Europe trains for disasters

Nearly 2000 personnel from six nations took part in the last EUDREX exercise, write **M König** and **Dr R Rudolph**. The event, involving an earthquake that caused a number CBRN scenarios, has thrown up a number of lessons learned and recommendations

The EU Community procedure was set up to help to facilitate and smooth co-operation between different EU member states' auxiliary forces should a large scale disaster occur that a single nation would be unable to cope with on its own. Part of this procedure is the EUDREX series of international exercises, one of which took place in October 2004 near Wiener Neustadt in Austria.

The exercise, which spread across several military training grounds, involved 1,900 personnel, most of them Austrian, reinforced by teams from Bulgaria, the Czech Republic, Slovak Republic, Latvia and Germany.

Heavy quake

The disaster/damage scenario was set in the fictitious nation of Tritolia. A heavy earthquake had destroyed a large city, damaging a great amount of industrial infrastructure. This included a pharmaceutical company's research laboratories, which were involved in vaccination production (biological situation). There were damaged sites involving radiation equipment, which had to be located and recovered; and several scenarios were played out in which salvage operations in connection with the release of chemicals were required.

The German contingent consisted of a salvage unit SE-BABC of the THW (organisation for the maintenance of supplies in an emergency) which practised salvage operations, along with CBRN specialists from SEEBA (Rapid Response Unit Rescue Abroad), and a section of Mannheim Fire Brigade, which was to support the THW with its CBRN reconnaissance component.

In the course of the two and a half day exercise, which took place non-stop around the clock, the German contingent was used at eight different disaster/damage sites.

In terms of personnel and equipment, the SE-BABC consists of one section troop to lead the unit, a second rescue group, and two specialist groups – one for evacuation and the other for position finding. For its own protection, the SE-BABC is equipped with basic tracking equipment and a component for self-decontamination.

The exercise involved numerous scenarios, designed to test co-operation between different EU member states

This unit was piloted over the course of several months. Now, its performance was to be tested during EUDREX. As part of a multi-phase programme, other THW sites will be prepared for this specialist task.

Reconnaissance

Mannheim Fire Brigade's CBRN reconnaissance unit used during EUDREX is a building block of the Analytical Task Force, which has been piloted at four sites since 2004.

The ATF's task is to offer support to the respective officers-in-charge during large or complicated disaster/damage situations involving chemical release. For this purpose, these units have comprehensive analytical equipment, including equipment for substance identification.

In the case of the biological situation in the fictitious pharmaceutical company, the task was to take samples and pack them for distribution. With support from the THW operations centre and the Joint Reporting and Operations Centre (JROC), possible laboratories for the analysis of these samples were identified, and informed accordingly.

The exercise, which spread across several military training grounds, involved personnel from Austria, Bulgaria, Czech Republic, Slovak Republic, Latvia and Germany

At the nuclear disaster/damage site, the radiation source had to be located, the danger zone sealed off correctly, and a strategy for saving human lives developed, during which rescue personnel were to be exposed to as little radiation as possible.

Co-operation

When rescuing an injured person from a shaft/well with an ammonia atmosphere, fire brigade personnel worked with colleagues from Vienna.

In further exercises involving methanol and ammonia releases, the task was to support rescue personnel with measuring equipment and/or to contain the areas at risk. In order to make the situation realistic, actual chemicals, albeit in small quantities, were released for the purpose of the measuring tasks.

In a train accident during which thionyl chloride was released, the substance had to be identified by its labelling, the risk zone had to be assessed, and measurements carried out in the vicinity of the tank wagon.

Experience

The findings described below highlight the experiences from the perspective of the CBRN Reconnaissance Component. The experiences that were gained for the Rescue component are not described in detail here. However, to sum up for the SE-BABC sector, it can be said that the technical equipment and tactics tried out in the run-up to the exercise made it possible to carry out the tasks that were set.

- **Self-Decontamination:** Basic equipment for self-decontamination is absolutely essential. Otherwise a safe deployment would only be possible, were decontamination squads of other units or countries to be available, and this could take several hours. It is good policy to carry compact but light equipment that can be used in different ways, and by a small number of personnel.
- **Databanks:** When using digital databanks, it is helpful if output is also possible in English in order to facilitate communication. Any translation during an operation is time-consuming, and there is always the possibility of misunderstandings and errors.
- **GPS:** The use of small, mobile GPS systems in order to obtain the exact location in the field was a great advantage, as it would not have been possible to give details of the location where samples or measurements were taken. In many instances, it is impossible to give a street or house number in a destroyed area or on open land. During service operations abroad, it is also rare for maps to be available from which to obtain UTM coordinates.

By using the equipment that was being carried, it was possible to digitalise and geo-reference local maps and/or aerial photographs, which meant that digital map material with UTM co-ordinates was available after a short lead time.

- **Identifying Officers-in-Charge:** Insufficient identification of team leaders proved to be a disadvantage. Only in the German team was an OIC identified in a makeshift manner by a yellow waistcoat. For service operations abroad, the term "officer-in-charge" has yet to be replaced with the expression 'team leader' or another term yet to be decided upon. A first draft on this subject is currently being reviewed by the respective committees.
- **Foreign languages:** All team members must have basic, and team leaders a good, working knowledge of English, as it is otherwise impossible to have sensible communications during the course of the operation. Unfortunately, not all participants had the required proficiency in English stipulated by the EU Community procedure.

In one instance, two team leaders could only communicate with the help of two interpreters from different teams, as the negotiations took place across three languages. It is not necessary here to go into details about the possible errors in translation and the resulting 'Chinese Whispers' effect, but it is obvious they could lead to dangerous situations.

Language

Had there been a common level of proficiency in English, it would have also been possible to have joint discussions regarding the situation. As it was, many negotiations had to be worked through 'bilaterally', which took up valuable time unnecessarily.

- **Operational site identification:** No international system exists for identifying disaster/damage sites in the field where CBRN risks are likely to arise. Recognised worldwide as the standard for rescue operations, INSARAG Guidelines are only available for SAR Team deployments. Plans for analogous identification system of CBRN sites are being drawn up and suggestions submitted for review.
- **Team size and equipment:** The personnel policy of five individuals for CBRN reconnaissance was sufficient for the tasks in hand and the equipment used.

Technical equipment consisted, in the main, of the reconnaissance vehicle and some additional measuring devices and/or extended sampling equipment. In principle this proved itself and seemed appropriate for the tasks in hand.

As part of the preparations for the exercise, it had been agreed that no analysis of the substances for identification purposes would be carried out, so the equipment carried was sufficient. In real operations, however, where the situation or site is unknown, it must be assumed that more extensive equipment – including a gas chromatograph mass spectrometer, further measuring devices and the necessary repair equipment – should be carried.

In this case, more personnel should also be assigned.

Many lessons were learned from the exercise, among them the need to have a common language, identification of officers in charge and basic equipment requirements

It was proven useful that the German team's equipment included components for atomic, biological and chemical hazards. In some scenarios, it was necessary to take over operational sites from other units, which only had radiation protection equipment or equipment for detecting chemical hazards.

The biological sampling equipment carried could only be tried out at one disaster/damage site. The experiences will be incorporated into further developments in the future. Of those groups present, it was only the German team that had equipment available that suited the biological situations, which shows that on an international level, there is still a need to catch up with the latest developments in this area.

- **Supplies:** Since both accommodation and catering were provided by those in charge of the exercise, no logistical arrangements had to be made by ourselves. In a real operation, an appropriate resource and personnel approach for one's own team has to be put in place. The time of total self-sufficiency even in the area of fuel supply is usually set at a minimum of 72 hours' operational duration, and in a real operation would be provided by components of the THW.

In order to ensure adequate medical care, each team was obliged to incorporate personnel with life-saving skills, and during the exercise this role was performed by fire brigade personnel.

- **Communication:** In order to ensure local communication, the usual radio and mobile telephones were used. After the local mobile network provider enhanced the mobile network, it was possible to achieve a good data transmission rate at all times, even via GPRS to Germany.

In real disaster scenarios, such an infrastructure cannot be relied upon. For this reason, a Satcom system was tentatively, but successfully, used on a trial basis for data transmission. However, for economic reasons any excessive use was avoided.

Integration

To sum up, it can be said that both components of the German team were able to gain many experiences from this exercise, which will prove useful for national as well as international operations.

Experiences gained in handling the EU mechanism and the integration into local command structures were of great value.

It may be said that the equipment provided to the German civil defence and disaster control services compare well with those of its European neighbours, even if there are still a number of improvements that could be made. CRJ

Authors

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SAREX 2005 in India

This March an international aviation search and rescue seminar was held in India, along with live land and sea exercises involving many agencies, says **N U Bhaskara Rao**, who describes this first ever SAREX event to be held in the Asia Pacific region

This March saw India hosting a Search and Rescue Exercise (SAREX) seminar and exercise as 141 delegates from 14 Asia-Pacific countries assembled in Chennai. The event was organised by the Airport Authority of India (AAI) on behalf of the Asia-Pacific Office (Bangkok) of the International Civil Aviation Organisation (ICAO).

Delegates from India, Bangladesh, Brunei, Darussalam, Cambodia, Indonesia, Japan, China, Malaysia, Republic of Korea, Singapore, Sri Lanka and Thailand attended SAREX 2005.

This was the first time that the SAREX seminar and exercises have been held in India – and the country, with its 4.6 million square kilometres of Search and Rescue Region (SRR), through which thousands of ships and aircraft transit every year, was certainly an appropriate venue.

The inauguration of the seminar took place in the presence of important personages, including Mr David Moore, Regional Officer Air Traffic Management, ICAO Asia and Pacific Office, Bangkok; Mr Brian Day, Technical Officer, Air Traffic Management Air Navigation Bureau, ICAO Headquarters, Montreal; Mr K Ramalingam, Chairman, Airports Authority of India; and Vice Admiral A K Singh, Director-General of the Indian Coast Guard.

Presentations and discussions during the seminar focused on all aspects of search and rescue (SAR). Officers from India, Indonesia, Malaysia, Sri Lanka and Thailand shared their experiences on handling the devastation caused by the tsunami of December 2004. For many years, this event will provide the backdrop for planning and discussions about SAR in this part of the world, in the same way that 9/11 has generated discussions about unlawful interference in aviation safety.

The deliberations made it clear that SAR is a humanitarian effort which transcends political, national and communal boundaries. Speakers emphasised the need for the gradual emergence of a world-wide SAR system that would assist all persons in distress, regardless of nationality. Regionalisation of training and planning to cater to areas beyond national boundaries should be institutionalised as a step in this direction.

Transnational approach

However, one prerequisite for the success of a transnational approach to SAR is that the planners, as well as SAR-workers, must exhibit a thorough understanding of cultural differences which – often unconsciously – influence the attitudes of local people and, if misunderstood, can become a serious hindrance to co-ordination and communication.

The AAI is responsible for civil aviation SAR in the Indian SRR. It provides Regional Co-ordination Centres (RCCs) at its Flight Information Centres, and co-ordinates through them with government and non-government organisations.

The two SAREX exercises were preceded by detailed preparatory work. Since communications about the 'aircraft crash' would pass over the networks of several SAR-departments, precautions were taken to ensure that a communications leak would not snowball into a rumour of an actual crash and cause panic.

The site for the crash was selected so as to attain the maximum similarity to an actual possible crash. Painted cardboard and other materials were prepared to resemble wreckage materials, and persons were selected and trained to act as the injured passengers.

Multi-agency

The mock exercise presumed that an aircraft carrying 17 passengers and a three-member crew had taken off from Tiruvananthapuram en route to Chennai. At 10:10 Indian Standard Time, the aircraft reported its position over Thiruchirappalli. A few minutes later, the pilot reported that one engine had been shut down due to technical problems. At 10:47 IST, the pilot reported that the aircraft was slowly losing altitude. At 10:53 IST, Chennai airport lost radio contact with the aircraft. ATC at Chennai made frantic attempts to establish contact by using all available means and radio frequencies, including emergency frequency 121.5 Mhz. Simultaneously, the Rescue Co-ordination Centre (RCC) at Chennai Airport was alerted and received all relevant information. The RCC plotted the probable location on a geographical map and put nearby Police, Fire and Rescue Services and medical agencies on standby. The RCC also requested the nearest Air Force Station at Tambaram, about 10 kilometres from Chennai airport, to send a helicopter to search for the distressed aircraft along the Thiruchirapalli-Chennai route at the predicted location.

Around 11:03 a telephone call was received at Chennai airport from the village of Kattuppakkam reporting a small aircraft flying dangerously low and that the aircraft appeared to be heading towards the land. The co-ordinates of this place were passed on to the search helicopter pilot. The Police, Fire and Rescue Services and the Medical Authorities who had earlier been put on the alert, were now informed of a possible crash.

The RCC now began its co-ordination work among various SAR agencies and information was passed back and forth to ensure that all units worked in unison and without loss of time.

The police team arrived at 11:28 IST, and cordoned off the area. A little later, the Fire and Rescue vehicles arrived and took up firefighting and rescue operations. Once the fire had been put out, firefighters and paramedics set up triage and began first aid. An Air Force hospital helicopter carried two seriously injured persons by winching and rushed them to the nearest hospital.

By 12:10 IST all the passengers had been accounted for and the exercise ended.

This was the first time that AAI conducted an exercise outside the airport premises, involving the Air Force, Police and Fire and Rescue Services

First of its kind

This was the first time that AAI had conducted an exercise outside the airport premises by involving different agencies, including the Air Force, the Police and the Fire and Rescue Services.

One special feature of the exercise was that an Emergency Locator Transmitter (ELT), coupled with a GPS receiver, was manually activated at the mock-aircraft crash site at 11:05. The RCC received the unresolved position through INMCC Bangalore at 11:20. The resolved position (the co-ordinates of the ELT) was received at 11:26.

During the debriefing on March 11, the exercise was rated as highly successful. Yet, it brought out certain co-ordination issues which require following up. For instance, police personnel, who arrived shortly before the Fire and Rescue Services, began rescue operations, although from a strictly copy-book point of view this is not their responsibility.

Deliberations during the debriefing led to the conclusion that in a context where police personnel are available in much larger numbers and are better equipped with regard to vehicles and communication, the likelihood of the police reaching the site in an actual crash is higher than other agencies. Instead of expecting the police to stand and wait, it would be better to give them elementary training in rescue operations.

Since 90 per cent of aircraft accidents take place in the approach funnel close to the airport, the Director of Tamil Nadu Fire and Rescue Services (TNFRS) told me later that he is taking steps to upgrade a nearby Fire Station at Tambaram into a multi-vehicle model-station, so it can respond more effectively to any possible aircraft crash. We have also mutually agreed to build up closer co-ordination and interaction between the Rescue and Fire Services of Chennai Airport and TNFRS. The Director of TNFRS has expressed the desire that a special training module may be prepared by AAI to expose State Fire and Rescue personnel to aircraft emergency/accident procedures.

SAR at sea

The SAR exercise in the Bay of Bengal was conducted on the morning of March 10, and many agencies took part, with the Indian Coast Guard and the Indian Navy playing the prime roles. The exercise was a simulation of a civil passenger air crash about 15 km from the shore. SAR was carried out with: two Coast Guard ships; two patrol vessels; one Dornier aircraft; two helicopters; a hovercraft; two naval fast-attack craft; and a naval reconnaissance aircraft.

The two SAR exercises brought together different agencies to work in co-ordination, allowing them to assess their own capabilities as well as to build up a proper interface for working jointly with other organisations. CRJ

Author

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Pilgrim protection

Italy's Emergency Services and Civil Protection units were put to the test in April when millions of pilgrims descended on Rome to mourn Pope John Paul II and to celebrate the election of his successor, Benedict XVI

Italy's emergency services – Police, Civil Protection, Ambulance and Fire Service, as well as thousands of other municipal workers and volunteers – were responsible for managing this enormous influx of pilgrims, and for ensuring their safety and wellbeing.

Mourning vigil

The Civil Protection organisation was definitely put to the test during the mourning vigil for John Paul II, the election of the new Pontiff and the inauguration of Benedict XVI. The organisation is judged to have worked very well indeed, with the work of the volunteers being regarded as particularly successful. Indeed, their operations attracted praise from all over the world, as did the organisation of the events in general.

Many observers from European Civil Defence forces were invited to see how the capital city handled the Pope's funeral and the new Pontiff's inauguration. These experts included Peter Billing of the European Commission, Margareta Nissen-Larsson of Sweden, Emma Reine from Estonia and Ivan Karapenev of Bulgaria – all of them were very keen to see how crisis management plans regarding these events were organised and executed. Peter Billing commented: "This experience will help create a common intervention mechanism among all 25 member states of the European Union."

It was estimated that over two and a half million pilgrims, from Italy and abroad, flowed into Rome. Eight and a half thousand Civil Protection volunteers were brought in for a number of missions, including marshalling, setting up and providing basic first aid, assisting the police in ensuring crowd safety, and helping the millions of visitors from around the world. They were assisted by 2000 boy scouts who helped distribute water and give information and other help to visitors.

Medical units

Medical units and ambulances also faced a large challenge. Ambulances were deployed at strategic points, with a major medical field unit set up just to the left of Saint Peter's Square. This unit was open 24 hours a day and treated thousands of people.

The National Fire Department was also present, with CBRN personnel and specialist rescue units on standby in the area.

Twenty thousand other personnel, mobilised from municipal services, also assisted during the events. To give some idea of the scale of this undertaking, two night's before the funeral, some 30 tons of refuse was collected.

Water supplies

The distribution of bottled water was important, as pilgrims and visitors were in long queues or sitting outside in the warm sun – 200 volunteers co-ordinated the delivery of the bottles from warehouses to distribution points. The day before the Pope's funeral, 800,000 litres of water had been distributed; by the end of proceedings, over two million litres had been given to pilgrims. In addition, water reservoirs were set up in public squares near where large television screens had been erected for those who could not get into St Mark's Square.

Left: Crowds gather in Rome. Above: Civil protection volunteers from all over Italy are briefed before starting operations

Some 3,500 chemical toilets were installed around the area.

On the inauguration of Benedict XVI, Civil Protection operations started the previous day, from a classroom at the Castelnuevo Porto, with the head of Civil Protection for Italy, Guido Bertolaso, addressing a room full of volunteers, who had arrived from all over Italy.

Personnel were organised into squadrons of ten to 12 people, each squadron having a radio operator and an interpreter. Thousands of visitors were expected from Germany, birthplace of Joseph Ratzinger, the new Pontiff. So volunteers from the provinces of Bolzano and Trentodue – German speaking regions of Italy – were recruited to help translate and assist the pilgrims.

The first shift began at 19:00 and lasted until 04:00. Volunteers were dispatched to St Peter's Square and helped Police to check all access in and out of the area. Later, when there were less people around, the volunteers began to enforce and control access to the square.

Crowd safety

The squadron leaders of the second shift, which was deployed between 04:00 and 11:00, were briefed at 02:00. At 02:30, volunteers were given their supplies for breakfast and lunch and, at 03:00, were taken by coach to Rome. They were responsible for checking the immense crowds that gathered before dawn, as well as ensuring their safety and security.

This second shift was, perhaps, one of the hardest for the volunteers, not only due to its early start, but also because changeover was scheduled for 11:00, right in the middle of the inauguration ceremony. Many did not want to leave their posts, at least not until the sacred rituals had been completed.

The most dramatic moment, was when they had to hold back some crowds, many of them carrying crosses. Volunteers assisted the Police by building a human barrier to help prevent a potentially dangerous crush.

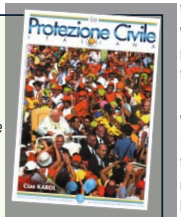
But, in general, crowd control measures and enforcement were highly successful and volunteers managed to keep the human tide from blocking access corridors and routes, and from overcrowding the square.

Garrisons of other civil Protection staff manned the service corridors and helped pilgrims in many ways, including distributing bottled water and providing minor first aid or medical treatment if these services were required.

The organisational mechanisms worked very well, beyond the end of the ceremony and well into the afternoon. Civil Protection officers helped the orderly egress of pilgrims and assisted in restoring that part of Rome, which had effectively become the 'centre of the world' for a few days, back to normality.

Civil Protection Chief Guido Bertolaso has since renewed his sincere thanks to all the volunteers who joined in the operation from every part of Italy, commending their extreme professionalism and commitment. CRJ

To further our mission of bringing you the best international coverage of fire, emergency planning and civil defence issues, Crisis Response Journal *is delighted to announce a new collaborative venture with the Italian Civil Protection Journal,* La Protezione Civile Italiana. *This journal was founded in 1981 under the high patronage of the Ministry for Civil Protection Co-ordination and is the official organ of ISPRO (The Institute for Studies and Research into Civil Protection and Defence). This article is based entirely on contributions from the Journal, written by Tiziano Ghedina, Andrea Moschin and Monica Missaglia.*



Train crash in Italy

In our March issue, CRJ reported briefly on a fatal train crash in Crevalcore, Italy. This issue brings a detailed incident report, written by **Monica Missaglia**

Friday, January 7, 2005, a cold morning with thick fog in the small town of Crevalcore in Northern Italy, saw a crash between a commuter train and a goods train transporting iron materials. The final death toll was 17 dead and 50 more seriously injured.

Emergency rescuers, consisting of firefighters, paramedics and volunteers, were immediately dispatched. They found a scene many have found hard to forget. When it derailed, the goods train railway engine had a devastating impact, destroying the passenger train's two front carriages. It was obvious that immediate rescue efforts were required.

All rescue organisation and planning was carried out by a specialist rescue team at the Regional Civil Protection's headquarters, headed by Demetrio Egidi.

The headquarters despatched rescue vehicles and ambulances, along with emergency lighting, tents and 300 blankets. Every single volunteer from Crevalcore, S. Giovanni in Persiceto, Sala Bolognese, Calderara and National Alpini's Associacion, were alerted and they worked together with volunteers from Modena, Ferrara and the Regional Civil Protection Team. Rescue workers and firefighters were helped by the Police and Carabinieri, as well as the Red Cross, railway personnel and staff from Crevalcore City Council.

Author
Monica Missaglia *is a journalist on* La Protezione Civile Italiana, *see p16*

Poor conditions

The thick fog and intense cold lingered, worsening the already difficult rescue conditions, so that rescuers had to work as fast as possible. Firefighters used cutting equipment on the passenger train to reach injured people and to remove the dead.

Sixteen people were immediately taken to hospitals in Bologna, Modena, Mirandola and S. Giovanni in Persiceto. Fifty passengers were first taken to a reception centre organised by the city council of Crevalcore. Once it was ascertained that they were uninjured and fit to continue their journey, the passengers were driven to Bologna Station by Civil Protection Rescue Volunteers.

Demetrio Egidi, head of Civil Protection for the Emilia Romagna Region, assumed command for the entire duration of the emergency, co-ordinating Civil Protection Volunteer and Red Cross teams.

Collaboration

From Friday, January 7, to Sunday, January 9, rescuers worked 24 hours a day at the scene. The last team of civil protection volunteers removed all the debris and cleared the area on the 9th.

Said Demetrio Egidi, after the incident: "The dense fog made rescue operations difficult, yet the Regional system of Civil Protection once more displayed unity and cohesion in immediately responding to such a big emergency. This is thanks to consolidated collaboration between territorial rescue teams, such as the Fire Department, 118 ambulance paramedics, civil protection volunteers and local authority personnel. CRJ

photo: Paulo Ferrari

Mortar attack fires

Following on from our article looking at aviation firefighting in Iraq, **John Jacoby** reports on an incident caused by a mortar attack and looks at how emergency services plan for such attacks during operations

Baghdad International Airport Fire Department covers two active runways and surrounding areas and has mutual aid arrangements with four military camps. There are a total of four Fire Departments on, and/or, around the airport. Of these four, we are the only Arabic fire department. We have 84 Iraqi firefighters and three contract firefighters (one fire chief and two watch commanders).

It is not uncommon for one department to call another if heavy smoke is seen, just to make sure help is not needed. The necessity of mutual aid agreements was demonstrated vividly recently.

Mutual aid

During a mortar attack a truck with three occupants was hit and exploded, setting off fires in a number of bins inside an outdoor storage area. We received a call from the Military requesting mutual aid.

As our trucks pulled out of the station, we could see an enormous plume of smoke. As we pulled closer, we observed huge fireball explosions from within this black plume. Once on scene, we pulled into the staging area.

The military was fighting the vehicle fire and performing rescue operations on the three trapped victims. Many large storage containers were alight and a dozen or more 55 gallon drums containing petroleum products had reached their boiling point, their tops and bottoms were starting to mushroom. Our ARFF truck turned its roof turret on the drums to reduce their temperature. An attack line was deployed and we started fighting the flames in the storage bins.

These bins contained hazardous materials, but were not labelled. The fires were small and violent, generating tons of smoke – some bin doors could be shut to kill the fire, but others had burned through, so firefighters had to pike pole out shelves of boxes containing unknown materials, all of which exploded violently when brought into an oxygen rich environment.

Further mutual aid arrived in the form of water tankers and re-supply lines were laid to each truck. Water is a huge issue here. Parts of the airport have an underground hydrant system, though this must be activated manually from the pump houses and sometimes the system doesn't work. We rely on emergency underground water supply tanks along the runway. Our next concern became the quantity of foam supplies – we had to use our foam wisely.

Author

John Jacoby *is Watch Commander at Baghdad International Airport, Iraq*

Mortar attack

Throughout the incident, all the personnel involved were acutely aware that this had all been started by a mortar attack...

After 90 minutes of firefighting the scene was under control, though it took another two and a half hours to completely extinguish the fire. Total assets used on scene were: Four fire departments; eight fire trucks; ten re-supply water tenders; and 50 plus firefighters.

Although the driver of the vehicle was dead and both passengers had major injuries there were no other injuries on scene. The entire storage facility was lost.

Had we been fighting the fire in a different environment, operations would have been conducted very differently. For instance, on observing that the 55 gallon drums were boiling and close to exploding, the safest thing – after having rescued the vehicle's passengers – would be to set up master streams or ARFF truck roof turrets and flooded the drums with water to reduce the temperature, pulling out of the scene until it was safe. However, with the camps so close to each other, and with other storage facilities around this fire, it was determined that an aggressive attack was the best.

The lesson learned that day was that no department could have handled the incident alone and that without the mutual aid plans, the emergency would have been much worse.

Our safety includes areas that very few airports list. We have safety plans for post rocket attacks and emergency plans should an attack occur while fighting a fire. When a rocket or mortar attack occurs, the on shift Watch Commander does a smoke check around the airport. If one of the incoming rounds has struck something the emergency is announced over the radio and a request for trucks is made.

"Had we been fighting the fire in a different environment, operations would have been conducted very differently"

The off duty Watch Commander responds to the station in case more than one incident has occurred or to dispatch trucks for the Watch Commander on scene. If we are on scene and an attack occurs we stop all firefighting operations and pull back to a bunker, unless it's a rescue operation, then the decision falls to the Fire Chief or scene commander.

Brush fires are another concern owing to the number of unexploded mortars and rockets, so as the crews attack the fire they are also looking for UXOs (unexploded ordnance).

The main focus is still the safety of our firefighters – it is just that we have to be more aggressive than most departments. CRJ

Night club blaze in Buenos Aires

Over 200 people were killed in a fire at a Buenos Aires night club in December – among them children and babies housed in a makeshift nursery in the toilets. **Juan Ferretti** looks at why so many people died and wonders whether any lessons have been learned

On December 30, 2004, a rock band 'Callejeros' was playing at a night club called Republica Cromagnon in Buenos Aires, Argentina. A few minuts before 23:00, a flare tossed in the air set fire to foam lining on the club's ceiling. Flames soon engulfed the building, killing 175 people, with many more succumbing to their injuries over the coming days. Even more horrifically, it was later discovered that a makeshift nursery had been improvised in the ladies' lavatory and that a number of small children and babies were killled.

Fire and smoke spread was accelerated by decoration materials, which were highly flammable: wood, Styrofoam, acoustic panels and plastic shade netting, locally referred to as 'media sombra'. It is this decorative net that caught fire first; when hit by the flare it melted into a 'rain of fire'. It has also been reported that in some parts of the building, teddy bear stuffing had been used as a cheap soundproofing alternative.

Panic

Most of the victims died after inhaling carbon monoxide and poisonous gases, providing a sharp contrast with other accidents of this kind, where crushing and burning seem to be the most common causes of death.

The smoke that filled the club instantly made the air unbreathable and caused immediate panic. People ran to the emergency exits, which were found to have been locked. These doors had to be wrenched open and some of those who managed to escape helped police and paramedics to locate and rescue a number of others. They also helped to pile up the bodies of victims in a neighbouring car park. Many young people assisted police officers in stopping the street traffic and carrying

Most of the victims died from inhaling carbon monoxide and poisonous gases, providing a sharp contrast with other accidents of this kind, where crushing and burning seem to be the most common causes of death

photo: EPA

survivors to the 46 ambulances that had been sent to the scene of the accident.

City officials said that eight firefighting units and around 110 members of the Buenos Aires Civil Defence Organisation were called upon. Additionally, 600 doctors, paramedics and volunteers worked all night – tirelessly, but according to some, in a disorganised manner.

Until this fire, the worst night club tragedy in Argentine history was in 1993, when a blaze broke out in a nighclub called Keyvis in a suburb of Buenos Aires killing 17. That fire is believed to have broken out after teenagers set some furniture alight as a prank. Although no-one was ever accused of starting the incident, this tragedy led to slightly stricter regulations as regards fire prevention and security inspections of night clubs.

While it is clear that the irresponsible tossing of a flare started the fire at Cromagnon, elements now under investigation seem to point to a sum total of events that possibly brought about this unprecedented death toll:

- In the first place, the night club is believed to have opened that evening with an invalid Fire Department permit, overdue for a fire hazard inspection by about a month;
- The highly flammable nature of the materials used to soundproof and decorate the club precipitated a rain of fire and the rapid spread of lethal smoke;
- The emergency doors were locked to prevent gatecrashers. People were trapped inside the club, adding to the general panic and chaos. Many reported that these doors were wide enough to let a truck in, and stated that had they been open, it would have been possible to have an easy, orderly and swift evacuation of the building;
- The night club had a maximum room capacity of 1,037 people. Most sources report that it held over 3,000 customers that evening; and
- Fire extinguishers were reported empty or past expiry date, and there were no emergency lights, which undoubtedly contributed to the chaotic situation as soon as the fire broke out and electricity failed.

Command issues

A further element to take into consideration is the alleged mishandling of the rescue operation, as it apparently did not have a centralised command. Firefighters reported to and took orders from their own superiors, as did paramedics and police officers respectively – no doubt they made formidable efforts, but did not have a single central co-ordinating authority.

This lack of a centralised large-scale emergency command system made it possible for many teenagers to return to the interior of the club after they had narrowly managed to escape the blaze, in an effort to help friends and relatives. These people had already inhaled carbon monoxide and other toxic gases on their way out, and many died when they rushed back in.

Soon after the disaster broke out, Judge Maria Angelica Crotto ordered the immediate arrest of the night club's owner; he is still in detention. The police have not yet identified the person or group that set off the fatal flare.

The Cromagnon criminal investigation is not yet finished, and it still is very difficult to establish clear responsibilities. The band playing on the night of the disaster are believed to have been involved in organising the concert, and may have had an active role in ticket sales. However, no evidence has been found as to their direct involvement in the decision to lock emergency exits to prevent gatecrashing.

Police inaction prior to the tragedy is now also being investigated, as several sources have reported that many officers knew that Cromagnon was operating with a largely exceeded occupancy rate. A judicial investigation into possible bribery and corruption has been launched.

This tragedy may still prove to be a major political test to City Mayor Anibal Ibarra, who has been the centre of harsh criticism in relation to the city's poor capability to handle large-scale emergencies and flaws in the inspection system. Although Ibarra reshuffled the whole Buenos Aires' security administration only a few days after the tragedy, he could not avoid a questioning session by the City Legislature, where he had to explain away a number of issues.

As to the possible flaws in the city inspection systems, many sources have stated that the majority of Buenos Aires inspectors were not qualified to ascertain whether a night club had a solid fire prevention system. Therefore, protection against hazards was practically entirely in the hands of club owners or managers.

Additionally, most sources consulted agreed that night club safety systems were operating in a legal vacuum in Buenos Aires, since City regulations did not then provide detailed specifications as regards the materials to be used in constructions, or details other than the minimal fire prevention standards that owners had to conform to in order to obtain a fire permit.

New rules

However, a completely new set of security regulations was approved by the City Government and the Legislature in February 2005. Now the building owner will be responsible for ensuring that the fire and life safety systems are maintained in an operable condition at all times and for the use of approved flame resistant materials in the construction and decoration of night clubs. People under age will not be admitted after midnight and the club will need to have permanent emergency and firefighting staff, as well as night club staff specially trained in emergency response and evacuation strategies.

These new regulations also state that night club owners or managers have to submit detailed information to City authorities about bands playing, the kinds of stage mounted for live concerts and the Fire Department permit dates. Additionally, night clubs will be authorised to ask permission to offer a maximum of 48 concerts in a period of four months, after which lapse the permit has to be renewed.

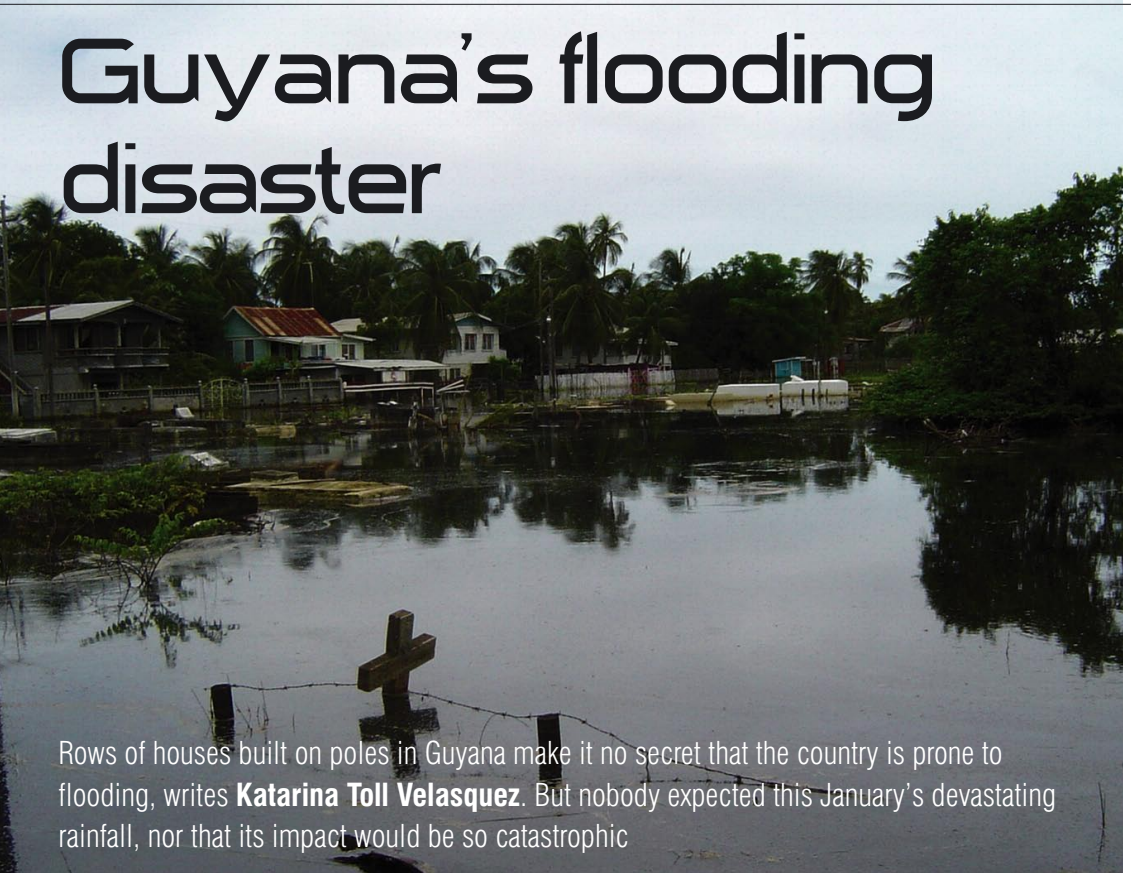
Today concerts are back in Buenos Aires. Fifty night clubs have just been authorised to offer live shows, as these clubs have already obtained their special permits and are said to comply with the new set of regulations.

Nevertheless, several questions remain unanswered. It is hard to tell whether the lesson has been learned. Buenos Aires audiences are governed by a relatively new cultural paradigm that has gradually tended to include more violence, more irrational behaviour, often aided by the consumption of alcohol and drugs.

In this relatively new cultural setting, it is not uncommon to see rock bands actively encouraging their fans to use flares and other pyrotechnic elements in their concerts.

It may not be possible to finally hold one person or group accountable, whether they be City officials, Police, the City Government, the rock band and/or the individual who tossed the flare. Yet it is not easy to foresee a substantial attitudinal change in a society where education is still not regarded as a real priority in the shaping of future safety. CRJ

Guyana's flooding disaster



Rows of houses built on poles in Guyana make it no secret that the country is prone to flooding, writes **Katarina Toll Velasquez**. But nobody expected this January's devastating rainfall, nor that its impact would be so catastrophic

Nobody in Guyana expected as much rain as the country received in early 2005, nor did anyone anticipate that the impact of the rains would be so devastating.

Three days of torrential rains and floods hit the capital area as of January 14. During that month, Guyana received a total of 132cm (52 inches) of rain, seven times the usual average for January. Entire villages found themselves cut off. Thousands of families had to flee their homes.

Disaster areas

The Government of Guyana declared Regions 3 (Essequibo Islands/West Demerara), Region 4 (Demerara/Mahaica) and Region 5 (Mahaica/Berbice) disaster areas and released 200 million Guyanese dollars for immediate emergency relief (approximately US$1.1 million; €0.8 million). The flood situation improved rapidly in the capital. However, rains resumed again towards the end of January. Many villages on the coast and in the 'backlands' suffered from persistently high water levels days and weeks after the initial flooding.

Outside the country, this emergency very quickly turned silent, although the situation looked very different from Guyana's muddy roadsides. Very quickly, the realisation that these were indeed the worst floods in 100 years of Guyana's history struck the Government, diplomatic missions and the aid community.

The situation was alarming: flooding affected almost one half of Guyana's population of 750,000, mostly on the coastal stretch between the capital Georgetown and Mahaica on the coast East of Demerara River. Of the 300,000 people affected during the peak of the emergency, one third were estimated to be children under nine. Three weeks after the peak of the emergency, an estimated 92,000 persons still had water in their homes. Many areas could only be accessed by boat. The water levels remained as high as 1.2-1.5 metres in some villages.

Many health centres and schools had to stay closed for a month or more. Those that opened only did so after extensive clean-up and sanitising efforts by affected communities, with support from public institutions and humanitarian organisations.

Leptospirosis

The food chain was disrupted because it was hard to access flooded villages and because fresh produce and livestock had been lost. Close to 5,000 persons took refuge in temporary shelters. Serious environmental concerns arose because of the dysfunctional garbage collection system.

In addition, the Ministry of Health announced a much-feared outbreak of leptospirosis in late January. This is a disease caused by contact with water contaminated by animal urine and causes probable death if not detected early enough. This outbreak was particularly alarming as it could quickly develop into an epidemic. The ministry launched a vast public campaign with UN support to prevent an epidemic and to avoid panic. Residents lined up at hospitals and health centres, where they were given free medication and guidelines on how to take it. This campaign was, undoubtedly, instrumental in avoiding the worst-case scenario.

The total death toll of the emergency was reported to be 34, of which seven were caused by drowning and the rest attributed to illnesses arising from the floods.

Overseas response

The United Nations Office for the Co-ordination of Humanitarian Affairs (OCHA) was in touch daily with the UN's in-country system in Guyana from the first days of the floods, both from its Geneva base and its regional office in Panama.

The direct United Nations counterpart of OCHA was the United Nations Resident Co-ordinator in Guyana. As is generally the case, the Resident Representative of the United Nations Development Programme (UNDP) holds this position. In case of disaster, it is the responsibility of the United Nations Resident Co-ordinator to consult with the Government on the appropriate UN response and to activate the relevant UN disaster response mechanisms.

The United Nations in-country team, made up of the various agencies established in Guyana, immediately mobilised to address the emergency needs in priority areas such as emergency food and water, health and sanitation. At the request of the UN Resident Co-ordinator and the Government of Guyana, OCHA immediately mobilised a UN Disaster Assessment and Co-ordination (UNDAC) Team to Guyana led by the OCHA Regional Disaster Response Advisor.

In January 2005, OCHA already had five UNDAC teams active in Indonesia, Sri Lanka, Thailand, the Maldives and the Seychelles in response to the Tsunami of December 26, 2004. The team mobilised to Guyana totalled seven experts from Bolivia, Finland and Norway in addition to two OCHA staff members. The International Humanitarian Partnership, a consortium of donor countries that provides support to UNDAC teams with equipment modules ranging from communications kits to entire aid working camps, supported the Guyana team with a Finnish communications module and one operator. This was despite it being stretched as it simultaneously supported international aid agencies operating in Indonesia and Sri Lanka.

During its three-week mission in Guyana the UNDAC Team provided a range of different support activities that are its speciality:

- It continuously assessed affected areas, together with Governmental partners, United Nations agencies, bilateral agencies and other responders. Guyanese partners in the assessment and liaison activities involved both the Joint Operations Centre (JOC) and the Civil Defence Commission (CDC), entities responsible for disaster management at national level, and other organisations such as the IFRCRC and the Guyana Red Cross, as well as the Guyana Citizens' Initiative for Flood Relief.
- The UNDAC team helped manage and disseminate the information generated through assessment activities of the affected populations and their needs. Information sharing took place first and foremost at local level, reaching the international donor community on a regular basis through the OCHA-managed humanitarian information website Reliefweb, with OCHA situation reports and material provided by other aid agencies.
- The UNDAC Team in Guyana provided support to the national disaster management authorities and UN's in-country system in co-ordinating international assistance and, in particular, in advising on setting up a platform for the various actors to meet. Progressively, the daily co-ordination meetings organised by the national authorities became a central meeting point for the entire range of national and international agencies involved.
- Meanwhile, the UNDAC team also provided support to the UN's in-country System in preparing a US$ 3 million United Nations Flash Appeal for Guyana. This document, launched in February, outlined the requirements of FAO, UNICEF, WFP, UNDP and WHO/PAHO for emergency activities in response to the floods, covering a six-month period.

Flooding affected almost one half of Guyana's population of 750,000. This disaster caused losses representing 59 per cent of the nation's gross domestic product. Three weeks after the peak of the emergency, an estimated 92,000 people still had water in their homes

all photos: UNDAC Team Guyana

Collapse threat

Shortly after the arrival of the UNDAC Team, the potential collapse of the East Demerara Water Conservancy dam cropped up as a major issue of concern. The UNDAC team alerted the Joint Environment Unit managed by OCHA and the United Nations Environment Programme (UNEP), as more extensive flooding could become another deadly threat. At the request of the Government, The Netherlands provided two experts in geotechnics, hydraulics, sea and river defence.

The water conservancy dam, dating back to 1880, is an essential part of Demerera's eastern coast hydraulic system. It channels a number of water sources into a storage area, primarily to irrigate sugar cane plantations, rice fields and other cash crops during periods of drought. It also protects neighbouring zones from floods. It has

a bearing capacity of more than 160 square km (100 square miles) of water.

The experts found the water conservancy dam to be fragile, unsafe and in serious need of urgent and substantial repairs. Though work teams are constantly monitoring and repairing this structure on a daily basis, they lacked sufficient and modern equipment to contribute with significant impact. Further support has been given to establish a national emergency task force for repairing the dam and the drainage system.

'Forgotten' disaster

It should be no surprise, however, that the outside world paid virtually no attention to what was happening to this corner of the planet. Guyana could perhaps have received greater visibility considering the sheer oddity of this disaster and the tragic fate of so many families trapped in their precarious homes for so long, totally dependent on daily distributions of cooked food parcels and bottled water for weeks and with no access to basic social services. But the flooding occurred only 20 days after the earthquake and Tsunami in South Asia. The international mass media could not be attracted to Guyana, despite the efforts of the UN and other entities. This reality, coupled with the fact that the name 'Guyana' was probably unfamiliar to anyone outside the borders of South America, made it impossible for this country to compete for international attention.

Emergency funding did reach Guyana, in great part due to the interest and involvement of the country and regional representatives of major donors such as Canada, the EU, the UK and the US. Donations and in-kind assistance also came from other countries, including several in the Latin America and Caribbean region. By mid-April 2005, the United Nations Flash Appeal had attracted approximately US$ 670,000, or close to one-fourth of the announced requirements of the United Nations agencies active in Guyana. The funding reported to OCHA has been provided to carry out programmes mainly in the emergency sectors of food, health, water and sanitation.

Overall, considering also bilateral and other contributions, a total of more than US$ 6 million has been reported to OCHA as donations for the flood response. Nevertheless, more is needed to allow Guyana's population to recover their livelihoods and to diminish the impact of any future floods.

Another telling indicator is the report of the Economic Commission for Latin America and the Caribbean (ECLAC), which undertook an assessment of the flood effects on the national economy and put the total damage at over half a billion US dollars.

In other words, this 'silent' disaster caused losses representing 59 per cent of Guyana's gross domestic product (GDP).

Independently of competing donor priorities, could the emergency aid for the flood-stricken population of Guyana have been quicker and more generous? As in every sudden-onset disaster, the major challenge at the beginning of the flood emergency was finding the right information – which was credible, logical, organised and easy to digest. Information that could help identify needs, financial requirements and support the international decision-making process as to the support that can be provided. Through the efforts of all concerned – local, national and international entities – this information slowly became available. However, a pre-defined system for early assessment and the availability of baseline data on the population of the areas affected could have speeded this process.

Preparedness

Guyana will need support in order to build capacity to address these issues and enhance preparedness for future natural phenomena. With two rainy seasons per year, and the next one due to start in June, it is becoming urgent to undertake these disaster preparedness efforts. This would facilitate access to the kind of information on needs and requirements necessary in the early stages of an emergency, without which it proves difficult to attract initial emergency funding.

For the international aid community, it is essential to find a capacity in-country to manage the early information on needs. Technical support is probably the greatest need at present in order to prepare for an effective response to the potential humanitarian impact of future rainy seasons. This type of support could be provided at relatively low cost, and yet have an enormous impact on the quality of the emergency response should Guyana is ever hit by flooding of this magnitude again.

■ *See www.crisisresponsejournal.com for full list of donations by country* CRJ

Author

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Opposite: Serious environmental concerns arose because of the dysfunctional garbage collection system and the fact that so many livestock were lost to the floods. This page: Guyana has two rainy seasons a year – the second one starts in June. Technical support is therefore greatly needed to help avoid a repletion of this disaster

all photos: UNDAC Team Guyana

Donor	Description	Value in US$
Brazil	Centre of Brazilian Studies to be used as a shelter; provision for humanitarian assistance (food aid)*	0.00
Canada	Access to safe drinking water and sanitary environment	80,645.00
Canada	Cash	120,000.00
Canada	Cash-CAD 240,000	193,548.00
Caribbean Development Bank	Cash	100,000.00
China	Cash	100,000.00
Cuba	29 medical doctors and 11 technical officials*	0.00
Economic Commission for Latin America	Assessment mission of the long-term impact of the floods*	0.00
Ecuador	One C130 to transport food items*	13,237.00
European Commission Humanitarian Aid Office	Emergency assistance to the victims of floods in Guyana (ECHO/GUY/EDF/2005/01000)	261,438.00
European Commission Humanitarian Aid Office	Emergency assistance to the victims of floods in Guyana (ECHO/GUY/EDF/2005/01000)	522,876.00
European Commission Humanitarian Aid Office	Emergency assistance to the victims of floods (ECHO/GUY/BUD/2005/01000)	330,251.00
European Commission Humanitarian Aid Office	Emergency assistance to the victims of floods (ECHO/GUY/BUD/2005/01000)	132,100.00
European Commission Humanitarian Aid Office	Awaiting allocation to specific projects/sector (ECHO/GUY/EDF/2005/01000)	130,719.00
European Commission Humanitarian Aid Office	Emergency assistance to the victims of floods (ECHO/GUY/BUD/2005/01000)	858,652.00
France	Emergency Relief – EUR50,000	67,842.00
Germany	NFI's	65,359.00
Germany	Urgent supply of water filters, water buckets, kitchen sets and mosquito nets	127,902.00
Inter-american Development Bank	Assessment personnel for needs/damage assessment	200,000.00
International Federation of Red Cross and Red Crescent Societies	Providing meals; will send hygiene kits, mosquito nets, jerry cans and other supplies*	0.00
International Federation of Red Cross and Red Crescent Societies	Disaster emergency relief fund – CHF 300,000	254,237.00
International Federation of Red Cross and Red Crescent Societies	Disaster emergency relief fund – CHF 150,000	132,743.00
IRA Fund	Food aid	387,392.00
Japan	In kind: 30 electric generators, 30 cord reels, 30 portable water tanks, 900 polyethylene tanks, 900 sleeping mats – JPY 12,450,000	120,046.00
Netherlands	Dispatch of 2 environmental experts*	0.00
New Zealand	Awaiting allocation to specific projects	69,000.00
Office for Coordination of Humanitarian Affairs	Dispatch of a 4-person UNDAC Team*	0.00
Office for Coordination of Humanitarian Affairs	Emergency cash grant for purchase of inflatable boats with motors	50,000.00
PAHO/WHO	Undertaking assessments in affected areas; SUMA training team*	0.00
Private	Medical personnel, free freight, pumps, boats, water tanks, food, water, bread etc*	170,000.00
Private	20 tons of relief items from Guyaneses living in Suriname*	0.00
Russian Federation	Air transportation of NBLI boats*	0.00
Singapore	Awaiting allocation to specific project/sector	20,000.00
Sweden	Distribution of blankets, household items, watercleaning tablets and watertanks	147,490.00
Trinidad and Tobago	4 large pumps*	0.00
United Kingdom	Strengthening coordination	18,500.00
United Kingdom	Rapid response team of 6 boats and 20 crew	222,000.00
United Kingdom	Government relief account	37,000.00
United Kingdom	Water and environmental sanitation kits, bed nets	148,000.00
United Kingdom	Water and sanitation	105,500.00
United Nations Children's Fund	Cash	75,000.00
United Nations Children's Fund	Organised and provided technical support; provided oral rehydration salts, water containers, buckets and dry food rations*	0.00
United Nations Development Programme	Dispatch of staff to ensure smooth transition from immediate relief to rehabilitation phase*	0.00
United Nations Development Programme	Cash	50,000.00
United States of America	10,000 blankets, 7 shallow-water boats	170,000.00
United States of America	In response to PAHO Appeal	150,000.00
United States of America	Cash	50,000.00
United States of America	For local purchase of relief items, boats and rental of office	100,000.00
United States of America	12 boats for relief effort*	0.00
United States of America	In kind: 10,000 water jugs, 10,000 hygiene kits and 10,000 blankets*	147,000.00
Venezuela	Team of medical personnel and agriculture specialist*	0.00
Venezuela	In kind: foodstuff, water, medicines	300,000.00
World Bank	Assessment of rehabilitation requirements*	0.00
World Food Programme	Rapid assessments, distribution of biscuits/ food rations	0.00
World Food Programme	Emergency food assistance	387,000.00
Grand Total		6,615,477.00
* Value of contribution not specified		
** Estimated Value		

Baltic collaboration

Dr Eng Barbara Kucnerowicz-Polak outlines how the Baltic states are co-operating in a civil protection programme that focuses on emergency management, sustainable development and safe communities

NEMUNAS oil spill exercise in Lithuania, 2004. The Eurobaltic programme involves civil protection co-operation among the Baltic states

RECENT STATISTICS ON man-made accidents and natural disasters clearly indicate a considerable increase in the numbers and impact of such emergencies on citizens. These effects take the form of loss of human life, damage to the environment and negative impact on economies. Society is increasingly vulnerable to specific risks, which can prevent or delay sustainable development.

Sustainability

The most efficient approach to strengthening disaster prevention, minimising the consequences of disasters and ensuring proper and sustainable development, is to organise a regional focus on sharing information, experiences and lessons learned in the field of risk management. This view was reflected during the regional session of the UN World Conference on Disaster Reduction (Kobe, 2005 – see page 57) and is highlighted in European Northern Dimension Action Plan 2004-2006.

The Eurobaltic programme focuses on protecting the population and environment against man-made and natural disasters, as well as day-to-day accidents. Eurobaltic involves collaboration between the Baltic Sea Region (BSR) countries (Denmark, Estonia, Finland, Germany, Iceland, Latvia, Lithuania, Norway, Poland, Russian Federation – Kaliningrad Oblast – and Sweden).

The programme will achieve better protection by increasing risk management efficiency, promoting safety among communities and building the capacity of relevant institutions responsible for risk and emergency management. The programme aims to create networks among national, regional and local authorities, as well as non-state organisations, research institutes and enterprises that are oriented in protecting human life, the environment and cultural heritage.

The Eurobaltic programme contributes towards supporting the sustainable development of safe communities in the region. It does this by promoting safe community programmes and safe industrial development. In addition, it also helps to mitigate the effects of cross border accidents by encouraging co-operation on spatial planning and sustainable land use management.

Three important elements of an efficient approach for the implementation of such a regional programme should be highlighted. These include political support, deep involvement of civil protection experts (focal points) and financial support – all three of these elements are necessary to keep the momentum going.

The initiative for creating a civil security co-operation programme within the framework of the Council of Baltic Sea States (CBSS) was born during the third summit of the heads of member state governments in March 2000. In the same year, the Committee of Senior Officials of the CBSS approved Poland as a leading country in the area of civil protection. In light of this decision, in December 2000, Poland (The National Headquarters of the State Fire Service) supported by Sweden (Swedish Rescue Services Agency), came forward with an initiative to establish the Eurobaltic programme.

Joint exercises

Co-operative initiatives include: creating conditions for the exchange of experts; training co-operation; and joint exercises with rescue services and other relevant institutions.
Co-operation also extends to: introducing an integrated early warning and alarm system; the standardisation and harmonisation of technical assistance resources; improving the uniformity of response methods; and identifying risks.

In June 2001, the ministerial sessions of the CBSS supported the launching of the project as an 'umbrella' for regional international co-operation in the field of civil protection.

The programme received the financial backing of the European Union in March 2003 – the BSR INTERREG III B Eurobaltic Civil Protection Project, so called Eurobaltic I, project will be finalised in March 2006.

Eurobaltic I has been organised in the form of five working packages (WP):

- **WP-1:** Risk identification and mapping, including spatial planning safety elements, assessing and mapping risks for implementing preventive and risk mitigation strategies.
- **WP-2:** Involving non-state actors in civil protection, focused on promoting organisational/public co-operation to prepare for and manage risk communication, developing effective early warning and alarm systems.
- **WP-3:** Focuses on horizontal co-operation, involving different sectors and different stakeholders in civil protection. It does this by promoting and developing cross border, cross-sectoral and multilevel co-operation, primarily at transnational/regional/local levels.
- **WP-4:** Looks at the application of new technologies, particularly IT in decision support systems, resulting in building IT support networks for implementing accident prevention policies, establishing preparedness and conducting Civil Protection response operations, and elaborating an action plan for achieving compatible and common technical solutions.
- **WP-5:** is focused on development and improving existing Civil Protection training and education towards strengthening human and institutional capacity building within the region. These initiatives may result in adoption of joint vocational Civil protection training programmes adapted to the region's needs.

During the Eurobaltic I project a general framework of co-operation in the area of civil protection in the BSR has been built, along with networks of experts dealing with specific aspects. Reports describing current status of the problems in all countries involved have been produced, allowing joint understanding among the project partners regarding priorities for addressing shortcomings in the civil protection capabilities and providing a basis for further work.

The application for Eurobaltic II was submitted in March 2005. This will be the follow up of the BSR INTERREG IIIB project Eurobaltic I and is focused on identified priorities. To achieve the project objectives, a methodology consisting of studies, workshops, pilot-projects, exercises (tabletop and on site) and guidelines is to be applied. Depending on priorities and key safety issues identified by the first project, the following parts of the methodology will be used in carrying out the activities:

- **WP1:** The setting -up of a network for transnational cross-sectoral research in Civil Protection; the development and spreading of examples of good practice and guiding documents in risk management through pilot-projects regarding chemical, environmental and flood risks, and regarding the implementation of the INSPIRE Directive.
- **WP2:** Carrying out a pilot-project on transnational operational co-operation between Poland, Lithuania and Russia, dealing with mutual response to minimise disaster consequences; workshops, exercises and train-the-trainers course on the transnational and cross-sectoral interface between land and sea resources in accidents and disasters at sea; workshop and exercise on psychological and communication issues in emergency call centres of an increasingly integrated region.
- **WP3:** Setting-up of a network regarding mutual support in safety promotion between communities; workshops and pilot-project to develop and spread common approaches to public safety education; the development and dissemination of guidelines regarding safety promotion to communities and authorities.

A review of activities in progress (Eurobaltic I) has shown that since December 2001, eight activities were carried out and finalised before March 2003, when financial support from Interreg III B was received. Since then, 28 activities have been undertaken to the end of 2004 and four are still in the process of implementation under the Eurobaltic I Programme.

Common approaches

These activities should result in the development of common approaches within the CBSS region on how to take safety issues into account in the field of spatial and physical planning of communities.

It should result in improvement policies and systems for involving citizens and their organisations in managing risks and emergencies, establishing networks and a common handbook and guidance for development at transnational/regional/local level of co-operation in respect to achieving safety in society and protection of health and environment.

Taken together, the Work Packages face the whole spectrum of contemporary challenges to Civil Protection. These include planning systems that take safety issues properly into account; the role of non-state actors; transnational, cross-sector and multi-level co-operation; IT technologies; and education and training systems. The activities include research, surveys, pilot projects, workshops, seminars, training and exercises, action plans and handbooks.

To summarise, the Eurobaltic programme is seen internationally as a 'success story' and an example of good practice. As such, it is often presented to other international forums.

The programme is evaluated once a year by CBSS member states' at the annual Civil Protection Experts Meeting. Progress reports are also provided to the Civil Protection Directors General during their annual meeting, as well as to the political body of the CBSS – the Committee of Senior Officials.

The implementation of the Eurobaltic programme has shown that regional co-operation, when demand driven and supported both financially and politically, provides opportunities to achieve more than could be done by individual countries alone. CRJ

Author

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No stone unturned – victim recovery

Months after the December 26 tsunami, thousands of people are still missing. How feasible is it that they will ever – or can ever – be recovered? **Emily Hough** speaks to police victim recovery expert Mark Harrison

Most of the recovery work was carried out by the Thai military shortly after the tsunami struck, with army personnel locating unconcealed bodies

AT THE REQUEST of Interpol and the British Foreign and Commonwealth Office, Mark Harrison has been co-ordinating an assessment of certain areas in Thailand to see if it is possible that victims buried alive or swept out to sea by the tsunami remain undiscovered under the beaches or caught in debris under water. The main focus of his work so far has been at the request of the Norwegian, Danish, Finnish and Swedish governments, countries that lost a demographically disproportionate amount of their citizens in the disaster.

Mr Harrison explains: "The police response is two-fold. The main thrust is one of identification and repatriation and there are 31 teams out there, working in a collaborative effort through Interpol with the Thai authorities."

Most of the recovery work was carried out by the Thai military shortly after the tsunami struck. The painstaking disaster victim identification process to match identifying factors and DNA with the data gathered in the mortuaries is ongoing. Mr Harrison's involvement lies with another process that of assessing whether there are any more victims that have, as yet, not been retrieved.

Risk levels

Of the thousands still listed as missing, people are graded into different levels of risk, ie whether they might have been elsewhere at the time, whether they were placed at the scene, video evidence, and so on. People from the same country would cluster around certain resorts, so locations have been narrowed down. Is it possible that victims lie buried under the beaches?

"Part of my role is to go back to the places where the groups of people were at the time and see what reasonably can be done to give further assurance that their human remains are still not at that location to be recovered," says Mr Harrison.

A decision can then be made as to search and recovery work in those areas. Police involved in identification efforts who are returning home can be assured that they are not leaving with work left unfinished. Those who have lost loved ones are also reassured that everything reasonable has been done to locate their relatives.

Technology

Overall co-ordination of this operation is vital, emphasises Mr Harrison: "In the past, specialist technology has been offered and deployed, but it hasn't worked in concert with everything else. If we are going to use one piece of technology, it has to be used in the right order. We mustn't cause difficulties for the next piece of technology that we bring along.

"If we are looking at a large area, first of all we would start with satellite imagery, which is non-invasive, then we would work with the thermal spectrum, then we might move into ground penetrating radar. Next we might start digging, which is when it becomes invasive. All of this must be done in the right order..."

In this particular disaster, it was suspected that many victims were buried on the beach, in the inter-tidal area. Skeletal remains had been found and it was thought that the tsunami had dumped sand from the sea bed on the beach, burying people alive.

An inter-tidal area is "One of the most challenging areas to search because water is coming in and going out," according to Mr Harrison. In the open sea, side scan sonar can be used, as well as sub-bottom profiling, which penetrates the sea bed. "But they both need a good body of water to develop the acoustic beam, and there isn't enough permanent depth in the inter-tidal area." Ground penetrating radar cannot operate in salt water and victim recovery dogs, trained to detect human remains, are also not ideal for these areas. "These dogs are reliant on the scent of a decomposing human. In a salt water area, there is very little scent egress because sand is porous and will fill any gaps. If you try to aerate the soil, it will backfill almost immediately," he says.

Skeletal remains

In the end, however, searching the inter-tidal area was not required. "I was uncomfortable with the skeletal remains," Mr Harrison says. "People do not become skeletal within a few weeks. If you are subsurface, you will remain in a flesh state for a considerable time. However, victims that had been swept out to sea had been effectively reduced to a skeletal form by marine life and they were being washed up onto the beaches on a daily basis.

"So they were being washed onto the beach, not coming up from under the beach."

Another of the locations assessed proved to be the site of an ancient graveyard that had been disrupted by the tsunami waves.

Although it was not necessary to search the inter-tidal area in the end, land and sea areas both needed to be assessed.

On the land, "We looked at capture points, as well as the paths the waves took and the end stops – perhaps a large natural feature that would capture most debris. These would be the areas where the Thai army would have found lots of bodies. They recovered those that were visible, but there may have been some more concealed within the debris forest," says Mr Harrison. Teams with victim recovery dogs from Norway, Sweden, Denmark and Finland were set to work in specific areas he identified.

Meanwhile, there is the ocean to consider. Some buildings were swept out to sea, and people who may have been in the building at the time could be on the sea bed. Says Mark Harrison: "There are still further assessments to be made and I have identified a few areas offshore that would be worthy of assessment."

With the initial assessments made, it is now for the various nations to decide how they want to proceed. Land areas have been searched to a satisfactory level, but the sea areas need further discussions.

"You could spend as much time and money as you want to, but this is a natural disaster scenario of biblical proportions and you have to be pragmatic in what can reasonably achieved," he says.

"It would also be fair to say that there has been a high expectation level by Western nations that their loved ones would all be recovered, because in our own countries, we tend to have a 100 per cent recovery record. But this is a disaster on a scale that has never been witnessed before," concludes Mr Harrison. CRJ

Another of the locations assessed proved to be the site of an ancient graveyard that had been disrupted by the tsunami waves

SAR versus search and recovery

Mark Harrison, *MBE, is National Police Crime and Missing Person Search Adviser for the National Crime and Operations Faculty in the UK. His work in Thailand is not the norm: "My day to day job is serial homicide, this is what I really specialise in which is much more challenging. By the time such cases come to me, we are the final recourse, the backstop organisation," he says.*

As well as searching for missing people or murder victims whose remains have been hidden, Mr Harrison specialises in search and recovery after large disasters such as explosions or rail crashes.

So how do the police work with other rescue services? Is there always going to be a conflict between the need to rescue any survivors of an incident as quickly as possible, and any investigative work that might be undertaken after the initial phase?

According to Mr Harrison, there can be little understanding of the difference between 'search and rescue' and 'search and recovery'. "Search and rescue just covers the immediacy of the incident, the actual post-recovery phase involves both search and recovery for deceased victims, as well as any evidence."

From his perspective, Mr Harrison says that it would be helpful were initial phase responders – fire, ambulance, volunteer or professional search and rescue teams – be more aware of the whole picture... "Search and rescue organisations are exactly that – they are not all specifically trained for recovery and identification of victims, repatriation, and so on."

The initial phase is dynamic and there is a certain amount of chaos built into that, according to Mr Harrison. In his opinion the difficulty lies in encouraging personnel in the initial responder phase to focus on the bigger picture. "It is hard to get people to think more strategically about what they are doing and that the movement of a dead body can have critical ramifications later on," he explains, adding that competing operating procedures can cause difficulties down the line. "Their main approach, and quite rightly so, is to get to trapped or injured people as quickly as possible and in the most effective and efficient way, then to recover them. However, in so doing, they need an awareness of how they might frustrate the investigative process later on."

Most countries' search teams are of a civilian nature and are purely focussed on rescue, not the recovery elements of an operation, says Mark Harrison

For example: "Say a factory blows up. There may be corporate manslaughter considerations. Investigators will need to remodel the building and where people were at the time of the blast, to work out explosive patterns and how the explosion was caused."

However, if bodies have been removed from the scene during the rescue, this reconstruction is all the more difficult.

On an international level, especially when talking about major incidents such as the tsunami, Mr Harrison feels that the police and military are well placed for post rescue recovery operations. "It is unfortunate that most countries don't have the search and recovery expertise that we have in the UK. Most countries' search teams are of a civilian nature rather than police or military and they are purely focussed on the rescue element, not the recovery part of the operation."

In addition: "A lot of search and rescue teams may not have the full range of technology that we have. What we can use in a natural disaster environment is also what we have used in a crime environment."

Summing up: "We are co-ordinated, everyone is plugged in, not working in isolation, which is where things can go wrong – where everyone is an expert in their little field and they are beavering away but without a big picture and unwittingly they cause a problem for what comes afterwards.

"It isn't a question of 'this is what we have got, this is what we can do,'" he concludes, "We can help co-ordinate the post-rescue effort, bringing to bear everything that is out there – from the police, military, mission specific experimental equipment, straight off the laboratory bench..."

Worldwide networking

Emily Hough talks to Chief William Peterson, International President of the IFE, to find out more how this professional institution is developing on an international level

The biggest success of the IFE in my book is the ability of the organisation to provide a professional network between fire engineers all over the world

The Institution of Fire Engineers was established in 1918 by a small group of fire officers in the United Kingdom. Over the last 87 years, the institution has burgeoned into an international organisation of over 11,000 members, with branches spanning the globe.

Set up as a professional institution to further knowledge on fire prevention, extinction and engineering, the IFE is a primary source for professional career development activities and qualifications. Indeed, it is the major long term professional development organisation for Fire Services in the UK. "But," says Chief Peterson, "outside the UK, the primary benefit is in networking capabilities, sharing solutions to common problems and providing long distance assistance." He explains that learning from others and sharing professional experience are at the core of the institution's ethos.

The IFE sets and maintains professional standards and advances its technical, regulatory and social influence to help further its prime aim – that of working towards a fire-safe society. The institution is also an independent voice for all those involved in the fire profession.

Geography

One of the IFE's strong points is the geographic distribution of its membership: "The ability to interact country to country, culture to culture, adds strength to the organisation," says Chief Peterson. "The IFE helps fire engineers open up to other viewpoints and perceptions. Another advantage is that we tend to be focussed on engineering, regardless of national, religious or political affairs. All those issues are put aside, along with any other potential barriers that might exist between international members."

This wide geographic spread is manifest in the organisation's global special interest groups, which have formed spontaneously. "These are different special interest groups within the IFE that deal with aspects of fire engineering, such as fire investigation," according to Chief Peterson. "In particular we are starting to see more interaction internationally on the subject of fire investigation and I feel this is probably the one group that has made the most progress in taking that proportion of the profession into an international role."

The institution is also an independent voice for all those involved in the fire profession

Ironically, the global nature of the IFE's membership can be a disadvantage as well as a strength. "It certainly makes pulling people together from all over the world very difficult."

Increasingly though, technology is helping to circumvent geographic impediments, with the institution embracing all forms of communication to help members interact. William Peterson comments: "We're certainly seeing much more information being exchanged via email or internet; we're feeling our way through the process to find out the best and most expedient way of utilising that technology.

"We tried an internet conference back in December; this was our first venture into doing something like this. It was scheduled so that everybody in all of our branches could participate through their general assembly representatives."

Internet conference

This first internet conference worked well and has raised enthusiasm levels: "It is definitely a potentially viable way of getting everyone on the line to represent their views and topics," according to Chief Peterson. "I think we'll see more and more of that, it is a way of getting information out to various segments of the membership and also getting feedback."

The IFE has established itself as a common access point for disseminating and sharing information and, to further this aim, is in the process of completely overhauling its current website. The revamped site will contain more information and will enable electronic networking between members.

This harnessing of technology can only help as the institution grows ever larger. "Most of the growth in the IFE is from outside the UK," says Chief Peterson. "Typically, this comes from individual contacts that some members have made, along with an expression of interest from another country to develop formal partnerships."

Strong contact with Russia has developed into visits and Poland is another area where interest is strong. "They've expressed a desire to learn more about the institution and join the IFE, primarily as a means to network and interact with the world outside the former Soviet Union," he says.

"We do have members in the Middle East as well," he adds, "although we do not yet have a Middle Eastern branch. I was at a conference in Dubai recently and there seemed to be significant interest in the IFE. We are developing contacts, a network and an ongoing relationship which, hopefully, will lead to the development of a branch somewhere in the Middle East."

As important as expanding its international network may be, the IFE also recognises that inspiring the next generation of fire engineers to utilise the institution as a valuable source of information and experience is equally vital. "All of us are looking at the younger practitioners coming into the business. We're encouraging them to participate in IFE activities and to see the value of the IFE in life-long professional development. We already have young professionals groups in the UK and the US. Branches in New Zealand and South Africa are also interested in starting up such networks."

Mentoring schemes are another aspect that the IFE has identified as a specific strategic aim. "Those of us who have been in the business for 20 years or more need to start sharing with those who are just coming in."

"The ability to interact country to country, culture to culture, adds strength to the organisation," says Chief Peterson

To support its aim of working towards a fire-safe society, the IFE is always keen to establish alliances and partnerships. One initiative that is about to bear fruit is the development of two training manuals with the International Fire Service Training Association (IFSTA) in Oklahoma. "We have deliberately selected two subjects that are relatively new, but which have universal application," explains Chief Peterson. "One will look at structural search and rescue, the other is on handling incidents involving weapons of mass destruction." These manuals have been put together with representation from Canada, USA, Australia, Poland, Bulgaria, Israel and Hong Kong. The manuals will be distributed world-wide – the search and rescue one should be available by the end of this year.

In roads

So where does William Peterson see the IFE in ten years' time? "I would like to see it as the premier international networking organisation for fire engineers and we are well on our way to achieving that particular goal," he says. "We certainly have more inroads to be made, predominately in countries where English is not spoken as the primary language.

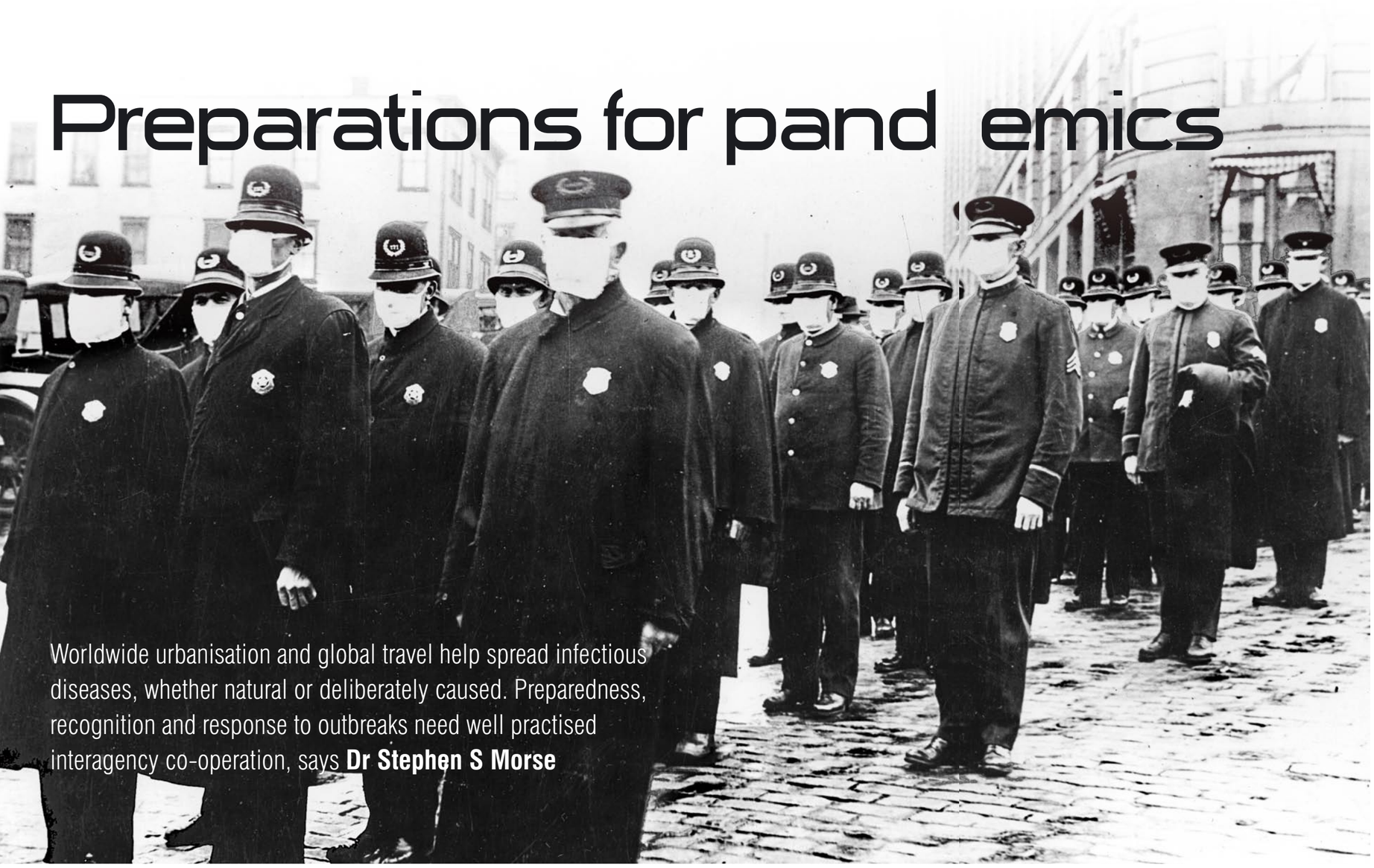
"We are working hard to develop a strategic partnership with the fire service in Japan, which I personally think is the best in the world in terms of community education. There is a lot we can learn from them, and in return we can share our experience with them."

He continues: "The biggest success of the IFE in my book is the ability of the organisation to provide a professional network between fire engineers all over the world. IFE is the only organisation that is truly international and that is where the real value in membership lies." CRJ

William Peterson *is the Chief Fire Officer of the Plano, Texas Fire Department. Peterson served for six years on the Standards Council of the National Fire Protection Association, is Past-President of the USA Branch of The Institution of Fire Engineers, has been elected to the Shadow Board of the IFE, and is a member of the Society of Fire Protection Engineers. Peterson was inducted as International President of the Institution of Fire Engineers in July 2004.*

Peterson received his Associate of Science Degree in Fire Science and a Bachelor's Degree in Fire Administration from Lewis University. He earned a Master's Degree in Public Administration and Human Relations from Webster University. He has completed training at the National Fire Academy and was a 1985 recipient of the FEMA Fellowship to the John F. Kennedy School of Government at Harvard University. In 1997, he received the Franklin Leadership Award from the International Association of Fire Chiefs. In 1999 he was appointed by the Director of the Federal Emergency Management Agency to America Burning, Recommissioned, which developed in 2000 its report: America at Risk, Findings and Recommendations on the Role of the Fire Service in the Prevention and Control of Risks in America. In 2000 he was named Career Fire Chief of the Year by Fire Chief *magazine and the IAFC.*

Preparations for pandemics



Worldwide urbanisation and global travel help spread infectious diseases, whether natural or deliberately caused. Preparedness, recognition and response to outbreaks need well practised interagency co-operation, says **Dr Stephen S Morse**

December 1918. Policemen in Seattle, USA are shown wearing masks made by the Seattle Chapter of the American National Red Cross during the influenza epidemic photo: American Red Cross

THE 1918 INFLUENZA pandemic killed more people than any other known event in history, with deaths estimated at 25 to 100 million worldwide. In some cities, there were not even enough healthy workers available to bury the dead. Infectious disease events of this magnitude are extremely rare, but sizeable infectious disease outbreaks are not: the last century witnessed several influenza pandemics since 1918, as well as HIV, SARS, and many other outbreaks. West Nile virus reached the United States in 1999, and the avian influenza in Asia is being monitored very closely for any indication that it might start spreading from person to person. Last, but by no means least, the anthrax attacks of 2001 reminded us that, in addition to large natural outbreaks, bioterrorism is also a possibility.

How do these emergencies first come to notice? We often refer to the proverbial "astute clinician", a physician or frontline health care worker who notices an unusual case of disease and acts appropriately. Those appropriate actions should include contacting health authorities for follow up investigation and disease control. The West Nile outbreak in New York City in 1999 was reported to the health department by a neurologist who noticed a cluster of unusual cases of paralysis. Reports of infectious disease outbreaks may also reach health authorities through their own various public health surveillance programmes, reports from the World Health Organisation (WHO) or health agencies in other jurisdictions, or informal networks such as ProMED-mail (www.promedmail.org).

The same principles may well be true of bioterrorist events as well. The anthrax attacks of autumn and winter 2001 – the one bioterrorist attack with which the US has had direct experience – were first noticed when a patient in a Florida hospital was diagnosed with pulmonary anthrax. Threat letters and additional cases in other parts of the eastern US were later identified.

Patterns

The pattern of an infectious disease outbreak will depend on the mode of introduction, how the infection is transmitted, and whether there are opportunities for secondary transmission. Some infections, such as influenza, pneumonic plague, or SARS, may spread through the respiratory route from person to person, with potential for wide dissemination. Many other infections are transmitted by food or water and could infect many people at once, then may spread further through the faecal-oral route. Mosquito-borne diseases, including dengue and yellow fever, can also cause large outbreaks. Some diseases, like the well known Ebola and Marburg viruses of Africa and even SARS, spread largely among close contacts and in hospital settings, through lapses in infection control.

Not all infectious diseases can spread from person to person. Anthrax, for example, does not, but is contracted from direct exposure to the agent on contaminated surfaces.

Medical response to infectious disease events should be led by the public health authorities (Health Ministries, health departments, or their local equivalents), working closely with health care providers. Rapid epidemiological assessment is essential. Accurate and timely communication with the public is also crucial. In many cases, political leaders will be the information providers. However, health authorities and other experts should be closely involved in advising the political leadership and in helping to ensure accuracy of the information.

Any major infectious disease event will also have serious implications for emergency services and public safety agencies.

Essential role

Emergency medical services could be the first to come in contact with a sick patient, and could possibly be the first to recognise an unusual disease. Once a major outbreak is recognised, the ambulance services will play critical roles in patient transport and may possibly even be able to alert medical personnel when an ambulance crew sees a suspect case. A large outbreak may require moving patients between hospitals to make room for the new urgent cases.

In many jurisdictions, the emergency medical services are part of the Fire Services, so the Fire Services will often be involved either directly or indirectly (see "Epidemic outbreak: a case study", *Crisis Response Journal*, Issue 2, concerning the role of the Fire Services Department in Hong Kong's response to SARS).

Public safety agencies will, of course have key roles, including general and special site security, traffic control, logistics, and many other aspects. After initial recognition of an event, disease control measures will be needed. Such measures may include immunisation (along with advising people to stay home if possible, immunisation is the first line of defence in an influenza pandemic) or distribution of medications. This will require a high level of non-medical support. Administration of vaccines or medicines to the public may occur at mass distribution centres. Providing security at the distribution sites and ensuring the movement of needed supplies will be required. In some cases, house-to-house visits or locating specific individuals may be necessary. Many of these responsibilities will fall to public safety agencies.

There has also been much discussion about quarantine measures and travel restrictions. These should be applied judiciously, and in many cases are likely to be limited; however, public safety agencies will be required for traffic control and, if movement is restricted, for enforcement.

If the event is a bioterrorist attack, and the sites of the initial exposure are specifically identified, site security and proper evidence collection and processing will be essential. Public safety agencies will, of course, be working to find the perpetrators. Environmental decontamination may also be necessary. In many jurisdictions, this may be a responsibility of fire service Hazardous Materials units or other emergency responders.

One of the other points demonstrated by the anthrax attacks is the importance of inter-agency communication (as well as communication with the public). After the Florida patient's anthrax was diagnosed by an infectious disease consultant, public health authorities were notified and immediately began investigating possible sources of exposure. At the same time, once the anthrax outbreaks were recognised as intentional, close co-operation with law enforcement and public safety agencies became crucial.

Working together

Finding the best ways for all these agencies to work together is critical, but remains an evolving process. In the United States, the National Incident Management System (NIMS) is the general model for unified command, co-ordinating the Incident Command Systems of different agencies (see *Crisis Response Journal*, Issue 2, 'A command system for all agencies?').

As with any type of emergency, preparedness is key. The World Health Organisation has a global pandemic influenza plan, and many countries and municipalities have their own national and local pandemic influenza plans. Preparedness is an ongoing, indeed evolving, process, and there is no 'guarantee' of preparedness. Even if there were, the dynamic and often unfamiliar nature of these threats would continue to make preparedness a moving target.

There have also been attempts towards more specific definition and benchmarks. In the United States, these include the planning documents and criteria from the Department of Homeland Security and, for public health, the "Project Public Health Ready" criteria from the National Association of County and City Health Officials (NACCHO).

One can view preparedness as comprising three main elements: Having a suitable emergency plan (which should include provisions for a large infectious disease emergency); training agency personnel for their own roles within the plan; and practising through drills and exercises.

In addition, of course, the appropriate equipment, materials and logistical support must be available, but people – well-trained personnel – are the key and *sine qua non* of preparedness.

The preparedness process is really one of continuous quality improvement: what CRJ

is learned from evaluation and exercises is used to refine the plans and training, and then tested in revised exercises. Exercises that bring together the different agencies, beginning with tabletop exercises or facilitated discussions, are highly recommended. These are excellent ways for different agencies, with their distinct needs and missions, to begin understanding how to work efficiently together. In the training and tabletop exercises we have done with traditional emergency responders, emergency managers, and public health, we have found that each agency had its own traditions and vocabulary. These were often alien to the other agencies, so sharing these viewpoints and learning to recognise each agency's capabilities and concerns were valuable for helping these agencies to co-ordinate more effectively.

Health departments

The idea of health departments (or, Environmental Health Departments in the UK) as emergency response agencies is relatively recent. Many people, including many who work in health departments, often don't think of public health agencies as emergency responders. But, in reality, public health has long been the primary response agency for infectious disease outbreaks, and there are many less obvious examples of emergency response that, historically, have been carried out routinely by public health.

For example, during power failures in the United States, health department restaurant inspectors protected the safety of the food supply by testing whether restaurant food had remained refrigerated. In many jurisdictions, health departments are also responsible for the safety of the water supply, for mosquito control, and for regulating health care institutions, and may provide emergency assistance to hospitals and clinics. In other jurisdictions, some of these functions may be assigned to emergency services or public safety agencies.

Personnel safety

Another serious concern is the welfare of emergency workers. A number of surveys (including those done by Drs. Kristine Qureshi, Robyn Gershon, and other colleagues at the Columbia Centre for Public Health Preparedness) indicate that the willingness of health care workers and emergency responders to respond to catastrophic emergencies is generally high, even though this may vary by type of event and be affected by personal and family safety concerns.

During an outbreak, emergency services personnel may come in frequent contact with people harbouring a contagious disease. Therefore, it is essential to ensure adequate personal protection, providing both suitable equipment and adequate training. As all responders tend to 'rise to the occasion' in an emergency, it is also essential to prevent personnel burn-out by maintaining vigilance for signs of overwork and providing counselling and mental health services as needed.

Ultimately, our ability to deal with infectious disease outbreaks will depend, to a great extent, on the capacity of the public health system and emergency services. This capacity is generally not consistent across jurisdictions, nor do public health systems anywhere in the world have a considerable amount of excess capacity. A large outbreak requires a surge capacity often beyond what is available to most health departments.

Estimating this capacity is extremely difficult, and needs to be built into planning. For example, the NYC Department of Health & Mental Hygiene (NYC DOHMH) and the Columbia Centre for Public Health Preparedness, have jointly developed a programme under which students from our School of Public Health can be called upon to help with outbreak investigations when needed. Many other arrangements have also been developed or tried in other places.

In the United States, many communities have developed Medical Reserve Corps to help provide additional volunteer health personnel during emergencies. Regional mutual aid arrangements can also be valuable if planned and practised in advance.

October, 1918. Influenza epidemic in US St Louis, MO Red Cross Motor Corps on duty

photo: American Red Cross

Use of a jet injector during the 1976 New Jersey Influenza A immunisation project

photo: CDC/Robert E Bates

National agencies

Ultimately, for very large outbreaks, help is often available from national agencies (such as the CDC or federal Disaster Medical Assistance Teams in the United States, or the Health Protection Agency in the United Kingdom), and from international agencies such as the WHO. Internationally, NGOs, such as Doctors Without Borders/Médecins Sans Frontières, the Red Cross/Red Crescent, and others, are also available to offer volunteer health care assistance on request. For bioterrorism, Interpol has recently begun considering ways to further assist public safety agencies and help co-ordinate international police response.

The conditions that allow infectious diseases to appear in new places or to disseminate include migration, worldwide urbanisation, and global travel, among others. These conditions are continuing to increase. As a result, we can anticipate that infectious disease outbreaks will be with us for the foreseeable future.

Therefore, interagency co-operation for appropriate preparedness, recognition, and response to infectious disease outbreaks will continue to be essential. CRJ

Author

Dr Stephen S. Morse *is Founding Director of the Columbia University Centre for Public Health Preparedness, Senior Scientist of the National Centre for Disaster Preparedness, and Associate Professor of Clinical Epidemiology in the Mailman School of Public Health, Columbia University, New York City. He is the editor of Emerging Viruses (Oxford University Press, 1993), which was selected by the "American Scientist" as one of the 100 most important science books of the 20th century. SSM is supported by CDC Co-operative Agreement U90/CCU224241 and by the Arts & Letters Foundation.*

A new centre for disease control

A new European agency has been established to help strengthen Europe's defences against infectious diseases, such as influenza, SARS and HIV/Aids. **Dr Karl Ekdahl** of the European Centre for Disease Prevention and Control speaks to *Crisis Response Journal*

The European Centre for Disease Prevention and Control (ECDC) will work in partnership with national health protection bodies across Europe to strengthen and develop continent-wide disease surveillance and early warning systems. The aim is to pool Europe's health knowledge "So as to develop authoritative scientific opinions about the risks posed by new and emerging infectious diseases," according to the European Commission.

An inaugural meeting of the Centre's Management Board was held in Stockholm in September 2004 and on March 1, 2005, Mrs Zsuzsanna Jakab took up her post of Director of the new European centre.

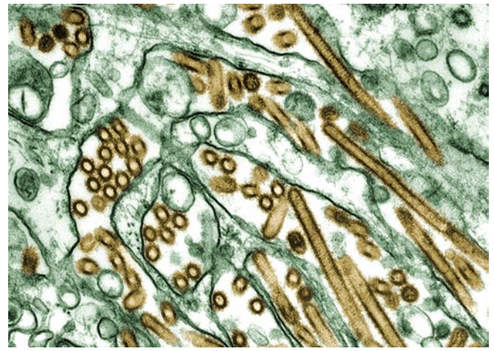
Reinforcement

Karl Ekdahl, MD, PhD, Associate Professor, detached National Expert for the ECDC, spoke to *Crisis Response Journal* to explain the background to the agency's establishment. "The Commission has managed a Communicable Diseases network since 1999," he said. "But there was a need for a substantial reinforcement of this system for the EU to be in a position to control communicable diseases effectively.

"In 2000 and 2001, two external evaluations of the Network highlighted weaknesses in the functioning of existing structures and reviewed options for a more effective response capacity at European Union level." All those involved favoured the creation of an EU-level centre.

The ECDC is not to be a replica of America's CDC: "It will be a less centralised structure," according to Dr Ekdahl. "It will build upon the existing competence, expertise and infrastructure in the member states."

For the moment, the centre's mandate focuses on communicable diseases and health threats of unknown origin, such as: "A large outbreak of a disease of unknown aetiology." So it will not advise or be involved in other medical emergencies such as chemical, radiation, mass trauma, and so on. However: "After an evaluation in 2007, this mandate may be extended to other areas," Dr Ekdahl explained.



Avian influenza viruses do not usually infect humans; however, several instances of human infections and outbreaks have been reported

photo: CDC/C. Goldsmith

So how prepared is Europe for pandemics or large scale epidemics? According to Dr Ekdahl, preparedness is "Generally good, but is still not optimal. It is important to give support to those members states with the weakest infrastructure; this will benefit all of Europe."

In the short term, pandemic influenza is very high on the list of biggest threats, "We will have another flu pandemic," he says, "But we do not know when it will hit us. Therefore, flu preparedness is something that cannot wait."

Should there be an outbreak of influenza or avian influenza, the ECDC's remit would be surveillance, risk assessment and scientific advice. Responsibility for response lies at member state level, with the Centre performing co-ordination activities.

But there are other, equally important threats, including the HIV epidemic, and an ongoing problem with antimicrobial resistance.

The spectre of a deliberate release is always in the background: "In some countries, the preparedness is good," while in others it could be greatly improved," sais Dr Ekdahl.

Early detection is one of the difficulties in diagnosing a deliberately targeted release. "In the future, we will need alternative, timely surveillance systems with enough sensitivity to detect illness in the population before it could be detected through laboratory verified test results," he said, adding: "Another problem is to build up the logistics and laboratory capacity so that we can quickly identify the aetiology of the 'unknown disease'. Having reference laboratories for unknown pathogens could be one solution."

A further complication to be considered is that such an event might be only one of several planned attacks within a short period of time.

When asked about release of harmful substances into drinking water supplies or the food chain, or soil contamination – whether these be deliberate or accidental – Dr Ekdahl commented that again, responsibility for action lies on the single member state affected, while the Centre would provide the advice and support.

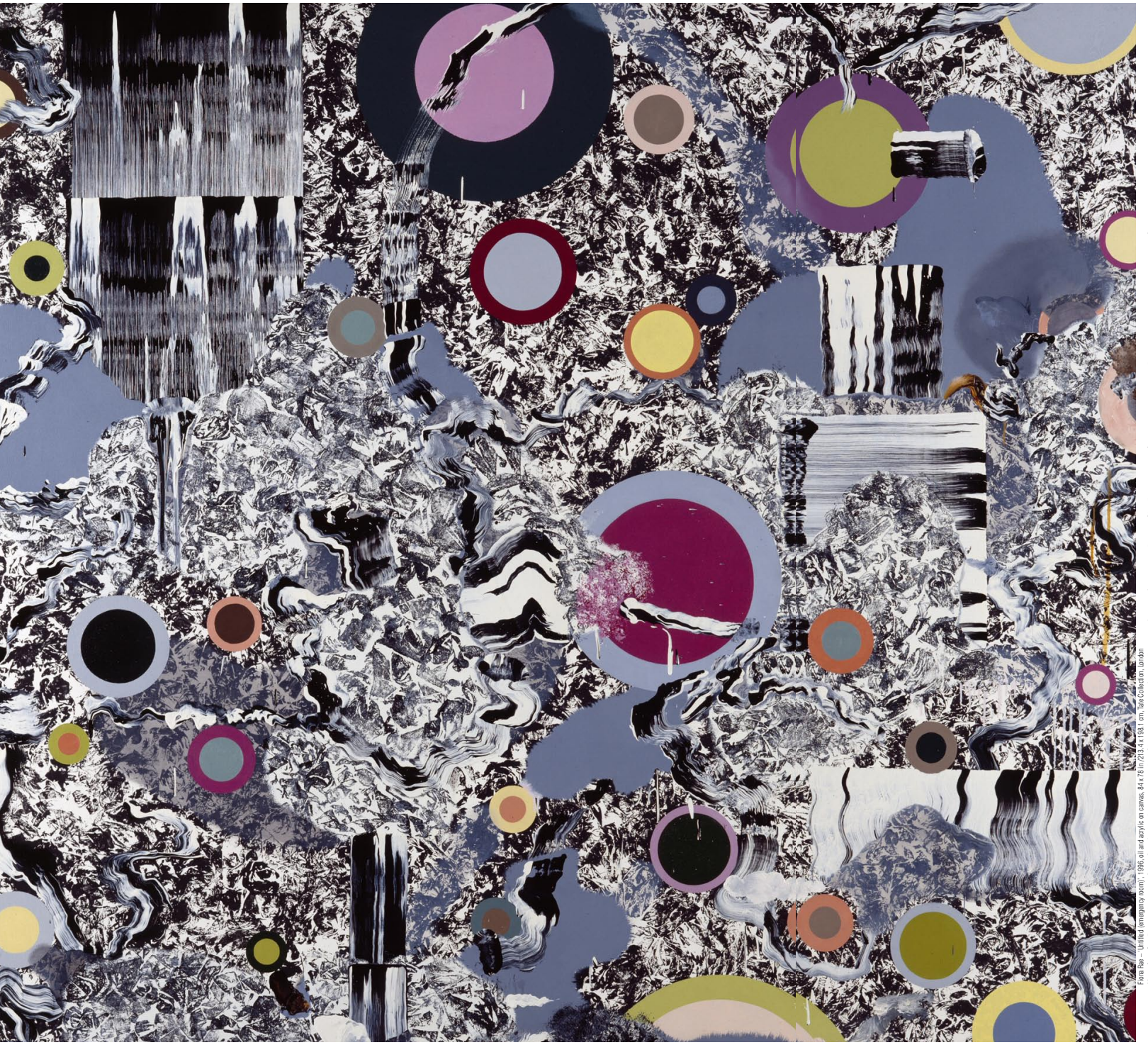
Communication

As the Centre is so newly established, there are many areas still under discussion. Communication strategies to disseminate its messages and advice are being planned at the moment. When asked whether the Centre will consider aspects specific to emergency planners and non-health emergency responders, Dr Ekdahl answered that this is an area that will be discussed, "if so requested."

It is early days yet and it remains to be seen exactly how the Centre will grow into its role, but everyone across Europe must be hoping that the ECDC will become a valuable weapon in the fight against major outbreaks of communicable disease, whether these be natural or caused by terrorist attacks. CRJ

Crossing the Rubicon

This is an age of total surprise, strategic traps and operational swamps, say **Dr Patrick Lagadec** and **Professor Pierre Carli**. New global challenges mean a looming watershed in emergency response and critical care strategies



Fiona Rae – 'Untitled (emergency room)', 1996, oil and acrylic on canvas. 84 x 78 in (213.4 x 198.1 cm). Tate collection, London

'Untitled (emergency room)' by Fiona Rae, epitomises the paradigm shift in 21st Century crises, says author Patrick Lagadec. Complex, fuzzy, inconceivable, fragmented ... today's threats and challenges occur in a context of instability and poorly defined frontiers; responders must deal with sudden and unexpected mutations in a crisis scenario. Intellectual strategies must evolve

EMERGENCIES HAVE ALWAYS called for the most efficient operational capacities, with fast response being the core paradigm. The best preparation comes from prior scenario clarification, prior operational planning, ready-made tool-kits, regular drills and the most efficient instant response: alert, mobilise, rush and save. When you hear the siren, it is no longer the time to think, to question the rules of engagement. It's time to act and apply what you know, what you have been trained for. This is the ultimate strength of our emergency teams: ready to rush, ready to save.

The last decades of the 20th Century showed that we had to strengthen these abilities considerably. The scale and complexity of disasters increased steadily, with more infrastructure to destroy and many more people to kill. We had to prepare more comprehensive plans and more developed organisational responses. Modern countries had to prepare for large operational theatres, with many bodies acting together for very long periods, under the severe scrutiny of the media.

But the 21st Century opens a new era. Increasingly, we are faced with: a qualitative jump in severity (for example the December 2004 Tsunami and the Madrid attacks); a shift from uncertainty to ignorance (Prions, mutating viruses and potential pandemics); a shift from site accidents to network domino effects (continental black-outs, such as in the US and Canada, August 2003); globalisation and speed of spread (the SARS contamination, the conjunction of unknown virus, air travel and hubs worldwide); unthinkable effects in globally interdependent societies with new vulnerable textures (the heat waves, for instance); and, most disturbingly of all, the inconceivable (the age of hyper-terrorism, when some have voluntarily chosen to embrace the universe of death).

This is an age of total surprise, strategic traps, and operational swamps. Naturally, rescuers still have to rush, save and solve. But in order to save, they must stay alive. And to solve, they must address emerging issues, not ones that prevailed previously, in a former age. The command is crystal clear, "Do not fight the last war".

Unprepared

Let's remember 1914. General Bachelet said: "We marched into the industrial era with the agrarian mindset of the previous age". To quote one of his British colleagues: "We were caught totally unprepared. In 1940, we were fully prepared – for the First World War".

The "9/11" Commission Report echoes these comments: "[it] was different from anything the Government had faced before". Essential gaps were underlined: "We believe that the 9/11 attacks revealed four kinds of failure: in imagination, policy, capabilities, and management." The Commission clarifies the structural problem: "Imagination is not a gift

usually associated with bureaucracies."; and observes the result: "The agencies are like a set of specialists in a hospital, each ordering tests, looking for symptoms, and prescribing medications. What is missing is the attending physician who makes sure they work as a team". The Commission could have added that what is missing, ultimately, is to know what it is about, where to go, with whom, and how.

The core of the issue is not easy to accept, if risks and crises cross the Rubicon – ie follow new patterns outside our mindsets, then our usual modes of response are no longer as efficient, and probably counterproductive.

When traditional responses no longer fit, the focus must turn to questions. If you hurry in the wrong direction, you could be a hero, but a dead hero is just a rescuer lost. The classic response "We are here to act, not to think" becomes a roadmap to failure.

Global challenge

This global challenge indicates a looming watershed in emergency response and critical care strategies.

The French organisation, which has proven its most advanced efficiency on many occasions, can be used as a good example to show the crucial need of a fresh approach. Pre-hospital emergency services provide an example for the analysing breakdown during a major disaster. The French system, started more than 30 years ago, consists of a chain of care from the site of the catastrophe to the hospital.

The system has two essential features. The first is the establishment of an advanced medical post (AMP) near the site in which medical teams in their mobile emergency response units start emergency treatment based upon triage. The second feature is the medically controlled dispatch system, which can direct patients not just to the nearest hospital, but to all available medical facilities, whether they be close or far away from the disaster site.

The immediate pre-hospital emergency response following a disaster is called the Red Plan. This is associated with a further White Plan, which has provisions for sending patients to a number of hospitals.

This system is described in detail elsewhere in relation to terrorist attacks (Carli P, Telion C, Baker D, Terrorism in France. *Pre-hospital and Disaster Medicine,* 2003, 18 :92-99).

Such a system has set a high breakdown point so that following a terrorist attack or natural disaster, more than 100 victims can be given a degree of emergency care which matches that provided daily in normal practice.

However, certain factors leading to an organisational breakdown can occur in such a plan, not least of all a large number of victims. If these run into thousands, the hospital resources available may be overwhelmed. Casualties may also be spread over a very large area, as in the case of the explosion at the AZF plant in Toulouse in 2001, impeding recovery and initiation of emergency medical care. Equally, release of CBRN materials in a terrorist attack may disrupt the plan considerably, since pre-hospital medical personnel may not always be competent to operate under such conditions.

A number of solutions are being studied to try to raise the threshold level of disaster response failure and therefore to avoid breakdown in the provision of emergency care.

It is also important to put in place dynamic strategies that permit identification of potential response breakdown and to avoid problems that could be created by the emergency response plan itself being too rigid or dogmatic.

The December 2004 tsunami demonstrated a qualitative jump in the severity of disasters that we are facing (pictured above: Damage in Indonesia)

Other important factors are not always taken into account in emergency response planning. These include an attack on the emergency responders themselves, either as the target of a second bomb or by a chance factor such as the collapse of the twin towers of the World Trade Centre. By the same token, there may be accidental or deliberate destruction of Ambulance or Fire Service control and dispatch centres, or even of the hospital facilities themselves, which would cause an irreplaceable and catastrophic disorganisation.

Communications

Loss of telephone communications would also be a major factor in reducing organisational response, as was seen in Toulouse when the communications network was destroyed during the AZF explosion.

The fact that the breakdown point in pre-hospital care can be caused by a domino effect is important in causing disruption at hospital level. This was seen during the Paris heat wave in August 2003, where the absence of any pre-hospital preventative measures and the limited availability of general practitioners, led to more than 2,500 seriously ill patients being admitted by the public hospital service in Paris.

The consequence of pre-hospital breakdown is therefore to put the hospital itself in the front line. This is not without hazard since contaminated victims (from a CBRN attack) may cause secondary victims inside the hospital itself. To limit this possibility a special Plan Blanc (White Plan) to deal with mass CBRN casualties has been created for each hospital, backed-up by special training and the provision of protection and decontamination equipment.

It is possible that when both pre-hospital and hospital response breakpoints are reached, the worst possible scenario will ensue, where there is loss of all means of communication with emergency medical responders outside the hospital, partial destruction of the emergency structures, as well as loss of a certain number of emergency response personnel. Such a nightmare situation is probably rare but it is important to consider the predicament of a doctor working in isolation with very few resources and a large number of casualties.

'Lone doctor'

In such a situation the tasks of the 'lone doctor' may lead to a reversal of the normal disaster medicine priorities. Thus the classical role of the emergency medical responder as an organiser and information channel is altered when the doctor finds himself/herself temporarily alone with a large number of victims. He/she still has, above all, a major role to play in providing an informed reconnaissance about the disaster and ensuring that the limited resources at his/her disposal will benefit the largest number of people. Direct medical care should only be started after the first two actions have been taken.

Consideration of the chain of support in pre-hospital care and the possibility of reaching the breakdown point in both the pre-hospital and hospital areas, show that two factors must be taken into account in planning for such a situation:

- A cohesive response that allows an overall continuation of control from the disaster site to the admission of victims at the hospital
- A system which allows for the different backgrounds of the emergency services involved (Police, Fire and Ambulance) as well as a common training pathway for these services, to allow them to work in circumstances very different from their daily routines.

Rapid Reflection Forces

New challenges call for new responses. But more is needed, such as the ability to ask questions. This is not obvious at all, especially within organisations where emergency response has to be swift, direct, pre-planned, and followed by the book. The reason is clear. When the issue is outside the box, your pre-planned policy, strategy and tactics have to be reconsidered, often radically. In such cases, which may well be the 'normal' scenarios from now on, you need the capacity to ask questions, in addition to the usual capacity of being able to deliver pre-organised responses.

In emergency organisations, responders are trained to face typical situations. When new risks arise, additional plans are prepared. Much effort is devoted towards anticipating the event, clarifying the needs, and fixing the response. But something quite different has to become the core of our culture: preparing to face the unthinkable.

This brings a radical change in preparation and training strategies. The key becomes the ability to clarify the challenge, the new rules of engagement are outside the usual mindsets. For instance, our usual drills and simulation exercises have to evolve considerably. The goal is less to control the ability of each person and organisation to stick to the rules, and adapt to tactical surprises, than to work on the ability to 'map' the issues, to assure coherence and efficiency in a highly unstable and fuzzy context.

Our experience shows that this task is not so difficult: progress can be extremely rapid. But the most acute challenge is to convince people to leave the reassuring world of 'responses' and move to the unknown universe of open questions.

Take part in a simulation and training session

Clearly, in many official bodies there is an urgent need for bold initiatives to meet the challenge. A principle should be kept in mind: when challenges are so high and complex, it is necessary to keep it simple, and to adopt a step-by-step approach. The authors would welcome any request for help.

More precisely, together with Crisis Response Journal*, they will be organising a half-day innovative simulation and training session with those who are interested taking part. The idea will be to play it simple, through the Internet.*

Do not hesitate to step in and join this interactive and innovative move. There is no time to waste.

■ events@cavamedia.com

If reality is inconceivable, then we have to invent inconceivable paradigms

People accept being tested to see whether they know how to follow rules; but they react in a negative way if invited to enter an open process, where the challenge is not to follow, but to invent.

When your usual 'rush and save' organisations and tools are no longer adequate, it is crucial to have some people who can sit back and adopt fresh views, to consider radically new hypotheses and strategies. After a rapid reaction force we need a new concept: the Rapid Reflection Force.

The concept of Rapid Reflection Force does not grow out of nowhere. Quite evidently, people have always been thinking and reflecting during large-scale emergencies. In any Emergency Operations Centre, a corner is devoted to decision-making and, in a sense, to reflection. This function must be clarified, recognised, and prepared. It has been at the periphery, and, for unconventional emergencies, it must now come to the fore. If not, tactics tend to overrule any other piece of work. Before any rush, unconventional issues and deadly traps must be clarified. If this vigilant and strong effort is not developed and secured, the crisis environment soon becomes the kingdom of tactics and micro-management.

Strategic observers

To fight this wholly normal tendency to lose sight of policy and strategy, some developments have already been implemented. For instance, in the late 1990s, we introduced the notion of 'Strategic Observers' during crises and simulation exercises, especially in various large companies (in the field of critical infrastructures). In a nutshell, a pair of top leaders were asked to be present, from the beginning to the very end of a difficult episode; to ask questions, again and again: "What if? What next? Who did you forget? Didn't you jump to a hasty conclusion? Could you clarify the hidden issues?"

Difficult function

This is a difficult function to endorse; it is so comfortable to reassure everyone that those in charge have the right answers, that everything is under control, that our 'crisis as usual' textbook techniques are to be applied...

These observers were chosen taking into account some basic criteria: their in-depth knowledge of the organisation; the respect they had within the crisis group; their ability to speak to the CEO. Most noticeable of all was their outstanding ability to move in a shaken context and instable environment. These people were not terrified by questions outside the box. On the contrary, unconventional challenges stimulated their strategic and operational creativity.

We now have to go much further. In any crisis centre, and especially at national level in case of unthinkable events, Rapid Reflection Forces have to be set up. Their function: to clarify the unconventional. What are the hidden traps? Who are the new actors? What is new in terms of space and speed, domino effect complexities, uncertainty and ignorance?

We don't want an academic-type think-tank able to clarify the issues within the next few months. We need a group of people accustomed to strategic issues and operational environments.

These people do exist but they are often dispersed – and not trained, at least collectively. They must be brought together in teams and trained in order to extend their experience and skills. In building these teams, we must be careful not to fall into the usual rut of assuming that members should be drawn exclusively from established circles: the goal is not to have those who excel in 'business-as-usual' management. The key is the ability to think and to ask beyond the usual boundaries. But, in any case, new strategies have to be adopted to train these people: unconventional simulations, systematic debriefing techniques for the most unthinkable situations; with the aim of developing the ability to think and act outside the box, to open new paradigms and strategies.

Usually, crisis training is tactic oriented. It must shift to an entire new universe: the focus must be on the policy, which requires imagination, flexibility and creativity. Not in theory, but in practice. CRJ

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Queensland's all-hazards approach

Queensland in Australia has redefined its approach to emergency management by incorporating fire, ambulance, counter disaster and rescue within one department, writes **Director General Michael Kinnane**, in part one of this article looking at integration and co-ordination between these agencies

"On Saturday, January 18, 2003 the bushfires, which had been burning in the hills to the west and south-west of Canberra, reached the perimeter of the city. The dryness of the vegetation after a prolonged, severe drought and the high volume of flammable fuel – coupled with weather conditions that were extremely conducive to fire – meant that once the fires gained a hold they proved extremely difficult to contain or suppress. Indeed they were accurately described as 'unstoppable'".

"Tuesday, September 11, 2001, dawned temperate and nearly cloudless in the eastern United States. Millions of men and women readied themselves for work. Some made their way to the Twin Towers, the signature structures of the World Trade Center complex in New York City. Others went to Arlington, Virginia, to the Pentagon. Across the Potomac River, the United States Congress was back in session. At the other end of Pennsylvania Avenue, people began to line up for a White House tour. In Sarasota, Florida, President George W. Bush went for an early morning run."

Common theme

"Since the cataclysmic attacks on the World Trade Center and the Pentagon on September 11, 2001, the United States has held its collective breath awaiting the next acts of premeditated and wanton terrorism. While political attention has focused on international threats, acts of terrorism also originate domestically, as the bombing of the Alfred P. Murrah Federal Building in Oklahoma City attests. And the medium of choice for the next terrorist attack could be slow and insidious rather than explosive. The anonymous mailing of anthrax spores to selected human targets shortly after September 11 demonstrated the vulnerability of our most basic daily support systems to biological, chemical, or radiological disruption."

The introductory paragraphs above are from reports that all focus on the lessons of disaster management, yet stem from three entirely different situations. Despite the differences, a common theme emerges in the lessons for emergency managers. The report into the Canberra bushfires talks of the need for tighter integration between emergency service agencies and improved interoperability of supporting communications networks.

The 9/11 Commission Report identifies the need to promote multi-jurisdictional mutual assistance compacts and the need for communications to link multiple agencies across different jurisdictions. Finally, the National Academy of Sciences forum for the hazard research community echoes the need for effective organisation, effective communication, and the need to break down "distrust, territoriality, and reluctance or inability to share information".

The lessons are clear from these and many other after-action reviews. If we are to respond effectively to the emerging threats to our world, whether they are man-made, or as a result of our changing interactions with our environment, we must collaborate in putting together responses, co-operate in their implementation, co-ordinate our activities and ensure we can communicate across both the electromagnetic spectrum and the different cultures in emergency services. Information sharing, joint training, and unified command and control must become second nature, and integration and interoperability must become watchwords for each individual agency charged with providing public safety.

These lessons are not new. However, in learning how we can better apply them, we can often gain from shared experiences, and I am delighted to be able to put forward the Queensland perspective to contribute to our communal pool of knowledge.

The old paradigm of response to, and suppression of, accidents and disasters, has given way to a more proactive approach of community engagement, safety awareness programmes, prevention strategies and disaster mitigation

'Smart State'

Queensland is Australia's second largest state, covering some 22 per cent of the continent in the northeast corner and an area of some 1.77 million square kilometres. Our population of some 3.75 million is the fastest growing in Australia. However, despite the annual increase of around 80,000, the overall numbers are no match for our size. Geography, or 'the tyranny of distance' is an ever-present factor for us. As part of Australia's federal system, the State is governed by a democratic parliament that oversees some 25 government departments. Like much of Australia, primary industries – agriculture and mining – and tourism are the most significant economic contributors. However, Queensland's economy is changing and diversifying as the community and businesses, encouraged by Government initiatives, embrace the Government's 'Smart State' ethos.

To foster new industries, the Government has invested billions in science research and innovation, including millions through the Smart State Research Facilities Fund. Smart State industries, like biotechnology, nanotechnology, nutraceuticals, new media, aviation and aerospace, are employing an increasing number of Queenslanders. Exports have grown by 24 per cent over the past six years, and now account for almost a quarter of Queensland's economy.

Queensland's climate is, in many ways, perfect, with warm days and cool nights in summer, and short winters bringing cooler nights and mild sunny days. The State's coastline stretches some 7,400 kilometres, from the border with New South Wales in the south, round the most northerly point of Australia and the Gulf of Carpentaria to the border with the Northern Territory in the northwest. Islands in the Torres Strait stretch the jurisdiction even further, to within four km from the coast of Papua New Guinea. While much of our population is concentrated along the coast and immediate hinterland, Queensland is Australia's most geographically decentralised state with some 35 per cent of the population living outside the major urban centres.

Despite its balmy weather, Queensland is the most disaster-prone state in Australia. In round terms, the State averages a landslide, two cyclones or tornados, four floods and two to five severe storms each year, in addition to the thousands of grass and bushfires that we expect as an ordinary part of summer. Given the significant impact of these occurrences, and with research indicating that such natural events are likely to get worse and occur more widely, disasters are not something Queenslanders are able to ignore. We have considerable experience, and dealing with the consequences of disasters has become a routine and integrated way of life.

I also believe we have something to contribute from the experience of managing thinly spread resources. Queenslanders are dominated by geography. The challenges of providing emergency response to regular disasters over a very large area with a small population base have driven us to make the most we can out of a limited piece of cloth. Queensland has also experienced the same changes in information intensity, in public expectations of service delivery and demands for accountability that characterise much of life in modern democracies. No government department will ever claim to have enough. But in Queensland we really have had to focus on this issue to ensure we use our resources efficiently.

Environment lessons

Queensland's model of emergency management has developed in response to both the constant features of our society and its changing requirements. It acknowledges the lessons we have learned in the past decade and addresses the ever-increasing demands of our environment. Prior to 1989, when emergency services in Queensland were placed under a single bureau, fire, ambulance and counter disaster services were provided on a local, independent and decentralised basis.

The State's fire services were provided through 81 local fire brigade boards, with the urban and

rural services operating as separate organisations. In 1990, the Fire Services Act replaced the boards with a single state-wide Fire Service incorporating the Rural Fire Service. Following a review in 1996, the Queensland Fire and Rescue Authority was established as a statutory authority.

Ambulance services were provided through a series of ambulance transport brigades run by 96 separate local ambulance committees. The Queensland Ambulance Service (QAS) was fully incorporated into the then Bureau of Emergency Services in July 1991, following a Parliamentary inquiry into ambulance services. After a further review in 1996, the QAS was also established as a statutory authority. In 2001, the statutory authorities were abolished and fire and ambulance services were administered through the Department of Emergency Services, providing a single agency and a platform for an unprecedented level of co-ordination and collaboration at all levels.

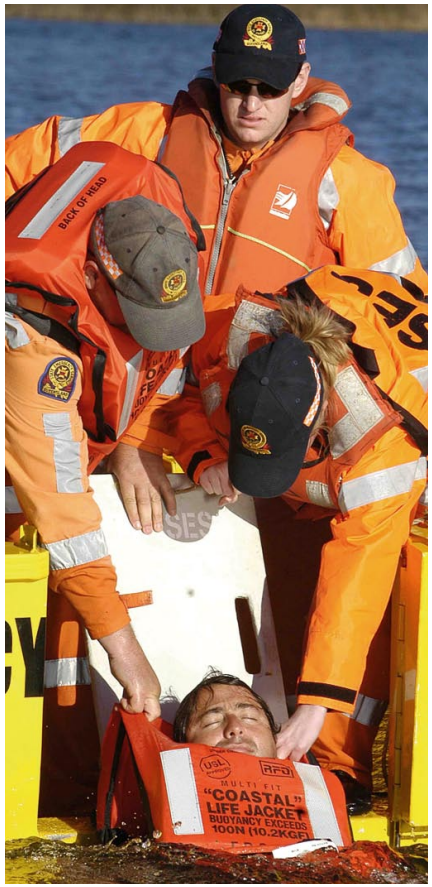
Reform

Each service is now headed by an operational commissioner who reports to the Director-General. The Director-General is the CEO of the Department, as well as of the operational services.

A range of legislative reforms, significant organisational and cultural change and valuable lessons from a number of major incidents have changed the face of emergency management in Queensland. The result is one integrated department, with standardised equipment and training, ensuring optimum co-ordination of emergency services across the State and at multi-levels with national and State Government agencies, Local Government councils and communities.

Today this single department now delivers ambulance, fire and rescue services, together with disaster management and aero-medical rescue, through our own and community-based helicopters. The Department looks after our volunteers who staff the Coastguard, Volunteer Marine Rescue, Surf Life Savers, Rural Fire Service, and State Emergency Services.

The Department responds to a variety of different customer and environmental demands by developing specific solutions under a flexible service delivery model. Joint Emergency Service units adapt our volunteer service to remote and thinly populated districts. Emergency Service cadets provide a recruiting base to sustain staff numbers in the longer term. Specialist units form a grouping specifically tailored to respond to the threat of terrorism and of chemical, biological, radiological, incendiary and explosive (CBRIE) disasters. A multi-service Community



Some 85,000 volunteers staff the Coastguard, Volunteer Marine Rescue, Surf Life Savers, Rural Fire Service and State Emergency Services

Engagement Unit provides advice regarding flexible service to our remote communities and ensures that the indigenous community has its needs met. Finally, Regional Planning and Co-ordination Teams, comprised of regional heads of service and the business support division, ensure an integrated approach to daily business in our regions is taken across all three of our operational services.

The old paradigm of response to, and suppression of, accidents and disasters has given way to a more proactive approach of community engagement, safety awareness programmes, prevention strategies and disaster mitigation. Our commitment to the community and the state of Queensland is summed up in a vision statement, which reflects the inclusive nature of our department where all staff are recognised for their contribution, the innovative 'Smart state' approach espoused by the Queensland Government, the need for co-ordination between all parts of the organisation and our emphasis on outcomes: *Moving forward as one innovative, integrated Department ... recognising with pride our various operational services, together with our essential support services ... so that we maximise coordination, planning and use of resources ... for the most effective operational service delivery to the community.*

This statement of commitment to our community has been put together with much thought. Every word has significance. It sums up, I feel, the right balance in this business of integration: absolute commitment to the synergies that collaboration brings to operational service delivery, but equally clear recognition of the roles, history, and culture that exist in our individual services.

Joint approach

The foundations of our joint approach are a focus on relationships and partnerships, and a solid legislative and administrative base. We have fully adopted the 'all hazards' approach to disasters, in recognition that, for those who respond and manage the immediate consequences, the cause is of lesser importance.

The Queensland Disaster Management Act, passed in 2003 and sponsored through the Department, enshrines this approach. It categorises disasters as natural or human-caused, and allows emergency services staff the same powers in either case.

A further Act, The Dangerous Goods Safety Management 2001, sets out the requirements for the safe storage and handling of dangerous goods, and the safe operation of major hazard facilities. Additionally it authorises the actions of our specialist units in providing advice and help during hazardous materials emergencies. While other Acts cover agency- or service-specific issues, this common legislative approach gives all our emergency services the same legal basis for response and recovery operations.

A firm administrative basis is essential if our services are to be able to mount sustainable operations for a particular event and continue service delivery in other sectors. I use the term 'administrative' loosely, to refer to all the functions that support operations. Co-location of facilities has been a significant enabler of our joint administrative approach. The Departmental Emergency Services Complex at Kedron Park, Brisbane, houses the state headquarters of all three operational services, as well as the headquarters of Brisbane Region, the State Disaster Co-ordination Centre and the key supporting business units. The facility also incorporates a 24/7 Ambulance station. All the operational divisions are supported by consolidated Business Services incorporating finance, information systems, human resources, industrial relations, and organisational health.

Operational support of the three services is also combined in one branch, and delivered through centralised vehicle fleet management, communications and technology support and property and facility management. This enables us to take a truly strategic approach to long-term equipment programmes, such as communications networks, and to capital works programmes when planning and building new facilities – particularly important, considering the State's rapidly increasing population.

A combined Ambulance and Fire communications centre in Brisbane not only controls the despatch of emergency services throughout the region, but provides important redundancy capacity for neighbouring regions. Ambulance and Fire stations are increasingly occupying new, shared sites, further increasing understanding and co-operation between the services, as well as between Ambulance and the State Health Department.

Implementation

Building on these foundations, our joint approach touches on every aspect of the Department's activities – starting with training and education. Our Queensland Fire and Rescue Services Training Academy already has an exceptional reputation in the Asia-Pacific region. Its excellent, purpose-built practical training facilities for fire, technical rescue, and urban search and rescue have attracted a wide cross-section of participants, including those from Police, Defence, and other states and across the region.

We are building on this reputation. The new Queensland Combined Emergency Services Academy has opened with a wider, and more strategic, range of courses. The Academy will oversee both individual specialist service training and higher level joint training, specifically directed at joint command and control. It will be a national centre of excellence, where operational managers from all our emergency services can come together, to learn from each other and form new relationships, away from their work.

Public-private partnerships are an important aspect of this new initiative, particularly with the Port of Brisbane and the neighbouring oil refinery.

We are also in the process of introducing the Vector Command simulation system across the department and in co-operation with other jurisdictions. We want to build on the scenarios to include whole-of-government planning that covers disasters and counter terrorism. Our vision of the future sees a facility, through which regional multi-agency teams of all services can pass to develop their own interoperability, in a realistic working environment.

The Academy will help to crystallise our extensive experience of conducting combined agency training across the State.

The Department has been running Joint Emergency Service Training (JEST) courses, in conjunction with the Queensland Police Service, for emergency managers at all levels of government, for the last 12 years. In the 1990s they were specifically targeted at the resolution of hazardous materials incidents that are prevalent in a country with a high proportion of primary industries. Over 5,000 emergency services workers from all disciplines, including Police and our own State Emergency Service, took part in our early programmes.

A combined Ambulance and Fire communications centre not only controls the despatch of emergency services throughout the region, but provides important redundancy capacity for neighbouring regions

CBRN capability

However, during our preparation to host events during the 2000 Olympics, Queensland began developing its capacity to respond to a terrorist incident in which Chemical, Biological or Radiological agents were used. From 2002, JEST courses have changed focus, concentrating firmly on the resolution of CBRIE incidents from the management perspective, and the integrated multi-agency approach that this requires.

Such courses are now run over three days and take participants through the theory, procedures and practice of dealing with a major deliberate hazardous material event – the most complicated probable disaster that they will face. This year alone we have put around 190 managers holding leadership appointments through the training.

Participants have come from a diverse range of agencies, including airport authorities, the postal service and environmental protection.

We have much more to do in this realm of joint training, however we are already well down the road. The one lesson that already stands out is that training and education is essential – on the broadest possible basis and particularly at the most-difficult-to reach higher levels. CRJ

■ *Next issue: In Part II of this article, Director General Kinnane, will discuss: Policy, procedures and structures; Relationships and partnerships with other state government agencies, different levels of government and the community; and engaging the wider community. This article is based on a presentation Mr Kinnane made at last year's International Joint Operations Command Conference in Toronto, Canada.*

Sources: *Inquiry into the Operational Response to the January 2003 Bushfires in the ACT. Ron McLeod AM August 2003.*
The 9/11 Commission Report. July 2004.
Countering Terrorism: Lessons Learned From Natural And Technological Disasters. February 28 – March 1, 2002. National Academy of Sciences, Washington, DC

Author

Michael Kinnane *was appointed Director General of the Queensland Department of Emergency Services in December 1998 after having held a variety of executive positions in Emergency Services.*

International rescue teams part III: operations and co-ordination

In this third part of the series, **John Holland** and **Stuart Kinsey** review operations and co-ordination in the disaster zone

Experienced and well-rehearsed teams are able to respond quickly and the majority work well within a co-ordinated structure. Problems are exacerbated when teams and individuals arrive late and unsolicited

IN PART ONE we looked at the selection and training of response team members to enable them to operate in a disaster zone as effective team members. In part two we looked at equipment requirements, INSARAG guidelines and the response mechanisms required to enable a team to respond quickly in support of the affected countries' resources. In part three we are going to view operations and co-ordination in the disaster zone.

A disaster situation is characterised by intense immediate needs, challenging priorities, destroyed or damaged communications, transportation systems and infrastructure. Couple this with a rapid influx of humanitarian assistance providers, highly stressed local government and other agencies, along with a confused and stressed community, and you have a recipe for chaos. Prompt co-ordination will help to reduce the chaos stage.

Co-ordination is there to support the local government and agencies as well as incoming international resources and should be treated as a valuable resource.

Mobilisation

Time is one of the most important factors in search and rescue operations following a disaster, so it is important that local emergency services, national emergency response and any international response is mobilised quickly. Any delay will undoubtedly cost lives.

Good co-ordination is equally important from an early stage. If the response effort is not well co-ordinated; again lives will be lost.

The co-ordination should start prior to the occurrence of any disaster through well-rehearsed emergency plans. Unfortunately, in the majority of rapid onset situations, this is not the case or sometimes, key personnel who would be part of the co-ordination system, are directly affected by the disaster. If some structure of co-ordination is in place then there is something to build on when further support arrives. If no co-ordination is in place, then it falls upon the UN to establish an on-site operations co-ordination centre (OSOCC). However, if the UN is not present, this role usually falls upon some experienced search and rescue teams or other organisations that are well rehearsed in supporting co-ordination.

It is imperative that any team responding to a disaster operates under the authority of the host country and within the framework of any established co-ordination systems. There should be no place in disaster response for teams that want to operate independently and outside the co-ordinated effort, irrespective of whether they are GO or NGO teams.

Experienced, well rehearsed teams are able to respond quickly and the majority work well within a co-ordinated structure. Problems are exacerbated when teams and individuals arrive late and unsolicited. There are too many flag wavers who complicate the rescue effort – they are inadequately trained and equipped and will jeopardise the response and co-ordinated effort from the experienced professional teams. The response of unsolicited teams has to stop, otherwise governments will be even more reluctant to accept international help, even when desperately needed.

OSCOCC following an earthquake

The first three to four days always involve an overwhelming need to locate people trapped within collapsed buildings.

This presents a unique co-ordination challenge.The actions of local and international SAR teams and local authorities need to be harmonised. For this purpose, an OSOCC has to be established as soon as possible.

The task of the OSOCC goes much beyond that of just being a source of information for SAR teams; it must also take into account the needs of the affected people including food, shelter and medical care.

For SAR co-ordination, the OSOCC has to be central to the DA and have what SAR teams want for it to be effective. The centre has to be a resource of information as well as a meeting place for sharing and augmenting that pool of information.

Below is an example of an effective OSOCC following an earthquake in Nahrin Afghanistan on March 26, 2002, with a Magnitude of Richter scale 6. 4

Example of quick effective Co-ordination

Initial information was reporting up to 2,000 fatalities.

Working with post conflict humanitarian aid UNOCHA (United Nations Office for the Co-ordination of Humanitarian Affairs), DFID and NGOs were operating in the region, due to this, the response to the earthquake was swift and within a few hours a joint OSOCC was set up.

At first light with resourses pooled, an assessment using two WFP (World Food Programme) helicopters and five 4X4 vehicles ensued. Incoming information was duly processed. Halfway through the day, approximately 235 fatalities were recorded, MSF (Médicins sans Frontières) had set up a small field hospital and were coping well. The helicopters were dealing with the more urgent casualty evacuations.

With a prompt and detailed assessment achieved, much of the aid initially requested was stood down and all international SAR teams were requested not to attend.

This example proved the benefit of a quick response, working together and trust in the abilities of others with experience ensured that a co-ordinated approach helped those in need and did not waste the valuable resources of international SAR teams. A similar timely and efficient co-ordination to a larger scale disaster would save not just save finances, but also lives.

This worked well because experienced people were in the country at the time of the disaster. Unfortunately this is not always the case.

Key factors

If search and rescue operations are to be co-ordinated effectively, giving those missing the best possible chance, several key factors should take place:

- Only teams registered or accredited by the UN and that have a proven track record should be able to respond internationally. These teams should be familiar with the UN co-ordination system and how to set up reception centres for receiving international responders, and/or support co-ordination (OSOCC) should it not already be in place;
- Foreign governments, embassies and the UN should have a database with INSARAG classified teams, together with contacts and a resources list. This should include dog teams as well as urban search and rescue teams;
- Host governments should take some responsibility of who responds from their country. Linking in with INSARAG, host embassies, better communications and an accreditation system in-country would help make this a relatively easy task to administer. Teams should be part of their government's internal response mechanism before responding internationally;
- Teams outside the INSARAG framework, arriving late or operating independently put added pressure on an already over-burdened infrastructure. The UN should recommend to the host authorities that they should turn these teams around at the airport; and
- International teams must be prepared to work alongside each other in a co-ordinated effort, under the authority of whichever co-ordinating body is in charge.

Co-ordination will not be effective if an open-door policy is allowed. Teams that are inexperienced, ill-equipped and work outside the co-ordinated effort affect a structured response.

When the UNDAC team arrives within a disaster zone, in the majority of cases search and rescue teams are sent to various parts of the city or surrounding towns and villages, making co-ordination difficult.

This is inevitable as some teams with close borders are able to respond quicker than others. International team leaders should still take responsibility to either liaise with any established co-ordination in-country or, at the earliest opportunity, provide information of activities back to a co-ordination centre, once this has been established. The first Medium or Heavy INSARAG classified international team should set up a Reception centre and/or an OSOCC to help support the LEMA, if required.

If no co-ordination is in place, the first teams arriving should consider carrying out an immediate assessment of the area, gathering information and drawing up a basic plan and providing this information to other arriving teams. Information should be gathered from as many sources as possible, although it should be analysed for accuracy before any action takes place. The urge is for any team to get on with the practicable search and rescue work. However, dropping off a few members of a team in the initial stages to provide information to other teams and to gather information from arriving teams, will help the overall co-ordination and response immensely. One useful initiative would be for the UN to provide courses for Team Leaders and Co-ordinators on how it would like information gathered and handed over to an arriving UNDAC team.

Basic information

If we take it that no co-ordination is in place when teams arrive, it is important that someone takes responsibility to gather information from other teams as they start arriving and deploying. Once deployed, it will be far more difficult for co-ordinators to gather the information required. Basic information required as early as possible includes: Nationality; size of team; type of team (search and rescue, dog team, medical team etc); team list; team leader; location; contact numbers including e-mail and faxes; contact numbers for teams' headquarters in origin country; team resources (engineers, dogs, medics, equipment etc); team transport or procured transport; and re-deployment capability,

Once co-ordination is established, the question has to be asked whether it is a good idea for all teams to be centred around that co-ordination centre, which appears to happen on many occasions. For example, following the Iranian earthquake in Bam, the vast majority

of international rescue teams established themselves around the UN co-ordination centre after day two. The camp, with dozens of teams, was based outside the main search areas. Military guards secured entry to and from the co-ordinating area and teams were deployed from the centre mainly by transport. The community was therefore denied access and was not able to provide valuable information easily.

Integration

If teams are able to integrate into the community areas that have suffered severe devastation, search activities would be made easier; the community would be able to offer information and the team may be able to offer further support in other ways.

Important Considerations during Co-ordination:

- Support or link in with any structured co-ordination already in place irrespective of how basic that may be;
- Consider the location for co-ordination, close to any governmental centres or emergency services HQ. If there is a resident UNDP office, this should also be considered although the location may be remote from the activity area. If in an earthquake zone, buildings should be avoided, even when siting a base camp;
- Consider ease of communications, both internal and external;
- Procure maps of the area at the earliest opportunity;
- Satellite maps of the damaged area are often available, providing you have the facility to download;
- Carry out an overview of the area by helicopter as soon as possible, if helicopters are not available, carry out a vehicle survey;
- Collate incoming teams' details and capabilities;
- Link with any local government still in place and work with emergency services and other indigenous organisations (GO or NGO) to provide effective co-ordination;
- Gather information from all GOs and NGOs;
- Note where teams have deployed to ensure good communications have been exchanged;

Example:
Following the Taiwan earthquake in September 1999 localised co-ordination centres were established in areas where buildings had collapsed. This proved very successful by giving local people an easily accessible centre to offer information, a centre for teams to sign in and gather information about the buildings they were about to search, including layouts of the buildings, how many people were missing and any searches that had already been carried, out along with the outcomes. The co-ordination centres also provided water, small tools, batteries for torches and equipment, dust masks and gloves.

Setting up a network of small co-ordination centres on the ground, reporting back to a central location, proved to be very successful and brought the search and rescue phase to a quick and professional conclusion.

- When possible, divide the impact area into grids that are within the capabilities of teams;
- Prioritise buildings from information gathered locally ie hospitals, schools, hotels, government buildings, which have collapsed;
- Use a written system of information that can be easily handed over if necessary;
- Consider security; and
- Consider medical support.

The Swiss Disaster Unit is normally very quick to respond to a major disaster and often it is able to establish first phase liaison at the airport, gathering information on teams arriving.

Activities: Before starting any activities, all efforts should be made to make contact with any government or local government co-ordination in place and work under that set up. The co-ordination centre's support to the team will be valuable, just as the team's support, input and experience will be to them.

Whether co-ordination is in place or not, teams need to consider many factors to be able to carry out effective search and rescue work.

- Teams need to establish themselves as close as possible to the work areas so they can be seen and easily accessible. There is little point in positioning teams outside the main areas of activity, as a vital information source – local people – will be lost. They need to be able to approach your base with ease and offer information. Word will soon spread of your location and information will soon be offered, a system to log, sift and prioritise that information needs to be in place;

Thought should be given to the area surrounding the main city or town affected, as outlying towns and villages are often overlooked by specialised search and rescue teams

- Assessments have to be carried out as a priority, prioritising search areas, mapping and collating information;
- Local emergency services and local teams in the area, will provide an important information source and possibly a good community level co-ordination source. Working with local teams and emergency services will provide much needed support to exhausted personnel who have probably been overstretched since the disaster. It may well boost morale and provide additional resources that they might not have;
- Any additional resources required and where you can get them from, transport, translators, fuel etc; and
- Utilising local people with or without specialised skills is an important co-ordination resource; they will be desperate to help, know the area, the buildings and cultural activities at the time of the disaster.

Whatever activities the team carries out should be collated and passed to the co-ordination centre or, if not yet established, the information should be provided at a latter date.

Teams should not be afraid to re-deploy if the search and rescue activities in the area are complete or priorities lie elsewhere, which could well be in other towns or villages. Again, inform the co-ordinators of any re-deployment.

The majority of teams tend to congregate and concentrate within the main city or town that has suffered from the impact of the disaster. Thought should be given to the surrounding area as outlying towns and villages are often overlooked by specialised search and rescue teams. There is normally a surplus of search and rescue teams in the main area but a lack of teams in the more remote areas – again good co-ordination should address this problem.

Withdrawal

Whether teams decide independently to withdraw or a decision is taken at a higher level that all rescue work has finished, withdrawal plans need to be made as soon as possible. There is nothing to be gained in staying on unless you are providing other specialist support such as medical or assessments. Teams must ensure that all information has been passed to the co-ordinating body before withdrawal. CRJ

■ *In part four we will use RAPID-UK case studies to support what has been covered in parts 1-3 by showing how co-ordination can work effectively and what happens when the response is not regulated.*

Authors

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CBR threats: a case study

The third part of this series homes in on the differing CBR threats with **Kevin Cuneo** providing a national case study by looking at how Australia has developed its national chemical, biological and radiological capability

In the first edition of *Crisis Response Journal*, Michael Powers from the Chemical and Biological Arms Control Institute in Washington DC, looked at the perplexing question of the nature of the terrorist threat from a US domestic perspective. He wrote about the 'What next?' scenario and the lack of consensus on where and when an attack may occur. The article also discussed the emerging threat of a Chemical, Biological or Radiological (CBR) attack versus the conventional bombs and bullets approach.

In the second edition, Michael expanded on the different range of agents that could be used and about the preparation, efforts and challenges that all emergency services, law enforcement and health care agencies face. He discussed the capability building efforts required to meet the risks, rather than the differing threats.

This paper looks at the CBR threat from an Australian emergency services perspective. It outlines some national strategies instigated to prepare the nation for a CBR incident and those activities agencies have undertaken to prepare and respond to an incident. Parallels can be drawn between the nature of the threat in the United States, and the efforts undertaken to counter them, to those pressing Australia. This should be no surprise because of the nature of the terrorism problem worldwide and the means available to governments to counter it.

Sarin agent

The Aum Shinrikyo's 1995 release of a coarsely made and equally rudimentary dispersed Sarin agent in the Tokyo subway was Australia's wakeup call to commence developing a capability to deal with a chemical terrorist attack. It was shortly after that immensely defining mass casualty attack, that Emergency Management Australia (EMA) brought together commonwealth and state/territory government agencies, emergency service organisations, police, health and defence to share information about the terrorist attack, as well as to develop consensus on the threat level, determine national deficiencies and define activities required to bridge any gap.

The workshop concluded that although the threat was low, there would be enormous consequences were a deliberate release of a chemical to occur. But as a gauge of Australia's preparedness at that time to deal with the range of deployable weapons, the workshop mainly concentrated on a chemical release.

The subject of biological or radiological materials being used and the need to prevent terrorist groups gaining access to Weapons of Mass Destruction (WMD) was discussed in papers presented, but in the main, little thought was given to the other materials.

Why was this so?

Previously WMD attacks, like that experienced in Tokyo, were virtually unheard of internationally. Australia's law enforcement and emergency services had little experience of terrorist attacks, apart from the Sydney Hilton Hotel bombing in 1978 and other incidents which could only be described as relatively low level when compared to the world stage. Those events were perpetrated using traditional methods such as explosive devices and fire bombings. There may have been a number of reasons for this low level of terrorist or criminal activity:

- Australia was not a target at this time;
- It appeared foreign policy simply didn't foster the discontent required to encourage state sponsored or groups to mount an attack against its citizens locally and internationally; and
- Australia did not have ready access to nuclear materials, a chemical or biological industry or individuals with sufficient capability to develop or disperse the materials.

Given the low terrorist threat, motivating governments through their communities, police, emergency services and health departments to take the threat seriously enough to spend considerable resources on procuring equipment, training personnel and developing new procedures, was not going to be easy. However, attitudes were changing.

It was after the deadly Tokyo attack that information about the Aum Shinrikyo sect began to surface and it appeared there may have been an Australian connection to the sect's operations to develop WMD. In September 1993 the sect purchased a remote pastoral station (Banjawarn) 600 km north east of Perth, Western Australia.

Exploration licenses

The sect took out mineral exploration licences so nobody else was permitted to enter its property for exploration purposes. It came to light that 'ministers' and 24 members of the sect had entered the country with a considerable amount of chemical material and protective clothing. The chemicals were seized and the Australian Customs Service charged two members with violating regulations relating to the carriage of dangerous goods on an aircraft. This did not deter the sect and on a subsequent trip several other members entered the country, purchased chemical material locally or interstate and used the isolated location to test a chemical agent.

Investigations in 1995 concluded the sect had used a kitchen in a disused house on the station as a laboratory and believed members had experimented on sheep some 18 months before mounting the Tokyo subway attack.

However, these facts alone and the considerable media coverage of the testing, did not motivate the country to rapidly improve its capability. The Sydney Olympics were only a few years away and this impending event provided some impetus for the main states where competitions were being held to start planning and preparing to deal with terrorism incidents, including developing a CBR response capability. But these plans were still confined to the larger populated states where it was believed any terrorist attack would eventuate.

Given the intent of terrorist groups to bring fear and disrupt communities, it is obvious that co-operation with the worldwide intelligence and law enforcement community is necessary

As the Olympics grew closer, Australia had nonetheless also become more active in United Nations missions, such as those in East Timor and other counter terrorism activities beyond its borders. Armed with the knowledge of the testing done in Western Australia by the Aum Shinrikyo sect and the growing awareness of terrorist events occurring worldwide, agencies were becoming more aware that Australia was not as immune as had been thought previously.

Threat assessments

Given the intent of terrorist groups to bring fear and disrupt communities, it is obvious that co-operation with the worldwide intelligence and law enforcement community is necessary. The Australian Intelligence Security Organisation (AISO) conducts investigations into terrorist threats. It has a mandate for the analysis and distribution of information to commonwealth and state/territory police and relevant agencies. Not only does Australia distribute information internally, but also shares vital intelligence with many nations. Since the rise in terrorist attacks, their resources and interaction has increased significantly. This includes contact with non traditional law and order agencies such as emergency services, public utilities, industry groups and health departments.

It is from the threat assessment material collected of events, critical infrastructure, groups and individuals that the state and territory police and other agencies make their risk management decisions. This is known as the preventative and preparedness phase and jurisdictions implement protective activities to lower the risk. Like many countries Australia has a National Counter Terrorism Plan (NCTP) and national counter terrorism alert levels. These are determined by the National Threat Assessment Centre. They are very low; low; medium; high and extreme. Their purpose is to:

- Inform;
- Determine precautionary measures;
- Raise vigilance to minimise any risks; and
- Form the basis of public decisions.

The assessment determines the most appropriate measures for explicit sectors, particular events which may be planned or individuals. The threat and risk of an attack is assessed by looking at a number of factors (see Figure 1).

In response to the escalating risk of an attack against interests internally, Australia also introduced a number of legislative changes and other initiatives to increase internal security arrangements. These have included the establishment of minimum security standards for airlines, the introduction of Air Security Officers and new maritime and port security arrangements. A national approach to regulate hazardous material has also been taken to secure and prevent them being used by terrorists.

Risk assessments

National standard AS/NZ 4630 (1999) is the basis on which the National Counter Terrorism Committee (NCTC), police, emergency services and other relevant agencies analyse and manage risk. The standard is a generic framework for:

- Establishing the context;
- Identifying risk;
- Analysing risks in terms of likelihood and consequence;
- Evaluating the risk against a pre-established criteria; and
- Treating the risk.

Australia is a large country. It has a geographical area of about 7.6 million square kilometres, but with a population of only 20 million, mainly located in the larger capital cities spread around the coastline. Regional centres are situated mainly on the eastern seaboard. To have a CBR response capacity in every regional centre and country community is unrealistic.

As a consequence, state and territory jurisdictions take information provided by the intelligence agencies and produce their own risk management plans, according to the particular likelihood and consequences of a terrorist event occurring in a specific locality or against a particular target.

Therefore communities in the cities and larger centres and their associated public infrastructure feature in most risk management plans. Some national icons and critical infrastructure are considered to be at risk and have also been included in the risk management matrices.

Emergency services have a history of managing risk and have been active in developing their own agency risk management plans, based on the different national counter terrorism alert

levels. These provide a framework for emergency services in which to plan activities that are designed to directly counter terrorism behaviour that may affect their service delivery in times of crisis. For example, the Fire and Emergency Services Authority of Western Australia has a counter terrorism risk management plan that encompasses major aspects of its business. It includes corporate and business level tasks, as well as straightforward activities for implementation at the fire and emergency service unit point level.

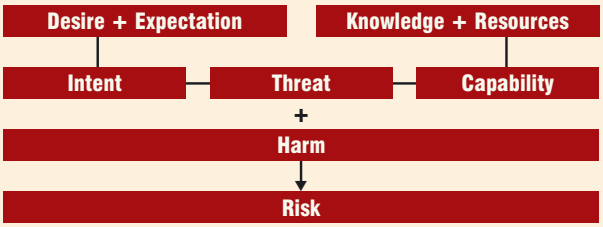
C, B or R?

While the likelihood of a deliberate CBR release is relatively low, the consequences of such an incident would be extreme. Governments and agencies face the dilemma of determining the order of priority when allocating resources. What level of preparedness should they try to achieve and in which particular order should agencies concentrate upon? Is it chemical, biological or radiological, in that order, or something else? At the end of the day, the type of incidents that have occurred worldwide have, to a certain degree, determined the risks and guided nation's preparedness efforts.

Emergency services needed to adopt a national approach similar to that used by police tactical response groups

It also has already been concluded that to have a capability in every location is virtually impossible to achieve. It was after the Hilton Hotel bombing over 20 years previously, that state and territory police jurisdictions got together under special arrangements, which were the forerunner to the NCTC, to have a truly national approach to counter traditional terrorist events. Australia needed a similar mechanism to effectively prepare to deal with a deliberate CBR release, whatever the type. Emergency services needed to adopt a national approach similar to that used by police tactical response groups and most developed nations.

Figure1: Factors to assess threat and risk of attack



National CBR strategy

Because Australia is made up of a federation of states and territories, with their own jurisdictional laws, they have responsibility to be prepared and respond to a terrorist initiated CBR event. Consequently the development of a national strategy would require a partnership between the Australian and state or territory government and its agencies to enable them to meaningfully contribute to an overall national capability.

To meet this end, the Australian Emergency Management Committee (AEMC) established a National CBR Working Group (NCBRWG) to facilitate the national approach. The group is made up of various Australian Government agencies, including health, defence and specialist departments dealing with chemical, biological and nuclear materials, state CBR committee chairs, state police and peak body representatives. The state chairs are, in the main, fire and emergency services personnel. The strategy brings together the various strengths of each level of government and recognises that only collectively will the chemical, biological and radiological threat be managed. CRJ

■ *Next issue: Kevin Cuneo looks at the characteristics of the Australian national CBR strategy, including multi-agency working, equipment, capabilities and interoperability, training and exercises, and national co-ordination.*

Sources: *Mt Macedon paper Number 4/1996, The Australian Emergency Management Institute, Mt Macedon; AFP investigation into Japanese sect activities in Western Australia; Richard Crothers, Australian Institute of Criminology; National Counter Terrorism Plan. June 2003, pages 3.4, 3.5; National CBR strategy. Emergency Management Australia Dec 03.*

Author

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Vehicle rescue issues: training the trainers

David Turpin reports on a UKRO project that addresses the specific vehicle rescue training needs of the Ghana National Fire Service. Many of the issues and training solutions could apply to other developing countries and would-be trainers

In August 2003 the World Rescue Organisation, led for the greater part by the United Kingdom Rescue Organisation, sent out a team of instructors to Ghana: Seven from the UK; one from Australia; and one team leader from the UK. The visit lasted two weeks. The brief was: to train the 'trainers' of the Ghana National Fire Service (GNFS) in Road Traffic Extrication techniques, including casualty care.

Background

Ghana, formerly known as the 'Gold Coast', is 239,000 sq km in size, has a population of 19 million and was the first African colonial country to gain independence, in March 1957. It is recognised as a third world country, where over 50 per cent of the population do not have access to clean water and many still die from Malaria and waterborne diseases.

The Ghana National Fire Service was established in 1957, employing 5,095 personnel – 3,774 male and 1,321 female. It has an annual budget of £8.4 million (US$15.44 million; €12.24 million). All training is carried out at the National Training Academy situated in the country's capital Accra.

Road traffic collisions in Ghana, as in most third world environments, are a common occurrence because of the poor roads and the lack of any safety and maintenance standards for vehicles. Every year over 1,500 people are killed on the roads, with five of the ten regions accounting for 80 per cent of those deaths. Many fatalities occur due to the poor state of the vehicle, with multi person entrapments being a common occurrence. Speed is a contributory factor in 60 per cent of all accidents.

However it is also true to say that many people die because of the severe shortage of necessary rescue skills and adequate rescue equipment. The equipment carried on appliances in the GNFS is basic firefighting equipment.

In addition to releasing personnel, many fire authorities in the UK donated much needed firefighting, pneumatic and hydraulic rescue equipment, as well as a Mercedes fire appliance. Health and safety does not exist and not all firefighters in GNFS have fire kit. All of the students attended the course dressed in overalls, some had boots, some had rubber boots, one turned up in a pair of open sandals. Any fire kit they did have, had been donated and was a 'one size fits all'. We issued students with basic PPE that we had managed to bring with us, such as safety goggles, gloves and helmets.

Clear objectives

A Training Programme was written by the instructors to cover all aspects of training to be carried out with clear aims and objectives and time scales needed. The standard of the student in GNFS was unknown, so the training was designed to cover basic extrication procedures and techniques, including casualty care. The training scenarios proposed mirrored those used at both the National and World Extrication Challenges. Before any training started, the students were asked how they would tackle an Road Traffic Collision (RTC) where a casualty was trapped by the legs. Every one of them answered: "We would all pull." When asked what would happen were the casualty still not to move, the reply was: "We would all pull harder."

As well as the above it was intended to run another four-day programme, repeated in the second week, of fire safety training – given on the request of the GNFS.

Ghana National Fire Service Training Plan

Day 1: *Introduction of trainers with students; Health and Safety introduction; Kit familiarisation; Scene approach; Scene assessment*
Aims – to enable the student to adopt current procedures in regard to scene approach and scene assessment

Day 2: *Stabilisation (vehicle on all four wheels, side and on roof); basic cutting techniques;*
Aims – to enable the students to adopt current procedures in regards to glass management techniques

Day 3: *Airway management techniques; longboard extrication techniques; roof fold down and casualty extrication*
Aims – to enable the students to adopt current procedures in regards to airway management; to enable students to extricate casualties using the longboard stretcher; and to use the correct cutting techniques to safely extricate a casualty from a vehicle on its side

Day 4: *All day practical exercise to enable students to practise the procedures taught during the course in a practical scenario. At the end of the exercise, students should have demonstrated the correct techniques in regards to:*
- *Scene approach;*
- *Scene assessment;*
- *The correct method of stabilising a vehicle on its wheels;*
- *C-spine immobilisation techniques;*
- *Safe, effective glass management techniques on a vehicle;*
- *Correct equipment positioning and assembly;*
- *Correct safety words of command for working with and passing over tools to another operator;*
- *Identifying and accessing shut lines to enable door removal;*
- *Removing foot pedals from a casualty;*
- *Roof removal using casualty centred rotational cutting;*
- *Dashboard roll;*
- *Roof fold down; and*
- *Longboard extrication techniques.*

On arrival in Ghana it quickly became apparent that a great deal of importance had been placed on the visit, as we were given VIP treatment. Members of the training team were keen to start the training immediately to make the best use of the short time available. However, it immediately became obvious this was not the only thing GNFS had in mind. During the first week, meetings had been scheduled with Ghana's CFO, the Minister of Interior, British High Commissioner and the Vice President of Ghana.

Delays

It was a great honour and privilege to meet the Vice President and the generosity and kindness shown to us at this time, not only by the GNFS, but also the people of Ghana, were something we will never forget. However, the team was becoming more and more frustrated as each day passed; the visits to the various areas to meet with senior people within the Ghanaian society were both interesting and flattering, but not what we had come to do.

It was decided at the time that were we to return in the future, senior officers from the UK must take on this role, leaving the team free to get on and actually deliver the extrication training.

The team looked forward to finally delivering the training in the second week. The students were made up of officers from the various regions of Ghana and ranged from L/ff to DO, including a number of Sub Officer instructors from the GNFS Training Academy.

On arrival at the Training Academy in Jamestown it became apparent the GNFS had totally underestimated the vehicle requirements to run the training course. There were only two cars on site for use and the term 'car' is overly generous. The vehicles were completely unsuitable for carrying out any extrication techniques; they were totally corroded with all the major body parts either removed, or so badly damaged as to give no structural integrity. This proved to be the introduction into a long saga of vehicle acquisition, which was to frustrate us throughout the visit.

There are a couple of reasons for this, firstly there are no government requirements for car safety inspections, so vehicles are literally run into the ground. Secondly, vehicles in Ghana are a treasured possession, and all owners are loath to part with them until they fall to pieces; even then, they are cannibalised for any remaining useful parts. What surprised us the most was the cost of, what we would call a 'scrap car' – anything from £60 to £100 (US$110 to 184; €87 to 145).

Practical training was held up by the lack of scrap vehicles provided, although this requirement had been made clear prior to the teams' arrival. Eventually, four vehicles (not the six originally requested) were made available and, with some well planned training, coupled with the expertise of the team (ie not cutting the car into little bits), we managed to deliver the training. The acquisition of vehicles for the Training Academy was a problem, but a greater concern was the inability of the trainers on stations to acquire vehicles, allowing them to cascade the training to their personnel.

World Rescue Organisation

The World Rescue Organisation (WRO) was formed in 1999 and is a registered United Kingdom (UK) company. It comprises of four regions: the Americas, Europe, Australasia and Africa. Member countries include the USA, Canada, UK, Australia, New Zealand, South Africa, Czech Republic, Belgium, Spain and South East Asia. The UK Rescue Organisation (UKRO) is a member of the WRO.

It has always been the desire of the UKRO, under the umbrella of the WRO, to help Fire Services in less developed countries. A need was identified for a training programme in Ghana, West Africa, after consultation with a firefighter who is the UK representative of a charity known as 'Ghana Outlook'.

Ghana Outlook specialises in rural community development and education, where it encourages self help initiatives. It has so far built three schools and created 16 libraries, where the chance of an education can lead to a pathway out of poverty.

David Turpin is of Tyne and Wear Fire and Rescue Service, UK, and the UKRO.

Familiarisation

The knowledge/experience in all cases regarding RTCs, equipment and training was zero. The GNFS had no hydraulic rescue equipment whatsoever, so personnel had to be familiarised with such equipment before training could begin. All students were trained in how to use hydraulic cutting equipment safely and competently.

The practical training was a great success and it soon became apparent that the students were extremely adaptable and keen to learn. All the teams followed the same training plan, ensuring all students were trained in exactly the same procedures and techniques. The students showed both enthusiasm and ability, which made them a pleasure to teach, and the week's input culminated in a final multiple RTC exercise. This exercise was a simulated major road traffic collision involving a number of vehicles, with various scenarios for the students to deal with. The participants were assessed by the UKRO instructors. The exercise concluded with all the team agreeing that the objectives were completed to a standard that would have been a credit to any fire service in the developed world.

At the end of the course it was intended to give each student a handout, which in fact was a RTC Instructor Manual, detailing all they had been taught during the week. The manual could also be used as a reference document so the students could plan training for their own personnel. The team had only brought three copies of the document as we were assured this could be photocopied in Ghana. I think it is fair to say they were not expecting the manual to be as big, and the amount of photocopying needed actually caused the photocopier to break down, so not all the copies were completed. However, the team was again assured the manual would be delivered to all students involved on the course.

Many fatalities occur due to the poor state of the vehicle, with multi person entrapments being a common occurrence. Speed is a contributory factor in 60 per cent of all accidents

photo: WHO/P Virot

Practical ability

The morale of the WRO/UKRO team on the completion of the course was extremely high. The input seemed to have been well received and absorbed. The practical ability of the students was demonstrated to a very high standard, and in no doubt. We were all extremely optimistic as to what we would find on our return.

On a slightly less positive note, when we did return, we were disappointed in that it seemed that the trainers in the GNFS had not been given the support promised by their superiors. However, we addressed the problem and on a subsequent visit, in March 2005, we were pleased to have found a massive improvement. CRJ

Key points

- *A visit to the country in question before sending a team out, to discuss the finances, resources, which are actually available to carry out the proposed training, saves a great deal of time;*
- *A decision needs to be made whether to donate and train with high-tech equipment or start with basic equipment (hacksaws, crowbars) and build up some understanding of rescue techniques, which would also be easier for maintenance;*
- *At the present, the public does not always call the fire service to RTCs. More communication between the GNFS and the Police might help;*
- *The GNFS does not receive enough funding to carry out basic firefighting and rescue, let alone initiatives such as public education; and*
- *Although the team did not appreciate all the visits to dignitaries, and wanted to get on with the training, these visits were very important to the GNFS and got the attention of the Minister – which is all important when budgets come around. The budget is constantly being cut and this can occur at any time during the year, without consultation. This problem was eventually overcome by bringing some senior officers to carry out a 'Training needs analysis' and who took on a liaison role with Ghana senior officials while the team concentrated on training.*

Perspectives on disaster reduction

In this review **Dr Eng Barbara Kucnerowicz-Polak** summarises events at the World Conference on Disaster Reduction held in Kobe, Japan, along with perspectives and feedback from Mongolia, Armenia, Finland and the Swiss Agency for Development and Co-operation

"In many developing countries, losses resulting from natural disasters exceed contributions from international development sources and, in some cases, they even exceed annual gross domestic product" – SDC photo: Andrea Booher/FEMA News

The Second World Conference on Disaster Reduction (WCDR) was held at Kobe, in Japan, in January 2005. Its main focus was on the substantial reduction of disaster losses, in terms of lives and in the social, economic and environmental assets of both communities and countries around the world.

Commemorations

The Conference took place alongside commemorations to mark the 10th anniversary of the Great Hanshin-Awaiji (GH-A) earthquake of January 1995, and a month after the tragic tsunami disaster hit the Indian Ocean.

Although the Conference's main aim was to cover all regions and types of natural disasters, and extended to man-made hazards, both of the above events influenced its proceedings.

Due to its dramatic nature and tragic consequences for many countries all over the World, the tsunami was present in most national authorities' and international organisations' statements and was also the focus of a special plenary session. The Japanese experience and lessons learned from GH-A earthquake, along with progress made over the last decade towards better preparedness and response – both in reducing consequences and in restoration – were notable (see CRJ issue II, p12). This experience and these developments were shared with participants on many occasions, including via an intergovernmental platform, at a public forum, at the exhibition and on study visits.

To facilitate preparation of the comprehensive and demand-driven action plan for the next decade, the conference focused on specific objectives:

- Reviewing the Yokohama Strategy and its Plan of Action, to update the guiding framework on disaster reduction for the 21st century;
- Identifying specific activities aimed at ensuring the implementation of the Johannesburg Plan of Implementation of the World Summit on Sustainable Development on vulnerability, risk assessment and disaster management;
- Sharing good practice and lessons learned, to further disaster reduction within the context of attaining sustainable development, and to identify gaps and challenges;
- Increasing awareness of the importance of disaster reduction policies, thereby facilitating and promoting the implementation of those policies; and
- Increasing the reliability and availability of appropriate disaster-related information to the public and disaster management agencies in all regions, as set out in relevant provisions of the Johannesburg Plan.

To realise these objectives, the conference was organised in three main segments, providing forums for exchanging views, opinions and experiences and for working out the basis of the 2005-2015 action plan and other final documents.

- **Intergovernmental segment:** This included nine plenary sessions where national delegations made statements, discussed and negotiated on the outcomes of the conference and finally adopted the WCDR documents. One hundred and fifty two national delegations were present, as well as many UN agencies and bodies, other multinational organisations and several regional commissions.
- **Thematic segment:** With five parallel sessions – Thematic Panel Clusters – this was intended to complement intergovernmental level discussions on the outcome of the WCDR, with expert focus on exchange of experiences, examples of good practice, facilitating partnerships and networking on specific issues/goals. The themes covered by that segment included: Governance, institutional and policy frameworks for risk reduction; Risk identification, assessment, monitoring and early warning; Knowledge, innovation and education to build

Republic of Armenia

We highly appreciate the opportunity to be involved with the international experience in disaster reduction and the integration of Armenia as a partner into the total global safety system. This has opened up co-operation and has encouraged Armenia's participation in the conference.

The full commitment of political bodies to the task of eliminating institutional barriers and of including disaster reduction strategies and programmes for sustainable development and poverty reduction remain indispensable for disaster reduction.

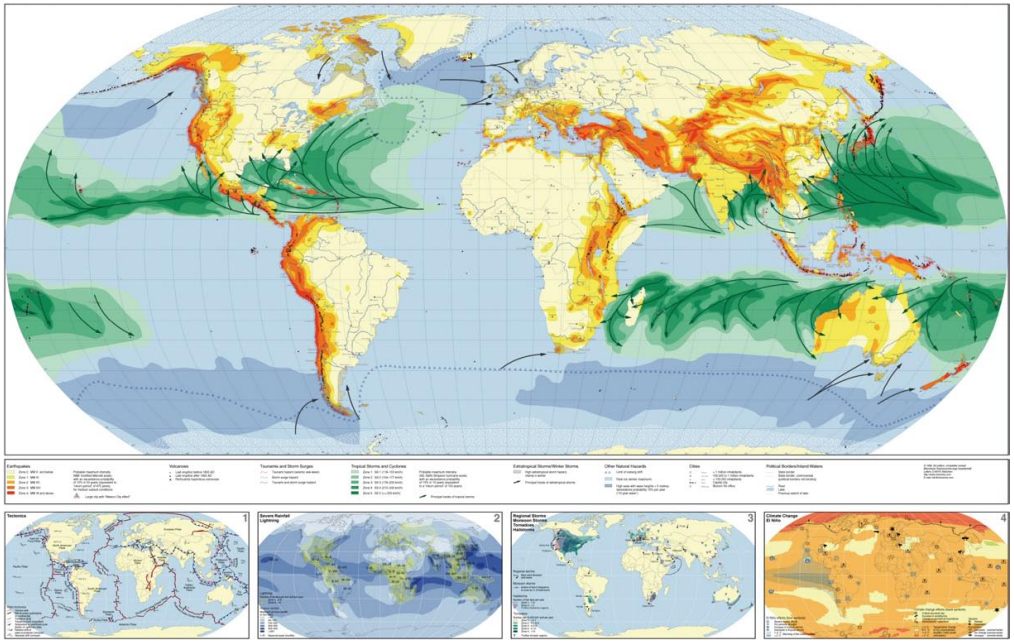
The vital role of disaster risk reduction has been proven in the years since the Yokohama strategy of 1994. The vision failed to be properly translated into action because of insufficient political commitment to the goal. Disaster risk reduction must cease to balance at the periphery of relief structures and should be incorporated into the Millennium Development Goals.

The international community has prioritised health and education as basic needs. It is now time for disaster reduction to gain the same status.

There are still some differences of understanding and perception of some problems, but our attention is now more focused on matters that can consolidate us and I am confident that we will continue to co-operate in the spirit of growing dynamism, trust and mutual assistance for the benefit of our nations.

■ S Badalyan, Member of the Governmental Delegation of the Republic of Armenia at the WCDR; Permanent Correspondent of Armenia in EUR-OPA Major Hazards Agreement; Counsellor of the Minister of Foreign Affairs, Republic of Armenia.

World Map of Natural Hazards, courtesy of Munich Re, GeoRisksResearch



up a culture of safety and resilience; Reducing and underlying risk factors; and Preparedness for effective response.

Three high-level round-table meetings were held, covering: Disaster risk: The next development challenge; Learning to live with risk and Emerging risks: What will tomorrow hold?

● **Public Forum:** This involved a huge number of NGOs and included nine thematic session discussing *inter alia* the role of NGOs in reducing risk consequences, community awareness, as well as effective co-operation between NGOs and public authorities and services. Over 40,000 visitors participated in a variety of activities, including workshops, exhibition booths and poster sessions.

Strengthening

Conference participants recognised the urgent need to strengthen national and regional systems in the Indian Ocean region and to expand existing mechanisms for sharing information and best practice in disaster detection, early warning, prevention, and assessment of natural disasters, as well as for disaster relief, post-disaster rehabilitation and reconstruction.

Work on establishing regional disaster reduction mechanisms for all of the relevant natural hazards was initiated, to include: specialised collaborative regional centres; networks for information exchange; early warning systems; establishment of databases; and knowledge management.

The special focus of the session was an early warning system. The initiative to mobilise the necessary intellectual and financial resources for setting up an effective and durable tsunami early warning system in the Indian Ocean, tailored to the specific circumstances of the region and reflecting individual requirements of countries, is one of the important main outcomes of the conference. The initiative received strong support from the EU and Germany (the host of United Nations conference on early warning in Bonn in early 2006). Many generous offers of financial and technical assistance were made by key countries across the globe, under the co-ordination of the United Nations.

The experience of existing Pacific Ocean tsunami early warning systems were strongly recommended to be used in further work on that issue. Also plans for comprehensive actions, such as the assessment of tsunami risk, including a range of advanced technical systems, detection and warning, development of response plans, public education programmes, and resilient shelters, lifelines and protective infrastructure establishment, should be facilitated by utilising existing experiences and good practice examples.

"Changed environmental conditions, such as those brought about by climate change, climate fluctuations and large-scale deforestation have an impact on loss of life and economic damage. Development banks and insurance companies are greatly concerned about these trends – the latter about the marked increase in economic losses in developed countries" – SDC

photo: Tom Smith / Cornwall County Fire Brigade

Swiss Agency for Development and co-operation (SDC)

The conference offered an opportunity to survey the current state of the art with respect to disaster prevention and precautionary measures, to scrutinise international developments and assess the focus of Switzerland's activities in these areas.

The programme outcome document: 'Building the Resilience of Nations and Communities to Disasters: Hyogo Framework for Action, 2005-2015' listed more than 60 individual actions that can help to reduce natural hazards, and especially reduce vulnerability. These actions (activities) were presented as recommendations.

The document made it very clear that responsibility lies with individual countries. At the same time, the international community has the duty to co-operate and co-ordinate, to generate knowledge for the prevention of natural disasters, and to motivate countries to take action.

The following priorities emerged as a few of the main directions to be taken in reducing natural hazards and disasters:

- *In order to intensify global efforts, approaches to reducing natural disasters should be integrated into all international frameworks and development objectives, including the Millennium Goals and the Framework Convention on Climate Change;*
- *The primary responsibility for protecting people and their livelihoods lies with different countries. Hence disaster reduction must have a place in different national policies;*
- *Favourable political conditions (good governance, corresponding legislation, sub national, national, regional and international co-operation and co-ordination mechanisms) are a necessary basic condition for all disaster reduction measures;*
- *Disaster reduction can only be tackled by means of an integrated approach that takes account of the three main mechanisms of hazard and disaster management: prevention, intervention and recovery; and*
- *Assessment of hazards is an integral part in planning the application of disaster reduction measures.*

Disaster reduction is the task of many different actors at different political levels. In particular, the population directly affected by a disaster is an important actor that must be taken account of.

In summary, the challenges, weaknesses and gaps were defined, and directions to be taken in the next ten years were outlined. Although concrete demands for the international community to meet its obligations more clearly by making a greater commitment were not directly met, wide consensus on establishing priorities was nonetheless achieved. Organisations, as well as individual countries, acknowledged broad ownership with respect to the issues at stake that can be used as a basis for initiating implementation of the Hyogo Framework for Action 200 – 2015.

Closer collaboration among humanitarian aid and development organisation is a crucial requirement for implementing the Hyogo Framework for Action. Only a joint commitment from all those involved will prevent further growth of vulnerability and risk, while also helping to reduce disasters.

■ Extracted from a detailed summary report written by Markus Zimmermann, Marco Ferrari and, Meinrad Studer of the SDC.

Finnish Ministry of the Interior, Department for Rescue Services

When talking about the outcome of the conference, it is important to keep in mind that the goals in the outcome document are good but the content is quite general and wide. The challenge is big. How to improve our endurance against natural disasters? It is absolutely necessary to establish national platforms in all the member countries in order to make the measures planned practical enough and to involve all relevant actors. The measures are concrete and feasible and based on local risks and circumstances.

Disaster reduction measures should be based on risk analysis. It is important to realise that disaster reduction calls for a systematic approach that will include prevention, early warning and effective response. Legislative, technological and educational means should form a holistic approach. Especially in the developing countries it is important to see that the whole system needs to be built on risk analysis and it should be developed step by step, starting from those parts of the system that offer the best cost benefit value. Cultural facts need to be taken into account when choosing the means that will be used to develop the response to the threats identified. In industrialised countries, the increasing vulnerability of societies has been shown several times during the last few years. Storms and floods have cut the vital lifelines (electricity, telecommunications and IT systems) even in the most advanced societies.

Legislation that prohibits building activities in vulnerable areas is of vital importance but is often difficult to put into practice. Any such legislation should be legitimate ie people have to both understand and respect it. This can only be achieved through education and open sharing of information.

Disaster prone areas are often used even though it is known that they will most probably face natural disasters. In these cases it is vital to build early warning systems so that people can be sheltered or evacuated before the disaster hits or at least very fast after the impact. In many cases it is practically impossible to predict a natural disaster. This calls for both modern technology and, again, education and information sharing. The people living in disaster prone areas need to know that they will eventually face a disaster and that they need to understand what that means and what they are supposed to do themselves.

The experiences after the tsunami last Christmas showed once again how difficult it is to build well functioning early warning systems. The planning for a new tsunami early warning system has also shown how difficult it may be to find consensus between many national, international and business actors when trying to establish well co-ordinated and effective world-wide technological networks.

It is clear that effective response is always needed in disaster situations. This presupposes very good planning. In this context it should be emphasised that disaster relief is not only a task for a few dedicated organisations. The whole society needs to be prepared to exceptional conditions. This means that all the organisations assess the risks to their own fields of responsibility and secure their functions. In addition, close co-operation between the different organisations is needed especially when talking about effective response.

■ Director General Pentti Partanen, Finnish Ministry of the Interior, Department for Rescue Services.

Mongolia National Emergency Management

This event was a good opportunity for us in many ways. The representatives who took part noted it was a more effective event in that disaster management consideration could be related into sustainable development policies and poverty alleviation policy.

We consider that if the Hyogo Declaration and the framework for action 2005 – 2015 are implemented successfully, disaster loss will be decreased.

However, developing countries are more vulnerable to disaster, and developed countries play a big role in disaster reduction. The co-operation and equal involvement of States are an important factor in disaster reduction. It is better that the attention of developed countries, international organisations, and banking and financing organisations be directed at improving international and local capacity to cope with disaster and to support developing countries.

They should take disaster prevention into account, which would help to prevent a far greater expense in disaster response activities.

The Mongolian Government and the National Emergency Management Agency (NEMA) of Mongolia have put forward the following goals:

- *To expand the bilateral, regional and international co-operation and partnership mechanisms in order to strengthen capacity to cope with disaster. NEMA and the Government are also working with the UNDP project "Strengthening the Disaster Mitigation and Management System in Mongolia" on developing national disaster reduction policy;*
- *Risks and vulnerabilities are being assessed;*
- *To improve public disaster awareness, to train and retrain national personnel, to learn from the experience of foreign countries and international organisations, and to strengthen the disaster legal environment under international standards; and*
- *To impart knowledge to youth on traditional methods and culture of disaster protection. Also to develop early warning systems, renovating equipment and techniques, especially in earthquake prevention, and enforcing national building codes and standards.*

■ Major General P Dash, Doctor, Professor, Chief of National Emergency Management, Mongolia

This WCRD was the second event to be held on such a scale (the first being in Yokohama, 1994). It saw a huge number and high level of participants, important document outcomes and set disaster risk reduction as a high priority on the agendas of international organisations for the next 10 years. The importance and scale of the WCRD is comparable to that of the World Summits on Sustainable Development. This was confirmed by the presence of a large number of highest level state delegates, including prime ministers, ministries and ambassadors, as well as a huge number of highest level experts. The United Nations was also represented by the UN Under-Secretary General for Humanitarian Affairs.

Among the most important outcome documents are the Hyogo Declaration and Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters. Although they are not legally binding, they represent a strong commitment by states and organisations to guide policies and actions in the next 10 years.

Commitments

The UN Under-Secretary-General confirmed his own strong engagement in providing the ISDR secretariat and all partners in the Inter-agency Task Force on Disaster Reduction and Member States with support to ensure that the UN system strengthens its disaster reduction actions. However, the realisation of this outcome will require the full commitment and involvement of all actors concerned, governments and services from local to national levels, regional and international organisations, and civil society, including volunteers, the private sector and the scientific community.

Another important outcome of the Conference has been in enhancing capacity building, both institutional and organisational, as well as individual, by networking, partnership and other forms of co-operation. This process has also influenced reaching the challenges taken on by the Conference.

The third important result of the Conference which should be highlighted was the international assistance given to the Indian Ocean region, aimed both at restoration and on building early warning systems to avoid such tragic consequences in the future. ERJ

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