responsibilities regarding actions intended to be taken by the SCG in relation to the public's right to be informed of the potential risk from anthrax. The chief constable asked the COPFS representative directly *"is it sufficient, defensible?"* However, the response was unhelpful, namely, *"I can't be drawn into decision process. But there needs to be a clear audit trail of decision making process"*. Not only does this indicate an absence of understanding about roles and responsibilities, but it also seems to be an obvious example of bureau-politics (Rosenthal et al. 1991), where the legal requirements and related responsibilities of the Lord Advocate in Scotland means that there is a barrier between COPFS and the other members of the SCG. Despite the efforts to establish a common purpose and understanding to minimise the impact of such differences (Hillyard, 2000).

Devolution provided another example of bureau-politics. As a consequence of the introduction of a devolved government in Scotland which has powers over some issues while others are retained at UK level, there was the confusion around what issues can be dealt with locally and what has been retained as a reserved matter by the UK Government. This is an important matter when dealing with counter terrorism.

*"With Regards to cross border issues at the Scottish end people*

***need to be more confident in what's reserved and devolved. That varies still. There is a tension with the CT (counter terrorist) side and Westminster” (Senior Police Officer2).***

Another issue raised was how multiple site events should be managed, particularly those that occur across a number of SCGs. The point was made that chief constables have statutory responsibility and are accountable for the policing in their areas, so there were difficulties in managing cross-border incidents. It was suggested that government should drive such incidents through central oversight.

***“There’s rigidity in current structure. The lack of linkage, coordination and sharing across SCGs needs to be tackled. Although I would acknowledge that it is a strength that a lot of remedies are local and SCGs know the local context, e.g. people, assets, geography etc. But it needs central overview for multi-site issues and events” (ACPOS2)***

How that oversight would be structured was not stated. But in emergent environments it is argued that the conventional command and control model is inappropriate (Dynes, 1983; 1994, 2003; Neal & Phillips, 1995; Schneider, 1992) because of ambiguous authority and responsibility (Waugh, 2000). Instead of command and control hierarchies, Haddow and Bullock (2003) suggest the coordination model is better for bringing together a number of organisations that may have overlapping responsibilities.

Furthermore, it was suggested that the lack of legal status of the SCG as a corporate body, undermined its effectiveness when acting collaboratively. Therefore, should be given power to compel its members to act, rather than relying solely on persuasion which may limit the effectiveness of its crisis management response.

***“The SCG should have legal status. This would compel them to act collectively and compel them in times of response to act as a collective” (GOV1)***

This view of compelling action is contrary to that of the collaborative network approach. The network interaction brings together participants, who have different motivations and interests, to work together for a common goal. Those involved share experience, information and resources (deLeon & Varda, 2009; Moynihan, 2005). But

the notion of compelling resources is more closely associated with administrative authority of hierarchical bureaucracies, rather than collaborative networks.

### **5.2.1.3 Disparate Sizes of SCGs and Resource Availability**

In relation to resources, there were also difficulties encountered by UK and Scottish agencies servicing all 8 SCGs. Particular issues include the variations in the number of meetings held by the different SCGs, which those organisations with a Scottish or UK remit are expected to attend.

***“The SCG system can be poor for national / UK organisations, as there are 8 SCGs in Scotland, planning and exercising effort can be duplicated and resources can therefore be used inefficiently” (SAS2)***

The capability of UK and Scottish organisations to provide adequate resources for all elements of the SCG was challenging. Consequently not all SCGs get appropriate representation from these bodies. There was a view that this situation would be exacerbated in the event of a multiple site incidents across a range of SCGs.

***“If there needed to be more than 1 SCG being set up would mean that 1 would get less than full representation from some national and other agencies” (ACFOS1)***

The disparate sizes of the 8 Scottish SCGs and the availability of resources within each were commented on. Some respondents highlighting that the differences were such that it raised the question of what the national structure should be. The current SCGs range from Strathclyde SCG with 12 local authorities to Fife SCG which is a unitary authority with coterminous boundaries for the local member organisations.

***“Although there needs to be a balance with any other structure and the current locally based one. It’s the same old issue. One group has half the country and one is small. What’s the national structure?” (ACPOS1)***

However, there were respondents supportive of the small SCGs. Suggesting that the small SCGs benefited because they did not have competing priorities and its members were able to develop personal relationships with other members because of the other close working opportunities.

***“I think D&G are very good ...It’s maybe because it’s a unitary authority. In contrast Strathclyde is very large, lots of change with chief executives...Sometimes small is beautiful. (SEPA1)***

However, the disadvantage of the smaller SCGs was that they had limited response capability. The larger SCGs with a number of local authorities and multiple agency boundaries had far more members in attendance; while this led to complexity it ensured sufficient resources for most incidents. A mid-size SCG, such as Lothian & Borders, was seen as a positive asset in that it was big enough to draw resources but could still retain the local knowledge aspect of its members.

A number of suggestions were made regarding how the SCGs could be re-structured. For example developing regional SCGs based on a North, South, East and West model.

***“More generally, it’s the old joke...you wouldnae want to start from here! The SECG (Strathclyde SCG) and D&G SCG, given the population differences 2.5 million and 190,000, one must be accurate as a model but they’re radically different, so one must be wrong. Government, SCG, Cat 1 responders (is the model) But disparate sizes of the SCGs is not good idea. Either disaggregate Strathclyde or band together the others, e.g. West Model, North Model and East Model” (SCGC4)***

It was suggested that the SCG size could also be adjusted, either by bringing the smaller SCGs such as Dumfries and Galloway into larger SCGs or by combining a number of mid-range SCGs to form a larger one. This would enable the SCGs to have resilience and response capability, in terms of resources and personnel. Conversely, smaller SCGs were also suggested, increasing the number of SCGs by grouping the appropriate local councils together to form coherent but smaller SCGs focused on geographical areas, such as Ayrshire, Greater Glasgow or Lanarkshire.

### **5.2.2. Coordination**

Respondents referred to the good business relationships and how business was conducted by consensus and cooperation, which meant working well together. These were enhanced through the development of personal or professional network relations leading to use of informal *ad hoc* channels for exchange and communication (Granot,

1999). The participants indicated a willingness to share information and collaborate, which are important factors for successful networks (Kapucu, 2006).

While there was cooperation through personal contacts it was recognised that the size of an SCG had a direct impact on the communication opportunities between members. For example, unitary authorities provided opportunities for members to meet and get to know each other more frequently because the same participants attended other meetings outwith the SCG. The view was that this made it easier to work together within the SCG because members had a greater understanding of each others roles and organisations. Moreover, there was evidence of ‘boundary spanners’. That is those who link their own organisation with partner agencies (Mulford, 1984; Burt, 1992; Granot, 1999; Williams, 2002). The following comment highlights the advantage of informal meetings in generating other opportunities to discuss matters, as well as identifying and involving other stakeholders that may have an interest in the SCG activity.

***“[unitary] authority means that there are good strong formal links through police and fire committee. It also brings into play other council sources such as environment. Meetings of this committee also generate informal meetings, which take the agenda items and work behind scenes...Very important. It means that the SCG is hugely effective because you can hit ground running. It means you are already aware of how people work rather than jostling for position. This brings with it a more informal atmosphere where you can be more relaxed and can bounce ideas off one another without being measured or judged”***  
**(ACFOS1).**

Despite the positive comments about informal networking and boundary spanners, the majority of the respondents were critical of other partners. For example a government representative acknowledged that the government did not have a good reputation when it became involved in times of crisis because it had not built sufficiently wide and robust networks of trust, tending to focus only on the chair of the SCG as its point of contact:

***“There are phone calls constantly. I’m in contact with SCG coordinators. I try to build strong links with the coordinators, whereas most of the Scottish Government focus on the Chair. I’ll meet other members at local authority forums and ACPOS, although I’ve good relationship with Chair...Hugely important in getting the wider business done. In times of crisis it’s the levels***

***of trust and competence, not personal agendas. The Scottish Government suffers there. It does not have a good reputation. It's more important to build links" (GOV1).***

It was suggested that it could be as many as half who do not understand the SCG. This diminishes the potential for achieving network resilience and survival through understanding the network (Granatt & Paré-Chamontin, 2006; Ehrhardt, et al., 2008). But there was a desire for more training in the structures and how organisations fit within the SCG structure.

***"In relation to other partners understanding there's a big chunk, more than 50% who aren't. Some could bore for Europe but others not. At a recent event the feedback was for more stuff on structure. A lot don't know (GOV2).***

The main criticism was that outwith the emergency services there was a lack of understanding about *Integrated Emergency Management* generally and of the SCG structures and roles specifically.

***"General understanding of SCGs varies greatly across Scotland and at different levels. There is still some way to go about the principles of Integrated Emergency Management (IEM) and Business Planning being seen as part of the day-to-day agenda" (GOV3)***

***"With regards to other partners understanding, I think the fire service and ambulance are okay. The local authorities are a bit lost and Category 2 and voluntary responders have difficulty in following the format. They appreciate that there is a structure in place but don't replicate it in their own organisations so don't know who the appropriate person is to attend" (SCGC1).***

The evidence from the observations supports that there is not a wide understanding and clarity around roles and responsibilities. During Exercise Ancient Mariner it was clear that many of the participants from outwith the emergency services were unsure of what was expected of them or how their organisation fitted within the SCG structure. Consequently, one of the key lessons from that particular exercise was the need for further clarity on roles, relationships and jurisdiction. Moreover, it was suggested that future exercises should focus on the SCG strategic aims and objectives to ensure that all participants were fully aware of the situation and the needs associated with it. The lack of awareness of roles was best illustrated by a chief

executive who asked ***“who normally Chairs SCG meetings?”*** at the Strategic Crisis Managers CPD.

The distinction made between those organisations used to dealing with command and control and those who are not was echoed by a chief constable, as well as a local authority chief executive and director. The references by police regarding command and control emphasise their desire for a hierarchical approach. Whereas the SCG is supposed to be a network of equal partners, instead it seems that one organisation, the police, tell others what they can and cannot do; albeit it is recognised that the police have appropriate crisis training:

***“In police you’re used to command and control, so you can tell people what to do. With others the role is function based with responsibility for the function, so council people take up post but crisis management is not part of the day job. Crisis happens. It’s an add on. They’re not properly trained” (ACPOS3)***

***“How do you manage the switch from inclusive democratic to command and control? You’re acting out of character. Police officers have years of training. Is there a toolkit or set of steps to move you from your natural environment to crisis mode? That would be useful” (LA1)***

### **5.2.3 Communication**

As the SCG is a heterogeneous organisation, involving public, private and voluntary organisations, some with rank hierarchies and some with functional responsibilities, all acting together in crisis response, communication is an essential component in achieving effective response. However, Smith and Elliott (2007) identified ineffective communication and information difficulties as organisational barriers to learning.

There is evidence that communication and information sharing within the SCG could be improved. Communication lines were described as bureaucratic. It was highlighted that ***“the SCGs tend to work in silos”*** (ACPOS2) and communication generally was described as ***“still in a bunker. It’s not mainstreamed enough”***. Furthermore, ***“the government takes a scatter gun approach”***, when demanding information during the pandemic flu. Another example given was the fuel strike. It was said that when

nothing much was happening there were lots of information being provided and requested and that you ***“almost got the feeling it was generating reports for the sake of doing something”***. This is obviously some distance from what Weick (1993) described as ‘respectful interaction’ and more likely to be a significant barrier to preparedness (Guelke, 2005).

A further hindrance to effective communication and information sharing was that representatives of member organisations did not communicate or consult within their own organisation. Consequently, one coordinator expressed the view before an SCG met, ***“It’s not uncommon that they’ve looked at papers the night before and haven’t consulted with anyone”***. Another example of silo or stovepipe mentality; evidenced by their personal self-interest being put before the organisational goals (Wisner, et al., 2004; Stone, 2004).

However, more positively, all responders gave examples of informal links and rated them as (important, vital, immeasurable invaluable, critical, crucial or essential) in the business of the SCG. A number indicated that the informal meetings were far more important than formal meetings of the SCG and it was recognised that

***“You don’t build relationships during a crisis’ you rely on the personal relationships build up before them” (ACPOS5)***

One assistant chief constable was proactive and visited the key sites in the force area and used it not only to build relationships but also as a means to identify early warning signals that may need to be addressed. Surprisingly there was little reference to the early identification of emerging threats by other respondents.

***“It’s crucial but sometimes we don’t put enough effort into it. I personally went round every site in my force ...to build up a personal informal network. During the visits we would review plans and chat with bosses. This improved relationships, which helped during the SCG. It also meant that I could identify any issues early” (ACPOS2)***

The advantages of such informal links were supposed to be an improved understanding of each others roles and knowing strengths and weaknesses. It also enabled the participants to build trust, relationship and understandings, which could

be extremely useful in overcoming structural challenges, as well as easing the mutual aid process or pre-empting the need to wait for a formal response to a request.

***“Communication is the most important aspect of dealing with emergencies. If you know the person you can phone directly or better still speak face-to-face. If you know them you get to know their sense of values and their organisation’s sense of values” (NHS1)***

The key aspect of such informal networking and awareness is a broader focus beyond the immediate needs of the member.

***“It helps if you know the people... ‘Cap Badge rivalry’ is what the chief quotes but I think more like ‘Cap Badge Silo’, being less concerned of others. Now we have an awareness of others and are working towards common objectives, rather than just focusing on your bit” (ACFOS2)***

Another advantage is that it helps overcome any organisational tensions, especially when there has been a recent change in roles or responsibilities.

***“In the 1980s there was tension between Fire and Ambulance. There was a poor relationship ‘as bad as any professional relationship’ I’ve experienced. This existed at both leadership and the sharp end. Since then I have made it my business to pursue and check any hint of tension between services. My experience is that [SCG] is excellent. I think that recently there was some local difficulty in [other region] between the police and fire when fire overstepped the mark regarding dealing with a road collision (which the fire service now have statutory responsibility for). However, this has been addressed with greater awareness of the change in roles” (ACFOS1)***

***“good partners but not so good about partnership. We’re still very parochial” (ACPOS6)***

During the observation there were numerous examples where informal networks were used to expedite actions. Their importance was emphasised at the New Salesman Exercise, when a Chief Superintendent highlighted that

***“Crisis is not the time to be building networks, but it will highlight how successful you’ve been in building them” (Chief Superintendent)***

This was illustrated during Exercise Castle Rock when during a SCG it was highlighted that coordination difficulties were due to ***“different personalities, there’s been a change of staff in [another SCG]”***. The importance of relationships in

stressful situations, such as crises, was reinforced the exercise debrief. It was noted that ***“the relationships formed early assisted in ensuring a successful exercise”***.

Another example of the use of informal networks was SCG Consequence Management having more up to date information than the officer in overall charge. When clarification of the information was sought by the chair of the SCG the response was, ***“coming direct to me from STAC. It’s the relationships working rather than communication process”***. The information discussed was subsequently confirmed as accurate during the meeting. However, it is obvious that access to such information has the potential to cause confusion. In fact concerns about generating confusion through use of information obtained informally were observed at another SCG. During the exercise a chief constable instructed the deputy chief constable not to use such informal network communications to task resources. The point that it had the potential to disrupt the exercise and was completely inappropriate was made emphatically.

The adverse impact of an ill judged communication flow was also observed at a number of exercises. For example, at Exercise Double Six, the chair acknowledged that not all decisions and discussions had been communicated appropriately. The deficit of information diminished the effectiveness of the response. Conversely the result of information overload was cited as at both Strategic Crisis Manager CPD and Exercise Castle Rock as a casual factor when things start to go wrong. In particular the volume of information traffic at Castle Rock resulted in about 50 actions outstanding.

The potential for when such overload occurs is for essential information to be lost and a loss of confidence in resulting decisions. This point was highlighted by a council chief executive at the CPD, who disclosed that because of the duplications of information being demanded by SCGs, government and the health organisations during the pandemic, which was far too much it was deleted without being read.

The same issues were echoed at Exercise Short Sermon. The result was a recommendation for a review of communication links between various components including UK government, the Scottish government and the NHS.

Another aspect was the challenge in improving the information flow because of tensions in the way different organisations operate. This was specifically referred to during Exercise Castle Rock, where as a consequence of tensions between SCGs one chair commented, *“it’s taken half a day for the strategic position to come from [other SCG] but it’s now similar to ours. We are now on the same page!”*

Other examples observed during that exercise included media statements being circulated by one SCG despite objections having been raised about its content by another SCG. There were also significant time lags in communication with one example of a document taking almost 15 hours to travel from one SCG to another.

During the observations at Exercise Castle Rock there were tensions between the Scottish and UK governments, as well as with other organisations. One Scottish Government representative commented that it was quite a difficult process which lacked clarity. He was of the view that this perhaps affected what [communication] was actually going out. This view was mirrored by one chief constable who emphasised that the Scottish Government, other forces, the investigators, and SGoRR had all indicated that the communication outcomes were not effective.

These incidents occurred despite a protocol being signed by all chief officers involved and the almost ritualistic statements that communication needs to be improved from every SCG. Such communication lags are more characteristic of hierarchical structures rather than networks (Ackoff, 1967; Carroll, 1998).

### **5.2.3.1 Information Sharing**

Information sharing and effective crisis communication requires interoperability. That is an appropriate structure and technology that allow agencies to communicate using a common language and system (Kapucu, 2006).

The essential need for a common understanding of terminology and language was seen during Exercise Castle Rock. The word ‘victim’ caused confusion during the exercise because it meant different things to different organisations. For example to

health it means someone still alive but to the police it meant dead. A lengthy debate around the meaning of ‘victim’ was observed at one of the SCGs. In addition, throughout the exercise all organisations and each of the 3 SCGs had difficulty in establishing the accurate number of people affected by the exercise incident. This was only cleared up towards the end of the exercise when there was realisation that different definitions were being used. Eventually a representative from Health Protection Agency (Porton Down) clarified what confirmed, probable and possible meant with regards to diagnoses of symptoms. But because it was not identified earlier a lot of time was spent double checking and seeking clarity.

The lack of technical means to share and post information both within and between SCGs and for the public was seen as another area which constrained effective communication. A particular issue was that some organisations had to use fax to share sensitive information because they did not have access to a secure network. There is also a related issue of security clearance for staff receiving such sensitive information. Consequently, it was identified that a better interagency operational communication framework for real time information sharing would assist communication and information sharing between the SCGs, as well improving the effectiveness of response.

A source of tension during the interviews was the restrictions on information being communicated when organisations are being asked to provide resources, but are excluded from the discussion and decision in relation to the situation. This issue resulted in much discussion and disagreement about the vetting levels applicable to gain access to particular meetings. Consequently a recommendation from the New Salesman Exercise was to have ACPOS and COPFS review the current policy.

It also had a bearing at Exercise Castle Rock because the Scottish Government was initially excluded from COBRA, which resulted in the Government Liaison Officer apologising at the SCG. Furthermore when an SCG member asked about a specific incident, the response from the SCG chair was *“we’re sharing as much as we can”*. A similar occurrence happened in another SCG when the chair of that SCG responded to a question from Health representative *“not in a position to talk about it in public domain”*. This caused particular difficulties for the health organisation involved,

especially in relation to the advice it could communicate. But probably more importantly it raised the issue of what is the public domain and who gets to decide whether a member of the SCG should not receive sensitive information? Table 5 summarises the main arguments in relation to the SCG structure, coordination and communication:

<b>Practice</b>	<b>Consequence</b>
SCG fragmented boundaries, disparate sizes, and lack of legal status.	8 separate SCGs is challenge for organisations to resource for Scottish and UK organisations. Also SCG resources available to respond are linked to its size. However, coordination is more effective in smaller SCGs.
SCG network versus hierarchical structures	Emergency services have preference for command and control rather than network coordination, which creates tensions between organisations.
Current SCG structure lacks responsiveness	SCG takes too long to establish in case of spontaneous incident.
Evidence of silo working remains	SCG members do not fully understand the constraints member organisations face, which undermines the effectiveness of the network structure.
No common means of secure communication	Time lags in communication and limitations in sharing sensitive information with those who do not have secure technology

**Table 5 – Summary of the Main Arguments in Relation to the SCG Structure, Coordination and Communication**

It has been argued here that the current SCG structure has some deficiencies, e.g. fragmented boundaries, disparate sizes and no legal status, which may undermine its coordination effectiveness. Moreover, the communication channels are complex and may experience time lags in crisis response. The heterogeneous nature of the SCG means a complex organisational structure, with multiple linkages between partners. The complexity of which was exacerbated by the devolved Scottish Government and Scotland’s distinct and independent legal system. Furthermore, the multiple boundaries, with SCG member organisations serving local, Scottish and UK wide areas, while supporting 8 separate SCGs was a resource challenge for many organisations. In addition, SCGs capability was related to their geographical size, which also influences coordination and communication effectiveness.

It also appears that there is a preference by members of the emergency services for command and control hierarchical structures rather than network and that the structure lacked the necessary responsiveness to deal with spontaneous, cross border dynamic crisis. Despite that the willingness of those within the SCG to build relationships and interact in a positive manner was seen as a potential means to eradicate silo working and gain a greater understanding of the other SCG member roles, responsibilities and constraints. But the evidence indicates that silo working is still prevalent. Finally, effective crisis communications are undermined by the lack of technology accessible to the entire SCG system. Consequently there were difficulties in transferring sensitive information between partner agencies. This was a particular issue when involving intelligence sources and the reluctance to share it with those who had not been previously vetted to the appropriate level. Furthermore, there were challenges around the use of common terminology among the various agencies, which result in misunderstanding and distraction during crisis.

### **5.3 Culture, Leadership & Decision-Making**

Key components of a resilient organisation are organisational culture (Mitroff et al., 1989; Weick & Sutcliffe, 2001), leadership (Smits & Ally, 2003; Kelly, 2007) and decision making (Frederickson & LaPorte, 2002). But a particularly important aspect of the organisational culture of the SCG was the frequency and willingness for multiagency working. This collective action to avert common threats was also identified as being a suitable success criterion for a policy network (Klickert, et al., 1997; Scharpf, 1978; Glasbergen, 1995). There was wide recognition by the respondents that the SCG provided numerous opportunities for members to interact and meet both on a formal and informal basis, enabling them to work together to achieve common outcomes. In this sense the SCG met the success criterion for a policy network.

The theory opines that multiagency collaboration results in greater understanding of the different organisations involved, especially in relation to an appreciation of the different organisational cultures, priorities, needs and constraints that partner agencies have (Weick, 1993; Cotton, 1993; Crichton, et al., 2005). Furthermore, that multiagency working leads to greater integration and the breaking down of silos,

which brings with it greater awareness of the roles and responsibilities of all participants of the SCG. However, there was a view that partner organisations were guilty of being insular rather than seeing the overall picture, with particular criticism of the local authorities. One Scottish government respondent who had worked across a number of SCGs and various member organisations highlighted the tendency of organisations to learn in silos, which resulted in a lack of understanding between organisational roles and responsibilities.

***“If you learn in silos, which you’ll do if you only know your own organisation, you’ll reflect that organisational culture. .... There’s a lack of understanding across the board about roles and responsibilities... The lack of awareness and understanding applies to the local authorities, especially”***  
**(GOV1)**

The development of relationships and networks, through getting to know colleagues and counterparts in other organisations was considered to very important organisational cultural aspect promoting respect, confidence and trust.

***“We still have a tendency to work in silos. Decisions can be made in isolation. For example at live play exercise there was a breakdown in communication between the executive and operational levels. It was not malicious or deliberate but reflected training, experience, infrastructure and assumptions about the organisation, which were wrong. That’s why I think it’s important to build relationships. It will lead to improvements”***  
**(SAS1)**

However a potential difficulty in forming close knit groups is that some stakeholders will be excluded. The potential is for ‘groupthink’ to develop. Essentially a form of extreme cohesion where the actions of the group are about consensus and protecting the image of the group rather than considering other appropriate courses of action (Janis, 1983; Turner & Pratkanis, 1997). This seemed to be a concern expressed by a chief executive referring to the close working relationships that council emergency planning officers had formed:

***“The emergency planning managers interact together. They have a ‘cosy club’ that could act against us. We need to ensure that they don’t exclude those not involved on a daily basis, i.e., the chief executives”***  
**(LA1)**

### 5.3.1 Leadership of SCG Brings Experience & Knowledge?

The respondents acknowledged that the SCGs had access to members with experience and knowledge, particularly those with expertise in specialist areas, who could come together at fairly short notice and the SCG work well. Moreover, because of the local nature of SCGs it was recognised that members would know the area covered and the risks within it. This local knowledge base was essential in the planning process and that the people who draw up SCG plans being the same as those who respond to them was also a positive aspect of the SCG system. A practical example of the use of local knowledge was given by one responder. During the foot and mouth when pyres for livestock were being set the responder's organisation was involved in assessing the sites. On one occasion it was set over a gas pipe fortunately this was identified and prevented because of local knowledge. However, a theme from all the observations taken was the need for explicit separation of responsibilities between each of the levels of management. In fact, Exercise Ancient Mariner found that there was a need for clearer identification of leadership responsibility at each stage of the incident, as well as clarification of who should be Chair of the SCG.

The context for crisis decision making within the SCG was identified a 'real world setting' characterised by time pressure, uncertainty, ill-defined goals, high personal stakes, and other complexities (Orasanu & Connolly, 1993; Lipshitz, et al 2001). When operating in such an environment, over half the respondents indicated that their day-to-day experience underpinned by their organisational training, rather than training specifically related to crisis management that had influenced their abilities:

***“I think is less to do with training and more to do with experience. Dealing with this on a daily basis at a high level” (ACPOS6)***

***“I would say that regards to (ability to assess situations) you may come across a new situation that training has not prepared you for. You need to accept you won't know the answer straight away. Being able to deal with ambiguity is important” (ACPOS1)***

It was striking that the members of the police service referred to the need to be able to make decisions when there is a lack of clarity and limited information. This was identified as a key characteristic of crisis management (Boin & 'tHart 2007). However, it was recognised that leaders had the potential to undermine group

cohesiveness. In the following example, not only is there reference to command and control approach adversely affecting police inclusiveness, but it also starkly demonstrates the danger of a leader adopting the wrong leadership style and failing to understand the different requirements of the organisations that make up the group membership, even during a simulation:

***“There was a recent exercise where the chief constable involved lost it because of attitude and an aggressive manner. Because of the command and control approach, we’re not always good at being inclusive. We’re more used to flipping between command and control and steady state, than some of our partners” (ACPOS7)***

It was also finding from Exercise Ancient Mariner that the police ‘suffer’ from a can do attitude. The use of language in describing this is in itself interesting. ‘Suffer’ tends to indicate an adverse or negative aspect. It would perhaps be more relevant to refer to the benefiting from a can do attitude.

***“When crisis hits we likely prove ourselves as good as we need to be. We could always improve. The reliance on ‘can do’ mentality of the Blue Light services is no bad thing” (ACPOS6)***

It was suggested by one chief constable that the involvement of the police imposed an appropriate response structure for the command and control of the incident.

***“We’re the emergency response side. In peacetime SCG is chaired by the chief executive of the local authority. When live activation its different ...We bring a discipline to the role with structure and command and control. We can start to task and increase the pace” (ACPOS3)***

This comment indicates demarcation between an emergency response and steady state management, implying that the need for police powers to deal with the emergency or crisis was the determining factor on whether the chief constable assumed the chair of the SCG. It is notable that of the 8 SCGs all but 1 are routinely chaired by the local chief constable. However, even with the exception which is chaired by the chief executive of the council, in the event of an ‘emergency’ the chief constable will take the chair.

### 5.3.2 Reluctance to Chair SCG

With regards to chairing the SCG it was highlighted that an effective chairperson needs to be inclusive and make use of all the experience and perspectives around the table. But the assumed existence of SCG members' knowledge seemed to be contradicted when in a separate event a council chief executive exclaimed that in relation to having full information

***“Chief Executives are not necessarily well informed [they’ll be] reciting only their brief which they’ll have received one hour before”  
(Council Chief Executive)***

Moreover, one chief constable who declined to take part in the research explained that although he held the chair of the SCG, he had been automatically appointed by virtue of his rank but did not actually have any experience of an SCG operating. However, it was highlighted that there was occasional reticence to chair SCG from those beyond the police and fire service.

***“The chair must have suitable knowledge and experience. The police, for example, deal with crisis management on a daily basis and in my experience they still include everyone around the table. An effective chair is one that is inclusive recognising the range of experience and skills around the table” (SAS1)***

***“... there is a reticence to take the chair by others outwith the blue lights. They rotated the chair at [recent] training event and that was quite interesting how others reacted. But we’ve moved and appreciate the multi-agency input” (ACFOS2)***

A consequence of a lack of capability in relation to those SCG members who do not routinely deal with crises is a reluctance to assume the responsibility of chairing the SCG. According to a Scottish government representative:

***“The key skill of the chair of the SCG is to be inclusive and be aware of organisational culture when all hell’s broken loose”***

Examples of a reluctance by those not routinely involved in crises in taking the chair when it would be more appropriate for their organisation to do so were observed on a number of occasions. During Exercise Ancient Mariner the chief constable chairing the SCG suggested after the initial emergency phase was over, i.e. once the strategy

was in place and it became obvious that it was primarily a public welfare issue, that it would be more appropriate that the chair was assumed by another agency. However all declined. In fact one participant from the appropriate agency to assume the chair was standing at the time and actually took a step back.

A similar incident was observed during the Strategic Crisis Managers CPD when the police chairman offered the chair to the NHS because of health issues arising in the scenario. The obvious reluctant reaction from the NHS representative was such that there was laughter around the room. The chair was then declined and remained with the police.

A delegate at Exercise Green Gate had also experienced this, when during the flu pandemic, the chief constable offered the chair to another agency but was declined. Furthermore, at Exercise Short Sermon when the chief police officer chairing the SCG concluded that the exercise was entering the recovery phase and should be chaired by the council chief executive there was some confusion because it seemed to be a lack of awareness and preparation for such a transition by the chief executive.

In addition to the variable quality of the individuals, organisational cultural issues become apparent, with references being made to police 'telling people what to do' and being task driven with a 'can do' attitude which contrasts with other organisations who are perhaps reluctant to volunteer or may not deliver on time. This highlights one of the challenges with a network, namely holding individual people to account for collective action (Knoke & Kuklinski, 1993). In contrast, with a hierarchy it is possible to employ a large number of people and preserve unambiguous accountability for what they do (Jaques, 1990). It is therefore perhaps unsurprising that the emergency services indicate a preference for command and control structures, where it is clear who should have done what.

***“With other partners at chief executive level it’s generally good. I’m less convinced at more junior levels with local authorities. There doesn’t seem to be any consistency. Some are at the top of their game and others don’t seem to provide resources. There’s insufficiency of focus; police are task driven but partners are more relaxed. There’s a question of desire and degree of integration. They get caught up in***

*legalise... They don't volunteer which is difficult. You almost have to embarrass people to take tasks and they don't deliver enough" (ACPOS4)*

*I think it needs to sit with the police for administration, otherwise nothing gets done. That's the culture. (Senior Police Officer1)*

A more critical view was that some of the strategic partners were not sure of their role or what purpose they were supposed to serve on the SCG.

*At strategic level I think some partners are very poor. They generally struggle with simple things like what they're there for, e.g. strategy and outcomes. The attitude, what's it got to do with me?" (GOV1)*

For some organisations it is simply the wrong level of attendee for the SCG.

*"there have also been complaints at the strategic that on some occasions the wrong level of people attended. That is those who are not executive decision makers" (MCA2)*

*"The other partners it varies across agencies and across individuals. Strategic is improving and the tactical mostly do. Strategic don't all attend, that's why the Regional Resilience Advisor is now in place. It's the level of understanding – some don't give two hoots. One local authority continuously sent a tactical rep to strategic group, which rejected rep. The local authority don't see it as their role and haven't attended since 2007" (SCGC8)*

The lack of commitment is evidenced by the non-attendance by the chief officers.

This leads to general scepticism at other levels of the SCG.

*"There are degrees of competence and interest levels at SCG. The Blue Light people are generally better. It is fairly critical but there's a lack of understanding. I think the lead is taken from the chief executive representation, it sends a signal. I've written two letters (regarding failure of appropriate representation at SCG) it makes it happen. Although I wouldn't go as far as sanctions, more gently pressed. Government should make it an expectation. After all it's not a huge commitment when you look at the meetings and exercises" (ACPOS6)*

These critical views are not just held by the 'blue lights' but across the SCG membership. It highlights that networks are not characterised solely by collaboration (Granovetter 1985; Powell 1991; Hakansson & Johanson 1993) but also need to be able to resolve disputes (Knocke & Kuklinski, 1993; Termeer & Koppenjan, 1997). In terms of the SCG, there are no effective sanctions available should a member either

absent themselves or show limited commitment to the SCG. Therefore, it is suggested that government should encourage or ‘gently press’ for full and committed engagement by all stakeholders.

### **5.3.2.1 Lack of Clarity re Politicians’ Role**

Despite the legislation, guidance and objectives related to the SCG, there was still a lack of clarity about the role and responsibilities of elected representatives. There were examples given that in many occasions politicians did not understand the limitation of their political role in the operational environment and that their requests for information and decision making were seen as distractions from the effectiveness of the SCG.

***“Politicians. How do we stop them interfering unnecessarily? How do we get them to stop criticising? Their prime objective is to get re-elected their use of ‘scapegoats’ impacts on public confidence. I could spend my working day chasing questions for politicians rather than getting on with my day job. I’ve personally been misquoted by a politician but fortunately I had an audit trail” (NHS1)***

The use of the term ‘scapegoat’ in this comment reflects Smith’s view that post-crisis key actors may seek to protect themselves and generate disinformation as the process of scapegoating begins (Smith, 1990). That, together with the description of ‘chasing questions’, from which it could be inferred that the politician’s questions are not central to the issue, echo Turner’s (1976; 1978) concept of peripheral inquiry and decoy phenomenon, which Smith and Elliott (2007) identified as being barriers to learning from crises. Perhaps indicated by the politician’s subsequent misquote, is a difficulty with sensemaking in relation to the crisis (Weick, 1993).

Despite concerns about politicians, particular complaints were made about their reluctance to become involved in the programme of exercises which is run, which perpetuated their lack of understanding of the SCG structures, roles and responsibilities.

***“Getting politicians to play (in exercises) is virtually impossible. Even in national counter terrorist experts national (UK wide) politicians will send senior civil servants to deputise for them. In***

*the event of an incident the politicians don't understand their role. They blur political and operational decisions and start intruding. They are surprised to find when it's a police decision rather than the politician's. That applies right across the UK. If they attended training, they would be confronted with the issue in a safer environment" (ACPOS1)*

*Political interference but it's the chief constable or chief executive that carries the can. Central Government needs to be clear about its supportive role. With CT it's slightly different CT is national responsibility but the consequence management response is devolved, e.g. Glasgow Airport there were some difficulties in who was doing what" (ACPOS3)*

These issues were summarised by a representative of the Scottish Government speaking about the issue of 'political management' at the New Salesman Exercise. It was highlighted that ***"politicians are capable of helping or hindering"*** and while they would respect reserved or devolved boundaries they were ***"more about trust and relationships and less about manuals and guidance"***. This raises the point that without an understanding of the guidance it is inevitable that politicians would misunderstand their role.

This was echoed by a representative from the Cabinet Office who acknowledged that the relationship between central and devolved government during the terrorist attack at Glasgow airport had not been as effective as it should have been. In particular, it was highlighted that ***"the UK government didn't really understand the role of the PF (Procurator Fiscal)"***.

This lack of understanding by politicians was referred to again at the Strategic Crisis Managers CPD event. On that occasion a senior police officer involved in the incident opined that ***"political wrangling between London and Scotland caused a 12 hour delay to 'feed the beast' (of the media) which was obviously an error"***. This was a dispute about media strategy, with the UK government wishing to adopt a 'say nothing' approach which contrasted with the Scottish Government strategy to disclose information.

The lack of understanding and the adverse impact which politicians can have on the effectiveness of the police investigation was also raised at the Counter Terrorism Workshop by a senior detective who was involved in the investigation. In this case it was given as an example of the tensions created by politicians that interfered with the

police being able to deal effectively with the incident itself. The dispute resulted in a chief constable opining that: ***“The UK and Scottish Governments should go and sort that out separately and allow the police to deal with the incident”***.

Another example of government’s lack of understanding about the difficulties between theory and practical application was observed at Exercise Green Gate. A representative from the Fire & Rescue Service informed me that in relation to mass-contamination set up in response to a CBRN incident that ***“this has never been done for real, but according to the Home Office model, everyone will be done in 6 hours”***. The message which was emphasised was that logistically it was just not possible.

It was suggested by the Cabinet Office representative that such tensions and misunderstandings could be overcome by cross border exercising involving politicians. Notwithstanding earlier comments about how difficult it actually is to get politicians to participate in crisis training in a safe learning environment, this was done during Exercise Castle Rock. The Exercise involved both UK and Scottish government participants; although the Scottish Government was unable to participate in the opening day because of a Cabinet meeting.

But the unavailability of Scottish Government in an exercise which took over a year to plan could be interpreted as a lack of priority to the notion of practise. If government are unable to provide resources for the opening day of the exercise, it begs the question about commitment and how government could be expected to ‘gently press’ others to fully commit, as suggested earlier by a chief constable who had difficulties ensuring all SCG members attended and fully participated in its functions.

When the Scottish Government did become involved in day 2 and 3 of the exercise, it highlighted another difficulty expressed by SCG members about politicians, namely the lack of understanding between political decision making and the independence of chief constables in operational policing matters. In fact the Scottish Government minister wanted to be ***“more proactive”*** and asked to be ***“copied into the investigation”***. This was an example of a politician overstepping the demarcation

between political issues and policing; notwithstanding the role of the Lord Advocate and Procurators Fiscal to direct the investigation.

Evidence of further blurring of the role of politicians became apparent during Exercise Castle Rock when it was announced that the UK Government's crisis committee ***"COBRA had met and set tactical parameters"*** and later when the Government Liaison Officer informed the chief constable that COBRA ***"were looking for the chief constable to 'give up the date' (in relation to an aspect of the investigation) to the media"***. On both occasions the chief constable did not comply.

Moreover, the actions by UK and Scottish governments within the exercise were praised by a representative of the Office of Security and Counter Terrorism at the Exercise debrief. In particular it was highlighted that although busy Ministers participated in ***"the strategic level of play"***. This raises questions about who is actually in charge and where does strategic responsibility lie, with the Strategic Coordinating Group or with Ministers. One chief constable was explicit, ***"Government needs to be clear about its supportive role"*** (ACPOS3).

### **5.3.3 Decision Making within the SCG**

The Strategic Crisis Managers CPD events highlighted the perceived distinction between command and control organisations and those with less hierarchical structures. For example a local authority chief executive suggested that not only were the structures different but the way decisions were made within the SCG was also effected. The nature of the SCG in dealing with crisis decision making would appear to be at odds with the preferred method of decision making in local government. It appears that local government are more comfortable and perhaps more cautious preferring to take time and have full information when making decisions.

***"there's a difference in management styles, the police are command and control but local government have a softer style. The speed of decision making also brings tensions"*** (Council Chief Executive)

At a practical level there were a number of comments that indicated deficiencies in decision making processes currently in place with SCGs. The crises that the SCG

were activated for are complex and difficult to conceptualise and analyse (Chisholm, 1998) and will not have an obvious cause to justify triggering procedures (Lagadec, 1993; Boin & 'tHart 2007). Therefore there is difficulty in making the decision as to when to shift from steady state management into crisis mode. Such decisions are made more difficult if it happens to be outside core office hours and involves a local or central government department. Making reference to the 'bird flu' scare which had recently occurred one chief police officer said, ***“When to go into crisis mode is the key? The police were left holding the dead swan because it happened after 4pm on a Friday”*** (ACPOS2).

In relation to decision making by the SCG, there were some reservations about everyone being involved in the decision and pressures within the group to agree rather than take a contrary position.

***“Sometimes I think there can be too many leaders, especially higher up in the organisation. Perhaps we can be too structured. We need to realise that all the answers won't come from person of rank every time, nor should we decide by committee. We need to get somewhere in between. We need a succinct and focused process to drive activity. Everyone doesn't need a voice. Eventually you get to the point when you say this is what's happening and everyone should get behind it”***  
(Senior Police Officer2)

Interestingly this comment indicates a characteristic attributed to High Reliability Organisations, namely deference to expertise where decisions are delegated to those not necessarily in command but with the most appropriate knowledge applicable to the circumstances (Weick & Sutcliffe, 2001) and goes on to recognise that in crisis quick decision making is important (Pearson & Clair, 1998). Concluding that once a decision is made it should be supported; although implied in the 'process to drive activity' is that should the circumstances change again so will the decision; an attribute of those organisations such as the police and military who routinely deal with crisis (Flin 1996; Weick, Sutcliffe & Obstfeld, 1999; Klein, 2001).

The downside to group decision making in dynamic situations such as crises, is that some may find themselves under pressure to agree to achieve consensus within the group, rather than express a contrary view based on the individual's expertise; in other

words, groupthink (Janis, 1982). Turner (1994b) linked groupthink to ‘sloppy management’, which has the potential to increase the vulnerability of the SCG.

***“Being assertive; sometimes something needs to be said. There can be undue pressure to go with the flow. There is an unequal basis of teams” (GOV3)***

There was also a perception that the SCG was driven by the practitioners, such as the emergency planning officers. This occurred because the practitioners met more frequently and tend to have more day-to-day involvement than the Strategic level of management within the SCG. This reflects the view made earlier by a council chief executive who referred to the emergency planning officers as ‘a cosy club’.

***“In my view it is clear that most decisions tend to be taken at operational level. At the strategic level I’m concerned about policy and legislative issues” (LA2)***

It was a concern expressed by a local authority chief executive at the Strategic Crisis Managers CPD that the ***“SCG has no statutory power”***. Furthermore at the New Salesman Exercise it was highlighted that organisational chief executives remain accountable for their own organisation’s actions. In relation to suggestions made about having one ‘super gold’ commander in a cross border event, one dissenting chief constable emphasised that ***“you can’t get away from personal liability and accountability of chief constables”*** (in relation to being responsible for all policing within their force areas). This viewpoint had implications of the structures used to deal with a terrorism incident. But was echoed by another chief constable who said

***“Two golds: who’s in charge? Who links to the First Minister? What does an engagement model look like?” (Chief Constable)***

In dealing with terrorism another group which is not included on the published structures is the Executive Liaison Group (ELG). The role of the ELG was subject to discussion at the Counter Terrorism Workshop, especially in relation to the chief constable’s accountability. Those sitting on the ELG would include any force affected by public risk. The group would also include other stakeholder specialists such as the Lord Advocate, who has the power to direct investigations. The ELG would provide strategy and forces would simply make tactical choices in line with the ELG strategy.

However, it was acknowledged that the constitutional position of the chief constable is such that should he/she disagree with the strategy the ELG would have to compromise. It was also confirmed at this event that ‘super gold’ commanders have no basis in law. The event facilitator informed the chief officers in attendance:

***“Scottish forces affected by public risk will sit at the ELG...tactical choices will go to individual forces. (With) regards accountability there’s no legal basis for super gold. If disputed by local chief constable the wider plan from the ELG would have to be re-worked to take account of chief constable’s position”***

The lack of clarity around the legal position highlights the difficulties of decision making bodies in dealing with crises. The existence of the ELG and its role in setting strategy, in relation to terrorism incidents, undermines the statutory function of the SCG. The notion that the SCG has specific duties but is also expected to implement tactical options from other strategic groups such as the ELG or government constrains the decision making of its members. It also blurs accountability and has the potential to create tensions within the group who may simply see their presence as the provider of resources, rather than strategic decision maker.

During Exercise Ancient Mariner the chair had difficulty in keeping the SCG business focused on strategic issues. The same issue was highlighted at the Strategic Crisis Manager’s CPD event where participants had to be reminded that strategic decisions should consider the longer term and should not drift down to tactical or operational levels. Likewise at Exercise Short Sermon the chair of the SCG had to remind members on a number of occasions that it dealt only with strategic issues and referred topics raised to the appropriate tactical level group. Although there were also complaints by other members of the tactical group at Exercise Short Sermon that the separation between strategic and tactical was too great.

The challenge in matching decision making to the appropriate structure was observed at a number of exercises. For example at Exercise Ancient Mariner a decision about a set of options presented by the key utility company were presented at the tactical level group in the first instance. Thereafter, they were sent to strategic which should have decided the options in the first place. From there strategic sent them to the Scientific and Technical Advisory Cell (STAC) for consideration. STAC then sent them back to

strategic for consideration. From there they were sent to tactical to implement. In essence the strategic decision arose from the tactical group. It was delayed by being sent round a number of forums only to return to the originators to implement some hours later.

A similar issue of strategic being given information but not making decisions was highlighted both at Exercise Double Six and Strategic Crisis Managers CPD events. In the former the strategic group simply noted all actions undertaken at the operational level. It did not make any decisions itself and resulted in twin sites taking quite different decisions regarding evacuation. The latter involved an aspect of the scenario similar to Exercise Ancient Mariner. In this case the SCG reflected that it did not actually make a decision. The decision had actually been made by the utility involved, not the SCG. The view of the chief executive was, ***“We didn’t make decision – [utility] made decision. We shared lots of information”***. When this observation was made the representative from the utility responded that to the utility organisation the outcomes and safety margins were obvious: ***“but decision making in multi-agency environment not as clear cut. Organisations don’t respond at the press of a button. There is more complexity in an SCG”***. This comment highlights the challenge in crisis requiring quick decisions (Pearson & Clair, 1998) while deferring to expertise (Weick & Sutcliffe, 2001) in a network environment where there are difficulties in attaching direct actions to accountability (Knoke & Kuklinski, 1993).

Furthermore, during the discussion around this issue a chief executive from a local authority tried to elicit information about the practicalities of the options, which would have assisted with the outcome. However, the group discussion talked over the question and it was not returned to. It did though lead to a discussion within the group about how to deal with decisions that did not have the unanimous support of the group. The question arose about what the decision was and whose decision was it actually to make. This indicated that the SCG did not see itself as a collective decision making body but still saw its business in silos; particularly who should be responsible for what.

The discussion finished with a telling incident when the facilitator asked how the group would deal with contentious issues with which the representative was at odds with the group. The responses included **“vote on it!”** and **“go to the media!”** While the responses raised much hilarity among the group it also notably caused some to become quite uncomfortable, mainly those whose organisations had been subject to media scrutiny. It was finally agreed that in the event of a fundamental disagreement the organisational representative would simply **“argue your case and have it minuted if you disagree”**. Unfortunately the group were unable to reconcile organisational disagreement with the need for the organisation to carry out a particular action. That was left unresolved.

The lack of decision making was also observed at Exercise Castle Rock. There a senior member of the Exercise Staff was exasperated when he declared. **“They’re having meetings about strategy rather than dealing with things. People are dying in the street. They just have meetings”**. Similar criticism was directed at the Scientific and Technical Advisory Cell during the same Exercise and was summarised by the umpire who said

**“Crisis decision making NOT! Could be better, for example STAC’s like being thrown an exam question; they kept going round and round. 45 minutes is not an urgent decision! There are a few prima donnas” (Umpire Ex Castle Rock)**

These comments highlight a number of issues in relation to multiagency decision making. The most obvious is the lack of ability to make decisions quickly. But decision making processes are critical when dealing with the high tempo of crisis demands (Frederickson & LaPorte, 2002). The perception of those on the outside was that there was a sense of ‘dither’ or lack of action. It indicates that those in the group were perhaps waiting for more information and were detached from the sense of urgency.

Another aspect within the STAC is the strength of personalities and the impact on decision making (Feldman, 2001; Robbins, 2005). The inference from the umpires comment is that a decision was being blocked by those with strong personalities. The absence of a mechanism to deal with dissent exacerbates the delay.

An observation that could be made about the STAC is its prestigious position because it is composed of those with detailed specialist knowledge and skills. However, my observation would be that they are not decision makers. The STAC is an advisory group to the decision makers in the SCG. This seems to have been misunderstood.

The power of perception and the challenge of making decisions remotely from the operational sphere were starkly illustrated by the example given at the Strategic Crisis Managers CPD by a senior fire officer. During the terrorist attack on Glasgow Airport it became apparent that there was the potential for further explosive devices and because the fire services could not be given such assurances that there were no further devices their procedures dictated a tactical withdrawal to a safe area. However, during the incident the world media had arrived and began broadcasting, so despite the procedures instructing withdrawal the fire and rescue services decided to remain because of the understanding that perceived retreat would have to the wider world. The key arguments in relation to the SCG’s culture, leadership and decision-making are summarised in Table 6 below:

Practice	Consequences
Despite the SCG members acknowledging the importance of multiagency working it is still insular.	Undermines network performance and creates silo working, which results in barriers to preparedness.
The network structure of the SCG means there is a lack of accountability for outcomes	The lack of accountability indicates a lack of trust which undermines the collaborative culture necessary for the SCG, and encourages emergency services to revert to command and control to ensure decisions are implemented.
There is a lack of clarity between the SCG and politicians in relation to strategic management responsibility.	Frustrations experienced by both have the potential to erode trust and effectiveness within the network.
Not all SCG members are comfortable with quick decision making necessary in crisis.	Most SCGs chaired by police chief constables, which reinforces the view that those outwith emergency services are supporting players. Consequently, there is reluctance by non-police to chair the SCG when it is appropriate.

**Table 6 – Summary of the Main Arguments in Relation to the SCG Culture, Leadership and Decision-Making**

In summary, it was identified that the key components of a resilient organisation are organisational culture, leadership and decision making. Leadership was essential in

creating the environment for successful crisis management in a network and a measurement of success in relation to the SCG as a policy network was proposed. That is, because of the strategic nature of the SCG, the opportunity to work together to achieve common outcomes was the appropriate measurement rather than the attainment of specific goals which is a measurement suitable for the operational level of activity. There was wide recognition by the respondents that the SCG provided numerous opportunities for members to interact and meet both on a formal and informal basis. Therefore, the SCG met the success criterion for a policy network.

The importance of multiagency working, especially for greater integration and the breaking down of silos was acknowledged. In particular how it engenders greater awareness of the roles and responsibilities by participants of the SCG. Despite this, there was evidence that partner organisations were guilty of being insular rather than seeing the overall picture, with particular criticism of the local authorities. Furthermore, the challenge of accountability for outcomes within the network environment was identified. As was the preference by senior police officers for hierarchical command and control structures to ensure clarity about who has actually done what. But it was found that there are no effective sanctions available to the SCG should a member either absent themselves or show limited commitment. A proposed solution was that the government should 'gently press' backsliders. The suggestion for more government intervention was contrary to the view of others that government actually had a supporting role and needs to be clear where the demarcation is between it and the operational aspects of the SCG.

It was also highlighted that the quick nature of crisis decision making needed in the SCG appears is a daily part of the emergency services job. But seems to be at odds with the preferred method of decision making in government, which is more comfortable and perhaps more cautious preferring to take time and have full information when making decisions. This may explain why of the 8 SCGs all but 1 is routinely chaired by the local chief constable, and the exception is only chaired by the council chief executive in the absence of crisis.

## 5.4 Chapter Conclusions

This chapter detailed the data from interviews, observations and the relevant crisis management and resilience literature. With regards to the various strategies and policies in relation to risk, crisis and business continuity management necessary to achieve the outcome of resilience, which are underpinned by the provision of training and exercising, the chapter identified barriers to learning which diminish the SCG adaptive capability. The SCG risk assessment process was seen as a ‘box ticking’ exercise completed to meet a deadline rather than assist in improving the SCG crisis management capability. Moreover, there were limited assessment skills available to the SCGs and findings were not used for strategic planning. Furthermore, there were concerns that business continuity was not a priority or core function of the SCG. Consequently, there could be little confidence in such plans, which were generally not tested.

There was too few trained staff. Despite resilience being an outcome of the SCG and a UK government policy, it was found that most references were about the lack of suitably trained staff. There was insufficient strength in depth with knowledge lying with too few people. But some organisations were reluctant to commit resources and there was a suggestion that training should be mandatory, although there were practical constraints, the most obvious being that SCG members are organisational leaders presumed to have sufficient knowledge to deal with the activities of the SCG. In relation to learning lessons, because the focus is on dealing with the immediate crisis lessons are not learned and mistakes are repeated. The lack of formal feedback mechanisms at both an individual and organisation level adversely impacts on the SCGs adaptive capability. This together with poor risk assessment capability results in the SCG being a crisis prone organisation being more reactive rather than proactive.

In relation to the organisational structure of the Strategic Coordinating Group, and its coordination and communication it found the current SCG structure has some deficiencies, such as fragmented boundaries and disparate sizes. It also lacks the necessary responsiveness to deal with spontaneous, cross border dynamic crisis and resource availability is determined by the geographical area of the SCG. Despite the intention of a network structure for coordination, members of the emergency services

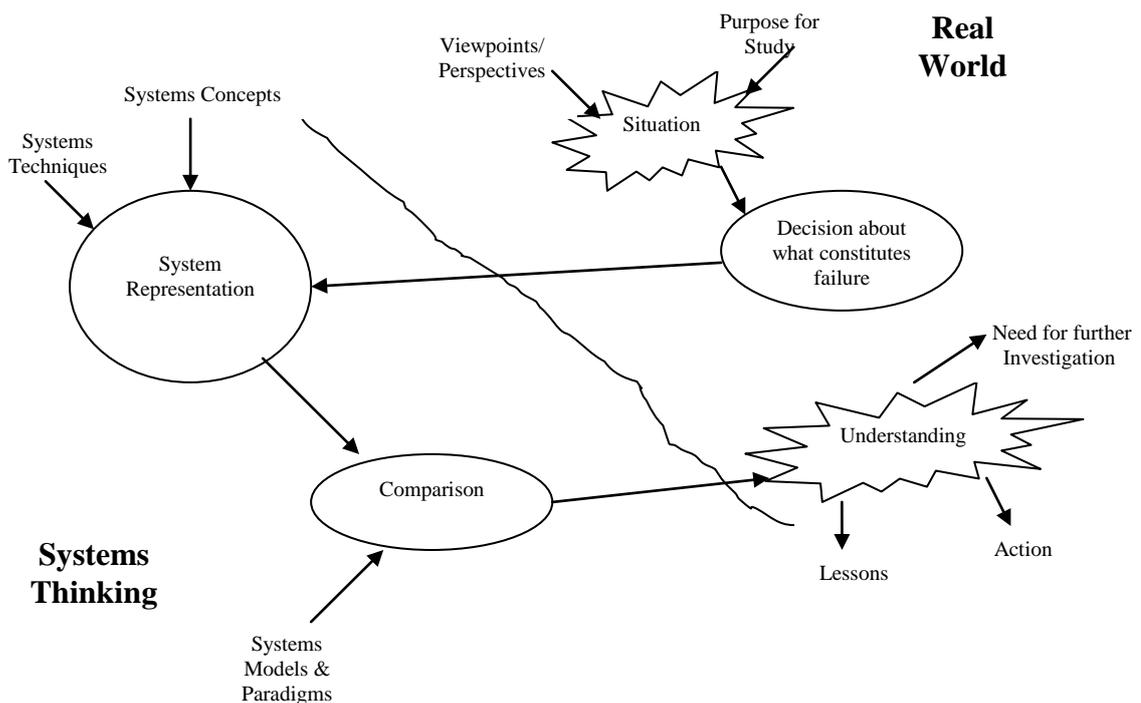
tend towards command and control hierarchical structures. Furthermore, there is evidence of silo working within the structure, with many participants being unaware of the roles and responsibilities of other network organisations. This together with the complexity of the structure undermines the communication and coordination during crisis. Effective crisis communications were undermined by the lack of technology accessible to the entire SCG. Consequently there were difficulties in transferring sensitive information between partner agencies, due to inadequate equipment, vetting concerns, and the lack of common terminology among the various agencies, which resulted in misunderstanding and distraction during crisis.

The organisational culture of the SCG and the influence of leadership and decision-making were identified as key components in multiagency working, especially for greater integration and the breaking down of silos. Despite this, there was evidence that partner organisations were guilty of being insular rather than seeing the overall picture, with particular criticism of the local authorities. This highlights the challenge of accountability for outcomes within the network environment. But it was found that there are no effective sanctions available to the SCG should a member either absent themselves or show limited commitment. Crisis decision making is part of the emergency services role, but others preferred a more cautious approach. Consequently leadership is essential in creating an environment in which everyone can contribute to ensure successful crisis management. The SCG provides numerous opportunities for members to interact and meet both on a formal and informal basis, which is an appropriate measure of success for a policy network.

Having considered the data at an individual and organisational level, in the next chapter systems models are applied to the SCG. The purpose of the chapter is to compare 'ideal' systems models to 'real' world evidence and identify any variances, which potentially undermine the organisational resilience of the SCG and could even result in failure.

## Chapter 6 – Analysing the SCG by Applying Systems Models

In this chapter system models are applied to the SCG. The first model, the Formal Systems Model (FSM), developed by Fortune & Peters, (1994 & 2005), focuses on common areas of failure within systems. Thereafter, the Viable Systems Model (VSM), developed by Beer (1979, 1981 & 1985), is used as an additional level of organisational analysis to determine whether there are any specific areas which could be addressed to improve the effectiveness of the SCG in delivering crisis management. By applying ‘ideal’ systems models to ‘real’ world evidence a number of variances are identified which may result in constraints or even failure. The gap between the ideal situation and the reality is analysed in the next chapter using Gouldner’s (1954) concept of ‘mock bureaucracy’. The process is illustrated in Figure 11 below:



**Figure 11 A Notional View of the Systems Failures Method (Source: Fortune & Peters, 1995: 17)**

The dynamic process illustrated is applied in this research using the 5 steps of the failures method (Fortune, 1993) as follows:

1. **Pre-analysis** – in which the various viewpoints, situations, techniques and perspectives are brought together and rendered into a useable form. To gather data for the pre-analysis I conducted a literature review (Hart, 1998), and interviewed key personnel involved in SCGs, as well as take observations. This enabled me to identify emergent themes which provided apparent failures for further analysis.
2. **Select Apparent Failure** – having considered the various pre-analysis elements a decision is taken on what should be the precise subject of the analysis. These were drawn from the emergent themes including: the strategies, policies and functions of the SCGs; the structure of the SCG as an organisation and how effective it was in relation to coordination and communication; and the culture of the SCG, especially the influence of leadership on decision-making and learning within the SCG organisation whether they were effective in delivering resilience.
3. **Consider System Boundaries** – experiment with the appropriate system boundary, bearing in mind those variations will influence the outcomes. In conducting the analysis I decided that the system boundary would be the Strategic Coordinating Group, to which I applied the various models.
4. **Select System** – this will allow comparison with the selected paradigm. The unit of analysis I selected was the SCG as an entity. I examined how it interacts with its environment, including government, legislation and experiences of crises, to determine whether it has sufficient adaptive capability to learn and enhance its crisis preparedness.
5. **Establish System** - describe the various components until a level of understanding of its interactions and outputs are established. Having examined the SCG and the various components that influence it I was able to reach a greater understanding of how it operates as a system in an effort to manage crises and ensure resilience.

The findings from the models enabled me to gain a greater understanding of the complex system of the SCG and its various components, especially how they interact to produce an outcome. From these results I was able to consider what was effective within the SCG and what areas could be improved upon. Thereafter I considered how I could explain why some elements were more successful than others. I decided that Gouldner's (1954) concept of 'mock bureaucracy' was a useful means of explaining why despite legislation, regulations, guidance and government policy the outcome of resilience and the effectiveness of the SCG was not wholly successful. Mock bureaucracy has similarly been used to study: police bureaucracy (Jermier et al. 1991); a foreseeable and avoidable mining disaster (Hynes & Prasad, 1997); and UK soccer industry (Elliott & Smith, 2006).

The question of how the SCG coordinates and communicates to ensure that it has sufficient information to deal with task requirements and the control of the crisis is central to this research. Therefore, before applying the system models it would be useful to restate exactly what the SCG task requirements are.

The Strategic Coordinating Group is the principal multiagency forum, which enables all Category 1 and 2 responders to meet their statutory obligation to cooperate. The SCG is also a conduit for information flow between local responders and central government in preparation and response, review, training and exercising. It has a specific responsibility regarding central government policy initiatives in the area of civil protection, as well as encouraging close working across organisations which have an important role in civil protection but are not Category 1 or 2 responders, according to local circumstances.

The tasks the SCG is responsible for include preparing for planned response to crises affecting its area, and adopting a systematic, planned and co-ordinated approach to risk management on which to base the production of a Community Risk Register. It has a duty to establish an annual programme for maintenance and development of local arrangements, and review lessons learned from multiagency incidents and exercises held at a local, Scottish, UK and international level (Scottish Executive, 2007:10-11).

## 6.1 An Analysis of the SCG using the Formal System Model

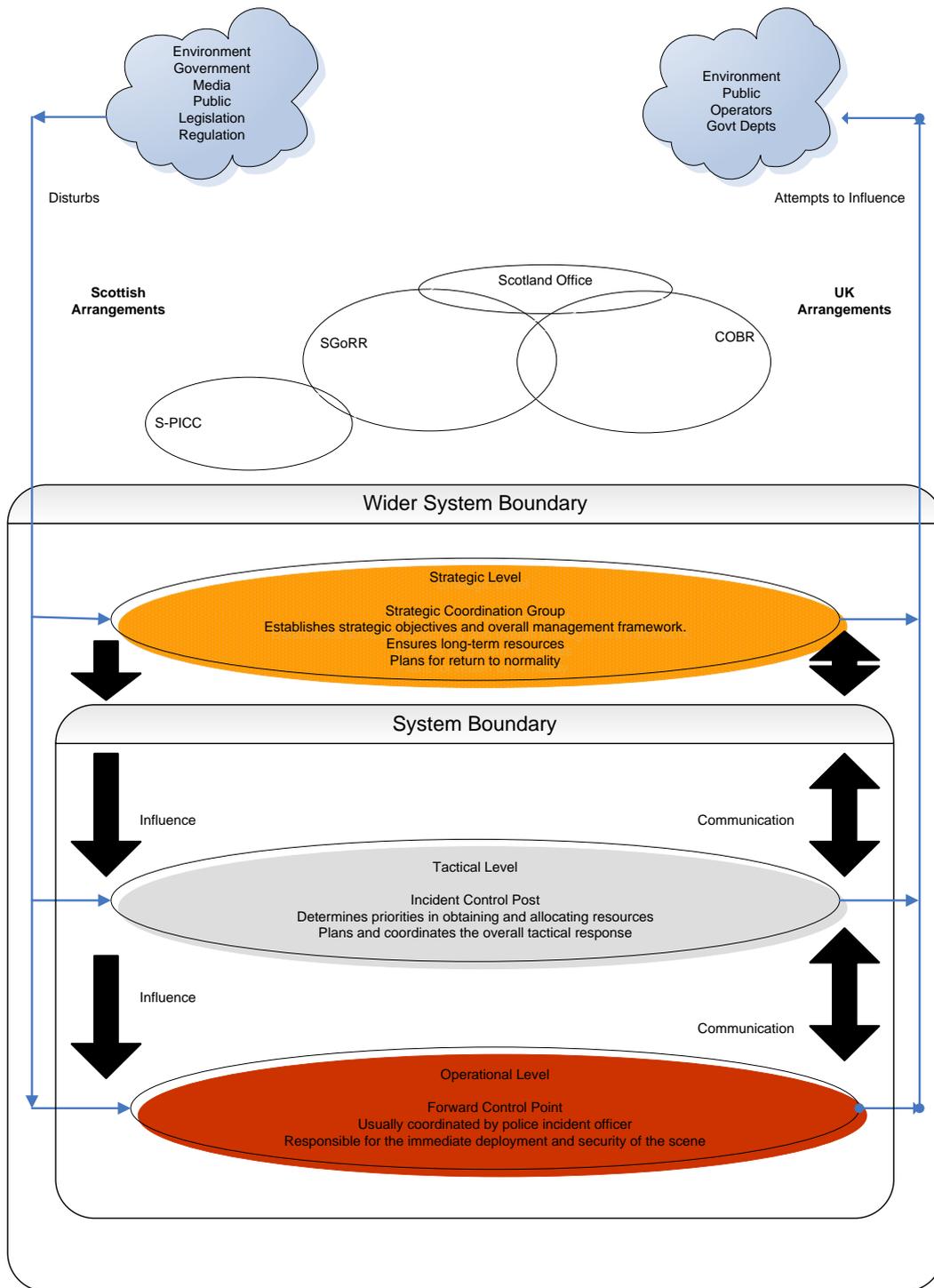
A Formal System Model of the SCG within the *Integrated Emergency Management* response framework is detailed below. Each level of the IEM framework is fractal. That is contains all the components of the FSM, namely the system comprising a decision-making subsystem, a performance-monitoring subsystem and a set of subsystems that carry out tasks of the system and effect its transformations by converting inputs into outputs.

The influence within the SCG system is from the top downwards: strategic, to tactical, to operational, and can therefore be considered hierarchical. Once the ascending levels are established they have the mandate to influence the activity on the subordinate level by controlling the allocation of resources and setting the task priorities. The downward influence from the SCG to the subordinate levels is indicated by the single arrows on the left side of the diagram.

The communication channels between each level are represented by the double arrows on the right side of the diagram. The establishment of communication links between levels, as well as its coordination across the level, is a primary task of response. However, while the arrows represent the existence of the information flows within the SCG, they do not guarantee the effectiveness of any communication channels established.

In the illustration at Figure 12 below, to better represent the tiered model of the SCG in the IEM, it is suggested that strategic coordinating group (Gold) is the wider system, and tactical (Silver) and operational (Bronze) within the system boundary.

**A Formal System Model of an Integrated Emergency Management Response**



**Figure 12 An Illustration of Integrated Emergency Management in the FSM**

Within the FSM, the SCG is placed within the wider system because according to the model it is the wider system which is responsible for formulating the initial design of the system, providing resources, legitimating the area of operation, making known the

expectations and receives performance information from the subordinate subsystems. In relation to the SCG, each is each considered in turn below.

The SCG does not have direct responsibility for the initial design of the system. The design of the IEM response framework is predetermined and subject to national agreement by those involved in integrated emergency management. Therefore, any system design of the SCG will reflect the agreed tiered approach of the IEM; however, within that framework the SCG does determine which organisations are to be involved to deal with the particular circumstances faced by the group. Therefore, there is flexibility in applying the system so that it best matches the crisis faced.

The SCG is the ultimate decision making body within the IEM framework. It sets out the policy and strategic objectives which give direction to all activity within the structure. Another aspect of the SCG, which is reflected in the FSM, is the responsibility for legitimating the area of operation. This is a further responsibility of the wider system in the FSM, that in addition to the provision of resources, it legitimates the area of operation. In the SCG, the combination of strategic policy setting the operational parameters and provision of resources legitimises the area of operation for those working within the system.

In terms of providing resources, when comparing the FSM and the SCG within the IEM framework, it is clear that the SCG has ultimate responsibility for the provision of resources. It is a condition of membership of the SCG that each member has the authority to commit resources on behalf of their own organisation to tackle whatever crisis being faced without referring back to the parent organisation. This meets the criteria of the wider system in the FSM.

The wider system of the FSM also receives performance information. In relation to the SCG, the effectiveness of its strategic policy is communicated back to it via the subordinate subsystems. The objectives and operational parameters are set by the wider system and communicated to the subordinate subsystems. These enable the SCG to set the tactical and operational parameters for the entire multiagency response, thus making known the expectations of the wider system to the systems. In

return it receives information about how well the subsystems are meeting the objectives set by the SCG.

Performance information regarding the effectiveness of the response is sent upwards from the operational subsystems in the form of requests for resources to tackle the crisis. Information is also communicated downwards by the decision making system to the subsystem via the prioritisation of tasks being taken and communicated to the operational or transformational subsystem. Similarly the feedback loop from both operational and tactical provides the performance-monitoring subsystem for both of them and for strategic; indicating whether the objectives at each level are being met or not, thus allowing for corrective actions if necessary.

In the FSM, the wider system deals with the disturbances from the environment and also tries to influence it. When considering the SCG as the wider system it would be expected to deal with the environment disturbances from the media, government departments and various other bodies. Therefore, in the FSM diagram above, some of the interconnected components which are active in the SCG environment are included. These illustrate some of the additional complexity that the SCG needs to manage, particularly in relation to the variety of communication linkages and responsibilities involving the Scottish and the UK Governments.

In the FSM model the UK Government arrangements are represented on the right of the model. The main component of which is the Cabinet Office Briefing Room (COBR). This represents the UK Government's crisis response team, usually chaired by the Home Secretary or Prime Minister. The Scottish Government's arrangements are on the left of the diagram. The main component is the Scottish Government Resilience Room (SGoRR), where the government manages its response to crisis. The UK Government's Scotland Office provides the link between the SGoRR and COBR. Other support systems would also be activated, including the Scottish Police Information and Coordination Centre (S-PICC), which assists in resource deployment for mutual aid.

Therefore, rather than being focused solely downwards to the incident, the SCG also needs to look upwards and outwards in an effort to influence the environment. This

would include the SCG seeking actions by others to assist with the initial incident, as well as longer term actions, such as seeking changes in legislation or dealing with formal enquiries. It also needs to manage the media demands which are an inevitable consequence of crises.

Following the comparison of the FSM and the SCG a number of variances were identified. These have been categorised using the five common failures of systems identified by Fortune & Peters (1994):

1. Deficiencies in the apparent organisational structure such as a lack of a performance measuring subsystem or a control decision system
2. No clear statements of purpose supplied in comprehensible form from the wider system
3. Deficiency in the performance of one or more subsystems
4. Subsystems with ineffective means of communication
5. Inadequately designed subsystems (which in relation to this research focuses on training inputs)

## **6.2 Structure**

The '*deficiencies in the apparent organisational structure*' considered the initial design of the system structure and whether it's flexible enough to respond to crises; or indeed has the capability to provide adequate resources for such response; importantly where accountability for response and resourcing lies within the structure; and what the effect of the lack of coterminous organisational boundaries is on the effectiveness of the response; and finally how the structure is funded and the effect this has on the SCG capability for crises response.

### **6.2.1 Initial Design of SCG System and its Effect on Flexibility**

In the FSM ideal model it would normally be expected that the wider system, in this case the SCG, would play a part in the initial design of the system structure. However, because the Integrated Emergency Management response framework is predetermined the wider system does not actually formulate the initial design of the system in

response to the circumstances. Instead the response structure is activated in line with the IEM framework. Therefore, it has been suggested that rather than being involved in the initial design, the SCG “*exercises a degree of purposive choice in seeking to apply it to a given set of circumstances*” (Pearce & Fortune 1995: 185). The implications for the SCG having a predetermined structure are that, by only exercising a degree of purposive choice, it may not have the flexibility necessary to deal with the particular situation of crisis.

Another aspect of SCG inflexibility in relation to initial design is the time it takes to establish. This limits its effectiveness in situations of spontaneous incidents which require immediate actions or have dynamic cross border elements. The implication for the SCG is that it may be the structure is better suited to predetermined events or prolonged incidents, rather than for crises situations with associated time pressures.

Moreover, the SCG has the same format for crisis response and steady state management. It does not vary the response structure for crisis, so does not seem to recognise that crisis and steady state are quite different environments, which require different skills to deal with them. This infers that the SCG has expectations that its membership will be able to deal with both. The implication of this structure is that to be effective participants need to have awareness of the differences and be able to operate along the continuum from steady state to crises. The SCG response structure is based on the emergency services command and controls 3 tier structures. However, not all organisations represented on the SCG have such internal hierarchies with a matching rank structure. Furthermore, the escalating police and fire services command structure means the highest rank officer takes charge, which seems to indicate that there is an assumption of rank rather than expertise in relation to decision making responsibilities.

### **6.2.2 Resources**

In relation to resources, in an ideal system, such as the FSM, the wider system is responsible for their provision. The responsibility for resource provision also lies with the SCG. However, in the real world the availability of resources, especially in the initial stages of response, is constrained by the capability of the individual member

organisations. In the event of an incident escalating and exceeding available resources each SCG would need to rely on the activation of mutual aid requests, which are not formalised or enforceable by the SCG.

Another area which could be problematic is the funding structures of the SCG. Beyond central funding for SCG coordinators, the SCGs do not receive specific organisational funding. The funding for resources is down to each partner organisation spending to meet its own requirements, rather than to meet the needs of the SCG. Consequently there is the potential for disparity in capability, especially in relation to specialised resources. The implication for the SCG is that the lack of clear funding structures and the tightening of public sector funding may undermine the potential for SCGs to improve effectiveness.

Moreover, the resource capability is dependent on the size of the SCG. Relevant staff expertise needs to be recognised to ensure that all responding members of the SCG have sufficient resource to call upon in the event of a crisis, while having enough redundancy to deal with the impact on their parent organisation. Therefore having the capability to resource both SCG and their own crisis management teams is a challenge for partner organisations, especially in times of shrinking budgets. Furthermore the current arrangements lead to inequitable distribution of the available resources among the 8 SCGs, and do not necessarily reflect the risks within the SCG area. Despite the issues resources, the SCGs do not make full use of all those available. For example, the use of voluntary groups in the SCG is limited, especially in the planning and decision making processes. More importantly there is no oversight of the structure and the commitment of partner organisations to ensure effective and committed responses.

Consequently, there are three implications for the SCG. One is whether it is unrealistic to expect UK and Scottish agencies to provide adequate resources for all 8 SCGs. The second is whether there is a need to rationalise the number of SCGs to enable the enhancement of resource collaboration during the planning and response processes. The third is the lack of oversight and monitoring of partner agencies to ensure that each is providing adequate resources in an effective manner.

### 6.2.3 Accountability

In addition to the availability of resources, another aspect which impacts on the effectiveness of the SCG is the availability of members with the confidence and competency to chair the SCG. Consequently, responsibility for the occupancy of the chair of the SCG is not always clear and may simply fall to the chief constable by default, rather than the representative from the more appropriate organisation. This raises the issue of accountability within the SCG. However, because the SCG is not a legal entity, although established by legislation, it is difficult to determine areas of responsibility. Nor are there clear mechanisms for dealing with dissent within the SCG. If a partner organisation fundamentally disapproves of a suggested course of action, there is no facility to deal with it. As a coordination network, the SCG does not have the mandate to compel partners to carry out a particular piece of work or engage with the process. It is not a democratic structure but one that relies on cooperation and shared action. The implication for the SCG is that responsibility for the overall outcomes may be dependent on a number of specific actions, which are the responsibility of several of the agencies; while executive responsibility for each partner organisation remains with the respective chief executive, each sitting on the SCG.

Another issue regarding accountability and resourcing is the requirement that the representative on the SCG should be the chief executive, or equivalent. In practice this would mean that the organisation is without its chief executive, which in times of crises may bring additional vulnerability to the chief executive's organisation. This may result in tensions between having the desire to serve on the SCG and the responsibility for one's own organisation.

Moreover, in terms of accountability the ascending activation of the IEM response structure may result in pressure being put on the strategic level to endorse the strategy initially implemented at subordinate levels. Whether the strategic level would have the time to reconsider the strategy or not in a dynamic situation is a key aspect of the effectiveness of response. However, potentially the SCG could become a 'rubber stamp' for tactical decisions or strong local leadership.

#### **6.2.4 Organisational Boundaries**

Further tensions may also arise because of the network structure of the SCG and the numerous organisations involved. The multiple organisations within the system means there are complex linkages between organisations at different levels which could lead to difficulties. Also, the multiple agencies involved in IEM means a fragmented and complex boundary map, with the potential for duplication or omission.

Moreover, the multiple links to and from the various government departments, at a Scottish and UK level lack clarity, which could hinder the effective functioning of the SCG. This is exacerbated with the lead department arrangement. The identification of the lead department is dependent on the nature of the crisis, therefore may not be immediately clear when the SCG is initially established. In addition, the distinct and separate Scottish Legal System brings another layer of complexity for UK wide agencies. This could lead to confusion and diminished performance. Therefore, the SCG function of coordination and communication with partners, including government, could be undermined. Furthermore, too large an SCG will increase the complexity and require greater numbers in attendance at meetings, with the resultant administrative and decision making challenges. Conversely, too small an SCG might mean more effective business processing, but also brings limited resources and capability.

It is argued that when the FSM is applied to the SCG that there are a number of variances in relation to the first common cause of system failure identified by Fortune & Peters (1994), namely 'deficiencies in the apparent organisational structure such as a lack of a performance measuring subsystem or a control decision system' when comparing the SCG to an ideal system. The key differences between the FSM and the SCG have been identified. For example, the predetermined design of the IEM structure reduces the influence of the SCG in its initial design, which also limits the flexibility of the SCG system design. Furthermore, the ascending nature of the IEM structure also brings the potential for the SCG to simply rubber stamp decisions made by subordinate levels. In relation to resource provision, the SCG capability is constrained, being dependent on contributions from each member organisation. The absence of direct funding for the SCG also means that each is dependent on the

provision of resources by its membership. Moreover, there is also potential for chief executives to experience tensions between serving on the SCG or their own organisation at a time of crisis was also identified. Likewise, that there are no oversight mechanisms to compel full and effective commitment from the participant organisations. Another deficiency is the lack of legal status of the SCG, as a collective decision making body, which has implications for its accountability. There area also fragmented and complex communication channels and linkages between and within different organisations, which are inherently different. All of which may undermine the potential for SCGs to respond to crises in an effective manner.

### 6.3 Objectives

The second of the common failures of system identified by Fortune & Peters (1994), is that there are *'no clear statements of purpose supplied in comprehensible form from the wider system'*. When comparing the SCG to the FSM the 'clear statement of purpose' was interpreted as the existence of organisational objectives within the system, as well as the various roles and responsibilities of those operating within the system. In the FSM this is how the wider system makes known its expectations to the subsystems. However, the comparison between the SCG and the FSM identified a lack of clarity around responsibility for setting the objectives, in addition to the exclusion of key partners from the legislation which underpins the system.

The effectiveness of any system is dependent on the provision of clear statements of purpose being communicated by the wider system to the other components within the system. In the SCG the expectations are made known via the strategic objectives. The Civil Contingencies Act and related guidance sets out common objectives, which provide the baseline objectives for the SCG. These are then adjusted by the SCG as the circumstances of the crisis evolve. The advantage of such dynamic objectives is that it focuses responders on the specific nature of the event and enables the development of a shared mental model. However, the setting and agreeing of objectives once the SCG is formed is a collective responsibility, which the chair should facilitate. But it is unclear who should be specifically responsible for them or how disagreements should be dealt with. This may result in a lack of clarity from the SCG in making its expectations known to the other subsystems. Another challenge for

the SCG as a group is to create the objectives broad enough to capture all participant activity, while being focused enough to be meaningful and helpful in guiding activities.

### **6.3.1 Key Partners Excluded from CCA**

In the FSM, clarity of roles and responsibilities and awareness of the processes and channels would enable those within the system to act cohesively without pre-relationship. Similarly, in the SCG if all participants are clear about their individual and organisational roles and responsibilities they would act more cohesively, increasing effectiveness. However, given the number of organisations involved and the potential complexities in an SCG, one implication would be that it is not feasible for all participants to understand their own role and the roles of other organisations. Consequently, this may lead to confusion, for example, around responders' statutory operational decisions and political decisions.

A further cause of confusion around roles and responsibilities is that there are key SCG partners not recognised as such under the CCA. The Ministry of Defence (MOD), Crown Office & Procurator Fiscal Service (COPFS) and both the Scottish and UK Government, are not listed in the Act as members of the SCG. However, they each have important roles. In particular in Scotland the COPFS has a legislative responsibility in relation to the investigation and prosecution of crimes. Moreover, in the event of a major incident, the Procurator Fiscal will attend the site and issue instructions regarding the investigation.

Here it is argued that in an ideal system such as the FSM the wider system must make its expectations known to the subordinate subsystems to ensure clarity and cohesion. In the SCG the existence and understanding of strategic objectives will have a key part to play in the delivery of an effective response in a crisis situation. Understanding roles and responsibilities within the SCG will influence the performance not only at an individual level but also at an organisational level. However, there are deficiencies in relation to the SCG, particularly in relation to responsibility for the development of objectives in dynamic situations such as crises. Moreover, key components have been excluded from the legislation and guidance, which sets out the roles and

responsibilities within the SCG. All of these undermine the effectiveness of the SCG as an ideal system.

## **6.4 Performance**

In considering whether there is '*deficiency in the performance of one or more subsystems*' when comparing the FSM and the SCG, it was identified that there is no specific performance subsystem within the SCG system, and that there is the potential for organisational cultures to undermine performance. Finally the absence of a formal process to identify lessons learned and ensure that they are actually implemented following crises is a significant gap in the effectiveness of the SCG's crisis preparedness.

### **6.4.1 Baseline Measures**

Outwith the strategic objectives for the immediate response to a crisis, a performance monitoring guide for the SCG is included as an annex to the guidance *Preparing Scotland*. Consequently at an organisational level there is a baseline level of activity which the SCG can be measured or compared against to determine whether it is effective and efficient in its activities. Measured against the guide it is possible to determine whether a particular SCG is performing effectively, and to compare the performances of different SCGs. However, a formal inspection mechanism to make such assessments has not been established. Furthermore, at an individual level, there are no formal measures setting out expected performance levels, either in crises or steady state management. Therefore it is not possible to determine whether an individual is a competent member of the SCG. It is therefore argued that the absence of explicit performance inspection mechanism has implications for SCG effectiveness, as it means that it is not possible to ensure that each individual member and each organisation are contributing to the overall performance of the SCG.

### **6.4.2 Organisational Cultures**

Furthermore, when applying the FSM to the SCG, it is not clear whether the SCG considers organisational cultures of its member organisations, or indeed, its own

organisational culture, and the potential effect that it could have on its performance levels. The focus on strategic response objectives referred to in the previous section, raises potential concerns about performance within the SCG being focused on crisis response. The consequence of such a focus is that it will be concerned with the activities of the initial responders, who will mainly be from of the emergency services. This may result in the exclusion of contributors from other multiagency partner organisations, which are not part of the emergency services. It also means that the SCG does not consider the performance levels expected in steady state management. The implications for the SCG in focusing on crisis response and those most closely associated with it, namely the emergency services, are that other partner agencies will be excluded or their contribution less valued because they do not have a direct input to that phase. This has the potential of creating a status hierarchy within the SCG system.

### **6.4.3 Lessons Learned & Barriers to Learning**

A key aspect of performance is learning lessons from previous incidents or exercises. This is achieved through a feedback loop. In the FSM the feedback loop is from the performance subsystem to the decision making subsystem, which also responds to disturbances from the environment and in turn tries to influence it. This closes the loop. However, in relation to the SCG system, the SCG as an organisation has responsibility for learning lessons, but so has the Scottish Resilience Development Service (ScoRDS), which is part of the Scottish Government; although, beyond the commitment to do so, neither the SCGs or ScoRDS has formal links or processes to capture, analyse and communicate lessons from local, Scottish, UK or international incidents to the SCGs. Likewise there are no formal processes to ensure that all SCG plans are viable and compatible with all member organisations. The implications for the SCG system is that, not only is there an absence of formal benchmarking, auditing or monitoring of performance of SCGs, but there is no effective process to capture lessons learned or share them across the SCGs. The potential is that lessons will not be learned and that there will be misplaced confidence in untested plans, which may not be effective.

It is argued that when comparing the SCG as a real world situation against the ideal system of the FSM, there is 'deficiency in the performance of one or more subsystems'. In particular it was identified that the SCG does not have an explicit performance subsystem within its system, beyond the strategic response objectives initially set for a crisis. Furthermore, the focus on crisis response in relation to performance brings the potential that those partner organisations from the SCG less involved in this aspect would be excluded, or at least seen as less influential within the group, leading to a hierarchy of influence within the SCG system. Moreover, it was found that the SCG feedback loop is deficient and may result in lessons not being learned, because the system does not have formal processes capable of capturing, analysing and communicating such lessons throughout the SCGs. Finally the absence of a formal process to ensure the viability of all plans means a significant gap in the effectiveness of the SCG as a crisis response system.

## **6.5 Communication**

In any organisation effective communication is essential. The common systems failure considers '*subsystems with ineffective means of communication*'. It highlights that the FSM simplifies the complexity of communication within the SCG to ease comprehension, while acknowledging the increased vulnerability of communication in crises compared to steady state. Finally it identifies that because the strategic level of the SCG system is rarely activated its arrangements are not as satisfactory as the subordinate levels.

In the FSM communication is represented by the connecting arrows between each of the subsystems. When comparing the SCG system to the FSM, communication is a two way process between levels. The arrows also represent communication within organisations and between them. The current SCG has complex information channels between the different levels and organisations which exacerbate deficiencies in communication and coordination. The fragmented nature of the responder organisations within an emergency environment and the different means of communications may lead to particular communication difficulties. However, the FSM necessarily simplifies the linkages, which given the number of organisations

within the SCG are complex; although it does not reflect that in crisis communication channels are more susceptible to failure, than when operating in steady state.

The SCG system response structure requires clear communication channels between each component and subsystem. However, the intention to have a communication channel operating between the different subsystems, or the existence of such a channel, does not provide any indication on whether the communication is actually effective through that particular channel. For example, experience has shown that, whilst the tactical and operational elements of the response plans are regularly used, there has been concern that the *“arrangements at strategic level are not entirely satisfactory, particularly where a major incident spans local boundaries and/or there is a requirement for those involved in the emergency response to work together”* (HMSO, 1994: 47).

Here the comparison of the SCG and the FSM has identified that there are some issues in relation to communication effectiveness, which may adversely impact on the SCG crises response. In particular the complexity of the communication network necessary to link the fragmented organisational network which comprises the SCG is considerable. Moreover, not all organisations have similar structures and the technical means to communicate between their own staff and the other organisations. In addition, some organisations with hierarchical communication structures may be more vulnerable to crisis compared to networks. This together with the infrequent establishment of the top level of the SCG means that its response can be less effective than the more practised subordinate levels.

## **6.6 Design of a Subsystem (Training)**

Finally, the common system failure identified by Fortune & Peters (1994), namely *‘inadequately designed subsystems’* is considered in relation to the training inputs to the subsystems. Consequently, the findings in this section are implicit in four previous system failures referred to above. Therefore, when comparing the SCG and the FSM there is not a specific subsystem in relation to training, but rather training is seen as a means to improve the effectiveness of all activity within the system. For example, even if effective communication channels are in place, a number of other issues will

influence the effectiveness of the communication during an incident. These include: leaders and team members knowledge, skills, attitudes, styles & behaviours; experience as a team, cohesion, structure/roles and size; decision making processes; organisational culture; and familiarity of task demands (Flin, 1996).

Each of the examples identified by Flin (1996) has implications for the various subsystems within the SCG. For example the knowledge, skills, leadership and experience levels, whether of individual's or groups, within the system will correlate to the effectiveness of the system. Moreover, experiences at both the individual and group will improve decision making processes enabling the use of heuristic models, as well as improve group cohesion based on the shared experiences faced together. Such previous experience also reduces the stress experienced by those within the system and therefore improves competency in response. Finally those who have worked together and formed levels of trust will have gained a greater understanding of their own roles and responsibilities along with the other group members, which will help understanding of organisational cultures and even engender a distinct organisational culture for those within the SCG.

It is argued that when considering training as a key input to the design of any subsystem, including the SCG would improve its effectiveness with adequately trained resources in sufficient numbers to enable the system to function effectively. However whether all the SCG resources are adequately trained and distributed to ensure an effective crisis response, can not be determined from the FSM model of the SCG. Except in the limited sense of the achievement of strategic response objectives there are no other baseline performance measures for comparison. Moreover, it is not possible to determine if the current training and exercising is effective or indeed supported or valued at the strategic level. This has implications for the effectiveness of the SCG system, unless it has the capability to respond to crises it will be unable to fulfil its primary function.

## **6.7 FSM Conclusion**

The comparison of the FSM and the SCG highlighted a number of variances, which were categorised using the five common system failures identified by Fortune &

Peters (1994), summarised in this research as structure, objectives, performance, communication and training. It is argued that the structure of the 8 SCGs has formalised deficiencies (e.g. fragmented boundaries, disparate sizes, no legal status, financing) and complex information channels which exacerbate deficiencies in communication and coordination, especially with governments and national responders. It also seems to have a bias towards rank based decision making, rather than expertise. Furthermore, the SCG structure lacks the flexibility to respond to dynamic events, such as terrorism, and is better suited to predetermined events or prolonged incidents. Moreover, the SCG does not recognise that there is a distinct difference in the skill set required to deal with steady state and crisis and expects its membership to deal with both. There are also significant deficiencies in the SCG decision-making process. It is dominated by the emergency services and lacks a suitable mechanism for dealing with dissenting views. Moreover not all participants' are clear about their own role and the wider role of the SCG. Finally it does not have formal performance structures in place to determine whether, as an organisation, one SCG is using available resources and responding as effectively as it could be. A comparison of FSM Theory and SCG practice is summarised in the following table:

**Table 7 Summary of FSM Theory and SCG Practice**

FSM Theory	SCG Practice
<b>Structure</b>	
Wider system would formulate design	SCG is predetermined, lacks flexibility and takes time to establish, so is not suitable for spontaneous incidents. It also requires members to deal with both steady state and crises, and reflects emergency service structure which is not relevant to other organisations.
Wider system is responsible for provision of resources, including funding	SCG is dependent on member organisations to provide resources. Mutual aid is not formalised or enforceable. Also the size of the SCG is linked to the quantity of resources available. Many Scottish & UK organisations have difficulty resourcing 8 SCGs. There is no central funding other than for SCG coordinators, which results in disparities between SCGs.
FSM makes the decision-making subsystem accountable	With the SCG it is difficult to determine where responsibility lies, as each member organisation is responsible for the actions of their personnel, to deliver collective outcome. Accountability is difficult because SCG is not a 'legal' entity and there is no clear mechanism to deal with dissent. The requirement for Chief Executives or equivalent in the SCG leaves individual member organisations vulnerable during crisis and creates

	tension between SCGs and member organisations. Also the ascending activation may result in SCG endorsing decisions made at subordinate levels.
FSM demarcates functions to create subsystems boundaries	SCGs reflect police areas but multiple organisations making up membership means complex and fragmented boundaries within SCG which could lead to gaps or omissions. This is exacerbated by political arrangements and devolution.
<b>Objectives</b>	
FSM provides clear statement of purpose	SCG has common strategic objectives that are adjusted to suit circumstances. But it is unclear who determines final objectives or how disagreements are dealt with, which potentially results in lack of clarity throughout the system and undermines cohesiveness.
Effectiveness of FSM dependent on understanding of Roles & Responsibilities	Complexity of SCG with numerous organisations makes it difficult for participants to understand the roles and responsibilities of all in the network, which may lead to confusion. A situation exacerbated by the omission from the Act key SCG partners, e.g. military, prosecutors, and Scottish and UK government.
<b>Performance</b>	
In the FSM performance is monitored by a specific performance monitoring subsystem	The SCG has no explicit performance management mechanism or baseline measures for individuals to evaluate their performance. The SCG focus on initial responders excludes others, as well as diminishes the importance of steady state management. This has the potential to create status hierarchy in SCG.
In the FSM feedback loops ensure that lessons are learned, enabling the system to adapt to its environment or identify existing barriers to learning	Individual SCGs are responsible for learning lessons but they have no process to capture, analyse and communicate lessons from local, Scottish, UK or international incidents. Nor do they have any formal benchmarking, auditing or monitoring processes. Therefore, they are unable to identify barriers to learning.
<b>Communication</b>	
FSM simplifies communication linkages	SCG communication is complex requiring both inter and intra-organisational communication. But not all member organisations have similar structures or technology. Also the infrequency of strategic level activation means it is less practised.
<b>Training Subsystem</b>	
FSM identifies that an inadequately designed subsystem may cause the entire system to fail. Therefore, training to enhance knowledge, skills, attitudes will improve cohesion and performance of the whole system	SCG membership does not mandate training participation. Therefore, except in the limited sense of the achievement of strategic response objectives there are no other baseline performance measures for comparison. So it is not possible to determine if the current training and exercising is effective or indeed supported or valued at the strategic level.

Having applied the Formal System Model to the SCG, which identified a number of issues which have been categorised under the 5 common system failures, the following section will consider the SCG using the Viable System Model, to achieve a further diagnosis of the SCG organisational structure.

## **6.8 An analysis of the SCG using the VSM**

Every viable system must have the capability to adapt to its environment. The success of the adaptation is determined by the quality of the intelligence and availability of appropriate resources. However, crisis occurs when the homeostatic relationships governing one or more of the essential variables are overwhelmed. The environment of the SCG includes all the elements that are outside of the SCG system. Those which could disturb or influence the viability of the SCG would include the Scottish and UK governments, media, public, and regulations and legislation. Other influences on the system environment include changes in the risk environment, such as reduced fuel availability or variations in terrorist tactics. Moreover, the availability of technology and improvement in communication resulting in increased information flows and demands would also impact the SCG.

### **6.8.1 System 1 (Implementation/Primary Purpose)**

The SCG can be viewed as a recursive system with each system 1 a viable system in its own right. By zooming into the SCG it would be possible to contract the system boundary to focus on a single response organisation carrying out its own functions while still reflecting the VSM. However, for this research the boundary is drawn at the multiagency strategic level rather than at the individual organisational response.

In the SCG the system 1 primary activity is what gives the SCG organisation its purpose. The level of System 1 in the SCG focuses on the two primary activities of:

- (i) Creating Resilience and
- (ii) Crisis response

The first S1 reflects the initial planning undertaken by the SCG members when it is in steady state. The planning process should respond to environment to maintain its currency. The second S1 is the activity of the SCG when responding to a crisis. In this S1 it is responding to crisis and planning the long term return to normality. The balance between operations and the environment is the first aggregate homeostat in the VSM. The aim in the VSM is to achieve synergy between the S1s, which should, as far as possible, exercise autonomy.

### **6.8.2 System 2 (Coordination/Conflict Resolution/Stability)**

With more than one system 1 operating in the SCG there is a possibility that they will get out of synch and destabilise the overall system. In the SCG instability could happen if there is disequilibrium between the S1 resilience planning activities at the expense of the S1 crisis response activity. To prevent this system 2 coordinates the common services which dampen the oscillations caused by system 1s. In this sense System 2 absorbs a lot of variety so that people have commonly understood expectations of one another and do not have to reinvent the wheel for each member organisation or for every incident. Once established, System 2 does not require a lot of executive attention unless there is a significant change in the environment. Typical coordination mechanisms are common standards, protocols, operations scheduling, as well as a common language and shared cultures that ease communication between operational units. Within the SCG coordination of multiagency activities is achieved through legislation (CCA, 2004), generic guidance (*Preparing Scotland*) together with local and national exercises and training events. Whether the coordination and conflict resolution element is sufficiently embedded in the organisations and individuals is a moot point. In the SCG structure there are a number of shared areas of activities and responsibilities may result in conflict. However, currently, there is no formal means to impose a desired outcome on an SCG member or deal with dissenting views.

### **6.8.3 System 3 (Control/Cohesion/Internal Regulation/Optimisation/Synergy)**

With system 3 there are executive decisions to be made. This equates to silver or tactical level of management in Integrated Emergency Management. The viable

system will run for the benefit of the whole, which may at times disadvantage some of the system 1s. System 3 deals with resource bargaining among system 1s, so that demands can be met, opportunities seized and threats avoided. Once the policy and parameters have been set, the S3 prioritises and allocates resources, available to S1.

To ensure the control/cohesion of S1 activity on a day-to-day basis and to supervise the coordination activity of S2, where the focus is on the short term and immediate management needs, such as the allocation of resources, the SCG tactical level of management are empowered to make such decisions as necessary. In the case of the SCG, resources are allocated to each separate organisation to prepare separately for responding, although there may be participation by some in multiagency exercises. In event of an actual incident the resources available are allocated according to need and priority at the tactical level of management. But their availability is dependent on them being made available to the SCG by their chief executive in the first instance.

#### **6.8.4 System 3\*(Monitoring/Audit)**

System 3\* fulfils the need for an audit channel which enables the management levels to delve into detail without taking over and micro managing. At a simplistic level this is 'management by walking about'. With the SCG formal monitoring is through the meetings structure and reporting to and from the various levels of responsibility. The meeting structure allows the S1 to report on activities and bid for resources. It also allows the tactical or S2/3 to ask 'Is it working?' However, in practice there are no routine formal audits of SCG activities undertaken. This has the potential to affect the viability of the SCG.

Taken together the management function systems 1, 2, 3 and 3\* account for the inside and now of an organisation, operating in the present tense. The only direct connection to the environment is the linkage between it and system 1 operations. This focus on the present rather than long term planning will be an important issue for the SCG, as there may be conflict between this and the longer term planning necessary for the recovery phase which Gold/Strategic is responsible for.

### **6.8.5 System 4 (Intelligence/ Adaptation/ Forward Planning/ Strategy)**

Organisations need to anticipate the future and prepare for it. System 4's role is to observe the anticipated future environment, so it can offer alternative paths from the present S3 to the future. This ensures the organisation remains viable by adapting to its environment. In the SCG this intelligence function should be reflected in the planning stage by ensuring tactics, resources, training etc are amended to reflect the potential threats and opportunities in a changing future environment. This would involve adopting a systematic, planned and coordinated approach to risk management, addressing risks in accordance with members' functions, as well as reviewing lessons learned from incidents and exercises at local, Scottish, UK and international levels.

A successful S4 will ensure that the current SCG has adequate resources to effectively respond to the potential threats. It is within this system that the risk assessments should be signalling necessary adjustments for the S1. However, whether the feedback loop is effective in the SCG is doubtful. SCG resources are the responsibility of disparate organisations. Moreover, there are other constraints such as funding that limit effective strategic planning.

### **6.8.6 Systems 3 / 4 Homeostat**

Maintaining a good balance between system 3's concern with the day-to-day running of affairs and system 4's concentration on the anticipated future is a challenge for every organisation. It is difficult because the balance is not the same for every organisation, the same organisation at every time or part of the same organisation. In terms of the SCG this will be an added challenge, given the variety of organisations and different perceptions of all those involved.

### **6.8.7 System 5 (Policy/Ulimate Authority/Identity)**

System 5 equates to gold or strategic level and reflects the ethos, identity and purpose of the organisation. It brings coherence to the system and underwrites the viability of the whole. Its active job is to monitor and adjust the three/four homeostat. That is, taking strategic decisions to match current reality to future needs. However, the

identity of the SCG is strongly linked to the 'emergency services'. There is an emphasis on the emergency response, to the exclusion of the longer term recovery aspects. Consequently, outwith the emergency service responders, SCG member organisations are seen as supporting functions. This is reinforced given that all SCGs, bar one, are chaired by chief constables.

For the SCG S5 sets the policy framework and the strategic objectives for the planning and also the actual response. However, it is in times of crisis that the organisational values will be tested. The absence of cohesiveness among the multiagency members and their organisations will undermine the existence of common values within the SCG. Experience of crises at organisational and individual levels, will assist to build cohesiveness and increase the effectiveness of the SCG overall. A potential consequence of low cohesiveness is a weak system 5, which could collapse, along with system 4, into system 3, depriving the organisation of its ability to act with intelligence. This may result in the SCG rubber stamping those decisions made at the subordinate level. Or even the misuse of power by an autocratic S3.

The other problem system 5 faces is to determine when to intervene in response to activity within the system. To alert the system of a threat or opportunity which has implications for the whole there is an 'algedonic' signal. It signals the need for a rapid response and can come from any part of the system at any level of recursion. The existence of early warning signals is an important element of effective crisis management. However, there is no obvious mechanism in the SCG to pick up early warning signals. The risk assessment process would be expected to identify threats and mitigate them, but in practice the risk register is completed in isolation of the S5, usually by a subgroup specifically tasked to deliver it. Importantly the SCG is not compelled to take remedial action. There is also some doubt whether all risks identified are adequately integrated into the planning process. Therefore, the SCG is focused on the initial reaction to a spontaneous event.

## **6.9 VSM Conclusion**

It is argued that the SCG can be viewed as a recursive system and the VSM applied to it. But in a viable system the adaptation is dependent on intelligence and resources,

which within the SCG the variety of organisational members, all with different perceptions makes viability more challenging.

Crisis may occur when there is an imbalance with the homeostatic relationships within a viable system. But while the need for an early warning detection system is recognised as necessary for effective crisis management, whether it actually exists in an effective form within the SCG is doubtful. In relation to the SCG adaptive changes to the risk environment and increasing information demands are examples which could cause crisis due to homeostat imbalance. One other area would be imbalance between the planning and the response systems, which forms link the SCG to its environment. To prevent this coordination is used to dampen the potential oscillations, through legislation, guidance and common training and exercising to embed shared experiences. However, there is no means to impose sanctions on SCG members that fail to comply. Furthermore, the management of resource demands is made more challenging because resources are allocated according to strategic objectives by the tactical managers to operational functions. But resources remain under the executive command of their own organisational executive. Moreover, in the SCG the formal monitoring system is limited to meetings and reporting. There is no formal audit process of the SCG. Finally the identity and ethos of the viable system is strongly influenced by the emergency services, which reinforces the power and influence of their representatives, especially since 7 of the 8 SCGs are chaired by chief constables. Consequently the viability of the SCG system is diminished. A comparison of VSM Theory and SCG practice is summarised in the following table:

VSM Theory	SCG Practice
<b>System 1</b> – enables a system to identify its primary purpose. S1 also provides the system’s sole connection to environment.	The SCG creates resilience when in steady state or provides crisis response when necessary. The SCG risk assessment process should identify any changes to the system environment.
<b>System 2</b> – coordinates the activities of the various System 1s.	The SCG uses standard operating procedures and protocols to coordinate and ensure common understanding and expectations.
<b>System 3</b> – makes decisions about resource allocation to ensure overall system cohesion.	The SCG sets policy and allows the tactical level to determine task and resource priorities in the allocation of resources for System 1 activities. But this activity is constrained by the availability of resources, which are controlled by the individual organisations of the SCG.
<b>System 3*</b> - enables the viable system to monitor exactly what is going on, so it can determine whether it is achieving its aims.	In the SCG monitoring is via meetings and requests. But there are no routine formal audits of SCG, which makes performance comparisons difficult.
<b>System 4</b> – enables the system to strategically plan and adapt to the changing environment. Its actions are based on the information provided by system 1.	The SCG risk assessment process should enable strategic planning and adaptation to changes in the environment in response to potential threats. However, the SCG does not have effective risk assessment processes to pick up early warning signals, nor is it flexible enough to respond to its changing environment.
<b>System 5</b> - provides the ethos and identity of the organisation. It brings coherence to the whole system.	The SCG sets the policy response framework, sets objectives and makes strategic decisions. In reality it strongly reflects emergency services, with 7 of the 8 SCGs chaired by chief constables.

**Table 8 VSM Theory and SCG Practice**

## 6.10 Chapter Conclusion

In this chapter both the Formal Systems and Viable Systems Models were used to analyse the structure and processes of the SCG. The models enabled a holistic examination of the key processes, communications and information flows in the SCG and the relationships between them. Consequently a number of variances between the ‘ideal’ system and the ‘real’ world were identified. Initially the variances were categorised using the five common system failures identified by Fortune & Peters (1994), namely structure, objectives, performance, communication and training.

The FSM identified formalised deficiencies in the SCG structure, including fragmented boundaries, disparate sizes, no legal status, financing, and complex information channels. There was a bias towards rank based decision making reflecting the emergency services' key role in crises. But it lacks a suitable mechanism for dealing with dissenting views. Moreover not all participants' are clear about their own role and the wider role of the SCG. The SCG structure also lacks the flexibility to respond to dynamic events such as terrorism, so is better suited to predetermined events or prolonged incidents, with a longer lead in time. Nor does it have formal performance structures in place to determine whether, as an organisation, one SCG is using available resources and responding as effectively as it could be.

Using the VSM a viable organisation requires adaptation dependent on intelligence and resources. This is challenging in the SCG because of the variety of organisational members, all with different perceptions. In relation to the SCG adaptive changes to the risk environment and increasing information demands are examples which could cause crisis due to homeostat imbalance. To prevent this coordination through legislation, guidance and common training and exercising is expected to embed shared experiences. But there is no sanctions should members fail to participate. Moreover, to ensure that the organisation does not experience crisis there is a need for an early warning detection system. However it does not exist in an effective form within the SCG; nor is there a routine formal audit process. These diminish the adaptive capability of the SCG.

Collectively these raise a number of concerns about the SCG and its crisis management effectiveness. These are reviewed in the following chapter using the crisis management framework and Gouldner's (1954) concept of 'mock bureaucracy' discussed previously.

## **Chapter 7 - Discussion & Recommendations**

This chapter brings together the emerging themes from the literature (summarised in chapter 4), the empirical evidence, (summarised in chapter 5), and the findings from the analysis of the SCG using the FSM and the VSM detailed in the previous chapter. The effectiveness of the SCGs is discussed in the context of whether they achieve the original intentions set out in the Civil Contingencies Act 2004. The findings are organised using the components of *Integrated Emergency Management: Assessment; Prevention; Preparation; Response; and Recovery* (Scottish Executive 2007), the components of which were described as analytically useful (Comfort, 1988; Rosenthal, Charles & t'Hart, 1989; Boin et al., 2010), and which reflect the 5 phase crisis management framework suggested by Mitroff and Pearson (1993). Gouldner's (1954) Patterns of Industrial Bureaucracy 'Mock Bureaucracy' is used as an analytical lens to explain why there are variances between the theoretical or 'ideal' and the 'real' world findings.

### **7.1 Mock Bureaucracy as an Analytical Lens**

The research explored the capability of SCGs, in particular whether the current Scottish crises management infrastructure and training arrangements were effective in ensuring that the SCGs were best prepared the current threats faced. Having compared the 'real' world data to the 'ideal' systems model it was identified that there are a number of variances. To describe the collapse of rules in an organisation, as means of explaining why despite legislation, government policy and guidance the SCGs do not fully comply with their task requirements the concept of 'mock bureaucracy' (Gouldner, 1954) is applied.

It was argued in chapter two that organisations that fail to comply with safety regulations, especially when there are few consequences for non-compliance, may generate conditions for crisis incubation (Smith, 1990; Turner, 1994b; Reason, 1990; Perrow, 1984). Moreover, such organisations will fail to realise that it is their culture of non-compliance that contributes to the crisis generation.

Gouldner's (1954) study identified a number of bureaucratic patterns in relation to rule compliance. He highlighted that despite rules enforcing regulations, many were disregarded because neither managers nor workers considered them legitimate. Mock bureaucracies develop because of a complete lack of legitimacy of certain rules; which have little intrinsic value and few consequences if not complied with (Jermier et al., 1991; Hynes & Prasad, 1997; Elliott & Smith, 2006b). This concept is applied to the SCG as an analytical lens to determine whether rules in relation to safety culture enshrined in the legislation, government policy and guidance for SCGs are complied with or not, and if not what are the implications for the SCG and resilience.

## **7.2 SCG & Resilience**

The desired outcome from the legislation was responders having the capability to deal with the full range of crises. This was to be achieved by:

1. Delivering a single framework for civil protection in the United Kingdom designed to meet the challenges of the 21<sup>st</sup> century
2. Improving the UK's ability to deal with the consequences of major disruptive incidents by improving the planning process at a local level, building better contacts between agencies and improving the link between local areas and central government
3. Clearly identifying the roles and responsibilities of local responders, ensuring consistency in civil protection activity and enhancing performance (Cabinet Office, 2004)

The specific role of the SCGs was to ensure the effective delivery of those duties under the Act that need to be developed in a multiagency environment through acting as the focus for civil protection and preparing response, adopting a risk management approach and producing a Community Risk Register, and making effective response arrangements. In addition, the related guidance specifically highlights that SCGs should review lessons learned from incidents and exercises, as well as coordinate multi-agency exercises and training (Scottish Executive, 2007: 10-11).

To achieve the outcome of resilience, the SCG adopts an *Integrated Emergency Management* approach to its planning. It incorporates 5 stages necessary for effective risk and crisis management: **assessment; prevention; preparation; response; and recovery** (Comfort, 1988; Rosenthal, Charles & t'Hart, 1989; Mitroff & Pearson, 1993; Boin et al., 2010). This approach reflects Gibson and Tarrant's (2010) integrated functions model, which considers organisational resilience an outcome of many environmental factors, including risk, business continuity and crisis management. A key component in achieving resilience is the organisation having the appropriate risk culture, which would anticipate and prepare for crisis and their consequences (Gibson & Tarrant, 2010; Comfort et al., 2010). Importantly, resilience requires risk and resources to be balanced, which can be achieved by developing a systematic approach to risk and crisis management. Wood (2005) suggests an appropriate measure of resilience is the ability of organisations to anticipate and adapt to the changing shape of risk, before failure and harm occurs. Using the stages set out above, each will be considered in detail to determine whether there are gaps between the theoretical 'ideal' system and the actual 'real' world in relation to the SCG and resilience.

### **7.2.1 Assessment**

The Civil Contingencies Act, 2004 introduced risk assessment and business continuity for category 1 responders, namely, the emergency services, local authorities, health boards and the Scottish Environment and Protection Agency. It is now a duty for category 1 responders to have in place arrangements to ensure they can continue to function and deliver their core services in the event of an emergency. Essentially this places a duty on every category 1 responder to develop and implement a business continuity management programme for their organisation. The legislation also introduces a duty to assess the risk of an emergency occurring and each SCG must maintain a community risk register. However, in Gouldner's terms there were indications that risk assessment process and Community Risk Register was a 'mock bureaucracy'. The evidence suggests that rules were not followed or enforced by either management or staff, indicating that they were not seen as legitimate or in line

with the SCG values. Furthermore, there was no obvious consequence for non-compliance.

Risk assessment is the first step in the emergency planning process and is considered essential to ensure that local responders have a common and realistic view of the potential disruptions they face, that is a shared situational awareness (Endsley et al., 2003). Resilient organisations seek out signals that may indicate potential crisis by creating an awareness of vulnerability (Weick & Sutcliffe, 2001; Hale et al., 2006). Failure to recognise and act upon early warning signals identified through risk assessments may result in a drift towards failure (Turner, 1976, 1978; Rasmussen, 1997; Woods, 2005). In other words, one of the main reasons that crises occur is organisations fail to recognise risk warning signs or their significance (Fink, 2002). It is when organisations do not have effective risk management that crises can occur. Therefore, resilient organisations are those that quickly capture and adapt to environmental information through assessment and amend their plans and structures ensuring that all relevant information is shared with others in the organisational system (LaPorte, 2006). In Scotland, the Strategic Coordinating Group (SCG) is the hub for such information sharing. It commissions the local risk assessment process and determines its management arrangements and reviews its outcomes.

However, there were differing views as to whether SCG is able to assess risk. Some organisations were seen to have the skills, such as the 'blue lights' and environment agency, and some did not. Despite its fundamental importance to achieving resilience the evidence exposed doubts about the effectiveness of the assessment process.

Although described as *“just an impression”* by one interviewee, it was supported by a number of others who highlighted that most SCG members had little or no training regarding risk assessment and there was a lack of commitment to participating in the process. The issue was summed up by a respondent and expert in risk management: *“Guidance is handed out. It’s down to who turns up, who’s the most vocal and sometimes, who’ll make a decision. There’s just no training”*. The lack of training for those undertaking the assessment together with the absence of commitment, indicated by absenteeism of group members, and that non compliance has no obvious consequences in relation to punishment because its an ongoing situation known by the

SCG members, highlights that the rules around risk assessment have not been legitimated by the SCG members, in terms of their own values.

Moreover, there were concerns that the assessments did not take into account cross border risks, such as pipelines or neighbouring SCG assessments, as only one SCG said that they considered the neighbouring SCG in its assessment process. This means that the same risk could be assessed differently depending on the SCG area it was in. The lack of strategic consideration can be explained because generally the risk assessment in SCGs was delegated from strategic to the tactical level for consideration. If this was done because of the level of risk assessment expertise at that level, it could be seen as an example of deference to expertise, a characteristic associated with so called High Reliability Organisations (Weick & Sutcliffe, 2001). However, in reality there were significant doubts about the effectiveness of the completed risk assessments, and in at least one case the assessment had to be re-considered at the strategic level because of its poor standard. Therefore, rather than indicate ‘deference to expertise’, the delegation of risk assessments indicates a lack of priority or value in the finished assessment and certainly the strategic view of risk assessment.

Furthermore, SCG plans were not generally linked to the assessments carried out for the completion of the Community Risk Register. Consequently, the lack of intrinsic value attached to the assessment process and its finished product, the CRR, led to it being described as a *“coffee table companion”*. The implication being that it had no further purpose for the activity of the SCG and certainly did not inform its strategic planning in relation to risk mitigation and response. This is in stark contrast to the view that organisations that are crisis prepared recognise the dynamic nature of crises so continuously review their situational assessments and amend them as new information or evidence becomes available (Weick, Sutcliffe & Obstfeld, 1999). The lack of priority given to the assessment process indicates that the SCG has not developed an organisational culture that encourages and values the continuous review of situational assessments, which would enable the organisation to amend its actions to reflect environmental changes.

Another issue in relation to the risk assessment process was that it was initiated and imposed by the UK Government. Moreover, it was inflexible so could not be adapted to local needs. Consequently one council developed its own guidance which differed from the official UK Government version. The imposition by an outside agency, the UK government, of the risk assessment process that did not reflect local needs, reinforced the view that the assessment process was not legitimate in terms of the SCG members' values. One respondent highlighted the resulting difficulties using the example of a CRR which still had not been officially published after almost two years because they were still trying to get risk assessments and action plans in place. In Gouldner's terms the imposition of rules in relation to the risk assessment process meant that the SCG members did not identify with them or their establishment. Consequently, the rules had no legitimacy and enforcement of them would violate the values of the SCG members, which excused non-compliance.

### 7.2.2 Prevention

The second phase is *prevention*, where agencies identify risk areas and these are addressed with the aim of eliminating or at least minimising the potential outcome of the risk. *Preparing Scotland* describes prevention of crises in terms of being “*nipped in the bud*” (Scottish Executive, 2007: 27). The examples given, fire fighters stopping a fire from spreading and highways authorities closing a road or a bridge in the face of imminent collapse, indicate not prevention but actions taken in response to the crisis once it becomes apparent. Moreover, SCGs cannot be compelled to act or undertake remedial works, such as flood defences, which might prevent a possible emergency at some future date. Although it must be acknowledged that many of the mitigation actions required, such as flood defences are the responsibility of individual councils or the Scottish Government, rather than the SCG. But all are stakeholders in the SCG so collaborating to implement mitigation measures would seem to be a practical means to achieve resilience and a fundamental duty of a policy network. This seems to be at odds with the view that crisis prepared organisations invest in both crisis prevention and response capability. It indicates that the SCG is reactive rather than proactive (Mitroff et al., 1989; Mitroff & Alpaslan, 2003; Mitroff, 2004).

The disparity between the expectation of prevention and the limitations imposed on the SCG by the Government to mitigate strategic risks seems to be an example of ‘mock bureaucracy’. The establishment of rules and bureaucratic cues to enforce the rules, including legislation, guidance and training by the government can be held up as efforts to create a safety culture. But in reality, because effective preventative measures are not required or enforced the rules have no legitimacy and can be ignored. This undermines a safety culture and implicitly signals to the SCGs that their preventative measures should be reactive. This has implications for the SCGs and resilience.

### **7.2.3 Preparation**

The third stage, *preparation*, is where agencies ensure that individually and collectively their systems and structures are sound enough to provide an effective response to any incident. Preparation includes having the appropriate policies, structures and resources in place that are essential to deal with unforeseen crises. The SCG seeks to implement the resilience policy through having risk, crisis and business continuity plans in place. These identify the appropriate response structures and resources necessary for effective crisis management. The preparation planning involves two elements, namely generic SCG multiagency plans and organisational business continuity plans. The generic plans are the building block of IEM. They set out the agreed management structures for control and coordination of the crisis, identify specific roles and responsibilities, communication and call-out arrangements. The business continuity plans remain the responsibility of the individual organisations.

The findings of the risk assessment stage include the preparation and testing of contingency plans for specific sites and events. Planning is an important component of an effective crisis response (Banerjee & Gillespie, 1994; Pearson & Clair, 1998). It reduces organisational vulnerability and assists staff to cope with the challenges of response (Chong, 2004). But plans need to be tested and it has been suggested that SCGs have misplaced confidence in their plans, especially as the majority had not been put to the test (Buckle, Coles & Marsh, 2006). This point is illustrated by a respondent who expressed confidence about having plans saying “*as far as having*

*BCM is concerned, we're good. We spend lots of time doing plans*". Unfortunately then rather undermined the confidence by going on to say *"although I'm not so sure about testing them. I don't think we've tested other agency plans"*. In fact the responses in relation to business continuity reflected the rationalisations identified by Mitroff and Pearson (1993) as hindering crisis management. It certainly seemed that business continuity planning was a luxury and not a priority for most organisations. The fact that it required a pandemic to drive the organisations to actually complete what was a statutory duty reinforces this, with one respondent saying *"there was more done in 6 months than 6 years!"* But despite that *"when the pandemic occurred most were found wanting"*.

The lack of commitment to the business continuity planning process by organisations suggests that effective crisis management has not been embedded in the core organisational values (Elwood, 2009). Instead the SCG has business continuity planning at the superficial level of the organisation, and therefore displays signs of being a crisis prone organisation because in relation to crises it has few plans, high rationalisation and denial (Mitroff et al., 1989). This approach to business continuity can be seen in terms of a 'mock bureaucracy'. The SCG knows the rules, which are set out in legislation, policy and guidance, but does not enforce its members to comply with them. Despite that failure to comply may have adverse consequences for the effectiveness of the SCG. The reluctance to ensure compliance was illustrated by one respondent, who chaired an SCG, and took the view that *"the SCG cannot be too intrusive"*. But given the potential impact business continuity compliance failure could have on the SCG and its community, it begs the question, who should be responsible for ensure compliance, if not the SCG.

Even if there is a tested plan in place, it needs to be recognised that crises have the potential to escalate beyond existing contingency plans and capability of the SCG for dealing with 'normal' crisis (Smith, 2005). Capability in dealing with such unforeseen crisis is the real challenge (Weick & Sutcliffe, 2001). But the SCG undermines its ability to deal with 'unforeseen crises' because its guidance stresses responders should maintain a *"realistic perspective"* on the events and exclude events that are so low that planning cannot be justified (Scottish Executive, 2007: 122). It could be argued that given the complexity of the SCG infrastructure and the tendency of

managers to minimise the risks they face there is a potential that weak signals from unexpected sources will be missed leading to the incubation of unforeseen crisis (Turner, 1976; 1978). Or conversely, by introducing subjective ‘taken for granted’ assumptions about what is ‘realistic’ into the planning process constrains it (Hopfl, 1994); either because of the politicised environment such decisions are taken in (Sagan, 1993) or because the lack of evidence in relation to the risk will mean it has no validity in relation to planning (Smith, 2005).

For crises that extend beyond the local SCG, such as foot and mouth disease or fuel protests, it is envisaged that the complementary arrangements made in each SCG area and by the Scottish Government, will form the basis of a multi-level generic plan for Scotland and its links with UK level plans. However, there are practical difficulties in managing cross-border crises. ***“The lack of linkage, coordination and sharing across SCGs needs to be tackled...it needs central overview for multi-site issues and events”***. Despite being identified as a crucial area for improvement in 2006 (Buckle et al., 2006; Walford, 2009) these difficulties persist, as was seen in relation to extreme weather where issues identified in 2005 were repeated in 2009 and 2010.

The complexity of the SCG structure obviously brings with it some difficulties. For example, the Cabinet Office Exercise ‘Winter Willow’, based around a ‘flu pandemic scenario, highlighted the need for improved linkages and communication, as well as clarity between strategic and tactical levels of incident management (Dept of Health, 2007). But such an integrated approach is difficult in practice because of the fragmented nature of UK political systems and the spread of political decision making authority over different levels of government (Drennan & McConnell, 2007). Barriers include professional and cultural challenges and confusion over accountability (Ling, 2002).

The SCGs seek to overcome such barriers by ensuring that members know their role, especially how their skills and expertise contributes to the overall response and how it is integrated with other partners within the plan. But the evidence suggested that ***“in relation to other partners understanding, there’s a big chunk, more than 50% who aren’t”***. In fact many members of the SCG see crisis management as a ‘bolt on’ to their day-to-day responsibilities. That is despite a planning process that is supposed to

include consultation about risk assessment, objectives, actions and responsibilities before a plan is agreed. Furthermore, plans are supposed to be embedded through dissemination to stakeholders and training key staff. Finally plans should be validated through exercise, and thereafter, reviewed and revised as necessary (Scottish Executive 2007). However, the research indicates that this is more aspirational because current arrangements are not yet embedded. Most plans are not tested nor staff exercised or trained. The lack of trained staff capable of dealing with a prolonged crisis or one which involved more than one SCG had encouraged SCGs to collaborate through joint units to maximise trained resources. But the situation was summarised by a chief police officer, who was ***“shocked at the lack of capabilities in Scotland”***. A point reinforced when two exercises that arrangement had been made to take observations had to be cancelled because of the lack of capability to deal with the exercise and preparations for the potential flu pandemic. Moreover there is no effective feedback mechanism to ensure that all participants are fully competent and confident to fulfil their roles within the planning arrangements.

At the strategic level executive experience appears to be more valued in ensuring an effective response than the training currently available. The fact that SCG membership is drawn from chief executives or the equivalent enables them to bring a wide range of experience in dealing with organisational challenges. However, despite this experience, the SCG has not diminished silo working among the responding organisations. The evidence suggests that there is a need to improve the effectiveness of a large proportion of the responders and ensure that they have a clear understanding of the SCG roles and responsibilities. For example, there is a lack of clarity about the role of the politician and the distinction between operational and political decisions. Clarity of roles and responsibilities and awareness of the SCG processes and channels would enable responders to act cohesively without pre-relationship and enhance resilience (Ginnett, 1990; Weick, 1993; Smith, 2005).

One reason for this lack of understanding in relation to roles and responsibilities may be the lack of crisis management as part of the regular business activity in many of the non-emergency services. In other words crisis management is a ‘bolt on’ to day-to-day responsibilities. Consequently beyond the blue lights most of the responders are seen and see themselves as having a supporting role, which in turn may adversely

impact on the effectiveness of response. It may also explain the reluctance of some partners to volunteer or commit resources to what is clearly a crisis response. The view that crisis management is a 'bolt on' to those outwith the emergency services indicates that the responsibility has been imposed and is not legitimate in terms of the non-emergency service's organisational values. As a result there is a lack of commitment to the role, which manifests itself in a reluctance to train and commit resources to crisis management; in other words a 'mock bureaucracy'.

#### **7.2.4 Response**

The fourth phase is *response*. The SCG is a heterogeneous organisation involving public, private and voluntary organisations. Coordinating a response is, therefore, a challenge because of the uncertainty as to the cause of crises, time pressures and confusion about who should make decisions (Brecher, 1979; Drabek, 1985; Janis, 1989). Moreover, bureaucratic organisations are not well designed to manage threats that emerge rapidly in unforeseen and often undetectable ways (Boin et al., 2010). To overcome such challenges it is suggested establishing a common purpose and culture (Hillyard, 2000) and exercising them before they are needed (Granot, 1999).

In an effort to establish a common purpose with the SCG, during the response phase it works towards a set of common objectives, which are set out in the guidance. These are to preserve life, property and the environment; to minimise the harmful effects of the event; to prevent its escalation; and to facilitate the investigation into its cause. While the initial response aims to deal principally with immediate effects, it will also incorporate suitable collaboration arrangements. The response phase is normally coordinated by the police but in the event of slow onset or less localised crises other organisations may be required to take the lead, for example a pandemic response would be led by health agencies.

In relation to culture, the view of the Scottish Government is that effective cooperation must be founded on collaborative partnerships (Scottish Executive, 2007). This has led to the establishment of networks where decision-making and coordination responses emerge from various sources rather than a single leader ('tHart, Rosenthal & Kouzmin, 1993). The collaborative network culture is reinforced

by legislation and guidance which establish regular meetings with specific organisations. The intention is for the SCG to engender an organisational culture that can switch from routine steady state management to crisis management. In other words from formal hierarchical operating procedures to informal network norms where there is greater latitude in decision-making and communication (Reason, 2000; LaPorte, 1996, Rochlin et al., 1987).

However, in reality SCG members still worked in silos and decisions were still made in isolation. *“If you learn in silos...you’ll reflect that organisational culture”*. Many organisations expressed the view that the ‘blue lights’ benefited from crisis training and therefore it was easier for them to move between steady state and crisis management. But for others it was out of character, asking *“how do you switch from inclusive democratic to command and control?”* All responders from the local authorities indicated that they operated in a supporting role with a focus on the recovery phase of an incident. As one police respondent said, *“Other agencies see themselves very much in support and turn to the Blue Lights”*. This indicates that non-emergency services deferred to the expertise of the ‘blue lights’ in relation to the response phase of the crisis. The research also indicated that many of the police officers favoured command and control rather than collaborative structures. Perhaps unsurprising since chief constables can draw on previous experience (Klein, 1993, 1995; Grint, 2005), and their own existing command and control structure and resources to implement decisions immediately. Therefore, collaboration with other agencies is necessary only when external resources are required to deal with the problem.

However, it also means that there is a perception the SCG is dominated by the ‘blue lights’. For example, in the aftermath of the London bombings there was some confusion over roles and responsibilities of responders and once the emergency service chiefs were in place they reverted from an SCG to conventional ‘emergency services’ Gold level meetings (London Resilience, 2006). The perception that ‘blue lights’ dominate SCGs has meant that other members see inequality. More importantly, there may be elements of ‘groupthink’ (Janis, 1982), which has the potential to increase the vulnerability of the SCG. One government representative

found the need to be assertive because “*sometimes something needs to be said. There can be undue pressure to go with the flow. There is an unequal basis of teams*”.

The dominance of the ‘blue lights’ is a likely consequence of the response phase normally being coordinated by the police, with all bar one SCG routinely chaired by chief constables, and the expectation with the one exception being that in crisis that SCG will be chaired by the chief constable. Moreover, that the ‘blue light’ services have additional powers specifically for use in emergencies, together with resources that can be deployed immediately and experience of previous crises, which confers status (Feldman, 2001; Robbins, 2005). Those with high status in groups may become more assertive, which can stifle creativity because lower status members tend to be less active participants in group discussions limiting their expert contribution (deLeon & Varda, 2009). The result may be that non-emergency services see instructions being imposed on their own organisation, rather than being part of the collaborative and shared decision-making process, and so failing to comply. Examples of such non-compliance include the non-attendance or non-participation of member organisations. In terms of ‘mock bureaucracy’ failing to comply may actually enhance the status of the non-emergency organisation.

In addition, the current structure of the SCGs with variances in size and resources means there are significant differences in capability, which create difficulties in coordinating responses. The need for rationalisation of SCG organisational boundaries was evident as a number of SCGs were already collaborating and pooling resources as part of their planning process. “*Disparate sizes of the SCGs is not a good idea. Either disaggregate Strathclyde or band together others*”; a comment reflecting that Strathclyde SCG serves a population of 2.5 million whereas Dumfries and Galloway SCG serves only 190,000. Furthermore, the lack of legal status of the SCGs means that they have no power to compel partners to carry out a particular piece of work or engage with the process. SCG effectiveness is further undermined by the lack of clear funding structures and the reduction of public sector budgets. Together these may undermine the intention of having a truly collaborative network characterised by reciprocity, representation, equality, participatory decision-making, and collaborative leadership (deLeon & Varda, 2009). The challenges of being truly collaborative, especially in sharing resources was highlighted by specific examples by the police and

councils reluctant to release resources for use outwith their own area and, in the case of the council, the criticism it generates from their constituents.

The communication and information sharing structures have been used in large scale crisis, such as the flu pandemic and fuel strikes. But the evidence suggests that information exchanges could be improved. They were described **“not being mainstreamed”** and **“still in a bunker”**. In other words silo working, rather than taking a broad strategic view. A particular example was the limited information sharing between SCGs; although it is recognised that information sharing would result in ‘good collective knowledge’. Moreover, there were issues around sharing sensitive information with other members of the same SCG, illustrated by the comment **“we’re sharing as much as we can”**. This was a particular issue when dealing with the UK and Scottish Governments in relation to terrorist incidents, especially when SCG members denied information were being asked to provide resources. This indicated an institutionalised lack of trust between network members. It is also contrary to successful network coordination, which is dependent on sharing information, willingness to collaborate and shared values (Kapucu, 2006).

The issue of trust and shared values was highlighted in relation to roles and understanding. There was significant criticism that many of the SCG members had limited understanding of the roles and responsibilities of other organisations. This has the potential to undermine network resilience because **“the network’s organisations must be capable of understanding the network”** (Granatt & Paré-Chamontin, 2006). The lack of understanding could diminish the establishment of shared values and trust, as well as the effectiveness of the SCG response. Particular criticism was levelled at the Scottish Government, for its excessive demands of information, resulting in the view that it was **“generating reports for the sake of doing something”**. The damage of such perceptions taking hold is lost trust within the network leading to a significant barrier to preparedness (Guelke, 2005).

In contrast there was wide spread recognition that informal channels and ‘boundary spanners’ could improve interoperability (Mulford, 1984; Burt, 1992; Granot, 1999; Williams, 2002). Many members highlighted well developed networks that they used to circumvent the slower formal channels. A number opined that informal networks

were more important than formal meetings of the SCG, because *“during a crisis you rely on the personal relationships built up before them”*. Moreover it enabled network members to develop greater trust and working relationship because, *“if you know them you get to know their sense of values and their organisation’s sense of values”*. Therefore, boundary spanning enables participants to build trust and understanding, which will lead to improved shared knowledge. Such relationships can assist in overcoming existing structural challenges during crisis.

In summary, as the SCG system matures common values, policies, and incentives should to ensure staff cohesiveness, which would also allow relationships and trust to be established. But in the SCG there is no explicit effort to build common values and culture. With the SCG it is implicit that involvement in the structure and its activities will achieve this. However, without compulsion some of those organisations that should be involved do not fully participate. The implication is that for the heterogeneous SCG it will have members pursuing different goals or at the very least different levels of commitment to the shared goals. In relation to the SCG one of the elements not included are the incentives for participation by the members. This has further implications for the overall success of the system. If there are no incentives for those participating there is greater potential for deviant behaviour, such as failing to attend meetings. Furthermore, the research evidence indicates that the culture and decision making in the SCG is dominated by the blue-light or emergency services. Moreover, responsibility for decision making tends to be associated with rank rather than expertise. But there is no formal mechanism for dealing with dissenting views within the SCG and some had experienced pressure to agree rather than take a contrary position.

### **7.2.5 Recovery**

The fifth and final stage, *recovery*, addresses the broader impact of the event. During the recovery phase lessons must be learned about the causes and effects of the response (Mitroff, 1988; Mitroff & Pearson, 1993; Stern, 1997). Turner (1976, 1978) suggests the result will be a readjustment of organisational culture to reflect the lessons learned. But there are barriers to learning (Smith & Elliott, 2007), including the rigidity of an organisation’s core beliefs, values and assumptions, and ineffective

communication. Furthermore, the ‘politics of crisis management’ can affect the learning process (Boin et al., 2010).

Currently, it is expected that SCGs have a documented process for capturing and taking forward lessons identified (Scottish Executive 2007). But this is undermined because the current culture focuses mainly on the response element of any crisis. The view is that SCGs *“don’t learn lessons. There are repeat events...we don’t sit down and incorporate them properly”*. Moreover, when lessons were identified it took *“an awfully long time to convert lessons into practice”*. There are a number of explanations for this. First it indicates an absence of double loop learning because despite the detection of the issue requiring change it does not result in a change in governing values (Argyris, 1980; Senge, 1992). Second self-protection was highlighted, reflecting the absence of a ‘no-blame’ culture within the SCG. A consequence of which is that near misses or mistakes will not be reported (Horlick-Jones, 1996). Third was cultural. Previously, the emergency services saw their role in dealing with the crisis and then moving on so did not always pick up the key points for improvement.

So while the SCG superficially encourages capturing lessons, and other isomorphic learning, within the organisations expected to do so there is a resistance to change. For example, the fire and rescue service found that in response to the introduction of logs to capture lessons, the results had been disappointing because you get *“101 excuses why they’re not done”*. The resistance to change indicates that the process is not considered important or been embedded into the core values of the organisation (Mitroff et al., 1989; Mitroff & Pearson, 1993). This is exacerbated at the systems level because difficulties in communication and information sharing, together with different levels of commitment and priorities within the member organisations. It was said *that “all the dirty washing is done in private, inside each organisation”*, rather than engaging in a mature discussion about what is required to be done to improve the over all effectiveness of the SCG. This indicates the existence of the ‘politics of crisis management’ (Boin et al., 2010) and a ‘mock bureaucracy’ (Gouldner, 1954). The elements of the SCG indicating crisis prepared and crisis prone are summarised in the following table.

**Table 9 Summary of SCG Crisis Prepared and Prone Elements**

	<b>Crisis Prepared</b>	<b>Crisis Prone</b>
<b>Assessment</b>	Risk Assessment & Business Continuity statutory duty for SCGs. Community Risk Registers published. Guidance provided by UK Government	SCG lacks necessary risk assessment skills & commitment to process. Cross border risks not considered & risk registers are not linked to strategic planning. Guidance does not reflect local needs.
<b>Prevention</b>	Establishment of SCG policy network. Risk assessments used to mitigate risks.	Examples of prevention given in guidance are reactive. SCGs cannot be compelled to take preventative action.
<b>Preparation</b>	SCG multiagency plans. SCG organisations have business continuity plans. UK Government provides complementary arrangements for wide area events. Lead Government Department protocol. Training provided by SCGs to ensure participants knows their roles and responsibilities.	Not all plans are tested & rationalisations are expressed by organisations. BCM not a priority & the planning scope restricted to 'realistic perspective'. SCG has no means to pick up weak signals. Lack of linkage and coordination for cross border crisis. Complex structures lead to confusion & many do not understand their roles. Crisis management is seen as 'bolt-on' rather than core function & there is a lack of trained staff.
<b>Response</b>	SCG has common objectives. Networks have been established. SCG reflect local police and fire services areas. UK & Scottish Governments support SCG activity.	Silo working persists & the SCG is dominated by emergency services. There is a preference for command & control structures rather than collaborative networks by police. Evidence of 'groupthink' and pressure on members to 'go with the flow'. Disparate SCG sizes & resource availability means significant differences in response capabilities. Members cannot be compelled to participate or take particular course of action. Reluctance to share sensitive information undermines trust in network. Governments generate excessive demands for information.
<b>Recovery</b>	Documented process for learning lessons	Focus is on response element, not aftermath. Lessons are not incorporated into future plans & the same lessons repeated. Reluctance to have frank discussions to share and learn within the network.

It seems that organisations in the SCG engage in ‘mock bureaucracy’; acknowledging legislation, regulation and guidance but continue to act as they did before it was in place. There is an obvious intention based on the legislation and guidance, together with an expectation that SCG would capture information and act on it. However, in reality the evidence for actual activity is minimal. Therefore, it is unable to provide timely feedback to enable changes to be made to plans. This omission is linked to another gap in the SCG, no incentives. Currently there are no consequences for compliance failure.

The evidence highlighted that SCGs tend to focus on the immediate crisis rather than post incident analysis. Most of the SCG member organisations do not have a formal process to capture lessons learned, and when exercises result in actions to amend processes there is a significant delay, even in relation to terrorist matters. There is also evidence that the same lessons are repeatedly ‘learned’. The existence of barriers to learning includes time constraints and lack of commitment, together with organisational aspects such as fear of failure and denial. Importantly there is no performance measurement mechanism to alert an SCG to the effectiveness of its activities in both the steady and crisis state.

It is, therefore, argued that although the IEM and the SCG structure provide a single framework for civil protection there are some areas which could improve the effectiveness of the structure. For example the complexity of the components within the framework means that it is not as flexible or agile necessary to deal with spontaneous dynamic events. Moreover, there are concerns about cross border or multiple site crises and how these would be coordinated effectively.

The question as to whether the SCG arrangements have improved the UK’s ability to respond is mixed. The familiarity of the structures and networks formed, together with the number of high profile events during which the framework was tested has undoubtedly improved the overall response ability. Moreover, the joint working by multi-agencies working together towards common goals, especially in the planning process will have improved, especially informal liaison among stakeholders with mutual concerns. Although there is still some doubt whether the resultant plans are used to drive the activities of the SCG.

However, one area which has not been as successful is in improving communication links between the UK and Scottish governments and SCGs. The complexities of the framework, together with the concept of 'lead' government department which means that an SCG may not know where the appropriate liaison should be with undermines the effectiveness of response. Moreover, the role of the elected politicians and the impact of devolved government, together with the separation of responsibilities for local responders and terrorist incidents. The Scottish government has responsibilities for the former and the UK government for the latter.

To overcome these challenges it is recognised that there is a requirement for SCG members to be clear about their own roles and responsibilities, as well as those of other partner organisations. However the evidence clearly indicates that this requires further development. Moreover, the desire to ensure consistency in civil protection activity and improved performance is fundamentally flawed because the current framework does not have performance monitoring mechanisms or measurements, which means that it is not possible to accurately determine whether an SCG is being as effective and efficient as they could be, nor is it possible to compare the activities across the different SCGs. Closely linked to the delivery of effective improvements would be the establishment of a feedback process at both individuals and organisational level.

The foregoing indicates that the current structure of the Strategic Coordinating Groups may not have the capability to prevent, to respond to, or to recover from crises effectively. A number of gaps have been identified, including that some members of the SCG are not fully confident about their roles and responsibilities and therefore may undermine the effectiveness of the SCG during their participation. However, comparison is difficult because of the absence of performance monitoring and feedback mechanisms to enable SCGs and their members to learn from incidents and change their practices.

### **7.3 Conclusion & Recommendations**

This research set out to determine whether the SCGs were successful in improving resilience and crises management in Scotland. The research focused on the various

SCG strategies and policies in relation to risk, crisis and business continuity management necessary to achieve the outcome of resilience; the organisational structure of the SCG, and its coordination and communication; the organisational culture of the SCG, and the influence of leadership and decision-making; and the perceptions of the individuals which form the core of the organisation and influence the crisis effectiveness of the SCG. It argued that a key element of resilience is the SCGs adaptive capability, to enable it to learn lessons from crises experience.

However, the evidence indicates that SCGs are not as effective as they could be. Resilience is diminished by the ineffectiveness of the risk assessment process within the structure, which is seen as a means to produce a risk register rather than as the basis of strategic planning by the SCG. In addition, the SCG is limited in its preventive activity and is not expected to take pre-emptive action that could mitigate future crisis but is only expected to develop plans to deal with the consequences. But resilience is further undermined by the lack of commitment to produce tested and validated business continuity plans. The consequence of not committing to testing and exercising plan is a lack of competent and confident personnel throughout the SCG to ensure multiple site crises could be supported over a prolonged period of time.

Furthermore, the current organisational structure of the SCG is complex and cumbersome, and heavily weighted towards the needs of the emergency services. Despite the desire for a network structure there is a tendency towards hierarchy by the emergency services. Therefore, other SCG partners are not truly equitable within the structure. This has consequences for resilience and network management because they are not wholly committed in terms of sharing resources or completing tasks quickly. Moreover, the whole structure lacks a formal feedback mechanism to ensure SCGs are capable of adapting quickly to changes in their environment and ensuring that training and tactics are adjusted accordingly to reflect the new situation.

This situation arises despite legislation, regulation, guidance and government policy. The research found that in many cases failure to comply with the resilience policy could be explained using the concept of 'mock bureaucracy'. That is because the rules were imposed from outside the organisation they simply are not considered legitimate and are not in line with the values of the organisations involved. A situation which is

able to continue because there is no sanction for failing to support the SCGs, nor indeed any mechanism for ensuring every member fully participates. Consequently an organisational culture within the SCG has developed where lack of commitment is met by the chair writing letters reminding organisations of their responsibility but no further sanction.

In summary the SCG organisational structure is undermined because of the lack of monitoring and feedback mechanism, which inhibits adaptive capability. Therefore, SCGs do not learn to the extent that the lessons reach their core values and defence mechanisms. Instead the lessons remain at a superficial level. SCGs therefore are crisis prone organisations, which are not wholly fit for purpose. In other words, they are an example of ‘mock bureaucracy’. To address this, I make the following recommendations, which reflect the four organisational layers of Pauchant and Mitroff’s Onion Model (1992), namely strategies, policies and procedures; structure, coordination and communication; culture; and core defence mechanisms of individuals.

### **7.3.1 Recommendations**

#### **1. Use Community Risk Registers for Strategic Planning and Audit Plans**

The legislation and non-statutory guidance provides clear strategies, policies and procedures for the SCGs. But the SCGs were not as effective as they could be because the strategies were not embedded throughout. For example, while all SCGs had developed Community Risk Registers they were not necessarily used in the strategic planning process. Moreover, the risk assessment processes used to develop CRRs was not consistent across the SCGs. Some cross border risks were not tracked end-to-end through respective SCGs, due to a lack of coordination and oversight. In addition CRRs do not adequately document all hazards, so potential risks are not captured or planned for perhaps because of political sensitivity or challenges in resourcing responses to some issues. To improve the assessment process the Scottish government should specify acceptable risk appetites for the SCGs to base planning assessments on.

The plans in relation to member organisations business continuity have been mostly left to the individual organisation, rather than been driven and coordinated by the SCG. Consequently SCGs could not be sure that supporting organisations were able to participate at the expected levels, particularly in relation to providing expert resources. Moreover, there is a discrepancy between the resources necessary to support SCG recovery plans and the actual levels of resources available for allocation by the SCG.

Furthermore, plans for incidents on multiple sites occurring simultaneously were underdeveloped. SCGs still focus on a single issues, e.g. during the pandemic total focus was on that to the exclusion of any other activities. This increases vulnerability for the SCGs. Moreover it is apparent that many plans have never actually been tested or staff exercised. Therefore, the effectiveness of the plans is unknown. Nor is there confidence of staff being aware of roles and responsibilities during the activation. These issues should be addressed by a formal audit of SCG planning, including the preparedness of participating organisations in relation to their business continuity arrangements. Part of this audit process would ensure staff participation in suitable exercises and that plans are robustly tested.

## **2. Simplify the response framework and rationalise the number of SCGs**

At the structural level, the legislation and guidance clearly sets out how the SCG should operate as a collaborative network. Therefore, the SCG model currently provides a sound foundation for resilience arrangements. However, it is suggested that the introduction of a revised and simplified response framework may alleviate the difficulties that some partner organisations have in relation to fitting within the response model. Complexity of SCG members' organisational boundaries impacts on SCG coordination, especially when dealing with multiple simultaneous events. So there is a need to achieve a common vision or approach in relation to SCG activity attaining common goals. The need for broad awareness of multiagency structures is a necessary component of effective resource deployment and coordination. But disparate organisational cultures, together with those of each individual, create barriers which could manifest as poor performance.

These barriers create an environment in which there was the potential for jurisdictional disputes between participating organisations. A particular area of concern is the lack of clarity between the SCG's operational response decisions and politicians and governments making political decisions. This highlights the difficulties of determining 'strategic' levels when an incident goes beyond a single SCG and how accountability for decisions and policies is tracked, and what are the specific limitations SCGs and politicians. Such lack of clarity highlights the need for a common approach across all SCGs, especially an understanding of terminology, which would improve cohesion and interoperability for multiagency networking.

Furthermore, the disparate size of SCGs is directly linked to the availability of resources to deal with incidents within the SCG area. To address this it is suggested that the number of SCGs be reduced to ensure equitable and adequate resource allocation in each to deal with significant crisis. Public sector organisations are altering boundaries and introducing shared services so there is an opportunity to rationalise the SCGs and clarify roles and responsibilities to eradicate duplication.

The SCGs should be overseen by a Scottish level coordination unit, which should facilitate extraordinary resourcing or mutual aid from neighbouring SCGs or coordinate crises which occur across a number of SCG areas, when required. Moreover, there is a need to introduce a formal system of performance monitoring into the SCG structure to enable every SCG to analyse its performance after each incident. Analysis through formal independent performance monitoring would allow comparisons between SCGs and their effectiveness in their use of resources. Such independent monitoring would facilitate a continuous and accurate recording of Scottish crisis preparedness and resource capability.

Improved performance would require the SCG to ensure that barriers to learning at both an individual and organisational level were identified and eradicated. Therefore, the revised model should incorporate feedback channels to individuals, participating organisations, as well as the SCG itself. To ensure use of such feedback channels a formal process of independent monitoring and recording activities during events could be introduced. However, an identified failing is that lessons identified are frequently not actioned or disseminated beyond the initial small group of participants. A

formalised system of feedback channels would ensure that lessons are captured and cascaded throughout the resilience community. This should be the responsibility of a separate independent Scottish level coordination unit.

A key element of an amended model is to put the SCG on a statutory footing to ensure legitimacy around its decisions and actions. The likelihood of an inquiry after large scale crises must be recognised, given the nature of incidents that SCGs are activated for, and therefore, it is essential that the SCG acts with legitimacy at all times.

Moreover, putting the SCG on a statutory basis would enable the roles of the MOD, Governments and politicians to be specified in law. Such a revision would bring clarity to the governance structures of the SCG, and provide an opportunity to embed decision-making structures based on expertise rather than rank.

Currently, SCG expenditure is unclear, as many resources are funding by individual member organisations rather than by the SCG. Consequently, there is disparity between SCGs and, more importantly, some expertise may be lost or diminished because an organisations limited funding inhibits full participation in SCG activities. As part of a revised and simplified response framework, central funding and procurement programmes should be established for the SCGs. This would address concerns regarding funding arrangements, which in the current financial climate is unlikely to remain at existing levels. One example is the voluntary services, which are an important component of the SCG but are not funded accordingly.

### **3. Develop Protocols to Ensure Consistent Approach and a Shared Culture of Understanding**

Currently there is a deficiency of shared understanding in the SCG. In other words the SCG has not developed a fully mature organisational culture in which everyone is clear about their and others roles and responsibilities, or indeed what constraints the SCG and member organisations face. Some activities within the SCG need clarification because they clearly undermine relationships and trust. For example levels of vetting and security classifications were prohibitive to effective response by SCG members. The suggestion is for protocols to assist in a consistent approach across all SCGs. Protocols should provide guidance about access to data during crises, which

would normally be restricted, to ensure effective data flows and decision-making. Another example where protocols could be applied is the arrangements and trigger points for mutual aid coordination and allocation. Such protocols could also define the Scottish government's priorities to ensure that all SCGs allocate resources appropriately to ensure a consistency across the country. They could also be used to clarify the roles and responsibilities with regard to policy and decision making by the government and the SCG members. This would enable a process to ensure that SCGs complied with guidance and related procedures. Such a consistent approach would also allow performance benchmarking for each SCG.

Barriers to joint working adversely impact on the ability of SCGs to respond effectively to incidents. Coordination is diminished because of the lack of understanding and appreciation of other member organisations capability. It is suggested that if all members of the SCG had awareness of the roles and responsibilities of the other organisations there would be improved coordination, as well as a greater appreciation of the need to adjust from hierarchical working to network working when moving from the parent organisation into SCG activity. One way to achieve such levels of understanding is to encourage the participation in joint working among the responding organisations. Collaboration would also improve cross-border relationships, as a consequence of enhanced understanding and appreciation of other organisational matters. It may also assist in the identification of additional resources not currently involved in the SCG through access to extended supply chains or networks, e.g. private sector or voluntary sector resources. The development of a shared organisational culture would also lead to improvements with the SCG cohesion. This would not only improve performance but would also limit the likelihood of representatives dropping out and delegating to lower level attendees for whom the responsibilities of the SCG are in addition to their day-to-day responsibilities.

#### **4. Enhance SCG Members' Capability through Standardised Training**

At the core of Pauchant and Mitroff's Onion Model (1992) is the argument that individual perception and defence mechanism is a key determinate in whether an organisation is crisis prepared or crisis prone. Currently there are many members of

the SCG who use rationalisations to avoid the necessity of preparing for crisis. This manifests itself through lack of commitment to the SCG and its activities. But it is possible to change these perceptions and therefore shift the SCG along the continuum towards crisis prepared. This can be achieved through multi-agency training, which would also improve interoperability and the overall effectiveness of the SCG. There is potential to develop an effective crisis management training programme to provide standardised training for all SCG participants. Such training would enhance SCG capability and improve the coordination of large scale events or incidents, especially those across multiple sites or SCG borders. The opportunity to participate in such training would allow participants to enhance their leadership and decision-making skills, as well as engendering a shared understanding of terminology and structures of all SCG member organisations.

However, it is recognised that there is a disparity between some organisational managers capability to deal with crises as opposed to steady state management. Those from the emergency services consider crisis as part of the day job and incidents were simply a matter of scale. In contrast others have less experience with crisis management. This manifests itself through the reluctance of some SCG members to assume the responsibility of chairing the SCG. Consequently, there is a need to ensure that all members have the capability and confidence to deal with steady state and crisis management, as both are necessary within the SCG. Furthermore, to ensure enough suitable resources future training strategies should be matched to potential demands identified in the community risk registers.

In addition to improved capability, such training would ensure that there were sufficient resource capacities to off-set staff turnover, as well as ensure both the SCG and the member's parent organisation had sufficiently trained resources to serve the SCG and maintain business as usual in their own parent organisation. As part of such a programme it would be possible to determine the overall capability of SCGs, particularly in relation to the minimum baseline levels of skills and specialisms necessary to ensure a reasonable level of effective response. Currently the absence of baseline measurements makes such calculations no more than speculation. A systematic approach to resource capability would also identify areas where collaborative working could improve SCG resilience and ensure an equitable

distribution of resources among SCGs to ensure that all were equally capable of responding effectively. It would also ensure that each SCG was capable of dealing with the actual demands placed on it by legislation and government.

#### **7.4 Reflections on Learning**

This section outlines my reflections and learning resulting from my study. The research is underpinned by the Civil Contingencies Act 2004, which as a recent piece of legislation provided a clear basis for the undertaking. The establishment of the SCGs marked a profound shift in Government policy and was, therefore, worthy of extensive study. Importantly, the recent introduction of the legislation meant that the research was conducted at a key moment in the evolution of civil contingencies in Scotland. Most participants had experience of what it was like before the legislation was introduced so could speak with authority about the changes that they had experienced as a consequence of the Act. The participants could reflect on their experiences and make direct comparisons with their current circumstances. The legislation may in fact be the high point of activity and focus on civil protection, as the impact of shrinking budgets and radical restructuring in the public services is likely to be reflected in fewer resources in this area. The potential is obviously a reduction in crisis management capability and resilience.

#### **Theory**

In using the systems approach I was able to gain a greater understanding of the interdependencies and constraints that can adversely impact on an organisation like the SCG. Network management theory combined with the systems approach enabled a greater understanding of the SCG as a multi-organisational network working to deliver Government policy. However, I became aware there can be a danger with systems models of the researcher becoming too abstract and detached from practical issues, or data being made to fit the model rather than the model explaining or contextualising the data. Moreover, deciding on what actually constitutes the system boundary is itself challenging. For example, when researching the SCG is it the ‘gold’ team, the entire structure or the geographical area that should be considered. When I referred to the SCG it meant the entire response structure and the interdependencies

within it. Such clarity is important especially when dealing with a number of interviewees with different perspectives of the SCG.

The theory in relation to crisis management and learning from crisis is well established. But in this research I was able to revisit the theory and apply it freshly to the SCG, a recently created organisational form expected to be able to deliver effective crisis management capabilities and resilience. In particular the concept of Gouldner's Mock Bureaucracy (1954) provided a useful lens to explain the findings. Being an established framework previously used by distinguished academics, enhanced its validity in this research. Moreover, being able to link it to the systems approach and Pauchant & Mitroff's Onion Model (1992) enabled me to achieve a coherent narrative, which was challenging given the volume of data.

## **Methodology**

In relation to the data analysis, the numerous sources available publically from SCGs and Scottish and UK Governments ensured that there was access to enough information to establish a broad understanding of the topic. But conversely it leads to a vast amount of information for the researcher to examine; consequently important points could easily be overlooked. My research approach was based on my police and project management experience, without this the scale of the undertaking, especially the administration of data, would have proved daunting. To avoid some of these difficulties researchers should give consideration to using a software package to manage the data. That said using a software package only assists with the technical aspects of managing large amounts of data. The analysis still requires the researcher's critical eye.

An important aspect of this research was the prior knowledge that I had of the SCG. This led me to consider whether having knowledge of an organisation facilitates or hinders the research. I was acutely aware being a serving police officer allowed me far greater access than would normally be the case, especially in relation to sensitive documents, discussions and exercises in relation to counter terrorism methods. My view was that ultimately effective research is based on an understanding of the organisation and context of data gathered. To obtain a deep understanding of the hidden elements of an organisation's culture prior knowledge is useful. However, it

also brings with it the danger of preconceived notions. Overcoming these, a researcher with interpersonal skills can build rapport and engender trust with interviewees. This enables the gathering of rich data, the quality of which could not be replicated without such a combination. In my case, I was able to build a rapport so that people were not only helpful, but their levels of frankness surprised me; although all expressed a desire to improve the system.

This study has highlighted to me the importance for researchers to take cognisance that complex organisations have distinctive elements within it. Therefore, they need to be clear about where the question can be answered. This requires knowledge of organisational interdependencies. How does the organisation actually work in practice as opposed to how it should theoretically work? For example, the dislocation between what the SCG publically profess in their strategies and policies is quite different from what actually happens. Especially enlightening was the power of individuals to subvert the stated intention of the executive level strategy. This dilemma was illustrated by Pauchant and Mitroff's Onion Model (1992).

### **Main Contributions**

The research identified that SCGs present several conceptual challenges. The SCGs must be understood as a network of organisations, with the elements of the network being heterogeneous. The SCGs include public and private sector organisations with differing goals and objectives, variable operating environments and funding structures as well as differing degrees of politicisation in the decision making process. As such, understanding the SCG requires both a holistic or systems perspective, and an ability to consider the individual elements (organisations) that comprise the network.

The specific role of the SCGs is to ensure the effective delivery of those duties under the Civil Contingencies Act that need to be developed in a multiagency environment. A key component is the adoption of a risk management approach and the production of Community Risk Registers. The SCGs also have a responsibility for reviewing lessons learned from incidents and exercises, as well as coordinating multi-agency exercises and training (Scottish Executive, 2007: 10-11).

The UK government's policy of resilience marked a profound shift from responding to crises to 'preventing' crises. To achieve an effective resilience capability requires an integrated system which includes effective risk assessment, business continuity planning and sufficient competent resources. This research considered the 8 Scottish SCGs as policy networks and their effectiveness in delivering a crises capability and resilience across Scotland, as envisaged by the Scottish and UK Governments. The research has explicitly established that there are clear gaps between the theoretical view of the SCGs set out in the legislation and guidance and how it operates in reality. In other words there is a discrepancy between what should happen and what actually does happen.

The research established that there are common issues, across all eight SCGs, in relation to network management and performance that need to be addressed. The thesis, for the first time, applied theory in relation to network management, crises and systems and critically reviewed how these combined in the multiagency environment of the SCGs. The research intention was to critically examine the theory and its practical application in the challenging environment of the SCGs and crises response. In doing so was able to make recommendations to improve Scotland's resilience and crisis management capabilities. More particularly, in the context of the SCGs the research has contributed by:

- Applying relevant crisis management literature to the new organisational form of the SCGs, in particular in particular analysing the SCGs and identifying the continuing existence of barriers to learning
- Critically reviewing the SCG structure and highlighting performance issues that need to be addressed
- Using systems theory and models make a comparison of the 'real world' SCGs and the ideal state
- Evaluating the impact of the SCGs on the UK Government's Resilience Policy

These are each considered in more detail below:

## 1. Crisis Management Literature

The introduction of the Civil Contingencies Act 2004 and the establishment of Strategic Coordinating Groups (SCGs) within an integrated emergency management framework were intended to provide Scotland with an effective crisis response structure and resilience. The Act sets out policies and functions of the SCG, including risk, crisis, emergency and business continuity management, which are intended to achieve the outcome of resilience. The research indicated that the approach established in legislation and supporting guidance is an effective means to ensure crisis management. The key components of the *Integrated Emergency Management* approach clearly reflect the phases necessary for effective crisis management (Comfort, 1988; Rosenthal, Charles & t'Hart, 1989; Mitroff & Pearson, 1993; Boin et al., 2010). Moreover, the approach is systematic, with the intention of preventing crises from occurring, but if that is unsuccessful will enable them to respond effectively (Mitroff & Pearson, 1993; Pearson & Clair, 1998).

The view that this combination of components when institutionalised in an organisation such as the SCG will result in resilience is supported by those who argue that resilience is an outcome influenced by a dynamic complex combination of environmental factors (Gibson & Tarrant, 2010; Comfort et al., 2010). However, one factor affecting the outcome of resilience is an organisation's risk culture. This research established that the SCGs do not have an effective risk culture; especially in relation to their commitment to dynamic risk assessments. A particular gap identified in the research was that risk registers and other risk analyses are not routinely used for strategic planning within the SCG. Consequently this omission will undermine crisis training and plans, because they are not based on the most recent risk environment and diminish resilience.

A key aspect of resilience is the ability of the SCGs to learn from previous experiences. For an organisation to be truly crisis prepared crisis management activity needs to reach beyond the superficial aspects of the organisation through to its core identity and defence mechanisms. This requires an organisational culture which values crisis management activities and adapts to its changing risk environment. However, the research has established that despite years of research suggesting that

organisations will experience such cultural readjustment following crises (Turner, 1976) and other studies highlighting how barriers to learning need to be identified and addressed (Smith & Elliott, 2007), in SCGs lessons learning from crises is deficient. There seems to be a lack of understanding that just saying that lessons are learned and creating a process in a document does not make it so; there is a need to get to the very core of beliefs so that they see the value in changing behaviours.

Organisations that do not recognise and adapt to threats by changing their procedures and policies experience ‘failure of hindsight’ (Toft, 1992). Turner (1978) opined that failures provided an opportunity for organisational learning. Despite this, learning lessons is one of the most underdeveloped aspects of crisis management (Lagadec, 1997; Stern, 1997). A key gap identified in the research was that the lessons identified from crises were not subsequently fed back into the policy network (Boin et al., 2007). Thus there was no second loop learning, manifesting itself in a cultural readjustment and a change to plans, training and individual and organisational beliefs.

The use of Gouldner’s (1954) concept of ‘mock bureaucracy’ provided a useful means to explain the need for shared values embedded at an individual and organisational level to achieve compliance with the components needed to ensure effective resilience. Such a culture is also essential in overcoming barriers to learning. This research has highlighted that its absence will undermine effective crisis management and resilience.

## **2. Organisational Structure & Performance of SCGs**

The enactment of the Civil Contingencies Act 2004 resulted in the establishment of the SCGs as a new organisational form. The Act sought to provide a single framework for civil protection to “*reinforce partnership working at all levels*” (Scottish Executive 2007: 56). The SCGs marked a move from hierarchical structures, characterised by top-down management and command and control relationships (Goldsmith & Eggers, 2004), towards networks characterised by a horizontal style of management, shared leadership and decisions made on the basis of expertise rather than positions. However, the research established that there were tensions between the emergency services hierarchical ‘command and control’ structure and partnership

working in a collaborative policy network configuration, such as the SCG. Moreover, by applying network theory to the SCG the research highlighted difficulties of process, obstacles to performance, and difficulties between the relationship between bureaucracy and multi-organisational arrangements, which may undermine SCG effectiveness in delivering resilience. Particularly problematic were the need for information sharing, willingness to collaborate, and shared values, all previously identified as essential for effective networks (Kapucu, 2006).

The research also recognised that crisis management activities were rooted in organisational structure, culture and policies (Carmeli & Schaubroeck, 2008). Therefore, Pauchant & Mitroff's (1992) Onion Model was particularly useful as analytical tool. It enabled analysis of the SCGs through the four organisational layers of the model: namely, Strategies and Policies in relation to crisis management and resilience; Organisational Structure, Coordination & Communication; Culture, Leadership and Decision-Making; and Individual Perceptions, Beliefs and Values. Moreover, the research was able to illustrate that unless the SCGs perform well through all four layers it will tend towards crisis prone rather than being crisis prepared.

### **3. Use of Systems Theory and Models to Analyse the SCGs**

The research highlighted that crisis management and organisational resilience are dominated by systems thinking and a general systems approach (Stead & Smallman, 1999). Organisational resilience was identified as an emerging systemic property, resulting from a complex interaction of social, technical and managerial aspects of the SCG. In other words resilience was an emerging property of complex systems (Paries, 2006).

The research used Checkland's *Systems Thinking, Systems Practice* (1993) as an overarching analytical approach to the SCG. The application of systems theory to the SCGs had not been done before. The application of systems theory enabled the examination of the SCGs organisational effectiveness (Checkland, 1993 & 2000). Moreover, the use of the two systems models, namely: The Formal Systems Model

(Pearce & Fortune, 1995; Fortune & Peters, 1995 & 2005) and the Viable Systems Model (Beer 1979, 1981 & 1985) is also a new contribution.

The analyses of the SCG using the FSM (Fortune & Peters, 2005) enabled the identification of a number of elements that had the potential to cause failure within the SCG. Moreover, it provided an analytical framework to describe the failures and explain why they occurred (White, 1995). The further analysis using Beer's VSM (1979, 1981 & 1985) enabled the examination SCGs relationships and their diagnosis which assisted in identifying where the SCG was not viable. The combined use of the models resulted in a greater understanding of the SCGs. This enabled recommendations on the redesign of the SCGs to make them more viable and adaptive to their environment. For example, the recommendation to have an audit function in recommendation 1 and a Scottish Coordination Unit in recommendation 2 flow specifically from the application of the models.

The research also reviewed the incubation of crises in systems (Turner, 1976, 1978; Perrow, 1984, 1999; Reason, 1990, 2000; Smith, 1990) and applied them in the context of the SCG. The application of the systems approach to the SCGs brought greater understanding of the potential for crises pathways being generated only to emerge as an organisational failure in the SCG. It also highlighted that unless a systems or holistic view of the crisis is taken there is a danger that opportunities to learn from crisis will be missed (Turner, 1976, Mitroff, 1988; Frederickson & LaPorte, 2002; Toft & Reynolds, 2005).

#### **4. Evaluating the impact of the SCGs on the UK Government's Resilience Policy**

The UK Government's response to its perceived capability deficit in relation to its *"experience of severe emergencies in the UK and the changing threat from international terrorism"* (Civil Contingencies Bill para 2), was the introduction of legislation and a national 'resilience' policy. The research established that the policy of resilience marked a profound shift in the UK Government's approach to crisis management. Previously it had adopted a piece-meal approach, enacting legislation to deal with specific incidents or threats. However, the Resilience Policy went further

and introduced a proactive element. The policy incorporated not just planning, preparation, maintenance, response and recovery but also prevention of such extreme events through learning from previous experiences (Cabinet Office, 2004). The research highlights that the UK Government policy chimes with the need in relation to organisational learning to anticipate, prepare for and respond to crises, and thereafter adjust practices to reflect the lessons learned from the crisis to ensure greater resilience in future (Turner, 1978; Mitroff, 1988; Frederickson & LaPorte, 2002; Toft & Reynolds, 2005).

The research also critically reviewed whether the policy and legislation actually achieved its desired outcome of responders having the capability to deal with the full range of crises by:

- a) Delivering a single framework for civil protection in the United Kingdom designed to meet the challenges of the 21<sup>st</sup> century

The research established that there are elements within the framework of the SCGs which on balance indicate that they are more crisis prone than crisis prepared. While the SCGs provide a single framework for civil protection there are some areas which could improve the effectiveness of the structure. For example the complexity of the components within the framework means that it is not as flexible or agile necessary to deal with spontaneous dynamic events. Moreover, concerns about the cross border issues have been an on-going concern since 1994 ***“arrangements at strategic level are not entirely satisfactory, particularly where a major incident spans local boundaries and/or there is a requirement for those involved in the emergency response to work together”*** (HMSO, 1994: 47).

- b) Improving the UK’s ability to deal with the consequences of major disruptive incidents by improving the planning process at a local level, building better contacts between agencies and improving the link between local areas and central government

The evidence also highlighted that the SCGs tend to focus on the immediate crisis rather than post incident analysis and that most of the SCG member organisations do

not have formal processes to capture lessons learned. Consequently when crises or exercises result in actions to amend SCG processes there is a significant delay, even in relation to terrorist matters. The research identified that there were still areas of improvement in relation to the communication links between the UK and Scottish governments and SCGs.

- c) Clearly identifying the roles and responsibilities of local responders, ensuring consistency in civil protection activity and enhancing performance (Cabinet Office, 2004)

In relation to the awareness of roles and responsibilities, it was established that there is a significant gap in appropriate knowledge. Moreover, while there is an obvious intention based on the legislation and guidance, together with an expectation that SCG would capture information and act on it; the SCG is unable to provide timely feedback to enable changes to be made to plans, because the current framework does not have performance monitoring mechanisms or measurements. Consequently the research established that it is not possible to accurately determine whether SCGs are being as effective and efficient as they could be, nor is it possible to compare the activities across the different SCGs.

This research set out to determine whether the SCGs were successful in improving resilience and crises management in Scotland. The research focused on the various SCG strategies and policies in relation to risk, crisis and business continuity management necessary to achieve the outcome of resilience; the organisational structure of the SCG, and its coordination and communication; the organisational culture of the SCG, and the influence of leadership and decision-making; and the perceptions of the individuals which form the core of the organisation and influence the crisis effectiveness of the SCG. It argued that a key element of resilience is the SCGs adaptive capability, to enable it to learn lessons from crises experience.

However, the research indicates that SCGs are not as effective as they could be. The principal finding is that the current structure does not ensure effective organisational learning and therefore Scotland's resilience is diminished. The SCG organisational structure is undermined because of the lack of monitoring and feedback mechanism,

which inhibits adaptive capability. Therefore, SCGs do not learn to the extent that the lessons reach their core values and defence mechanisms. Instead the lessons remain at a superficial level. SCGs therefore are crisis prone organisations, which are not wholly fit for purpose. In other words, they are an example of ‘mock bureaucracy’.

### **Future Research**

SCGs as currently designed are crisis prone so need to improve. However, the ongoing restructuring of public services, together with the establishment of single police and fire services in Scotland in 2013, present opportunities to fundamentally reshape Scotland’s crisis management and resilience capability. As an integral part of this change a study should be undertaken to evaluate whether the restructuring leads to significant improvement. The findings contained in this thesis provide a baseline measure of the current structure to determine whether the changes are effective.

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National Emergencies & Civil Defence Legislation

Legislation	General Powers
<b>Emergency Powers Act 1920</b>	<ul style="list-style-type: none"> <li>• Passed to deal with major industrial disruption and civil disorders</li> <li>• Set parameters for the proclamation of an emergency</li> <li>• Provided power to make regulations to deal with the emergency</li> </ul>
<b>Regional Commissioners Act 1939</b>	<ul style="list-style-type: none"> <li>• Coordinated and tested the capabilities of emergency services</li> </ul>
<b>The Civil Defence Act 1939</b> (suspended by the <b>Civil Defence (Suspension of Powers) Act 1945</b> )	<ul style="list-style-type: none"> <li>• Imposed duties on local authorities and public utilities to provide public shelters</li> <li>• Granted local authorities powers to undertake civil defence works</li> <li>• Central government had duties to offer guidance to occupiers and employers</li> </ul>
<b>Civil Defence Act 1948</b>	<ul style="list-style-type: none"> <li>• Duties on local authorities to make contingency plans against war risks</li> <li>• Provided for a government support grant</li> <li>• Enacted preparations for emergency administration to enable the functions of central and local government to continue and to resume as near normality as possible after a nuclear attack</li> <li>• Formation of an ‘organisation of volunteers trained in essential tasks of fire fighting rescue, care of homeless, emergency feeding, communications and control’</li> <li>• It became ‘part of the functions of the designated Minister to take such steps as appear to him from time to time to be necessary or expedient for civil defence purposes’</li> <li>• Imposed further civil defence duties on police forces, fire brigades, and employees of local authorities, as well as police authorities</li> <li>• Stipulated that training duties were obligatory for constables, firemen, and members of the civil defence forces and services</li> </ul>
<b>Civil Defence (General) Regulations 1949</b> and the <b>Civil Defence (Public Protection) Regulations</b>	<ul style="list-style-type: none"> <li>• Made councils responsible for collecting and distributing information about possible attack, controlling and coordinating counteraction, including evacuation and emergency care and housing and rescue, protecting against ‘the toxic effects of atomic, biological and chemical warfare’, and advising the public</li> </ul>

<b>Emergency Powers Act 1964</b>	<ul style="list-style-type: none"> <li>• Widened the causes of ‘emergency’ to include events of such a nature as to disrupt the life of the community</li> <li>• Allowed, without any need to declare a state of emergency, the use of armed forces in direct employment in ‘agricultural work or other work, being urgent work of national importance’</li> </ul>
<b>The Civil Defence (Planning) Regulations 1974</b>	<ul style="list-style-type: none"> <li>• Laid down a duty to plan for the continuance of essential services in wartime</li> </ul>
<b>Drought Act 1976</b>	<ul style="list-style-type: none"> <li>• Gave government powers to help meet deficiencies in water supplies, e.g. hosepipe ban</li> </ul>
<b>Energy Act 1976</b>	<ul style="list-style-type: none"> <li>• Gave government emergency powers to regulate or prohibit the production, supply and consumption of energy</li> </ul>
<b>Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act 1976</b>	<ul style="list-style-type: none"> <li>• A statutory public inquiry into the circumstances of a death held in the Sheriff Court at the instance of the Procurator Fiscal</li> <li>• The findings of a FAI are not legally binding</li> </ul>
<b>The Civil Defence (General Local Authority Functions) Regulations 1983</b>	<ul style="list-style-type: none"> <li>• Provided duties not only to devise plans but also revise them, as well as dealing with equipment, control centres, training and exercises</li> </ul>
<b>Civil Protection in Peacetime Act 1986</b>	<ul style="list-style-type: none"> <li>• Permitted use of resources in responding to emergencies not connected with hostile attack</li> <li>• Encouraged planning for an emergency or disaster involving destruction of, or danger to, life or property</li> </ul>
<b>Local Government Act 1972 (amended 1989)</b>	<ul style="list-style-type: none"> <li>• Allowed local authorities to incur expenditure on making and exercising contingency plans as well as for dealing with emergencies in their areas</li> </ul>
<b>Civil Defence (General Local Authority Functions) Regulations 1993</b>	<ul style="list-style-type: none"> <li>• Reiterated the duty of councils to make, review and revise plans, to train and exercise them in more appropriate terms than those focusing on hostile attack and nuclear consequences</li> </ul>
<b>Civil Contingencies Act 2004</b>	<ul style="list-style-type: none"> <li>• Local arrangements for civil protection</li> <li>• Sets out related emergency powers</li> <li>• Redefines what constitutes an emergency to include threats to human welfare and the environment, as well as damage to security</li> </ul>

## Terrorism Legislation

Legislation	General Powers
<b>The Northern Ireland (Emergency Provisions) Act 1973</b>	<ul style="list-style-type: none"> <li>• Persons involved in terrorism in Northern Ireland excluded from the Province or the UK.</li> <li>• The police could detain suspects for 48 hours on their own authority</li> </ul>
<b>Prevention of Terrorism (Temporary Provisions) Act 1974</b>	<ul style="list-style-type: none"> <li>• Proscribed organisations involved in terrorism</li> <li>• Gave the police powers of arrest, search and detention without warrant of people where there was a reasonable suspicion that they belonged to a proscribed organisation</li> <li>• Created the offence of withholding information from the police about future acts of terrorism, or people involved with terrorism</li> </ul>
<b>The Prevention of Terrorism (Temporary Provisions) Act 1989</b>	<ul style="list-style-type: none"> <li>• Defined terrorism as ‘the use of violence for political ends, and includes any use of violence for the purpose of putting the public or any section of the public in fear’</li> </ul>
<b>Prevention of Terrorism (Additional Powers) Act 1996</b>	<ul style="list-style-type: none"> <li>• Extended the police powers available in Northern Ireland to the police in Great Britain, including powers to stop and search pedestrians within designated areas for terrorist items</li> <li>• Empowered police to cordon off areas and impose temporary parking restrictions in response to perceived threats, and search non-residential premises, such as lorry parks and lock-up garages, as well as unaccompanied freight at ports</li> </ul>
<b>Criminal Justice (Terrorism and Conspiracy) Act 1998</b>	<ul style="list-style-type: none"> <li>• Power to forfeit the assets of those convicted of terrorist activities</li> <li>• Allowed the opinion of a police officer’s evidence regarding membership of a proscribed organisation to be admissible in court</li> <li>• Rights of courts to draw inferences from suspect’s refusal to answer questions during an investigation into their membership of a terrorist organisation</li> <li>• Created the offence of conspiring in the UK to commit a terrorist act abroad</li> </ul>
<b>Terrorism Act 2000.</b>	<ul style="list-style-type: none"> <li>• Definition of terrorism was widened but restricted to terrorism connected with the affairs of Northern Ireland or Irish and international terrorism</li> <li>• Recognised terrorism may have a religious or ideological as well as a political motivation</li> <li>• Non violent may have a devastating impact to society,</li> </ul>

	<p>e.g. interference with water or power</p> <ul style="list-style-type: none"> <li>• Specifically covered the disruption of key computer systems</li> <li>• Provided extraordinary powers of stop and search to police officers for the purposes of preventing terrorism</li> <li>• Police detention of suspect without charge for up to 7 days with court approval</li> </ul>
<b>The Anti-Terrorism, Crime &amp; Security Act 2001</b>	<ul style="list-style-type: none"> <li>• Extended the <b>Terrorism Act 2000</b> regarding seizure of terrorist cash</li> <li>• Strengthened the protection and security of aviation and civil nuclear sites and the security of dangerous substances held in labs and universities</li> <li>• Ministers get power to detain without trial foreign nationals who were suspected of terrorist links where there was insufficient evidence to prosecute (later overturned by Law Lords)</li> </ul>
<b>Criminal Justice Act 2003</b>	<ul style="list-style-type: none"> <li>• Police detention of suspect without charge with court approval extended to fourteen days</li> </ul>
<b>Prevention of Terrorism Act 2005</b>	<ul style="list-style-type: none"> <li>• Introduced control orders imposing obligations on subjects to protect members of the public from a risk of terrorism</li> </ul>
<b>The Serious Organised Crime and Police Act 2005</b>	<ul style="list-style-type: none"> <li>• Introduced restrictions of movement and protest for half a mile around the Houses of Parliament, GCHQ, Ministry of Defence at Whitehall, Downing St and Chequers</li> </ul>
<b>Terrorism Act 2006</b>	<ul style="list-style-type: none"> <li>• 28 day detention period without charge introduced</li> <li>• Outlawed the encouragement or glorification of terrorism through the publication of statements or internet activity that could result in the commission or preparation of acts of terrorism or convention offences</li> <li>• Prohibits training or being present at a place where terrorist training was taking place</li> </ul>
<b>Counter-Terrorism Act 2008</b>	<ul style="list-style-type: none"> <li>• Powers for Security Services to gather and share information</li> <li>• Creation that a crime is aggravated by reason of having a terrorist connection which must be reflected in sentence imposed</li> <li>• Imposes notification requirements and travel restrictions on persons in respect of certain terrorist offences</li> </ul>

<b>Counter-Terrorism Act 2008 (Foreign Travel Notification Requirements) Regulations 2009</b>	<ul style="list-style-type: none"> <li>• Requires specified individuals to notify travel details when leaving the UK for 3 days or more</li> </ul>
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### Health & Safety Legislation

<b>Legislation</b>	<b>General Powers</b>
<b>Health and Safety at Act 1974</b>	<ul style="list-style-type: none"> <li>• To ensure ‘so far as reasonably practicable’ that employees and the public are not exposed to risks to their health and safety from the employer’s undertaking or business</li> </ul>
<b>Management of Health &amp; Safety at Work Regulations 1999</b>	<ul style="list-style-type: none"> <li>• Impose a general requirement upon employers to carry out a ‘suitable and sufficient’ risk assessment</li> <li>• Employers are required to have appropriate arrangements for the effective planning, organisation, monitoring and review of these risks</li> <li>• Employers have a duty to provide employees with comprehensive and relevant information on the risks to their health and safety identified by the assessment, the preventative and protective measures and procedures and any nominated safety personnel</li> <li>• Employers are also required to put in place arrangements for dealing with foreseeable emergencies</li> </ul>
<b>Health and Safety (First Aid) Regulations 1981</b>	<ul style="list-style-type: none"> <li>• Requirement to provide adequate medical equipment and trained first aiders or appointed persons and information on first aid facilities and equipment to staff and others</li> </ul>
<b>Confined Spaces Regulations 1997</b>	<ul style="list-style-type: none"> <li>• Requires that where it is necessary for persons to work in confined spaces, employers must have suitable and sufficient arrangements for their rescue in an emergency</li> </ul>
<b>Carriage of Dangerous Goods by Road Regulations 1996</b>	<ul style="list-style-type: none"> <li>• Imposes a duty on operator of a container, vehicle or tank to provide information to others engaged in the handling of emergencies or accident situations</li> </ul>
<b>The Reporting of Injuries, Diseases &amp; Dangerous Occurrences Regulations 1995</b>	<ul style="list-style-type: none"> <li>• Imposes duty on employers to report to the enforcing authority, which is usually the Health &amp; Safety Executive, certain types of accidents, including fatal accidents, major injury accidents, and dangerous occurrences</li> </ul>

<p><b>Combined Code of the Committee on Corporate Governance (Turnbull Report, 1998)</b></p>	<ul style="list-style-type: none"> <li>• UK companies to have a system of internal control so that the Board could identify and control its exposure to significant risks, including health and safety risks</li> <li>• The Board of Directors is responsible for internal control and is required to carry out an annual assessment and make a statement in its annual report and accounts</li> <li>• The system of internal control should include control activities, information and communication processes and processes for monitoring its continued effectiveness</li> </ul>
<p><b>Corporate Manslaughter and Corporate Homicide Act 2007</b></p>	<ul style="list-style-type: none"> <li>• New offence of corporate manslaughter to be called corporate homicide in Scotland</li> <li>• Applies to companies and other incorporated bodies, Government departments and similar bodies, police forces and certain unincorporated associations</li> </ul>

### Legislation Enacting EU ‘Seveso’ Directives

Legislation	General Powers
<p><b>Control of Industrial Major Accident Regulations 1984 (CIMAH)</b></p>	<ul style="list-style-type: none"> <li>• Placed requirements on both the onshore major hazard industry and the national and local government bodies that dealt with them</li> <li>• Introduced need for emergency planning</li> <li>• Duty on the local authority to prepare and keep current an off-site emergency plan</li> <li>• Duty for information sharing between the manufacturer, local authority and those who could be affected by a major accident at the site</li> </ul>
<p><b>Control of Major Accident Hazard Regulations 1999 (COMAH)</b></p>	<ul style="list-style-type: none"> <li>• Covers both industrial activities and the storage of dangerous chemicals</li> <li>• Requires preparation and implement a Major Accident Prevention Policy (MAPP)</li> <li>• Operators must take all necessary measures to prevent major accidents and limit their consequences, ensuring design, construction, operation and maintenance of the establishment are adequate</li> <li>• Sites subject to Seveso II must notify their existence to the competent authority</li> <li>• Major accidents to be reported the competent authority as soon as practicable</li> <li>• Prepare safety report which demonstrates on-site plans are in place; that local authorities have been provided with off-site plan for land use and planning purposes;</li> </ul>

	<p>that environmental risks are adequately covered; and that safety report is available to the public</p> <ul style="list-style-type: none"><li>• Groups of establishments should be identified where the consequences of a major accident may be increased because of their location and proximity to each other</li></ul>
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### Strategic Coordinating Groups in Scotland Roles, Responsibilities & Borders

The purpose of this Appendix is to describe the organisations that comprise SCGs and their roles and responsibilities in relation to response<sup>9</sup>. It will also map the boundaries of the organisations, highlighting that the environment that the organisations work within is complicated by the lack of coterminous boundaries.

#### **Police**

Scotland's first constables were appointed in 1617 in the reign of James VI but city and burgh police forces were not established until the 19th century, largely replacing town guards of citizens or old soldiers; although a small but short-lived professional police force had been established in Glasgow in 1778. However, the UK's first Police Act was the Glasgow Police Act of 30 June 1800 and another eleven Scottish cities and burghs established police forces under individual police Acts of Parliament before Peel's Metropolitan Police was established. The Burgh Police (Scotland) Act of 1833 gave powers to Scottish burghs to establish police forces, if they had not already done so. The Act meant that each burgh did not need to seek an Act of Parliament to form a police force, but many had done so in the preceding 33 years (Donnelly, 2008).

The Police (Scotland) Act 1967 sets out the current legislation in relation to policing in Scotland. Each force is maintained by a police authority or joint board, which consist of elected representatives of each council in the force area. Joint Police Boards now maintain 6 of the Scottish forces: Northern Constabulary, Central Scotland Police, Grampian Police, Lothian & Borders Police, Strathclyde Police and Tayside Police. Only Dumfries & Galloway and Fife Constabularies are directly administered by the councils for their geographical areas.

The police forces are subject to a tripartite system of governance, consisting of The Government, the Police Authority or Joint Police Board, and the Chief Constable. However, the chief constable has operational independence. While police authorities appoint the chief constables (subject to the approval of the Secretary of State), neither police authorities nor the Secretary of State have power to direct chief constables on enforcement of the law or on the deployment of police officers. The chief constable has a duty to comply with instructions from the Lord Advocate, the sheriff principal or the appropriate prosecutor in relation to offences and prosecutions. Efficient and effective use of the resources placed at his disposal by the police authority is a matter for the chief constable.

The roles and responsibilities of the police are to:

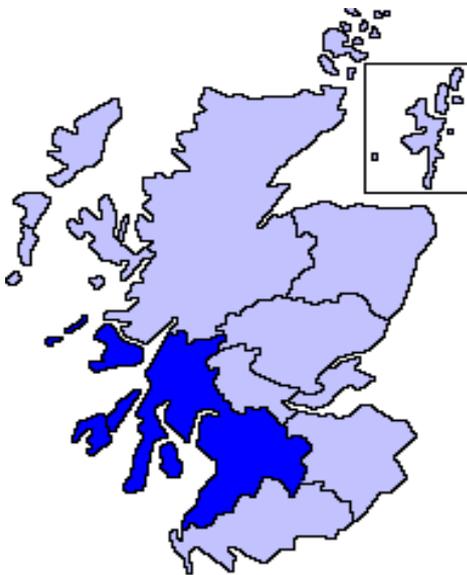
- Co-ordinate the activities of local responders and others acting in support at the scene of an incident except when HM Coastguard co-ordinate search and rescue in a maritime incident

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<sup>9</sup> <http://www.scotland.gov.uk/Resource/Doc/243492/0067754.pdf> accessed

- Treat the affected area as a crime scene, in parallel to the general response, unless it is obvious that the emergency is caused by a natural event;
- Act under the direction of the Procurator Fiscal and, where appropriate, facilitate the inquiries carried out by bodies such as the Health and Safety Executive, Rail, Air or Marine Accident Investigation Branches of the Department for Transport
- Process casualty information including the identification of deceased and removal of the dead on behalf of the Procurator Fiscal; and
- As host force, co-ordinate the response to, and investigation of, major accidents on the rail network in Scotland

As of 30<sup>th</sup> June 2010 Scotland's 8 forces, excluding BTP, have a total of 17, 424 police officers<sup>10</sup>.



### **Strathclyde Police (8,410 police officers)**

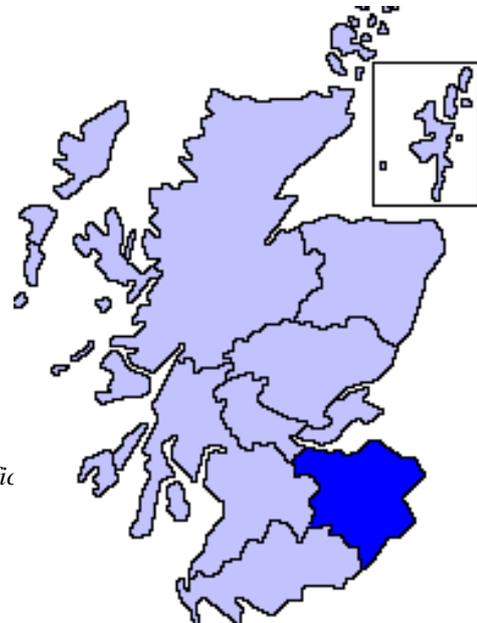
Strathclyde Police is responsible for the council areas of Argyll and Bute, City of Glasgow, East Ayrshire, East Dunbartonshire, East Renfrewshire, Inverclyde, North Ayrshire, North Lanarkshire, Renfrewshire, South Ayrshire, South Lanarkshire and West Dunbartonshire.

Until 1996 the police area was also the local government region of Strathclyde. It is the largest of the eight Scottish police forces. It is the second largest in terms of area in Scotland, after the area covered by Northern Constabulary. Strathclyde Police was created

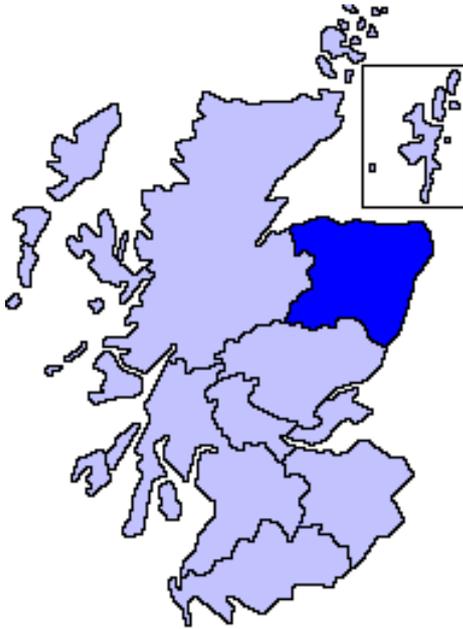
on May 16, 1975 from the merger of City of Glasgow Police, Lanarkshire Constabulary, Renfrew & Bute Constabulary, Dunbartonshire Constabulary, Argyll County Police, Ayrshire Constabulary and a small portion of Stirling and Clackmannan Police.

### **Lothian & Borders Police (3,007 police officers)**

Lothian and Borders Police is responsible for the council areas of the City of Edinburgh, East Lothian, Midlothian, Scottish Borders and West Lothian. Lothian and Borders Police was formed on May 16 1975 by an amalgamation of Berwick, Roxburgh and Selkirk Constabulary, Edinburgh City Police and The Lothians and Peebles Constabulary.



<sup>10</sup> [http://data.gov.uk/dataset/police\\_officer\\_strength\\_statistics\\_scotland](http://data.gov.uk/dataset/police_officer_strength_statistics_scotland) - *An Official Publication for Scotland* (7 September 2010).

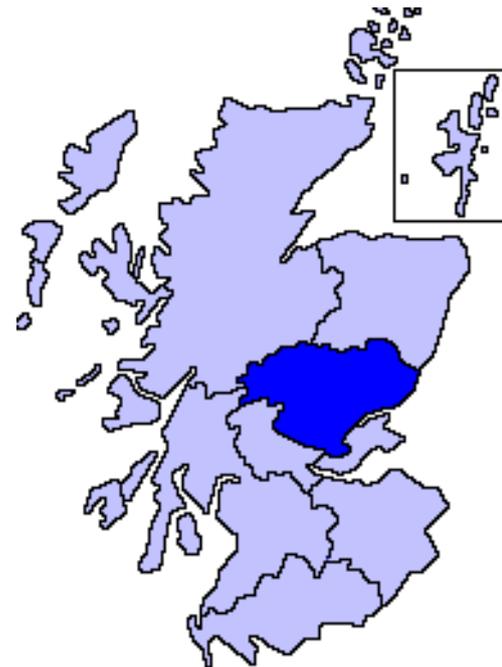


**Grampian Police** (1,557 police officers)

Grampian Police is responsible for the council areas of Aberdeenshire, City of Aberdeen and Moray, which was the former Grampian Region created in 1975. The Force area covers some of the North Sea, giving Grampian Police the responsibility of policing the oil and gas platforms of the North East. Grampian Police was formed on May 16, 1975, from a merger of the Scottish North Eastern Counties Constabulary and the Aberdeen City Police. The North Eastern force had itself been formed on May 16, 1949, by the merger of Aberdeenshire Constabulary, Banffshire Constabulary, Kincardineshire Constabulary and Moray and Nairn Constabulary.

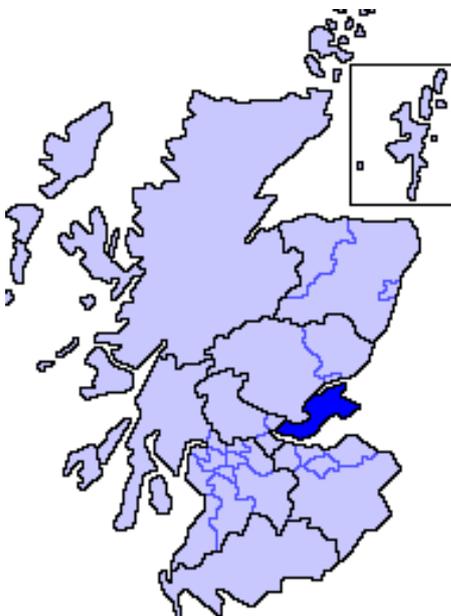
**Tayside Police** (1,220 police officers)

Tayside Police covers the Scottish council areas of Angus, City of Dundee and Perth and Kinross. It was formed on May 16, 1975, with the region of Tayside, as an amalgamation of the Perth and Kinross Constabulary, Angus Constabulary and City of Dundee Police



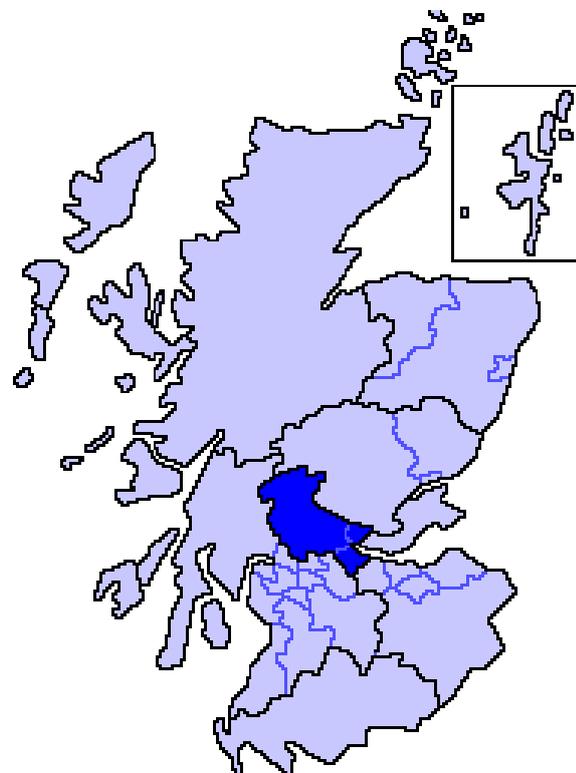
**Fife Constabulary** (1,082 police officers)

Fife Constabulary is responsible for the council area of Fife. The force was established in 1949 following the amalgamation of the originally independent Fife County, Dunfermline City and Kirkcaldy Burgh police forces.



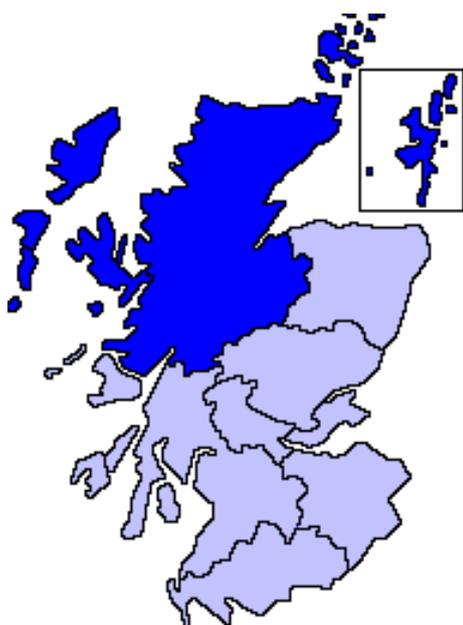
### **Central Scotland Police (853 police officers)**

Central Scotland Police is responsible for the council areas of Stirling, Falkirk and Clackmannanshire, which was previously known as Central region. The Force Headquarters is in Stirling. The force was created on May 16, 1975, with the Central Scotland region, as a successor to the Stirling and Clackmannan Police, together with the south-western portion of the Perth and Kinross Constabulary area.



### **Northern Constabulary (785 police officers)**

The Northern Constabulary is responsible for the Highland council area along with the Western Isles, the Orkney Isles and the Shetland Isles, which comprise most of the Highlands and Islands area. It is the police force covering the largest geographical area in the United Kingdom, equivalent to the size of Belgium, but is one of the smallest in terms of officers.



The current police force was formed on 16 May 1975 as a merger of the pre-existing Northern Constabulary, the Ross and Sutherland Constabulary (itself a merger of Ross and Cromarty Constabulary and Sutherland Constabulary) and the Inverness Constabulary (a merger of Inverness Burgh

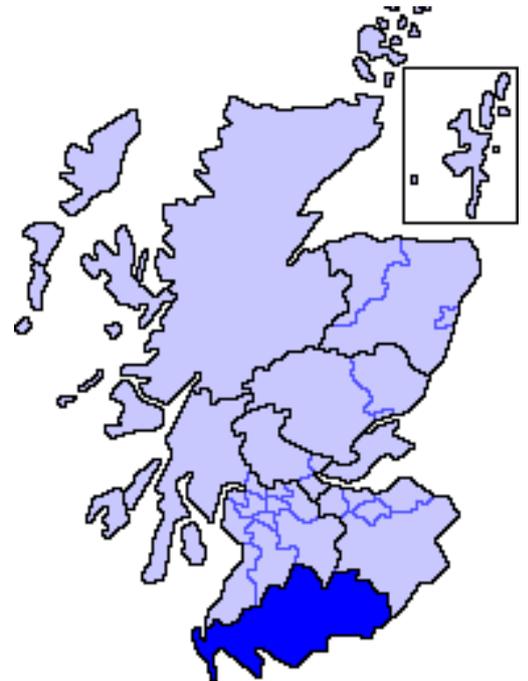
Police and Inverness-shire Constabulary), along with the northernmost portion of the Argyll County Police area, and the Nairn part of the Scottish North East Counties Constabulary. The previous Northern Constabulary had been created in 1969 by the merger of the Caithness Constabulary, Orkney Constabulary and Zetland Constabulary.

The new Northern Constabulary was created at the same time as local government reorganisation created the Highland Regional Council and the islands councils of the Western Isles, the Orkney Isles and the Shetland Isles. The rest of the Argyll County Police was merged into the Strathclyde Police, and the rest of the Scottish North East Counties Constabulary into the Grampian Police.

**Dumfries & Galloway Constabulary** (511 police officers)

Dumfries and Galloway Constabulary is responsible for the council area of Dumfries and Galloway.

The police force was formed in 1948 as an amalgamation of the previous police forces for Dumfriesshire, the Stewarty of Kirkcudbright and Wigtownshire, and preceded the creation of the former Dumfries and Galloway Regional Council by 27 years.



**British Transport Police (BTP)<sup>11</sup>**

The British Transport Police (BTP) polices those railways and light-rail systems in Great Britain for which it has entered into an agreement to provide such services.

It was formed by the British Transport Commission Act 1949 which combined the already-existing police forces inherited from the pre-nationalisation railways by British Railways, those forces having been previously formed by powers available under Common Law to parishes, landowners and other bodies to appoint

constables to patrol land and/or property under their control. This is distinct from the establishment of a police force by statute, as applicable to the Metropolitan Police in 1829; BTP did not have jurisdiction on a statutory basis until the enactment of the Transport Police (Jurisdiction) Act 1994 which was subsequently amended by the Railways and Transport Safety Act 2003.

Since 2007 BTP also has jurisdiction for the Glasgow Subway.

BTP has a total establishment of 2,835 police officers and 1,455 support staff. Scotland 231 police officers and 28 support staff.

<sup>11</sup> <http://www.btp.police.uk/> accessed 20/09/10

## **Fire & Rescue Services**<sup>12</sup>

The Fire (Scotland) Act 2005 is the primary legislation controlling the provision and maintenance of fire-fighting and fire-prevention services. Since the establishment of a devolved Scottish government in 1999, national control is the responsibility of the Cabinet Secretary for Justice in the Scottish Government. Local control is the responsibility of a local Fire Authority or Board, consisting of elected councilors from the council areas covered by the service.

The current Scottish Fire & Rescue Services are still broadly based on the Regional Council areas of local government in use from 1975 to 1996. The Fire & Rescue Service areas are coterminous with the police force areas and the related SCG boundary. Currently, there are now eight Scottish Fire and Rescue Services, combined they have a total of 8,558 firefighters and control room staff<sup>13</sup>. The distribution of firefighters is as follows:

- Strathclyde = 3,216 firefighters and control room staff
- Highland & Islands = 1,715 firefighters and control room staff
- Lothian & Borders = 1,086 firefighters and control room staff
- Grampian = 873 firefighters and control room staff
- Tayside = 703 firefighters and control room staff
- Fife = 520 firefighters and control room staff
- Central Scotland = 445 firefighters and control room staff
- Dumfries & Galloway = 351 firefighters and control room staff

The roles and responsibilities of the fire and rescue services are to:

- Rescue people from fire, flood, transport incidents, machinery and collapsed structures
- Fight fires and prevent the spread of fire in open and enclosed spaces on or next to land
- Render humanitarian assistance
- Protect and mitigate damage to property and the environment from the effects of fire and by dealing with hazmat incidents
- Management of the inner cordon
- Manage incidents involving hazardous materials
- Provide qualified scientific advice in relation to hazmat incidents and damage control
- Assist in mass decontamination of casualties following a CBRN/hazmat incident at the request of the Scottish Ambulance Service; and
- Investigate the causes of fire.

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<sup>12</sup> <http://www.scotland.gov.uk/Topics/Justice/public-safety/fire-and-rescue-services> accessed 20/09/10

<sup>13</sup> <http://www.scotland.gov.uk/Publications/2010/09/03093526/5> accessed 20/09/10

## Scottish Ambulance Service Divisions



### Scottish Ambulance Service<sup>14</sup>

The Scottish Ambulance Service (SAS) is part of NHS Scotland, and serves all of Scotland. It is a Special Health Board funded directly by the Scottish Government Health Department.

The roles and responsibilities for the Scottish Ambulance Service are to:

- Save life and provide immediate care for patients at the scene of the incident and in transit to hospital
- Alert Hospital Services and other relevant NHS agencies
- Manage decontamination of people affected by hazardous substances prior to their evacuation from the

scene

- Evacuate the injured from the scene in order of medical priority
- Arrange and ensure the most appropriate transport for the injured to the receiving hospital
- Supply patient care equipment to the scene of a major incident
- Transport vital medical staff and their equipment to the scene
- Alert the British Red Cross and St Andrew's Ambulance Association and co-ordinate their work in support of SAS
- Provide and maintain communications equipment for medical staff and voluntary organisations at the scene; and
- Restore service normality

It also operates three Special Operations Response Teams (SORT) based in the North, East and West of Scotland. These teams are specially trained and equipped to deal with major incidents of any kind as well as chemical, nuclear or radiological incidents.

The national headquarters are in Edinburgh and there are five divisions within the Service, namely:

North - Highlands, Western Isles, Grampian, Orkney, Shetland

East Central - Fife, Forth Valley, Tayside

West Central - Greater Glasgow, Lanarkshire

South East - Edinburgh, Lothian and Borders

South West - Argyll, Argyll islands, Clyde islands, Ayrshire, Dumfries and Galloway

The Scottish Ambulance Service has 4,161 staff, including 2,330 paramedics and technicians.

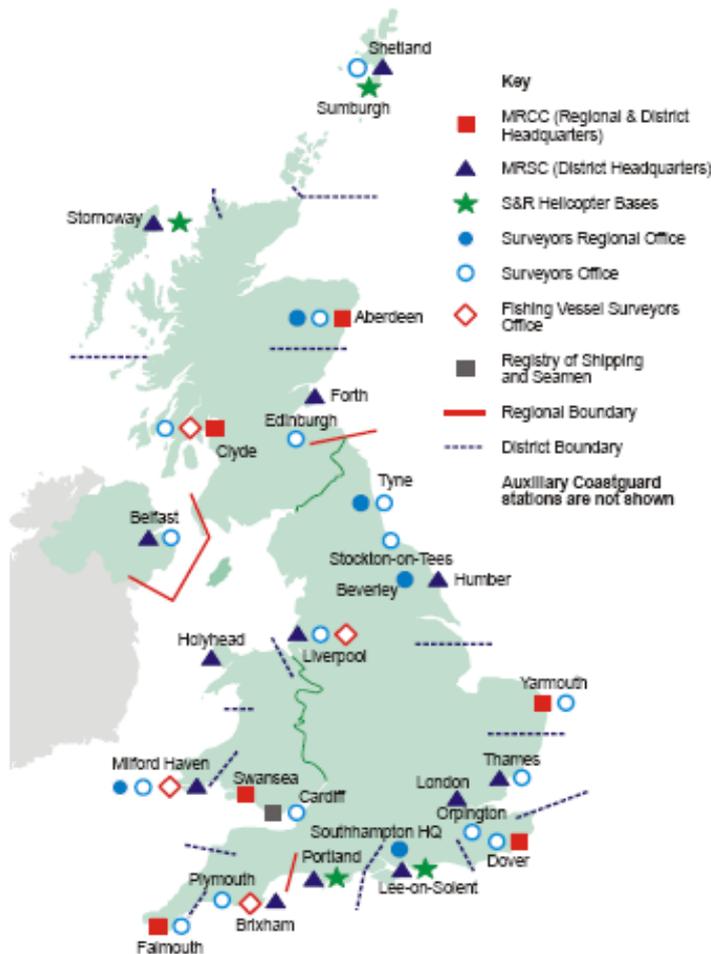
<sup>14</sup> <http://www.scottishambulance.com/>

## Maritime & Coastguard Agency<sup>15</sup>

The Maritime and Coastguard Agency (MCA) is a UK executive agency working to prevent the loss of lives at sea and is responsible for implementing British and International maritime law and safety policy. This involves coordinating search and rescue (SAR) at sea through Her Majesty's Coastguard (HMCG),

The MCA is structured into three Search & Rescue Regions (SRR):

1. Scotland & Northern Ireland Region
2. Wales & Western Region
3. East of England Region



The region which covers Scotland, Northern Ireland and the Scottish Isles encompasses 6 Coastguard Rescue Co-ordination Centres and 5 Marine Offices, some of which are collocated. There are 207 smaller properties, which house Auxiliary Teams and their 21 Sector Managers. The region directs 2 Coastguard Emergency Towing Vessels (ETVs), one of which is stationed in the Minches and the other in the Fair Isle Channel.

The Region's oil-related responsibilities include Search and Rescue (SAR) for in excess of 90 Mobile Rigs and over 100 Production Platforms; over 15,000 Personnel work offshore in its area. In total, the Region employs 264 permanent staff and 1,310 Auxiliary Coastguards.

The roles and responsibilities of MCA are to:

- Initiate and co-ordinate civil maritime search and rescue by mobilising, organising and dispatching resources to assist people in distress at sea, in danger on cliffs or shoreline and in certain inland areas

<sup>15</sup> <http://www.mcga.gov.uk/c4mca/mcga07-home> accessed 20/09/10

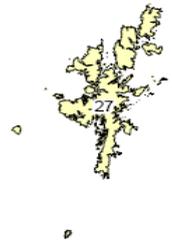
- Be national co-ordinator of all civil maritime Search and Rescue (SAR) activities by utilising its own facilities and those made available by others (e.g. military helicopters and Royal National Lifeboat Institution (RNLI) lifeboats) but will also seek assistance from any source likely to make an effective contribution
- If specifically requested, assist emergency services and local authorities during emergencies, such as flooding
- The Counter Pollution and Response Branch deals with pollution at sea and assists local authorities with shoreline clean-up.
- The Secretary of State for Transport's Representative (SOSREP) is co-located with the MCA. The SOSREP is empowered to intervene on behalf of the Secretary of State for purposes relating to the safety of ships or pollution from ships, offshore oil or gas installations. SOSREP has the power to give directions

UK wide the MCA employs 1,200 people who are supported by 3,500 volunteer Coastguard Rescue Officers.

### **Maritime Incident Response Group (MIRG)**

The UK Fire & Rescue Service Maritime Incident Response Group (MIRG) was launched in April 2006. The MIRG consists of fifteen strategically located shore based FRS who provide a 24/7 response to incidents at sea where there is a risk of life or high environment risk for which fire fighting, chemical hazard and/or rescue teams may be required.

## Local Authority Areas



### Councils<sup>16</sup>

The Local Government etc. (Scotland) Act 1994 created the current local government structure of 32 unitary authorities covering the whole of Scotland. It abolished the two-tier structure of regions and districts created by the Local Government (Scotland) Act 1973 which had previously covered Scotland except for the islands council areas. The Act came into effect on 1 April 1996.

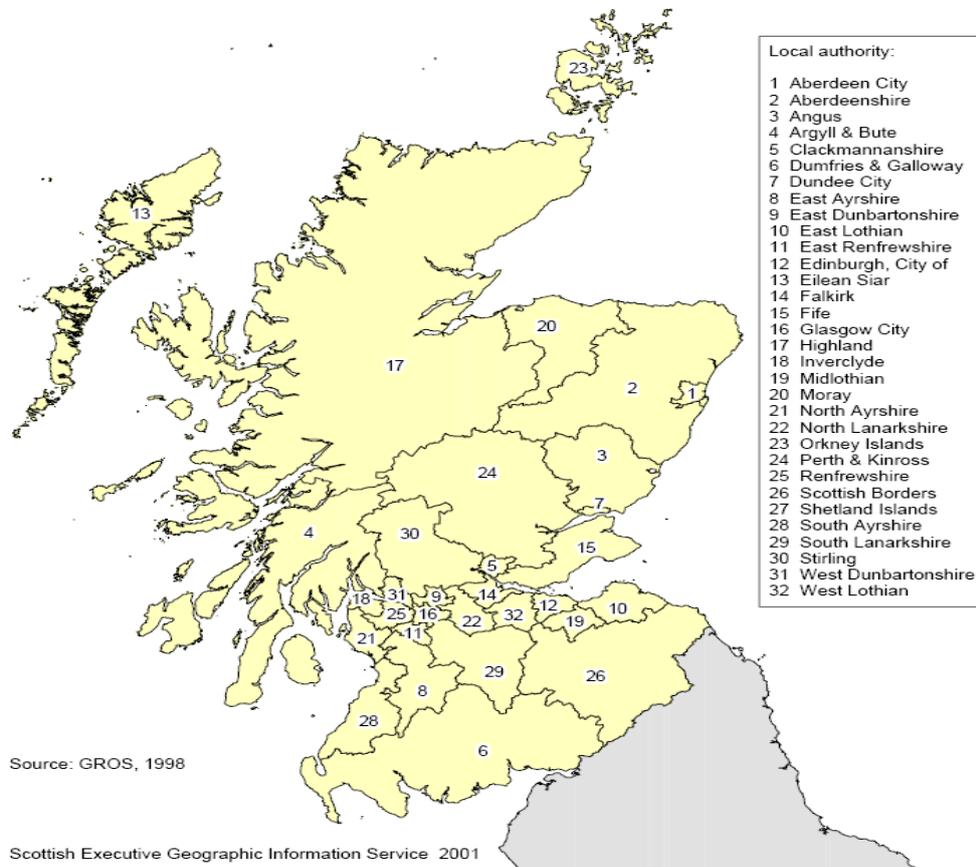
The reorganisation of local government areas also led to changes in policing and fire services, which had been organised in 1975 to correspond to one or more regions<sup>17</sup>. The Police (Scotland) Act

1967 was amended to allow for the reconstitution of police areas and appointment of joint authorities. Similarly fire services and authorities were reconstituted.

There are now only two unitary councils, namely Fife and Dumfries & Galloway, which have their police and fire and rescue services, and their health boards with coterminous boundaries. All the others have a number of councils within the local authority area. For example, Strathclyde Police has 12 councils and three health boards within its force area and Grampian Police has three councils and a single health board.

The roles and responsibilities of the local authorities are:

- Support the emergency services and those assisting them
- Provide a variety of support services for the local and wider community
- Maintain normal services at an appropriate level
- Provide a wide range of social care and welfare services, working alone or with public, private and voluntary organisations. Services include care for

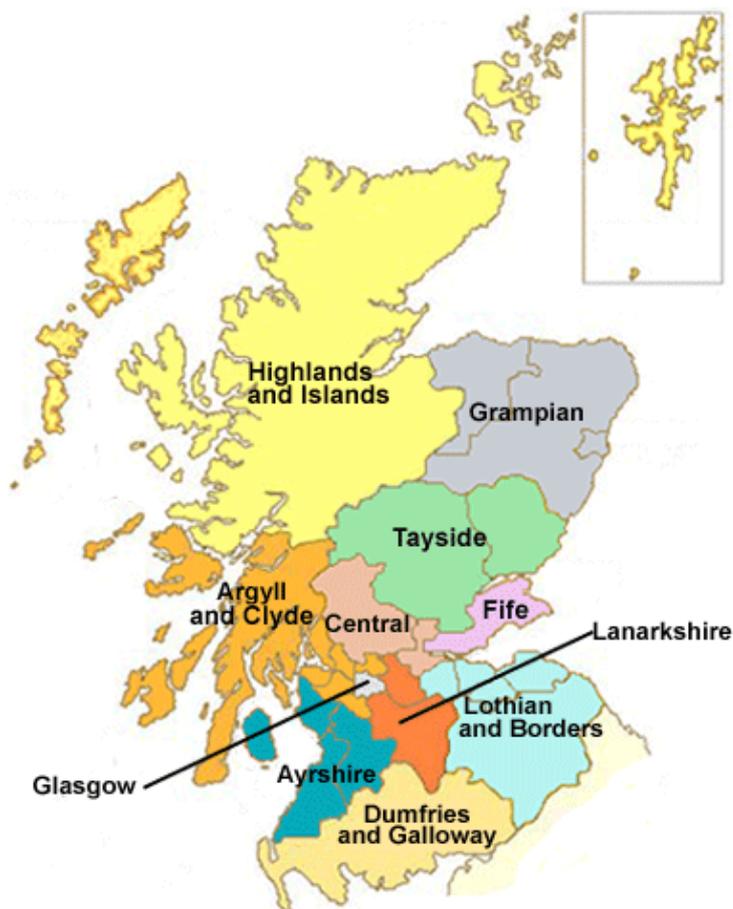


<sup>16</sup> <http://www.scotland.gov.uk/Resource/Doc/933/0009386.pdf> accessed 20/09/10

<sup>17</sup> <http://www.scotland.gov.uk/Topics/Government/local-government> accessed 20/09/10

people, rest centres, temporary accommodation, re-housing and practical support for victims

- Access a wide variety of specialist, scientific, environmental and communications expertise
- Represent the diverse interests of local people and, in so doing, maintain close links with communities through elected members, Community Councils, Community Planning and other formal partnerships
- Have powers to take action to preserve community wellbeing; and
- Lead the longer-term recovery and regeneration of affected communities.



### **Crown Office & Procurator Fiscal Service (COPFS)**<sup>18</sup>

The Crown Office and Procurator Fiscal Service provide the independent public prosecution service for Scotland, and is a Ministerial Department of the Scottish Government. The department is headed by Her Majesty's Lord Advocate, who under the Scottish legal system is responsible for prosecution, along with the area Procurators Fiscal.

Under Scottish criminal law the responsibility not only for prosecution but also the investigation of crime lies with COPFS. The role of the police is to gather evidence and undertake enquiries on behalf of the procurator fiscal but “the fiscal retains primacy at all times” (HMICS, 2000: 17<sup>19</sup>).

This is different from England and Wales, where the Crown Prosecution Service (CPS) has no investigative role (Donnelly & Scott, 2005<sup>20</sup>).

In 2002, COPFS was restructured to correspond largely with police force areas. It was divided into 11 areas each headed by Area Procurator Fiscal. These areas generally coincide with the boundaries of the eight Scottish police forces. The exception is Strathclyde, which has 4 COPFS areas namely Argyll & Clyde, Ayrshire, Glasgow and Lanarkshire.

<sup>18</sup> <http://www.copfs.gov.uk/About/Departmental-Overview/Area-Procurator-Fiscal/APFIndex> accessed 20/09/10

<sup>19</sup> HM Inspectorate of Constabulary for Scotland (2000) *A Fair Cop? The Investigation of Complaints against the police in Scotland*. Edinburgh, HMSO

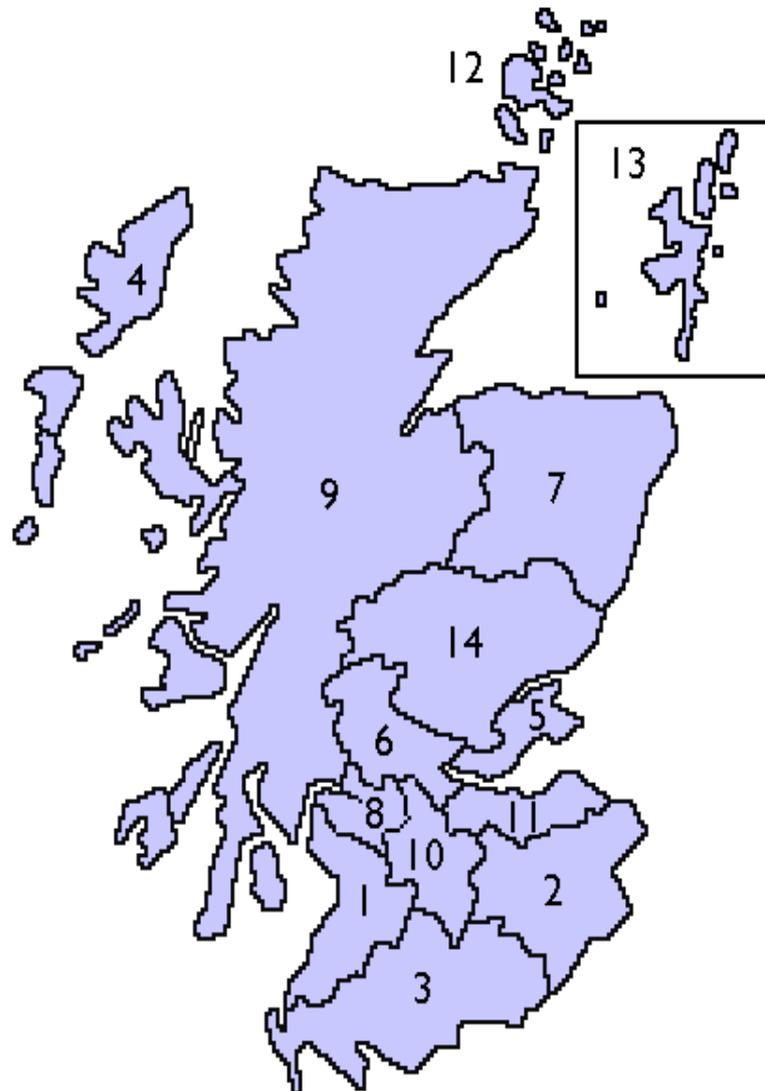
<sup>20</sup> Donnelly, D & Scott, K (eds) (2005) *Policing Scotland*. Devon, Willan Publishing

The realignment was part of a progress to enhance the links between the police and Crown Office. The aim was improved operational effectiveness through increased and improved liaison (Donnelly & Scott, 2005).

### **Health Boards**<sup>21</sup>

The service was founded by the National Health Service (Scotland) Act 1947 (since repealed by the National Health Service (Scotland) Act 1978). In 2005 the Argyll & Clyde Health Board was scrapped because of financial difficulties and its responsibilities delegated to NHS Glasgow and NHS Highland<sup>22</sup>. Current provision of healthcare is the responsibility of 14 geographically-based local NHS Boards and a number of National Special Health Boards. These are:

1. NHS Ayrshire and Arran
2. NHS Borders
3. NHS Dumfries and Galloway
4. NHS Western Isles
5. NHS Fife
6. NHS Forth Valley
7. NHS Grampian
8. NHS Greater Glasgow and Clyde
9. NHS Highland
10. NHS Lanarkshire
11. NHS Lothian
12. NHS Orkney
13. NHS Shetland
14. NHS Tayside



The roles and responsibilities of the Health Boards are:

- Ensure health representation at multi-agency strategic and tactical level meetings
- Ensure co-ordination/support arrangements are in place between all health services, including Community Health Partnerships and other Primary Care services, involved in emergency response within the NHS Board/Strategic Coordinating Group area
- Ensure that the NHS within its area has clear command and control structures and facilities

<sup>21</sup> <http://www.show.scot.nhs.uk/organisations/index.aspx> accessed 20/09/10

<sup>22</sup> <http://news.bbc.co.uk/1/hi/scotland/4559659.stm> accessed 20/09/10

- Ensure that direct healthcare resources can be mobilised quickly to support local hospitals or to sustain patients in the community, should hospital services be reduced or compromised for a period
- Work with other NHS Boards as the “lead” NHS Board, or to act in support of a nominated “lead” Local Health Board
- Work with support from Scottish Government Health Directorates (SGHD)/Health Protection Scotland, to monitor and safeguard the health of the local population for the duration of an emergency
- Disseminate health advice to the public if required
- Liaise with and provide situation reports to the Emergency Support, and Emergency Action Teams, or SGHDs’ Performance Management Division and with NHS 24

### **Health Protection Scotland<sup>23</sup>**

Health Protection Scotland (HPS) was established by the Scottish Government in 2005 to strengthen and co-ordinate health protection in Scotland. HPS is a division of NHS National Services Scotland. In particular, Health Protection Scotland work alongside the NHS providing specialist support in communicable disease and infection control, and emergency planning.

### **Health Protection Agency<sup>24</sup>**

The Health Protection Agency (HPA), originally established as an NHS special health authority in 2003, it is now a non-departmental public body charged with protecting the health and well-being of United Kingdom citizens from infectious diseases and with preventing harm and reducing impacts when hazards involving chemicals, poisons or radiation occur. On April 1, 2005, the Agency was established as a non-departmental public body, replacing the HPA SpHA and the National Radiological Protection Board (NRPB).

### **SEPA<sup>25</sup>**

The Scottish Environment Protection Agency (SEPA) is Scotland’s environmental regulator and is a non-departmental public body (NDPB), accountable, through Scottish Ministers, to the Scottish Parliament. SEPA was established in 1996 by the Environment Act 1995 and is responsible for the protection of the natural environment in Scotland. It is also responsible for delivering Scotland's flood warning system, helping to implement Scotland's National Waste Strategy and controlling, with the Health and Safety Executive, the risk of major accidents at industrial sites. SEPA has 1,300 employees in range of specialist areas including chemistry, ecology, environmental regulation, hydrology, engineering, quality control, planning, communications, and business support and management functions.

The roles and responsibilities of SEPA are to:

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<sup>23</sup> <http://www.hps.scot.nhs.uk/> accessed 20/09/10

<sup>24</sup> <http://www.hpa.org.uk/AboutTheHPA/> accessed 20/09/10

<sup>25</sup> [http://www.sepa.org.uk/about\\_us.aspx](http://www.sepa.org.uk/about_us.aspx) accessed 20/09/10

- deploy appropriate staff to meet local co-ordination arrangements
- provide advice on all aspects of environmental impact, protection and recovery
- assist in determining the footprint and movement of any contamination
- give advice about implications to the environment, containment, storage, transportation and disposal of contaminated liquid or solid waste; and
- maintain operational links with Scottish Water, Local authorities, Environmental Health Departments and Health and Safety Executive

Additionally, SEPA has powers to prevent, minimize or reduce pollution of the environment and enforces environmental legislation. SEPA:

- regulates the treatment, storage, movement and disposal of waste
- provides, as flood warning authority, regularly updated information on flood warnings (Floodline) across Scotland
- administers jointly with the Health and Safety Executive the Control of Major Accident Hazards (COMAH) legislation; and
- regulates the disposal of radioactive waste and manages Scottish interests in the Radioactive Incident Monitoring Network (RIMNET)

### **Scottish Utilities Contingency Planning Group (SUCPG)**<sup>26</sup>

The SUCPG is a forum to consider and share best practice and information with the aim of improving the resilience capability of the utility sectors in Scotland. It seeks to establish and consolidate linkages between Government and utility companies, as well as encourage participation of utility involvement in exercises within Scotland. The SUCPG has no legislative power. Membership of the SUCPG consists of representatives of the following organisations:

Scottish Water  
 British Telecom  
 Scotia Gas Networks  
 Scottish Power  
 Scottish and Southern Energy  
 O2 - representing Mobile Phone Companies  
 Scottish Government

### **Scottish Water**<sup>27</sup>

Scottish Water is a statutory corporation in Scotland that provides water and sewerage services. Unlike in England and Wales, water and sewerage provision in Scotland continues as a public corporation accountable to the public through the Scottish Government. Scottish Water operates under a regulatory framework established by the Water Services etc. (Scotland) Act 2005.

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<sup>26</sup> Terms and References of Scottish Utilities Contingency Planning Group

<sup>27</sup> [http://www.scottishwater.co.uk/portal/page/portal/SWE\\_PGP\\_NEWS/SWE\\_PGE\\_NEWS](http://www.scottishwater.co.uk/portal/page/portal/SWE_PGP_NEWS/SWE_PGE_NEWS) accessed 20/09/10

## **MOD**<sup>28</sup>

One of the principal responsibilities of any government is the defence of the realm. In the UK there is a distinction between the defence of the UK against military threats, and the safety and security of the citizen. The safety and security of the population within the UK itself is always the responsibility of the Home Secretary, delivered through the Police and other emergency services and local authorities. However, where local services find that the scale or nature of events puts the situation beyond the capacity of their own resources, their recourse is usually to mutual aid arrangements.

**Military Aid to the Civil Authorities (MACA)** is the collective term used by the Ministry of Defence of the Government of the United Kingdom to refer to the operational deployment of the armed forces of the United Kingdom in support of the civilian authorities, other government departments and the community as a whole. MOD support must always be at the specific request of the civil authorities, and requires the specific authorisation of Defence Ministers. Any MOD support is subject to civil primacy. There are 3 criteria for the provision of MACA:

1. Military aid should always be the last resort. The use of mutual aid, other agencies, and the private sector must be otherwise considered as insufficient or be unsuitable.
2. The Civil Authority lacks the required level of capability to fulfill the task and it is unreasonable or prohibitively expensive to expect it to develop one.
3. The Civil Authority has a capability, but the need to act is urgent and it lacks readily available resources.

MACA supports the civil authorities in the fulfilment of civil objectives, principally in peace. It is conducted because the Armed Forces' national structure, organisation, skills, equipment and training can be of benefit in time of emergency to fill civil authority capability gaps. MACA is subdivided into 3 categories:

1. **Military Aid to other Government Departments.** Military Aid to other Government Departments (MAGD) is the assistance provided by the Armed Forces on urgent work of national importance or in maintaining supplies and services essential to the life, health and safety of the community.
2. **Military Aid to the Civil Power.** The provision of military assistance (armed if appropriate) to the Civil Power (MACP) in its maintenance of law, order and public safety using specialist capabilities or equipment, in situations beyond the capability of the Civil Power. It includes capabilities such as Explosive Ordnance Disposal.
3. **Military Aid to the Civil Community.** Military Aid to the Civil Community (MACC) is the provision of unarmed military assistance:
  - (i) To the civil authorities when they have an urgent need for help to prevent or deal with the aftermath of a natural disaster or a major incident.

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<sup>28</sup> *Operations in the UK: The Defence Contribution To Resilience.* Joint Doctrine Publication 02 (JDP 02), 2nd Edition Dated September 2007

- (ii) To civil sponsors, either by carrying out special projects of significant social value to the community or by attaching individual volunteers full-time for specific projects.

All operations must be conducted within both civil and military law. Failure to comply with this principle may result in criminal and/or civil law proceedings being brought against individuals or the MOD. Unlike the Police and some other civil agencies, members of the Armed Forces have no powers over and above those of the ordinary citizen. They have the same personal duty as anyone else to abide by the law at all times.

### **UK Government**<sup>29</sup>

Within UK central government, departments deliver their responsibilities (generally through local agencies) and are accountable to Parliament for their effective delivery. This includes providing, where appropriate, strategic decision-making and oversight for emergencies affecting their responsibilities.

In the event of a significant emergency one department, the Lead Government Department (LGD), will take overall responsibility for assessing the situation, ensuring that its Ministers and other relevant Ministers are briefed, handling media and parliamentary interest, and providing coordinated policy and other support as necessary to local responders. Other government departments will provide support to the LGD to ensure a coordinated response; however, individual departments will remain responsible, including to Parliament, for their particular policy areas.

Where the UK Government lead is unclear, it is the responsibility of the Cabinet Office to make a judgement and advise the Prime Minister's Office on the most appropriate LGD.

### **Counter Terrorism**<sup>30</sup>

The Joint Terrorism Analysis Centre (JTAC) was established in 2003 by the government as the UK's centre for the analysis and assessment of international terrorism. It sets threat levels and issues warnings of threats and other terrorist-related subjects. The establishment of JTAC brought together counter-terrorist expertise from the police, key government departments and agencies.

Counter-Terrorism policy is reserved to the UK Government. However, many aspects of preparation, prevention and dealing with the consequences of a terrorist act in Scotland would be managed and controlled by the Scottish Government and local agencies. The response to a terrorist incident in the UK relies on a coordinated approach between those responding at a local level, including emergency services and local authorities, and the central government departments with a key role to play.

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<sup>29</sup> Cabinet Office (2010) Responding to Emergencies: The UK Central Government's Response Concept of Operations, March 2010

<sup>30</sup> <http://www.homeoffice.gov.uk/counter-terrorism/> accessed 20/09/10

To establish an effective link between the national and local response, a government liaison team (GLT) will be established as a single point of contact. This team will include relevant representatives from government departments. The GLT is headed by a Government Liaison Officer (GLO) and will support the police Gold/strategic commander for the duration of the incident. The GLO will report back to central government to ensure that all decisions made at both the local and national level are based on accurate and up-to-date information, and take into account both operational and political implications.

The Home Office is the UK Government Department responsible for keeping the UK safe from the threat posed by terrorism. In a terrorist attack the Home Secretary leads the government response to the incident, as the Minister responsible for counter-terrorism in England, Wales and Scotland. While the Home Office always leads the government response immediately following a terrorist attack, depending on the nature of the attack, lead responsibility may be transferred to another department during the response phase. For example, if there has been lasting damage to transport infrastructure, it may be appropriate to transfer lead responsibility to the Department for Transport.

The Office for Security and Counter Terrorism (OSCT) is responsible for activating and coordinating the Home Office response. The overall government response is through a cross-departmental crisis committee, COBRA (named after the room it meets in Cabinet Office Briefing Room A). In a terrorist attack COBRA could be chaired by the Prime Minister or the Home Office and will include representatives from other government departments and agencies. The aim of COBRA is to provide effective decision-making and rapid coordination of the central government response to the terrorist attack.

It should be noted that because a terrorist attack is a crime it is a matter for the Chief Constable in whose area the offence has been committed. Therefore, regardless of any help or support provided by government, the Chief Constable will have operational control at the scene.

The police will normally activate a Strategic Coordination Centre (SCC), where the SCG will be situated. SCG responsibilities will include controlling any spontaneous incidents, consequence management, resilience, reassurance and restoring normality. In the event of a terrorist attack the SCG will always be chaired by the Police 'Gold or Strategic' Commander, appointed by the Chief Constable. With other types of non-terrorist events the SCG may be chaired by other agencies, for example Chief Executive of the Council.

### **Scottish Government**<sup>31</sup>

The Scottish Government was known as the Scottish Executive until the name was changed in September 2007.

Scotland was granted devolution by the passing of the Scotland Act in 1998 which means that Scotland has a parliament with 'devolved' powers within the United

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<sup>31</sup> <http://www.scotland.gov.uk/Topics/Justice/public-safety/ready-scotland> accessed 20/09/10

Kingdom. Any powers which remain with the UK Parliament at Westminster are reserved.

- Devolved powers include matters such as education, health and prisons
- Reserved powers include decisions mostly about matters with a UK or international impact such as national security and terrorism

The devolved administration in Scotland will, within its competency, play a full role in the response to and recovery from an emergency. The role will depend on two things: whether the incident affects Scotland and whether the response to the emergency includes activity within the competence of the administration. For example, whilst national security is a reserved matter, the emergency services and NHS in Scotland are the responsibility of Scottish Ministers and the investigation and prosecution of crime, including terrorist crime, is a devolved responsibility of the Lord Advocate.

The devolved administration will mirror many of the tasks of the UK central crisis mechanism. The precise balance of activity will depend on the competence of the devolved administration involved. That is the terms of the devolution settlement and the nature of the incident.

In areas of reserved responsibility, the UK Government Lead Department will lead the response and recovery in the devolved areas working closely with the relevant devolved administration. In practice, even where formal accountability rests with UK ministers, the Scottish Government will expect to be briefed on developments where these significantly affect their territory. Likewise, Ministers of the Scottish Government will be expected to comment by national and local media necessitating close cooperation and information sharing between UK departments and their counterparts in the Scottish Government.

If the emergency takes place in Scotland and relates to a devolved matter, the Scottish Government will assume the lead. If the emergency occurs in England but has cross border implications for devolved issues the Scottish Government will lead on this aspect within Scotland and provide advice and support as necessary to the UK government.

The devolved administrations maintain their own facilities to support their response to and recovery from emergencies within their competence or affecting their territory. In Scotland, these include:

- **Scottish Resilience**<sup>32</sup>

Scottish Resilience is part of the Scottish Government and provides advice to Scottish Ministers on all aspects of civil contingencies. It brings together civil servants and professionals from the fire, police and ambulance services, and local government and health partners. Its staff are based in Edinburgh, Perth and Glasgow, and at the Scottish Fire Services College.

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<sup>32</sup> <http://www.scotland.gov.uk/Topics/Justice/public-safety/ready-scotland/Government/ScottishResilience/Q/editmode/on/forceupdate/on> accessed 20/09/10

- **Resilience Advisory Board for Scotland (RABS)<sup>33</sup>**

The Resilience Advisory Board for Scotland (RABS) advises Scottish Ministers and the wider civil contingencies community on strategic policy development, to ensure that Scotland is prepared to respond effectively to major emergencies. RABS brings together senior representatives from frontline responder organisations and other subject matter experts, under the chairmanship of the Scottish Government's director general of Justice and Communities. Members provide objective advice based on their own personal expertise and knowledge of their sector.

- **ScoRDS<sup>34</sup>**

The Scottish Resilience Development Service (ScoRDS) is part of Scottish Resilience. It provides training, exercising and other knowledge development opportunities to the emergency services and other responder agencies, to ensure that Scotland is prepared to respond to any major emergency. In order to achieve this ScoRDS will:

- co-ordinate multi-agency training and exercising across Scotland and help to ensure that lessons are learned from incidents and exercises and applied
- provide opportunities for individual and organisational learning and development within the civil contingencies community
- develop and foster a knowledge culture within the civil contingencies community to collate and analyse information and enable practitioners to share knowledge, good practice and lessons learned
- through ScoRDS sponsored events, support the process of consultation and communication within the civil contingency communities

The common areas of responsibilities are summarised in the following table:

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<sup>33</sup> <http://www.scotland.gov.uk/News/Releases/2008/12/18104314> accessed 20/09/10

<sup>34</sup> <https://scords.gov.uk/> accessed 20/09/10

## Summary Table of Common Areas of Responsibility

Agencies	Common Areas of Responsibility & Potential Tensions
<b>Police &amp; MCA</b>	<b>Coordination</b> - Police have the responsibility for coordinating the activities of local responders and others acting in support at the scene of an incident. However, MCA initiate and coordinate civil maritime search and rescue by mobilising, organising and dispatching resources to assist people in distress at sea, in danger on cliffs or shoreline and in certain inland areas
<b>Police, Fire &amp; Ambulance</b>	<b>Scene Management</b> - The police have the responsibility to treat the affected area as a crime scene, unless it is obvious that the emergency is caused by a natural event. However, Fire & Rescue have responsibility for rescuing people from the scene. Whereas Ambulance responsibility is to save life and provide the immediate care of those at the scene
<b>Police &amp; Fire</b>	<b>Cordons &amp; Security</b> - The police have responsibility for ensuring that the incident site is secure. However, the Fire & Rescue Service is responsible for management of the inner cordon
<b>Police/COPFS, Fire &amp; Ambulance</b>	<b>Casualty Management</b> - The police have a responsibility to process casualty information including the identification of deceased and removal of the dead on behalf of the Procurator Fiscal. However, the Fire & Rescue Service have a responsibility to manage the inner cordon and render humanitarian assistance. The Ambulance Service provide transit to hospital
<b>Police/PF, Fire</b>	<b>Investigation</b> - The responsibility, not only for prosecution, but also the investigation of crime lies with COPFS. The police act under the direction of the Procurator Fiscal. However, the Fire & Rescue Services are responsible for investigations into the causes of fire
<b>Police &amp; BTP</b>	<b>Rail Incident Management</b> - The host police force has responsibility to coordinate the response to, and investigation of, major accidents on the rail network in Scotland. However, BTP is responsible for the policing of railways and light-rail systems in Scotland, including the Glasgow Subway
<b>Fire, Councils &amp; SEPA</b>	<b>Scientific Advice</b> - The Fire & Rescue Service have a responsibility to manage incidents involving hazardous materials and provide qualified scientific advice. However, the Councils have a responsibility to access a wide variety of specialist, scientific, environmental and communications expertise. Moreover, SEPA also provide environmental advice and administers COMAH with HSE
<b>Fire &amp; Ambulance</b>	<b>Decontamination</b> - The Fire & Rescue service have a responsibility to assist in mass decontamination of casualties following a CBRN/hazmat incident at the request of the Scottish Ambulance Service. However, the Ambulance Service manages decontamination of people affected by hazardous substances prior to their evacuation from the scene. The Fire & Rescue Service also manage the inner cordon
<b>SEPA, MCA, Fire &amp; Councils</b>	<b>Flood Responsibilities</b> - SEPA is Scotland's flood warning authority and provides, as regularly updated information on flood warnings. The MCA, if specifically requested, will assist emergency services and local authorities during emergencies, such as flooding. The Fire Service rescue people from flood, as well as fire, transport incidents, machinery and collapsed structures. Moreover, Councils have a responsibility to provide practical support for victims, as well as other social and welfare services
<b>MCA &amp; Fire</b>	<b>Water Rescue</b> - The MCA initiate and coordinate civil maritime search and rescue by mobilising, organising and dispatching resources to assist people in distress at sea, in danger on cliffs or shoreline and in certain inland areas. Whereas Fire & Rescue are responsible for rescuing people from flood

<b>MCA &amp; Councils</b>	<b>Shorelines</b> - The MCA's Counter Pollution and Response Branch deals with pollution at sea and assists local authorities with shoreline clean-up. Councils take the lead the longer-term recovery and regeneration of affected communities
<b>MCA, Police &amp; PF</b>	<b>Instructions to Responders</b> - The Secretary of State's Representative (SOSREP) to the MCA is empowered to intervene on behalf of the Secretary of State for purposes relating to the safety of ships or pollution from ships, offshore oil or gas installations, and has the power to give directions. However, in Scotland the police act under the direction of the Procurator Fiscal and, where appropriate, facilitate the inquiries carried out by bodies such as the Health and Safety Executive, Rail, Air or Marine Accident Investigation Branches of the Department for Transport
<b>Council, Police, Fire &amp; Ambulance</b>	<b>Provision of Support</b> - The Councils are responsible for supporting the emergency services and those assisting them. However, under the terms of the CCA the Chief Executive of the Councils can chair the SCG. They also represent the diverse interests of local people, maintain close links with communities through elected members, Community Councils, Community Planning and other formal partnerships, as well as having powers to take action to preserve community wellbeing, and lead the longer-term recovery and regeneration of affected communities
<b>Council &amp; Health</b>	<b>Community Wellbeing</b> - The Councils have powers to take action to preserve community wellbeing. However, Health also have responsibility to monitor and safeguard the health of the local population for the duration of an emergency
<b>Health, Police &amp; Council</b>	<b>Public Advice</b> - The police have a responsibility to coordinate the activities of local responders and others. Whereas Health Boards are responsible for ensuring the coordination and support arrangements are in place between all health services. They also are responsible for monitoring and safeguarding the health of the local population for the duration of an emergency. However, the Councils have powers to take action to preserve community wellbeing
<b>Scottish Water &amp; Scottish Government</b>	<b>Responsibility for Water</b> - Scottish Water is a public corporation accountable to the public through the Scottish Government. However, Scottish Water is a member of SUCPG, which seeks to establish and consolidate linkages between Government and utility companies
<b>Military &amp; Police</b>	<b>Use of Military Aid</b> - Military Aide to the Civil Authority (MACA) is conducted because the Armed Forces' national structure, organisation, skills, equipment and training can be of benefit in time of emergency to fill civil authority capability gaps. However, it can only be called upon as a last resort, in an urgent situation when the civil authorities lack capacity. However, unlike the police, the military have no powers over citizens and are not members of SCG
<b>UK &amp; Scottish Governments</b>	<b>Who Leads?</b> Counter-terrorism is reserved to the UK government and the response to a terrorist incident in the UK relies on a coordinated approach between those responding at a local level and the central government. However, the devolved administrations maintain their own facilities to support their response to and recovery from emergencies. Moreover, Lord Advocate responsible for prosecuting terrorist crimes in Scotland and Chief Constables are operationally independent and responsible for all policing in their area, including counter-terrorism

## Timeline of Selected Changes

Date	Comment
1617	Scotland's first constables appointed
1778	First short lived professional police force established in Glasgow
1800	Glasgow Police Act 1800 – The UK's first police act passed. 12 Scottish police forces before Peel's Metropolitan Police
1833	The Burgh Police (Scotland) Act 1833 – Scottish Burghs were able to establish police forces
1947	National Health Service (Scotland) Act 1947 – established NHS in Scotland
1948	Dumfries & Galloway Constabulary formed
1949	Fife Constabulary formed
1949	British Transport Commission Act 1949 – formation of British Transport Police
1975	Local Government (Scotland) Act 1973 – created regions and district local government structure
1975	16 May 1975 – Strathclyde, Lothian & Borders, Grampian, Tayside, Central Scotland and Northern forces formed
1994	Transport Police (Jurisdiction) Act 1994 – BTP jurisdiction moved to statutory basis
1996	Local Government (Scotland) Act 1994 – created current 32 council areas (relevant police & fire services Acts amended)
1996	Environment Act 1995 – led to establishment of Scottish Environment Protection Agency
1999	Scotland Act 1998 – Scotland granted devolution and establishes Scottish Parliament
1999	Scotland's Cabinet Secretary for Justice assumes responsibility for police and fire following devolution
2002	Crown Office Procurator Fiscal Service (COPFS) restructures to correspond with police force boundaries
2003	Health Protection Agency established as NHS Special Health Authority (NHS SpHA)
2003	Joint Terrorism Analysis Centre (JTAC) formed
2004	Civil Contingencies Act 2004 – Formalised establishment of SCGs
2005	Civil Contingencies Act 2004 (Contingency Planning) (Scotland) Regulations 2005 – enacts CCA 2004 in Scotland
2005	The Fire (Scotland) Act 2005 - broadened fire and rescue services responsibilities and emphasised fire prevention
2005	14 Health Boards – following removal of NHS Health Board Argyll & Clyde
2005	Health Protection Scotland established by Scottish Executive
2005	Health Protection Agency reformed as non-departmental public body replacing NHS SpHA and National Radiological Protection Board
2005	Water Services etc. (Scotland) Act 2005 – Scottish Water established as a statutory corporation answerable to Scottish Parliament
2006	The UK Fire & Rescue Service Maritime Incident Response Groups formed
2007	Responsibility for Glasgow Subway transferred from Strathclyde Police to British Transport Police
2007	Scottish Executive now known as Scottish Government
2007	ScoRDS established by Scottish Government

## Research Information Sheet

### Introduction

This information concerns a project in which you are being invited to participate. If you consent to assisting in the research you may be interviewed or observed during training exercises. It should be noted that no personal data will be reported and all communications will be treated in the strictest confidence.

### Information

The researcher is a serving police officer with Strathclyde Police currently undertaking doctoral research at the University of Glasgow. The project is being supervised by Professor Denis Smith and Dr Moira Fischbacher and because of its sensitive nature it is restricted. The key areas of research are crisis management, organisational culture and multi-agency integrated emergency management.

### Research Title

The research topic is ***'Crisis management training in the public sector – is it effective for the current threat?'***

The questions the study seeks to answer are:

1. What is the capacity of Strategic Coordinating Groups to respond to, to recover from and to prevent emergencies and disasters? And
2. Are public sector multi-agency crisis management teams adequately trained to provide an effective and integrated response in time of crisis?

The study follows a report in to the capabilities of Scottish agencies to deal with civil contingency threats concluded that further research was needed into ways in which the various Strategic Coordinating Groups could respond to and recover from crises (Buckle et al., 2006). Moreover, a lesson identified from the terrorist events in London on 7<sup>th</sup> July 2005 was the need for common training in the Gold [or strategic] role for all agencies (LRSF, 2006).

This research seeks to explore the capacity of the strategic coordinating groups, which are essentially the top level crisis management teams. In particular it will explore whether the current civil contingencies infrastructure and training arrangements are effective in ensuring that crisis management teams are best prepared for such incidents.

### Proposed methodology

It is intended that this research will:

- Review the structure and organisation of integrated emergency management in Scotland
- Analyse current theory in relation to crisis management, in particular the dynamics and decision making process in teams
- Study the proposed and actual multi-agency approach to selecting crisis management team members
- Examine training provision in relation to crisis management teams across the multi-agencies
- Assess whether the current approach is suitable in light of the threat from 'new' terrorism
- Consider the impact of the Civil Contingencies Act and other legislation on multi-agency arrangements
- Determine any areas that the overall integrated emergency management and resilience framework could be improved

### **Risk Assessment**

There is no risk attached to the research. Interviews will be conducted in the participant's normal place of employment. Observations at SCG exercises will be conducted as part of the formal Observer Programme related to the exercise. All such exercises will reflect the normal activity associated with the participants' role in the organisation which they represent at the SCG.

### **Data Security & Subject Confidentiality**

Any data gathered will be secured on police premises as confidential in line with the Government Protected Marking Scheme. No information disclosed by the participants will be attributed to them and will be treated in the utmost confidence. I will be the only one with full access to the data. My supervisors will be able to read transcripts (if appropriate) and analysis of the interviews as they will have appropriate levels of security clearance.

## Research Consent Form

I have received a personal copy and read the Research Information Sheet relating to Kevin Pollock's doctoral studies entitled '***Crisis management training in the public sector – is it effective for the current threat?***'

I am aware that the study seeks to consider the following questions:

- What is the capacity of Strategic Coordinating Groups to respond to, to recover from and to prevent emergencies and disasters? And
- Are public sector multi-agency crisis management teams adequately trained to provide an effective and integrated response in time of crisis?

I acknowledge that I have been informed that:

- I may withdraw my consent to participate at any time
- I may refuse to be observed by the researcher while participating in an exercise at any time
- Any information communicated as part of the research will be treated in the strictest confidence
- Any comments made by me will not be directly attributed in any publication

### Consent

Having read the foregoing, I agree to participate in the research project.

**Name:**

**Date:**

### Researcher Contact Details

Semi-Structured Interview Format

**Thank you for taking the time to see me and for answering these questions. Your responses to these questions will be treated in strict confidence and they will not be attributed to you in any way.**

1. What is your Professional Background and experience in terms of emergency management/contingency planning? E.g. police, council, military, emergency services, health care, etc.
2. How long did you spend in this occupation (if the respondent has experience in multiple occupational settings then ask them to be specific in terms of the length of time spent in that organisation)
3. How long have you spent in SCG or other involvement in crisis management or similar
4. What training/qualifications have you undertaken in this area? Please distinguish between personal development and training that has been required by your employer
5. What memberships of professional bodies do you hold
6. In your opinion, what has been the usefulness (or otherwise) of the training/qualifications that you have undertaken
7. What value has that training been in terms of subsequent application in SCG or other crisis management situation
8. What has been your frequency of attendance or involvement in crisis/emergency events and over what time period has this taken place
9. What sources of guidance do you use for IEM / crisis management? Please be specific in terms of written guidance, internet information etc
10. With regards to the SCG from your personal knowledge could you please comment on the following:
  - a. How often has it been activated for live incident?
  - b. How often has it been activated for exercise?
  - c. How often does it meet for routine meetings?
11. What is your organisation's primary role in the SCG?
12. Describe the formal linkages between your organisation and the other agencies involved. Please be specific in terms of the FORMAL linkages that are required by legislation
13. What informal links exist between your ORGANISATION and other agencies involved?
14. To what extent are INFORMAL links at the PERSONAL level important in this regard?
15. With regards to the following, outline your understanding of the SCG's:
  - a. Structure – strategic, tactical & operational
  - b. Objectives – prevent loss of life, prevent escalation etc
  - c. Processes – communication, consultation, risk assessment & BCM
  - d. Functions – distinguish between training/planning & crisis management
16. In your view list 3 strengths of the SCG that are central to its performance
17. How would you rank those in terms of importance
18. Likewise detail 3 areas which could be improved
19. Again, can you rank those in terms of their importance
20. Do you have any comments regarding the effectiveness of the current SCG / IEM structure?
21. Are there any STRUCTURAL changes that you think would be important
22. How effective would you consider the training that you have undertaken?
23. What do you consider to be the most useful component of the training you have received?
  - a. Why do you think that it is important?
24. How important do you consider the following elements to effective training?

- a. Provision of a simple, robust conceptual scheme of crisis/incident command
  - b. Opportunity to actively practise crisis/incident command in a setting that adequately simulates the psychological demands on the commander
  - c. Provision of feedback about the effectiveness of command and control decisions and actions
  - d. Opportunity for guided reflection and self-appraisal
25. Why do you think that these factors are important? (Detail them back to the respondent)
26. What skills would you look for in terms of the membership of a Crisis Management Team?
27. Do you feel that your training and experience to-date has influenced your:
- a. Ability to assess situations
  - b. Deciding on a course of action
  - c. Implementing a plan of action in line with operational constraints
  - d. Monitoring the operation thereafter
28. What skills do you feel that you need in order to improve your own capabilities as a crisis team member?
29. Is there anything else in relation to your training, experience or developmental opportunities that could add to your **leadership** ability?
30. How do you incorporate the lessons from the training that you have received into your day-to-day working practices?
31. Have you experienced any difficulties in doing so?
32. Do you think that your organisation has learned lessons from the training that you (and others) have received to-date?
33. If you think that the organisation has not learned then what are the reasons for this i.e. are there barriers to learning?
34. In your view what is the best way to learn about crises. Is it in a classroom, exercise environment or on-the-job?
35. Supplementary question re mandatory training?

