Multi-agency command support

Drawing on Rescue Global's deployment in the Philippines after Super Typhoon Haiyan, and upon 30 years of operations analysis, **David Jones** reviews the command environment and the difficulties of producing intelligence in a complex emergency

In complex emergencies, national and international organisations are initially attempting to operate in a vacuum with no reliable information; they then have to make sense of large volumes of data flooding in at high velocity, with variable levels of provenance, relevance and reliability.

This article will examine challenges in the multi-agency response to Super Typhoon Haiyan, focusing on two of the four main work areas of the Joint Emergency Services Interoperability Program (JESIP). The JESIP model is a reasonable filter to apply, given its intention of enabling interoperability in complex operations, across multiple stakeholder groups. The four strands to JESIP are: Doctrine and Organisation; Operational Communications; Shared Situational Awareness; and Training and Exercising.

Shared situational awareness and operational communication will be the focus of this piece, as these are keystone components in the initial phases of emergency response operations; future articles will examine the other strands.

Shared situational awareness and operational communication relate strongly to the need for commonly recognised informed pictures (CRIPs) upon which to calculate likely resources, formulate initial plans, estimate likely consequences of action or inaction, evaluate the effectiveness of any actions taken, as well as the need to communicate all of this in a timely manner.

This has been examined within the context of research into catastrophic events where command, control, communications and intelligence were among the factors considered. In particular we have looked at those that were the subject of a Public Inquiry, owing to the availability of open source data, and real-time media footage, which allows for fascinating autopsy opportunities. This has highlighted common key failings (and successes) and provided rich insights to inform future planning.

Some – though not all – of the events examined are included in Table 1. Though

Rescue Global is a crisis and disaster response agency, focused on the immediate reaction to critical events, and the reconnaissance required, in order to empower the local, regional and national (host) government, as well as the first responders and international humanitarian community

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largely UK-based, these incidents are similar enough to those presented by large international disasters such as Haiyan, in terms of the issues faced by incident commanders, political level stakeholders and grass root level organisations.

The common causes of failure which have frustrated – and, in some cases, prevented – effective command and control in demanding operational environments, as outlined by Dr Kevin Pollock (see sources) are: Poor working practices and organisational planning; Inadequate training; Ineffective communications; No system to ensure that lessons were learned and cascaded; Lack of leadership; Absence of a 'no blame' culture; Failure to learn lessons; No monitoring/audit mechanism; and Previous lessons/reports not acted upon.

In his paper for the UK's Cabinet Office Civil Contingencies Secretariat, Pollock notes that in all of the events examined, the major strategic issues were:

■ **Doctrine:** Provision of clear and easily understood guidance that ensures

everyone is aware of their own and others' roles and responsibilities;
■ **Operational communications:** The need for a common system used by all stakeholders with the capacity to deal with the surges of activity associated with major incidents;
■ **Situational awareness:** The ability to access and share information between stakeholders quickly; and
■ **Training and exercising:** The need for continuous development of stakeholders to ensure sufficient capacity to cope with a prolonged event.

This list is unlikely to be a surprise to those working in disaster response. It is far too easy though to think that some of the lessons learnt from past events must surely have resulted in changes – especially in obvious areas such as shared situational awareness and communication. Yet many causes of failure still remain in evidence. We accept that international disasters such as Haiyan have inherent differences to some of the events examined, for example geographic spread, number of responding organisations, political and cultural variances, etc.

But that argument only goes so far and more can be done. There is some incredible work being carried out in the fields of communication, intelligence platforms,

online collaboration, mapping, use of unmanned aerial systems and more.

It is important to state that nothing in this article should be construed to be critical of the hard-working people, institutions and organisations that have a role in international disaster response.

In 2013 Rescue Global deployed on Operation Inundantia, a response to the flooding in Kedarnath, Uttarakhand, India (*CRJ* 9:2), where we met the National Disaster Management Authority (NDMA), which comprises central government, and the National Institute for Disaster Management (NIDM), made up of academics and experts.

The NDMA is accountable and responsible for national disaster issues, while the NIDM is an academic institute, which both advises and supports the NDMA with subject matter experts.

During our operations in India, both the NDMA and NIDM demonstrated high levels of professionalism and commitment to their roles. Nonetheless, the common causes of failures previously identified, were seen to have played a huge part in the build-up, response to, and aftermath of the floods. In fact, these areas are now the subject of ongoing work we are collaborating on with the NIDM and NDMA, also the Universities of Delhi (India), Oxford, Nottingham and Southampton (UK), with regards to situational awareness (early warning and monitoring), and operational communications (multi-agency co-operation and agile teaming).

In an entirely different event, during Operation Phoenix, we witnessed the sterling efforts, successes and frustrations of the UN Cluster system. As previously stated, exceptionally hard working people, in challenging circumstances, staff this system. It is easy to criticize, especially if one has not worked in these organisations, within the operational environment in which

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they find themselves. Nonetheless, we saw first-hand the challenges in making situational awareness a reality, ie what happens when many organisations are working in the same area, without effective sharing of resources, intelligence, results and impact of actions, set against a backdrop of ongoing risk.

Having conducted reviews of Operations Inundantia and Phoenix, and comparing the

results with the four strands of JESIP, we have identified areas of commonality, which can be used to inform future planning towards more effective response operations.

It is helpful to view these circumstances in relation to specific phases of response operations. The phase of one to six weeks into the response was selected as this allows examination of the issues faced by local responders when warning of the impending event first came in and their response, the initial arrival phase of international agencies, planning and execution of initial operations, followed by the ongoing survey work and delivery of aid.

The filters in Table 2 were used when looking at situations and events during Haiyan, as observed by Rescue Global and its partners (including the Philippine Air Force), to determine whether any of the common causes of failure identified in previous response operations could be seen in the response to Haiyan.

Rescue Global operated extensively in all three of the contexts outlined below, for two of the busiest months of the initial and ongoing operations. It worked alongside the Philippine Air Force, RAM Airborne, Cadena and Rotary, while maintaining communication with partners also operating during this time frame, for example Team Rubicon and AirLink.

Rescue Global ran its air operations out of Mactan Air Base in Cebu, hosted by the Philippine Air Force. We positioned a King Air aircraft, and one of our Pathfinder (PF) teams there. We had a team leader, communications officer, pilot, co pilot, inter-agency liaison officer, deputy team leader, and support from the HQ based in Westminster, UK.

Frustration

During day-to-day operations in Cebu (used as a logistics hub and aid distribution point for many of the response operations, owing to the size and good condition of the airport), the PF team attended various cluster meetings, as well as other inter-agency meetings and the Philippine Air Force briefings. We were also receiving updates and information from our Westminster HQ and partners. A frustration here was that despite the online portal(s) for filing reports (for example water, sanitation and hygiene, or general reconnaissance and damage assessments), as well as the in-person briefings, there remained throughout a need for a common picture which showed data at the basic level, for example confirmed storm damage, number of persons in an area, condition of roads and so forth.

This is not to say that some of this data did not exist, nor that no one had conducted ▶

▶ these assessments. In fact, a lot of this data did exist and had been hard earned by local, regional and national organisations, as well as by the military and the wider aid community. The issue was that the data did not appear to have been collected, collated, analysed and disseminated in such a way as to be as helpful as it could have been, to inform decision-making at the appropriate levels.

For example, when examining the path of Haiyan, it can be seen that islands to the west were badly hit early on in the event. These islands were hard to reach, owing to a lack of airfields and many of the small boats used to reach them were destroyed by the storm.

Data about the condition of these islands and the urgent needs of their inhabitants, was therefore required. Although some communications were not working, there was spotty cell coverage, and some local charities, which had been working there prior to the storm, did have satellite communications.

Some survey work had been conducted by military reconnaissance teams and charities, and early calls to people on the islands had gleaned important data about their needs. Information had also been passed on by people who left the islands immediately before the storms hit. One of the islands, which hosts a resort that recruits from the islands around it, had managed to maintain communications and had a reasonable level of awareness of the surrounding islands' status, as well as resources with which to help a response.

However, we only know much of this in hindsight.

When we initially identified the island group in question as a likely area of need, it was very difficult to gather current and historic data from any of the expected repositories. When speaking to agencies on the ground, inside and outside of cluster meetings, reviewing the portals and also situation reports from individual agencies, the need for a common or joint operating picture was made very clear.

In order to prioritise our own activities, the main one being disaster reconnaissance to establish need and then communicating this to response agencies, we had to gather reliable information urgently. We flew a reconnaissance mission to the one main island where a landing was possible (with short take-off and landing aircraft and helicopters) to conduct ground surveys and see conditions at first-hand. After initial reconnaissance of the island grouping by air, we landed, conducted ground surveys, met with locals and managed to contact other islands by satellite phone, having been given their numbers by locals. It was clear that some

surveys had been carried out, but the results did not seem to have filtered up to a level where actions could then have been planned.

Upon returning to Cebu, and after calls to both Roxas and Manila, it was clear that information on this island grouping, as well as many other areas throughout the Philippines, was still fragmented, with many aid agencies who were not so well connected to the cluster system not knowing where to report their findings. Upon consulting the cluster and other interagency mechanisms in Cebu, it remained true that information was still scarce with regards to many areas, even though some surveys had been conducted, in some cases several times in the same locations. We encountered this many more times throughout our deployment.

Complex issues

After our reconnaissance of the island groups, and our findings in Cebu, we flew to Roxas to liaise with the operational planning teams based there. Here, we met senior staff from many of the response agencies deployed at that time, the Canadian military – which was leading on planning – as well as local NGOs.

Although many agencies were present in this location, with the main hall housing a representative from many organisations, the level of collaboration was hampered at technological, procedural and human levels, due in part to many of the common causes of failure, cited at the

Table 1

Year	Incident
1987	King's Cross Underground Fire
1988	Piper Alpha Explosion
1988	Clapham Rail Crash
1994	Texaco Refinery Explosion
1999	Ladbroke Grove Rail Enquiry
2004	Boscastle Floods
2005	Buncefield Oil Depot Explosion
2007	Pitt Review (UK Floods)

Table 2

TIMING	FOCUS	CAUSES OF FAILURE?
3 weeks, therefore post initial surge	Operational Communication Shared Situational Awareness	Poor working practices and organizational planning Inadequate training Ineffective communications No system to ensure that lessons were learned and cascaded Lack of leadership Absence of no blame culture Failure to learn lessons No monitoring/audit mechanism Previous lessons/reports not acted upon

beginning of the article and in Table 2.

But it must be acknowledged that some of these issues faced during Haiyan were more complex and were exacerbated by a more difficult environment than some of the events examined.

One of the complicating factors was that unlike many of the historic events identified, international disasters are often spread over a wider geographical area, and are therefore less contained by distance, time and immediate boundaries. Haiyan was a good example of this.

There are often many more stakeholders involved and affected in international disasters at the strategic, operational and tactical levels, as well as there being more exposure to the political, media, charity and NGO domains. There are also varying levels of centralised command and control, with less lead agency prominence, and fewer common operating practices, especially in the initial stages of the event.

Some improvements could be made in the areas of shared situational awareness, communication, integration of technology and sharing of practices and reporting. we also believe that multi-agency training and exercising must be implemented to ensure a robust culture of continuous improvement and delivery according to needs.

During our time in Roxas, we met with some of the UN mapping team, lead officers from the Health and Logistics clusters, as well as the Liaison Officer (UK Royal Navy) from *HMS Illustrious*, who was conducting disaster survey and aid delivery operations in the area, co-ordinated by the UK Department for International Development (DFID).

Following the delivery of our reconnaissance data, *HMS Illustrious* sailed immediately to the island grouping identified and delivered many tons of aid in a short period of time.

We completed that particular mission with a final assessment trip to the islands, accompanied by Colonel Marciano Jesus Guevara (Philippine Air Force), Squadron Commander, 5052nd Search and Rescue Squadron, 505th Search and Rescue Group, to confirm sufficient aid delivery.

Upon returning to the UK our mission was completed, Rescue Global handed over all information it had gathered to the Philippine Air Force. We were pleased to be awarded certificates of appreciation from the Civil Defence Directorate, the Philippine Air Force, and the Philippine Ambassador to the UK. A final appreciation letter came from the Air League of the UK with an award from HRH Prince Phillip at St James's Palace.

Having examined 30 years' worth of major incidents, disasters and the likely causes of some of the failures experienced, it has been fascinating to view these in the context of a more recent international disaster. After our response to Haiyan, we conducted reviews, identified areas for improvement, then cross-referenced them with needs identified in the past.

At tactical and strategic levels, the most obvious initial areas are a need for greater shared situational awareness and improved operational communication in the multi-agency environment.

Breaking these down further, there are challenges at the technological, organisational, and cultural levels. There are, however, initiatives and programmes that seek to address these needs. One example is the Orchid Project, a collaboration between the Universities of Oxford, Nottingham and Southampton (UK), which is developing technology for use by first responders, including: Artificial Intelligence platforms; command and control solutions; autonomous agents and multi-agent systems; active sensing; flexible autonomy; agile teaming; and social media based systems for intelligence gathering.

Training and exercises conducted at the UK Cabinet Office's Emergency Planning College also aim to ensure continuous professional development in the industry, and to share knowledge to further develop theory and practice.

Another project is Team Rubicon and Palantir, which are working to integrate mapping, tracking, damage assessments, tasking of personnel on the ground, and volunteer management through easy to use mobile device and ground control systems, supported by philanthropic engineer programmes.

Meanwhile, the Department of Geology at Delhi University, is working in the area of early warning and risk mapping the geological areas of likely future disasters, in order to plan, resource, mitigate and provide data at the policy, strategic, operational and tactical levels. The Institute for Risk and Disaster Reduction at University College London is working to develop working practices, engage academic theory in operational contexts, and visit disaster sites after an event to conduct autopsies to glean insights for the future.

These are examples of work underway by Rescue Global and some of our partners. There are other programmes and initiatives.

To address situational awareness and operational communications, there is a need for a co-ordinated, structured needs assessment and gap analysis, to inform planning for multi-

Top: Pathfinders deploying to Mactan Air Base from the UK;
Middle: Rescue Global King Air on the ground in Cebu, the Philippines, during Operation Phoenix (Haiyan); Bottom: Pathfinder Team Leader during flooding in Kedarnath, India, during flooding

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agency response to international disasters such as Haiyan in the future, drawing upon the excellent programmes which exist.

Sensibly, this work will need to be at the UN level in some cases, and at national level in those countries most often affected by disasters. This will help to build national resilience, and enable international response.

To that end, Rescue Global is active worldwide, for example in India, the Philippines and Mexico, working on early warning systems, grass roots training for communities, multi-agency training for military and civil defence organisations, as well as NGO engagement. We welcome offers of assistance and collaboration from NGOs, charities, official agencies, industry and academia.

Rescue Global is involved in research, operational testing (in the field) of equipment, theories and methodologies. We encourage collaboration with us in: Disaster zone communications, interoperability, situational awareness, disaster intelligence collection and collation; also multi-agency command support, decision-making tools for incident commanders, and strategic co-ordination groups; the use of UAV/UAS in disaster response operations and the use of Human Actor Collectives in the humanitarian sector.

As part of our ongoing testing and development of methods, equipment and multi-agency collaboration, Rescue Global has been invited to participate in Exercise Angel Thunder (USA) in May. This is the world's largest inter-agency, multinational SAR exercise. Personnel will train and be tested throughout the full spectrum of SAR, disaster response and other capabilities. It will involve ground recovery of personnel, use of air, land and sea assets, in a high tempo operational environment. **CRJ**.

References
■ *Pollock, K (2013):* Review of persistent lessons identified, relating to interoperability from emergencies since 1986*, report Cabinet Office Civil Contingencies Secretariat, UK; EPC Occasional Papers New Series No. 6;*
■ *Leigh, M, McFarlane, R, Williams, D, (2008):* Leadership in Multi-Agency Co-ordinating Groups, A functional approach*, Emergency Planning College, Occasional Papers, New Series, No. 7*
■ *www.jesip.org.uk;*
■ *www.orchid.ac.uk*

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