Disaster Rules

Rob Russell, Timothy J Hodgetts,
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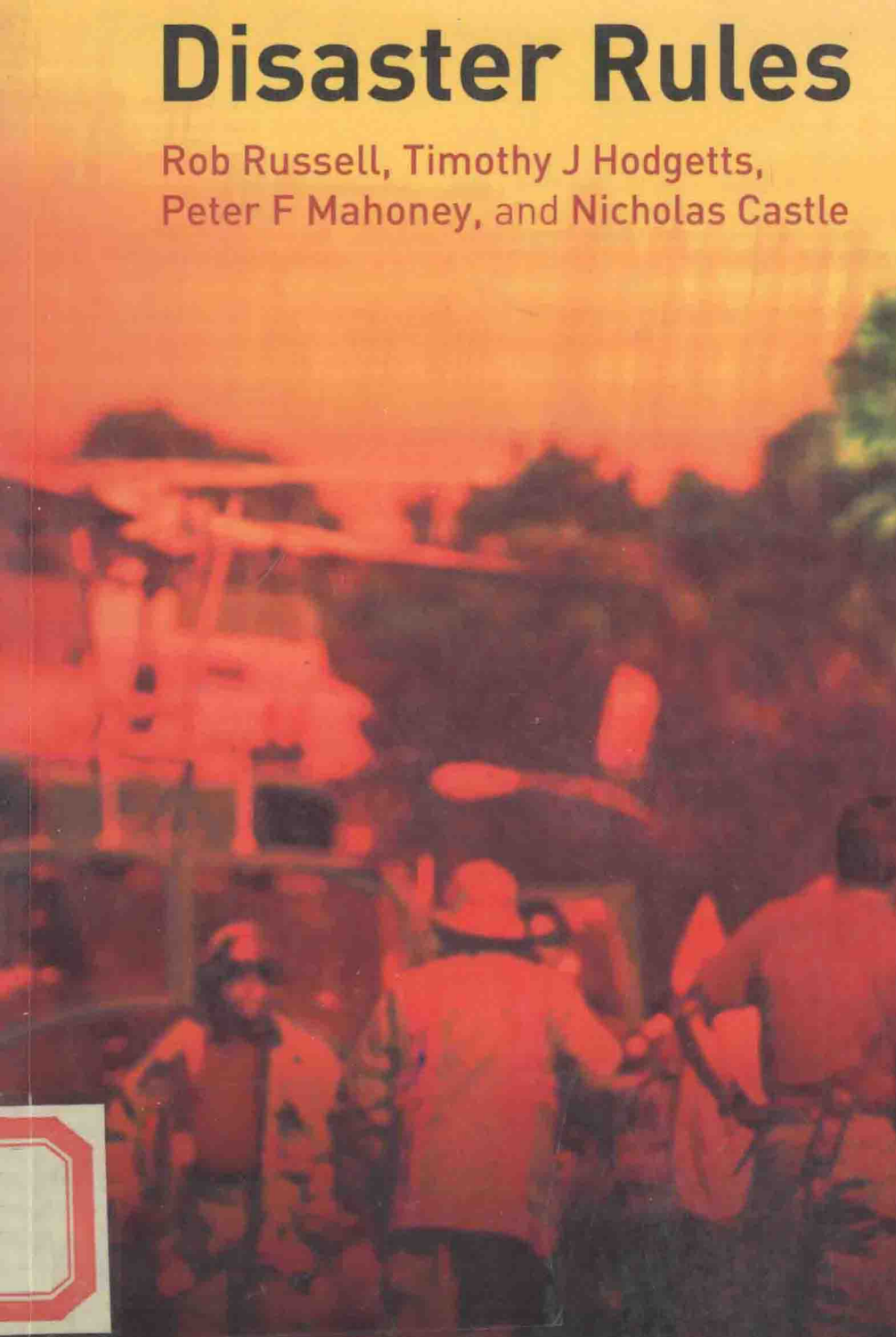

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Disaster Rules

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Introduction

This book distils evidence and experience of complex incidents involving multiple casualties into a simple framework, with 'rules' that can be applied to assist in incident management. The rules are generalisations and their exceptions are explained.

The term 'major incident' has a different meaning to each emergency service. In health service terms, the definition that this book follows is 'Any incident where the number, severity or type of live casualty, or by its location, requires extraordinary resources' [1].

A major incident can be man-made or natural, simple or compound (interrupts lines of communication and/or transportation; degrades the health service response through infrastructure damage to hospitals and/or ambulances) and compensated or uncompensated. When the resources at the scene remain inadequate to cope with the volume or complexity of the casualties, then the incident is uncompensated – this is synonymous with the meaning of the word *disaster* adopted within this book.

One of the most extreme examples of a modern *disaster* occurred in the aftermath of the earthquake in Haiti on 12 January 2010. Not only were there in excess of 200 000 killed and 300 000 injured, but factors conspired to compound the response to the incident – government buildings were damaged; the local United Nations infrastructure was destroyed; hospitals were part of the incident; and both the principal airport and the port were affected, which restricted the effectiveness of the international aid agency response. The destruction of an estimated 50% of the capital's buildings generated tens of thousands of displaced persons requiring the basic essentials of fresh water, food, sanitation and shelter.

Major incidents are reported, internationally, on a near daily basis; yet, within the UK they are relatively rare (it has been estimated that on average 3–4 multiple casualty situations occur per year, with a range 0–11 [2]). Therefore, local experience is likely to be limited. These easy-to-remember rules may unfreeze the inertia that is inevitable when faced with an overwhelming crisis and help the individual to order their thoughts.

The structure of this book reflects the paradigm developed within the *Major Incident Medical Management and Support* (MIMMS) programme since 1994. MIMMS is a generic, all-hazard training approach to major incidents that has been adopted internationally by civilian emergency services and by NATO: it follows the CSCATTT paradigm (Command-Safety-CommunicationsAssessment-Triage-Treatment-Transport).

The rules in this book are equally applicable when viewed through an alternative lens, the most distributed being the DISASTER paradigm developed in the US following the 9/11 disaster in 2001 (Detect-Incident command-Scene security and Safety-Assess hazards-Support-Triage and Treatment-Evacuation-Recovery) [3]. The section on special incidents is particularly relevant to this CBRN-focused approach.

Whatever paradigm you follow, rules are only a guide. The ability to be flexible and adaptable during a major incident remains essential. Nevertheless, rules provide you with a reference point from which to start, a benchmark and confidence from which to improvise in the most challenging of circumstances.

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2011

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Rule 1: Every incident is different, but the solutions are the same

The potential variety of major incidents is huge. Consider the immediate environment in which you work: how many potential sources of a major incident are there? Now expand this area geographically to include the local region/county/state and then the country in which you work: how many other sources did you consider?

Even at high-risk locations, such as a chemical factory or airfield, it is unrealistic to predict exactly where an incident will occur, and what the environmental conditions will be like when it happens (e.g. day or night, weather, wind direction). It is neither plausible nor desirable to write a plan with the detail to cover all eventualities. Even if you could produce such a plan, it would be unreasonable to expect all relevant stakeholders to read it all – let alone remember the detail and apply it in a crisis.

As a result, major incident response plans should be 'all-hazard' and based on a common structure of priorities. If the same priorities are applied consistently, then plans will be constructed in a similar way, personnel will find them easier to navigate, experience will be analysed and deconstructed with a common logic, and learning (individual and organisational) is likely to be reproducible. A response, when necessary, will be standardised and follow best practice.

This is the same principle adopted for resuscitation of the seriously ill or injured patient: <C>ABC [1].

The following hierarchy of priorities can be used in any circumstance that generates multiple casualties [2]:

Command and control
Safety
Communication
Assessment
Triage
Treatment
Transport

CSCATTT is the <C>ABC of major incident management. These principles can be used at the scene or at a hospital, and in a military or civilian environment. The principles provide a systematic response to any incident, natural or man-made, irrespective of its type.

If you remember nothing else, remember CSCATTT.

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Rule 2: Prior planning and preparation prevents poor performance

Or *'Better to prevent and prepare than repent and repair'*

Or *'To fail to plan is to plan to fail'*

This time-honoured military saying is self-explanatory: anticipation of the likely challenges posed by any task, before they arise, enables sensible planning for how those challenges can be met. The attitude 'It will never happen to us' is no defence for poor planning.

The importance of thorough and effective planning is demonstrated by the actions of Major General Sir Frederick Roberts during the Second Afghan War.

MILITARY EXAMPLE

The Second Afghan War

The Second Afghan War (1878–1881) had gone badly for British Forces, culminating in disaster at Maiwand on 27 July 1880: the Berkshire Regiment lost their colours, and were almost wiped out, as were two regiments of loyal Sikh Cavalry. The British garrison at Kandahar immediately came under siege. The main British force at Kabul seemed powerless to help them. Roberts volunteered to lead 10 000 troops to relieve Kandahar, 313 miles away, in the heat of the Afghan summer.

Roberts had already demonstrated the value of meticulous preparation the previous year. Hugely outnumbered by Afghan fanatical holy warriors (Ghazis) at Sherpur, but aware that the Ghazis liked to attack under cover of darkness, he took the precaution of laying in large supplies of star-shells, newly developed at the Royal Ordnance Factories. He set up his riflemen on a ridge overlooking an open plain, and kept them at high readiness. As 100 000 Ghazis launched their 'surprise' assault across the plain, they were lit up by the star-shells, making easy targets for the rifles. Roberts' victory was total.

Tasked with relieving Kandahar, he planned his march with equal thoroughness. He formed a 'Transport Corps' to manage water and food supplies on the march, and to convey heavy equipment over the mountainous terrain. So successful was his organisation that Roberts brought his force to Kandahar in 22 days, intact and in fighting order. They engaged and defeated the besieging Afghan army on 1st September.

The variety of possible major incidents demands an 'all-hazard' approach with maximum flexibility (Rule 1); however, this should not be misinterpreted as vague planning. An acute receiving hospital will have a common core plan (the 'all-hazard' response), but may also have a series of supplements containing detail for specific high-risk incidents within the area of the hospital's responsibility – for example, an incident generating large numbers of children, large numbers of burns, or casualties that have been exposed to toxic chemicals or radiation.

Specific high-risk sites (airport; chemical installation) will demand their own plan for a major incident. A mass gathering is a frequent and predictable risk for multiple casualties, and national guidance exists for those preparing the medical response plans at sports stadia and music events [1, 2]. Common principles of major incident management can still be followed to structure these plans (Rule 1).

Consider the high-risk sites or events in your area that could produce a major incident. Does each location have a plan that is regularly rehearsed and reviewed? Is there consistency between the plans in their structure and scope of content? Does each plan conform to published national guidance or statute (such as the Civil Contingencies Act 2004 [3])?

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Rule 3: When exercising, start small and build up

When designing a major incident exercise, it is tempting to plan for what is perceived to be the most realistic scenario: a multi-agency exercise with simulated casualties. This approach, like a man building his house on sand [1], does not first secure the foundations of education (Figures 1.1 and 1.2): it runs the risk of not testing the plan but the staff, who will feel under personal pressure. Without an understanding of the fundamental principles of a major incident, response staff may resent and disengage from the exercise, thus reducing or negating its value.

Most front-line personnel, outside the major incident planning core team, will have a limited working knowledge of the procedures involved within a major incident. The cognitive understanding and psychomotor skills that front-line staff need should be taught or refreshed prior to a multi-agency exercise.

Knowledge and understanding can be built through lectures or an online training programme; practical skills (such as triage or the use of a radio) can be acquired individually; decision-making and judgement can be assessed through a tabletop exercise. This stepwise approach to learning allows staff to have built their competencies in a controlled environment and to participate with confidence in a multi-agency exercise with simulated casualties (when there is little or no opportunity to interrupt the flow of activity for structured education). Staff will also be empowered to give more informed feedback on how the plan worked.

Figure 1.1 The structured approach to major incident exercises. PEWC, practical exercise without casualties.

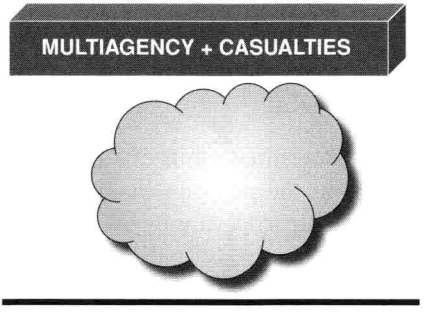

Figure 1.2 The unstructured approach to major incident exercises.

The merit of advertising a multi-agency major incident exercise is debatable. Advertising the exercise, and potentially offering the required training in the interim, removes personal and corporate anxiety, and allows adequate preparation. This preparation builds confidence in roles and procedures and moves the focus away from individual performance to the performance of the plan and the collective response. However, experience has demonstrated that those off-duty may not be contactable when the planned exercise occurs, particularly when this is out of normal working hours.

Not providing warning of exercise would seem to be a better test of the response as a genuine incident will arise without any advance notification. However, rumour usually leaks out, regardless of precautions to the contrary, and this can cause broad apprehension of staff. Should they check the plan and their roles? Of course they should, but false rumours degrade morale and those in key roles will feel under personal pressure: again, this may threaten disengagement and reduction in the effectiveness of the exercise.

Rule 4: No plan ever survives first contact with the enemy

Viscount Slim of Burma

Although planning is essential (Rule 2), plans must be flexible enough to be adapted as the situation changes. Rigid adherence to plans that have been made irrelevant by events can have disastrous consequences.

An example of inflexible planning is provided from the fall of Singapore, 15 February 1942.

MILITARY EXAMPLE

The Fall of Singapore

Plans for defending the vital British Naval base in Singapore were almost entirely designed to meet an attack from the south. A northern assault across the straits from the Malayan mainland seemed impossible as Malaya was in British hands. The plans also assumed British naval superiority. The loss of HM Ships Prince of Wales and Repulse to air attack and the dramatic speed of the Japanese occupation of Malaya left the 'impregnable fortress' of Singapore vulnerable to attack from the north. Japanese forces crossed the straits and despite valiant resistance conquered the island in just 7 days.

Therefore, to be optimally effective, major incident plans must be as follows:

- Flexible and able to allow for deviation from an expected course of incident evolution, encouraging real-time decision-making
- Easy to follow during an incident
- Inclusive of local knowledge
- Adjusted to learn lessons from previous exercises and incidents
- Subject to annual review
- Based on individual, role-specific action cards

A major incident plan acts as the framework for an organised response. Pitfalls in planning are as follows:

- A plan that relies on individuals: the presumption is that they never take leave or are unwell. Each role should have a number of people prepared to take it on.