

SINGAPORE

I. Natural hazards in Singapore

1.1 Natural hazards likely to affect the country

Though Singapore is spared from natural disasters such as earthquakes, typhoons and volcanic eruptions, the challenges for the emergency services are in preventing and mitigating man-made disasters in a highly urbanised environment with many high-rise buildings and Hazardous Material (HazMat) industries.

The global threat of terrorism has also added a new dimension to emergency preparedness and response for Singapore. The level of recent terrorist activities in the region, coupled with the possible use of chemical, biological and radiological agents is of great concern to Singapore.

1.2 Recent major disasters

Nicoll Highway Collapse

On 20 Apr 2004 at 1535 hrs, part of Nicoll Highway, a major local road, collapsed, rendering it unusable. Steel structures supporting the tunneling of a subway line beneath the highway had given way, resulting in a massive cave-in at the construction site which also affected the road above it. The 5-day long rescue operations was made even more difficult by 2 heavy downpours that resulted in dangerous soil conditions which threatened the stability of neighbouring buildings and the safety of the rescuers. A total of 3 were injured and 4 killed.

The rescue operation saw the close cooperation and coordination amongst various government agencies as well as from the construction company handling the project. Operation Civil Emergency (Ops CE), a national response plan for local major disasters, was implemented and many aspects of the inter-agency response were tested. This high profile incident highlighted the need for SCDF as the incident manager to work closely with the media, who were hungry for information to fill up their news slots.

Pulau Merlimau Fire

On 25 Oct 1988, a fire occurred at one of the chemical storage tanks at the Singapore Refining Company (SRC) on Pulau Merlimau, an off-shore island. The fire built up rapidly and spread to the two other nearby tanks. Fortunately, there were no casualties. The fire-fighting operation lasted 5 days and many parts of Singapore were showered by soot from the fire. The fire highlighted the need to handle large tank fires swiftly, considering the large number of such tanks located in the south-western parts of the island.

Hotel New World Collapse

The Hotel New World disaster occurred on 15 Mar 1986 at 1125 hrs. The six-storey building with 1 basement car park collapsed suddenly due to structural faults. Rescue operations lasted 7 days. Out of the 50 people trapped in the rubble, 33 perished while 17 were successfully rescued.

II. Disaster Management system

2.1 Administrative system

<i>Conventional long form:</i>	Republic of Singapore
<i>Conventional short form:</i>	Singapore
<i>Government type:</i>	parliamentary republic
<i>Capital:</i>	Singapore
<i>Administrative divisions:</i>	none

Singapore is a city-state with a land surface area of 669 square kilometers. It has a population of about 4.2 million, with a multiracial mix of mainly Chinese Malay and Indians and a small minority of other races, along with about half a million expatriates and foreign workers.

Singapore's infrastructure includes one of the world's busiest airport and seaport with an extensive network of roads and mass rapid transit system. It is densely populated, with many working and living in high-rise commercial and residential buildings¹.

¹ 80% of the population resides in high-rise flats.

National, Sub-National And Local

The Singapore Civil Defence Force (SCDF) is the national emergency authority for fire and rescue. SCDF has a workforce of about 5,100 people comprising 1,700 regular uniformed staff, 200 civilian staff and 3,200 Full-time National Servicemen². In addition, another 10,000 Operationally Ready National Servicemen (ORNSmen) from the reserve service are available for activation during emergencies.

15 Fire Stations have been established island-wide, with 25 Fire Posts under the command of the various fire stations. These fire stations and fire posts are staffed by fire-fighters and emergency ambulance service teams, and form the response bases for both fire and medical emergencies. Response to an incident is targeted to be within 8 minutes for fire and 11 minutes for emergency medical services.

SCDF has also established special rescue capabilities, including the **Disaster Assistance and Rescue Team (DART)**, a specially trained unit that can undertake high-risk fire fighting and rescue operations. Another special capability unit is the **HazMat Incident Teams (HITs)**, which are specialised teams trained and equipped to handle hazardous material (HazMat) incidents.

2.2 Legal system, legal framework

The main legislation supporting emergency preparedness and disaster management activities in Singapore are:-

The **Civil Defence Act**, which provides the legal framework for, amongst other things, the declaration of a state of emergency and the mobilisation and deployment of operationally ready national service rescuers;

The **Fire Safety Act**, which provides the legal framework to impose fire safety requirements on commercial and industrial premises, as well as

² Full-time National Servicemen are Singaporean males who are 18 years old or older and are called to enlist and serve 2 years of National Service, either in the military, police or civil defence.

the involvement of the management and owners of such premises in emergency preparedness against fires; and

The **Civil Defence Shelter Act**, which provides the legal framework for buildings to be provided with civil defence shelters for use by persons to take refuge during a state of emergency.

2.3 Structure of disaster management

The Ministry of Home Affairs (MHA) is the principal policy-making government body for safety and security in Singapore. In the event of a national disaster, MHA leads at the strategic level of incident management. At the tactical level, SCDF will coordinate the planning and execution of the multi agency response to mitigate the impact of the disaster.

SCDF provides effective 24-hour fire fighting, rescue and emergency ambulance services. Other functions include educating the community as well as **mobilizing** the community to be more involved in safety and security. SCDF also enforces fire safety requirements and oversees the civil defence shelter construction programme and the public warning system.

SCDF operates a 3-tier command structure, with Headquarters (HQ) SCDF at the apex commanding 4 Land Divisions. These Divisions are supported by a network of Fire Stations and Fire Posts strategically located over the island. Operations are based on a multi-tier response. The Operations Centre at HQ SCDF will despatch the nearest resources to the incident (additional resources from other fire stations may provide reinforcements if needed). Further resource requirements can be met by the Special Rescue Battalion (SRB)³, the recall of off-duty fire fighters as well as Reservist units, known as Operationally Ready National Service (ORNS) units.

³ The SRB consists of Full-Time National Service Rescuers. It was formed to augment the regular fire and rescue forces when additional manpower is required.

2.4 Priorities on disaster risk management

SCDF places heavy emphasis on training to equip our personnel with the desired knowledge, competency, skills and attitudes. The opening of the Civil Defence Academy in Mar 1999 marked a significant milestone in the history of the Singapore Civil Defence Force. The Academy, with purpose-built features, meets the training needs of regulars, national service personnel, emergency response personnel of the industries, fire fighters and rescuers as well as participants from other parts of the world.

The training facilities in the Academy include the use of state-of-the-art simulators and modern communication technology to make learning simpler, more interesting and more realistic.

III. Disaster management plan

Policy Framework

The Emergency Preparedness and Disaster Management activities undertaken by Singapore in the event of a major disaster are based on the following main principles:-

- a. **Prevention** – The tragic consequences resulting from major incidents can be minimised through prevention, via a set of comprehensive government regulations to ensure safety.
- b. **Readiness** – Readiness is contingent upon preparation. Pre-planning for possible response to different forms of emergencies enhances readiness. The contingency plans are exercised regularly;
- c. **Awareness** – The community must be aware of the nature and scope of disasters. They have to be educated on the importance of emergency preparedness and involvement in exercises, training and physical preparations;
- d. **Coordination (Internal & External)** – All local agencies responding to an emergency must work within a unified framework to coordinate multi-agency efforts in emergency response and

management of disasters. This will involve swift deployment of forces to mitigate the incident at the tactical level, and to provide expert advice at the operational level, in order to minimise damage to lives and property; and

- e. **Recovery** – Rehabilitation of the injured and restoration work is an important component of the total disaster management programme. A speedy recovery will enable the affected population to return to near-normal conditions after a disaster.

Procedures And Mechanisms

SCDF has developed the Operations Civil Emergency (Ops CE) Plan, a national response plan for civil emergencies which outlines the work of SCDF and all the Related Agencies (RAs)⁴ in the management of a major disaster. Under this plan, SCDF is overall-in-charge of the multi-agency response. SCDF will direct and co-ordinate the agencies' responses through the Joint Planning Staff (JPS)⁵ who provide specialist advice to manage the incident. As highlighted earlier, ORNS units may also be mobilised and deployed should the additional manpower be required.

This national plan is exercised regularly on an annual basis to ensure all agencies are familiar with their roles and functions and develop their response capabilities for incident management. Through such exercises as well as recent major incidents (e.g. Nicoll Highway collapse etc), the Ops CE plan gets refined.

IV. Budget size on national level

The Budget size for SCDF on national level is about SGD\$300 million.

⁴ There are altogether 22 Related Agencies from various ministries and statutory boards that provide ground forces for incident management, specialist advice for planning and coordination with IM.

⁵ The JPS are representatives from related agencies who come together to allow better inter-agency coordination and management of the ground situation.

V. Progress and situations of the Hyogo Framework for Action (HFA)

In line with the five priorities for action under the HFA, SCDF continues to identify and implement key activities as appropriate to our circumstances and capacities. Some of these key activities are elaborated in detail in the Section VI below.

VI. Projects on disaster reduction headed by your Ministry

Public Education

While SCDF aims to continually improve on its capabilities to respond to incidents, its ability to manage an incident in the community is inevitably limited. Hence, the emergency response capability of the general public is also enhanced to better prepare the population to handle emergencies. This is achieved via measures such as educating the public on **In-Place Protection (IPP)**, a series of protective measures to be taken at home during a chemical release. Such education takes place via the distribution of the **Civil Defence Emergency Handbook**, a handbook on emergency procedures and skills required for various types of emergencies.

Other methods of educating the public include the conduct of annual **Community Exercises**, as well as the **Home Fire Safety Visit Programme**. The former familiarises the grassroots volunteers and residents on how to deal with large scale emergencies within their neighbourhood, while the latter provides personal fire safety advice from CD volunteer personnel to registered residents. To sensitise and get the community more prepared for terrorist acts, the SCDF also conducts modular-based instructional training for the public under the **Community Emergency Preparedness Programme (CEPP)**. Through both theoretical and practical training, the programme covers First Aid, Cardio-Pulmonary Resuscitation (CPR), Fire Safety and Casualty Evacuation, Emergency Preparedness for War and dealing with unconventional threats.

Community Involvement

Besides conducting training for residents, SCDF also aims to work hand in hand with the community to be more involved in their own safety and security. To serve this purpose, SCDF constantly recruits volunteers from

the community. These **Civil Defence (CD) Volunteers** are trained to assist the SCDF in operational and public educational activities. Suitable volunteers have also been sent to attend Instructor Training, and will subsequently help conduct lessons to residents as auxiliary instructors. In addition to the CD Volunteers, various community groups have also been established to assist in Civil Defence. One such group is the **Civil Defence Executive Committees (CDECs)**. These are grassroots entities that help to promote CD messages at the community level and assist in organising various Civil Defence programmes. Also established by SCDF are the **Community Emergency Response Teams (CERTs)**, emergency response units consisting of residents living within a particular neighbourhood's vicinity. During emergencies, the CERTs will work hand in hand with the police and SCDF to mitigate the impact of the emergencies on the community.

Aside from these groups set up to work alongside SCDF, SCDF and other MHA agencies have also established the **Community Safety and Security Programme (CSSP)**, a framework that encourages the community to look after its own safety and security through self-help and mutual support. It serves to foster community cohesion and harmony among local grassroots leaders and residents, students and workers. In particular, SCDF actively facilitates the conduct of CSSPs that focus on fire safety, emergency preparedness, community vigilance and readiness (e.g. the Fire Safety for Market programme, Community Patrols, Emergency Preparedness for Domestic Maids etc).

VII. ADRC Counterpart

Singapore Civil Defence Force

HQ Singapore Civil Defence Force, 91 Ubi Avenue 4, Singapore 408827