UK FIRE & RESCUE
ISAR
INTERNATIONAL SEARCH AND RESCUE

United Kingdom Fire and Rescue

International Search and Rescue

Celebrating 25 years of humanitarian response 1993-2018

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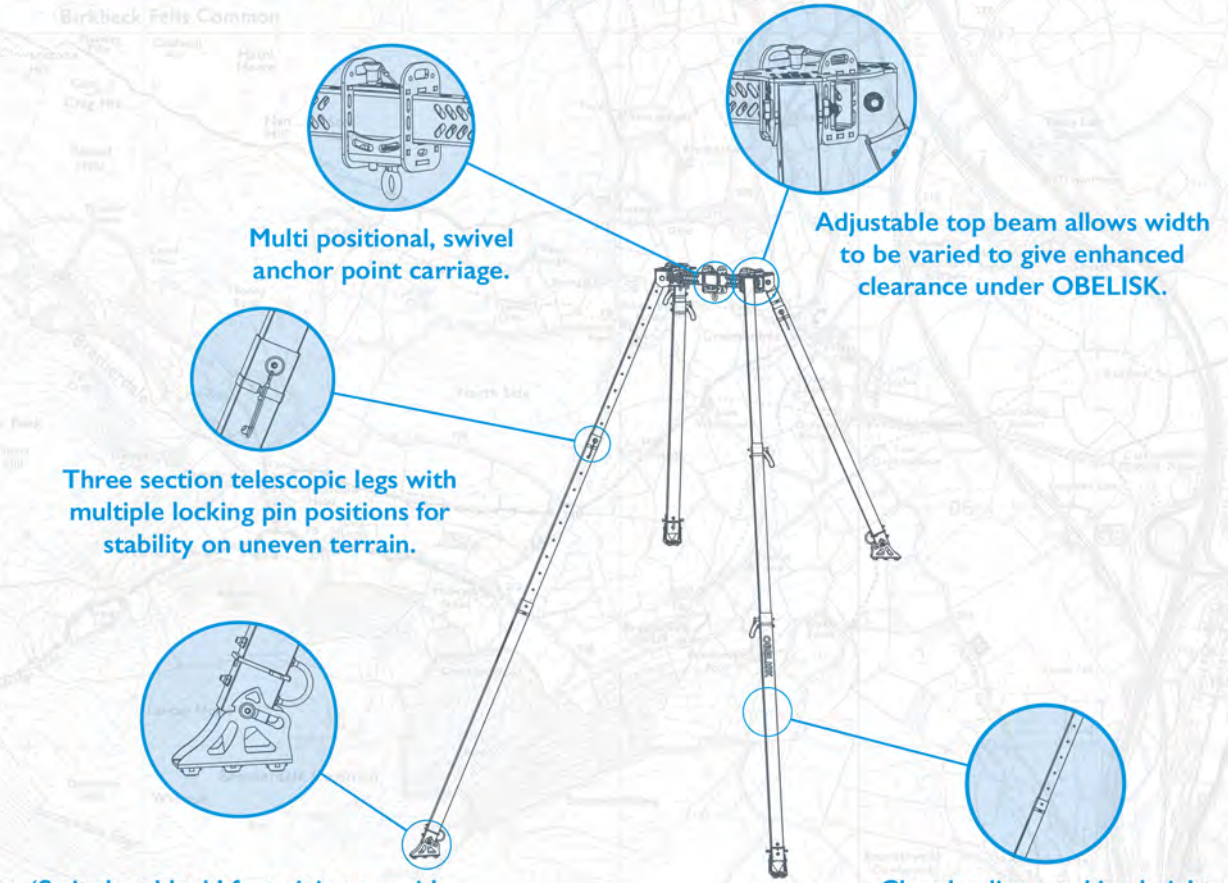

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LYON WORK & RESCUE

Foreword

DFID is proud to be associated with the UK International Search and Rescue Team.

As the Government Department responsible for UK overseas humanitarian response we depend on the UK fire and rescue services, and the dedicated men and women who serve in them, to mount life-saving missions at a moment's notice in distant, difficult disasters. Over the years those men and women have unhesitatingly put themselves at the service of desperate disaster victims across the world – helping to rescue those stricken by earthquakes, hurricanes or floods in places as far-flung as Turkey, Japan, Haiti, Bosnia, New Zealand, Indonesia – and to bring comfort to survivors by retrieving the bodies of their loved ones.

DFID pays tribute to UK ISAR's 25 years of unstinting service and looks forward to continuing our partnership through all its challenges and rewards over the next 25 years and beyond.

Jack Jones OBE
DFID Humanitarian Response Manager | Emergency Deployment Team Programme | Department for International Development (DFID)

Introduction

The United Kingdom Fire Service Search and Rescue Team (UKFSSART) was officially formalised in 1993 following an initiative designed to improve the effectiveness of British relief efforts to international disasters.

Today known as the United Kingdom International Search and Rescue Team (UK ISAR) it comprises volunteer members selected from across 15 different fire and rescue services, including Scotland and Wales, and is further bolstered by dedicated medical team, structural engineers and veterinary personnel who volunteer from organisations outside of the UK fire and rescue service. All members undergo a stringent selection process.

The UK ISAR team provides a specialised, technical search and rescue response to incidents in disaster affected nations, on behalf of the UK Government. The team was one of the first to undertake the United Nations International Search and Rescue Advisory Group (INSARAG) classification in 2005 and then went on to be reclassified in 2009 and 2016. UK ISAR are one of 53 United Nations classified search and rescue teams from across the world who respond to sudden onset disasters, such as earthquakes, hurricanes, tornadoes and flooding events, as well as providing mentoring and capacity building programmes.

UK ISAR responds overseas at the request of the affected nation's Government on behalf of the Department for International Development (DFID) and supports a mechanism through which the UK can comply with the principles of United Nations General Assembly Resolution 57/150 'Strengthening the effectiveness and coordination of international urban search and rescue assistance'.

Specialists deployed

The team mobilises within six hours of request, and deploys with a total of 70 specialists, which includes management, logistics, canine, command support, medical, engineering, coordination and liaison. Once deployed, UK ISAR teams are fully self-sufficient in terms of shelter, food, water, sanitation and welfare, and can operate at two large sites simultaneously providing 24-hour operations for up to 10 days.

The team is trained and equipped to undertake the following operations: assessment of damaged cities, towns and buildings; search for and location of deeply entrapped victims (technical search); scene stabilisation using timber shoring systems; gaining access to structures using hot cutting, hydraulic tools; advanced life support; rescue (extrication); Hazardous Materials Assessment; and Heavy Equipment Operations using cranes and machinery.

One of the key characteristics of the team, and the personnel who come together for each deployment, has always been the tenacious ability to use a vast range of skills in the most flexible manner. This quality ensures that any task, from the search and rescue of victims trapped within a collapsed concrete structure, to the delivery of aid items as part of a wider humanitarian operation, is met with an equal measure of proficiency, determination and humour, which has ensured the world class status of UK ISAR for the last 25 years, and will continue to do so, well into the future.

Prior to the formal arrangements of 1993, UK fire and rescue service personnel had responded to significant earthquakes in Mexico City in 1985, Armenia in 1988, and to the humanitarian crisis in Iraq during 1991.

https://www.youtube.com/watch?v=NZ2JU7x0PfA
https://vimeo.com/36637652

Sean Moore OBE, UK ISAR National Coordinator. Photo: Ricci Coughlan/Department for International Development.

"Being a member of UK ISAR involves you completing years of training and exercising to ensure that you are ready to deploy, but it never really prepares you for the real thing. When you arrive on mission your senses are completely overwhelmed with the terrible sights, sounds, smells and noises and the utter devastation that you are faced with. It is then, however, that you realise you are part of not only a team but a huge family that is ready and prepared to do whatever it takes to rescue people trapped within collapsed buildings and structures. This is what we do and the reason why we undertake all of the many years of training."

1991: Humanitarian crisis in Iraq

Operation Safe Haven in Northern Iraq was a ground-breaking overseas mission for the British fire and rescue service. In the aftermath of the first Gulf war, the Kurdish community, fearing for their lives and the safety of their families, fled into the inhospitable mountain region of Northern Iraq, bordering Turkey.

Freezing temperatures and a lack of shelter, food, clean water or medical facilities, resulted in many deaths. This was particularly prevalent in the young and elderly.

This appalling situation attracted worldwide condemnation and several Governments responded.

Request for assistance

The first request for assistance to the British fire and rescue service came via the Home office, from the Overseas Development Administration (ODA), a section of the Foreign and Commonwealth Office (FCO). The request was to identify firefighters throughout the country that may possess the skills necessary to assist in alleviating the plight of these refugees.

Brigades throughout Britain responded, and 32 individuals were selected to form the fire and rescue service contingent. Within 48 hours the team gathered at Stanstead Airport ready to fly to south eastern Turkey and then onward by road to Iraq. They were to form part of a 90-person, multi-disciplined team of doctors, nurses, water engineers and brigade personnel.

The objective of Operation Safe Haven was to convince the Kurdish people that it was safe to vacate the mountain camps, under the protection of the military, and move back to their homes. Safe areas known as 'way stations' were established in the valleys and plains below the mountain, where refugees could receive protection, clean water, food, shelter and structured medical aid. There was also fuel and transport available to help them return to their homes, which had now been secured by military means.

The teams operated in the mountains and at way stations throughout Northern Iraq for almost two months, with a second contingent of firefighters replacing the first. In total 59 fire and rescue service personnel from 12 brigades were active in the operation to help the Kurdish community.

"The success of the operation was evident in how quickly almost one million people were returned to a safe environment, whether in safe havens or their own towns and villages."

Versatility of British firefighters

The ultimate success of this operation in relation to fire and rescue service personnel can best be summed up by quoting from a report sent from Iraq to update senior managers in Britain. It stated, 'The tasks undertaken by fire-fighters has been wide and varied completely demonstrating the absolute versatility of British fire-fighters. It is extremely difficult to produce in detail in this report all the tasks undertaken by fire-fighters in Operation Safe Haven, however, the following gives a brief overview of the type of duties performed.

- Hospital duties, including assisting doctors during surgical procedures and operations.
- Infant feeding programmes involving ori-nasal intubation.
- General ward duties, attending to patients suffering a wide range of ailments including blast injuries from anti-personnel mines and a wide range of medical conditions and infections.
- Water and sanitation projects in both transit camps and the villages where residents wished to return and water supplies had been destroyed or polluted.
- Food distribution, setting up and running feeding stations for displaced persons on route to the way stations, towns and villages from the mountain camps.
- Sanitation projects in the mountain camps in an attempt to alleviate the squalid conditions in these camps and thus reduce the high levels of sickness.
- Outreach work with the Kurdish community in the camps villages and towns.
- Engineering projects. Assisting the Royal Engineers in repairing damaged bridges enabling displaced persons to return to villages otherwise inaccessible.

Every task undertaken by the fire service personnel has been approached with enthusiasm and determination, usually under extremely difficult circumstances'.

The success of the operation was evident in how quickly almost one million people were returned to a safe environment, whether in safe havens or their own towns and villages.

Although Operation Safe Haven was not the first time British firefighters had been deployed overseas, it was the first time help was offered on humanitarian grounds only, not involving search and rescue.

1993: Creation of the UKFSSART

Following the UK response to assist the Kurdish population in Iraq, the Minister for Overseas Development the Right Hon Lynda Chalker announced a new initiative designed to improve the effectiveness of any future British relief effort. This was to be achieved by introducing additional measures to provide a rapid assessment of the requirement together with coordination of the British Government relief effort and the deployment of skilled teams and equipment designed to alleviate suffering in the best and quickest way possible.

"Teams were drawn from registers of skilled personnel."

Following the announcement, a seminar for representatives of brigades previously registered as being prepared to provide a response was held at the Fire Service College, in October 1991. The objectives of the seminar were to develop fire and rescue service guidelines for any future overseas response.

Agreement was reached at the seminar to form a Steering Group of Chief Officers, chaired by one of Her Majesty's Inspectors of Fire Services, with the objective of developing, as quickly as possible, a coordinated British fire and rescue service response to overseas disasters.

These outcomes were communicated to the wider British fire and rescue service within Dear Chief Officer Letter 9/92, and informed personnel, that when responding to a disaster, the Overseas Development Administration (ODA) of the Foreign and Commonwealth Office would deploy disaster relief teams under its Disaster Relief Initiative. Teams were drawn from registers of skilled personnel held by ODA's specialist operational partner agencies. These covered a range of disciplines, including health, engineering, logistics, and search and rescue. The UK fire and rescue service registered with the ODA, enabling the ODA to request firefighters to join or form disaster relief teams.

Highly motivated team

Additionally, in response to a request from the office of the United Nations Disaster Relief Coordinator (UNDRO) the ODA may provide a UK Fire Service Search and Rescue team, with a medical element included as an integral part of the team, to work with the UN in a disaster overseas.

Membership of the UK Fire Service Search and Rescue Teams (UKFSSART) was on a voluntary basis and prospective candidates were required to be of Qualified Firefighter standard and hold a First Aid certificate.

Dear Chief Officer Letter 9/92 informed prospective applicants that careful thought should be given to membership of the teams and detailed a standard application form together with an aide memoire to assist interviewing officers.

The formal creation of The United Kingdom Fire Service Search and Rescue Team (UKFSSART) in 1993 saw a highly motivated group of volunteers from across the country commence training for deployment to a wide variety of humanitarian disasters.

1999: Kosovo crisis support in Macedonia

In April 1999, 16 UK Fire Service Search and Rescue Team (UKFSSART) personnel were deployed to establish a bridgehead at Skopje Airport in Macedonia, in support of the Kosovo crisis.

Beginning in early April 1999 the largest displacement of civilians in Europe since the Second World War had led to hundreds of thousands of Kosovans being relocated to refugee camps and supportive families in the community, particularly in Albania and Macedonia. The countries of the European Union, the United States of America and other members of the UN family became actively engaged in the humanitarian relief effort. By the beginning of June, tens of thousands of men, women and children had been evacuated and transported around the globe.

Humanitarian aid

The UK Government deployed UKFSSART personnel to Skopje in Macedonia. Their role was to assist the

International Relief effort. Much of the work involved unloading planes laden with humanitarian aid, including tents, clothing, food, medicines and vehicles destined for Kosovo. The British team were able to reduce the unloading and turnaround times of many different types of aircraft, thus ensuring the maximum use of the airport for humanitarian aid.

The team also assisted at a nearby refugee campsite, carrying out a range of tasks, including the installation of a water supply system.

1999: Two earthquakes devastate Turkey

Also in 1999, two devastating earthquakes hit Turkey within the space of less than three months. The Department for International Development (DFID) requested the United Kingdom Fire Service Search and Rescue Team (UKFSSART) to mobilise immediately, and head to Istanbul.

The first earthquake – with its epicentre at Izmit in Turkey's heavily populated north west – struck at 0302 hours local time on 17 August. A powerful 7.8 magnitude quake, it left some 17,000 people dead and thousands more homeless. The earthquake came at the worst possible time, when people were at home in their beds, and thousands were killed instantly as their homes collapsed on them. Thousands more died of injuries, suffocation, dehydration, or exhaustion as rescue crews scrambled to pull them from the rubble.

The overwhelming impact made it one of the most devastating earthquakes of the 20th Century. Fire and rescue services in the initial deployment included Cheshire, South Wales, West Midlands, Leicestershire, and Mid and West Wales.

Multiple rescues during the August earthquake included that of a 60 year old woman, who had been trapped within the rubble for over 60 hours.

Deployed personnel to the November 1999 earthquake in Turkey were from Lancashire, Lincolnshire, Greater Manchester, West Midlands and West Sussex fire and rescue services.

Due to the scale of devastation, the immense work required, and the welfare of the rescue team, a second wave of rescuers was mobilised; this included personnel from West Midlands, West Sussex, Kent, Essex and Hampshire. Multiple rescues included that of a 60 year old woman, who had been trapped within the rubble for over 60 hours.

November earthquake

On 12 November 1999 another devastating earthquake with a magnitude of 7.2 struck a hilly region of north-western Turkey spreading death and destruction to Duze, a city of 80,000, the city of Bolu and surrounding villages. The November earthquake was not an aftershock from the August earthquake but a different seismic event, along the same western segment of the North Anatolian Fault system. It was felt widely throughout the region, in Istanbul, Ankara and the Eastern Mediterranean coastline. Deployed personnel on this occasion were from fire and rescue services, including Lancashire, Lincolnshire, Greater Manchester, West Midlands and West Sussex.

Team profile: Greater Manchester

Greater Manchester Fire and Rescue Service (GMFRS) has a long history deploying to international disasters, dating back to the 1991 deployment to Northern Iraq, which saw several members of GMFRS forming part of a larger UK fire and rescue service response to the humanitarian crises in the aftermath of the first Gulf War.

GMFRS has been involved in some very high profile incidents in the last 25 years, starting with the deployment to Macedonia in 1999 in support of UN operations in Bosnia, then later in 1999 GMFRS deployed to its first earthquake, in Turkey. Since then the team has formed part of the UK response to Algeria, Pakistan and India and then Haiti, in 2010. This was followed by the earthquake in Japan in 2011.

The GMFRS ISAR team continues to develop and has recently welcomed a few new faces; the recruitment process saw the ISAR candidates complete a gruelling three day selection process in the Lake District national park. Such disciplines as navigation and command tasks were carried out under testing conditions. These scenarios were designed to simulate the conditions encountered during a real time deployment.

GMFRS has also played its part over the last 25 years in the field of humanitarian assistance. In 1999 a team from GMFRS deployed to Bosnia to assist in the loading and distribution of aid in the aftermath of the Balkans conflict. And again in 2015 GMFRS ISAR was involved in the loading of UK Aid from airfields in the south of England to assist with the Ebola Relief programme. This demonstrated the versatility of ISAR in varying situations.

The GMFRS element of UK ISAR has 18 fully trained staff ready to deploy as part of the INSARAG classified Heavy Rescue team.

2000: water rescue in Mozambique

Torrential rains and flooding caused devastation in parts of South Africa in January 2000. Mozambique was the most severely affected neighbouring country, as numerous rivers in the region overflowed their banks, and many roads, bridges, and railways connecting the countries were flooded or washed away. UK Aid provided helicopters to undertake search and rescue operations, and two transport planes carrying emergency personnel, inflatable motorboats and life rafts.

Words: ***Gary Williams, Cheshire Fire and Rescue Service***

Preliminary estimates indicated that at least 300,000 people were at serious risk in Mozambique; 60,000 of those were displaced persons in the cities of Maputo and Matola, with 80,000 displaced in rural Maputo Province. In addition to food and shelter, one of the main concerns for affected populations was access to safe drinking water and potential outbreaks of cholera or other water-borne diseases.

A personal account

We all saw the devastating effect of the flood, the traumatic pictures of the locals that had survived but lost a family member, and the loss of everything they needed to survive in the jungle. The South African Helicopter teams carried out dramatic and heroic rescues 24 hours a day that left them totally exhausted with fatigue and stress, but they carried on regardless. The two rescues that particularly stick in my mind are those of the woman who had given birth in a tree and the winch man grabbing two little boys from the river holding one in each hand.

Cheshire Search and Rescue Team were not on immediate callout but were waiting for a possible deployment to the affected area. As the days went by the chances of being deployed seemed remote. However, at 15:00 hours on 14 March 2000, some two weeks on from the start of the disaster, I was informed by my Field Commander, Kevin Kelly, that John Pugh, Martin Walsh and I would be deployed to Mozambique within the next 24 hours, leaving from RAF Manston in Kent to Maputo, Mozambique, in a Russian Antonov aircraft capable of carrying an enormous amount of cargo.

This gave us 24 hours to organise the operational equipment we would need to take and also our personal kit, including any last-minute supplies. We visited a Professor of Tropical Medicine who gave us personal medical advice regarding the environment to which we were being deployed. After numerous interviews by the local press and regional TV we departed for RAF Manston where we were met by Her Majesty's Inspector (HMI) Ted Pearn and members from the Department for International Development (DFID), who were in charge of the deployment.

RNLI boats

Shortly after arrival at Manston we attended a briefing on the present situation in Mozambique and were informed that we would be carrying out water rescue operations using boats provided by the Royal National Lifeboat Institution (RNLI). The RNLI team consisted of a crew of 12, including an inspector, a boat handling instructor, a boat mechanic and lifeboat men from all over the UK.

The following morning, HMI Ted Pearn and DFID gave us a briefing on personal safety due to the nature of the area where we were being deployed. Such areas of personal safety included anti-personnel mines, snakes, crocodiles, signs and symptoms of various diseases, local cultures and the obvious danger of the nature of the task in hand. We were briefed on land mines as there was a mine clearing campaign being carried out and all mine fields were marked on our maps. However, the flooding made it difficult to know if you were in danger from a submerged mine field or not. Many mines had been moved by the floodwater and were being found a long distance away from the known mine fields.

"Crocodiles and snakes were plentiful in the river so volunteers to climb into the water to release the boats were not forthcoming!"

Vital equipment and supplies

At 14:00 hours that day, we took off for Maputo with the aircraft packed to its total capacity with vital rescue equipment and supplies. We flew via Athens, Jeda, and Mombasa for refuelling, and arrived at Maputo some 24 hours later. On arrival the whole team couldn't fail to notice the extreme temperature. We unloaded the aircraft immediately after landing, which took three hours.

The following day the search and rescue teams from Lancashire, South Wales and Mid and West Wales moved from Maputo to Biera in the north of the country, in a Belgian Hercules, so that operations could be carried out on the River Buzi. Cheshire's team and two RNLI members stayed in Maputo for an extra day to arrange for all the equipment to be transported to Biera, some 1000km and two hours flying time from Maputo.

Later that evening, myself and three other team members, four RNLI members and two doctors were briefed. Our task was to take the doctors to Goonda to assess health and medical needs. Goonda is a small village, which was located 90km of unchartered waters up the River Buzi, almost into Zimbabwe. It was estimated that this would take us 48 hours. The reason for finding this village was that the larger villages were already receiving aid but unfortunately the smaller areas were not getting any supplies as the flooding water made it difficult to know their locations. Therefore, another of our tasks was to plot the locations, using a Global Positioning System (GPS), of smaller villages along the River Buzi, to enable the aeroplanes to drop essential aid to them.

Unbearable heat

The next morning we left Biera across the Indian Ocean to reach the River Buzi's delta. We stopped in Buzi to pick up our river guide, who unfortunately managed to get us all lost on more than one occasion! The heat was almost unbearable and caused the engines on the boats to overheat on many occasions; to prevent this happening we eventually had to remove the thermostats from the engines.

We stopped in Mannague, a small village, to assess health problems and then moved on to Chindu, with our final stop for that day being Estakinia, plotting all villages using the GPS en route. We stopped in Estakinia to rendezvous with the helicopter for water and fuel supplies; a smoke flare was set off to identify our location to the helicopter. The helicopter located our position and left after resupply. The flare used was a dual flare and was still usable. For safety reasons it was decided to ignite it. However, the intense heat and petrol vapour present in the atmosphere ignited, setting a boat on fire, even though the flare was set off some distance from the boats. A team member's legs caught fire and he jumped into the river to extinguish the flames where only a few minutes before we had seen crocodiles swimming. At the time all four boats were tethered together and although we tried to extinguish the fire, we were unable to do so and therefore to save the other boats we cut free the offending boat and pushed it down river. The burning boat was loaded with two team member's equipment, one doctor's equipment, food, water and other essential items. We then radioed for the helicopter to return to pick up the casualty who had burns to his legs. After this event, we walked for one hour through the jungle to a place where it would be safe to spend the night, away from the wildlife, which populates the area.

We set off the following morning for Goonda, arriving at 1400 hours. We made an assessment of the village's needs and plotted its location on the GPS. We then headed down river at full speed to try to return to Biera before dark. However, this was not possible and we spent the night in Buzi, sleeping in our boats.

Demanding and exhausting

At first light the following day we set off for Biera, which was a relatively uneventful journey, except for a couple of occasions when the boats hit sandbanks. Crocodiles and snakes were plentiful in the river so volunteers to climb into the water to release the boats were not forthcoming! We safely arrived in Biera three hours later to be greeted by DFID, other SART members and ITN reporters.

This was the first time that boats had been that far up the river in unchartered waters and navigation was very difficult. The journey was very demanding and exhausting. It took me a few days to fully recover from fatigue and the effects of the intense heat.

Other team members carried out similar operations up the River Buzi after our return. Those team members at base trained local people in fire fighting techniques using their limited equipment, while others trained the local fire brigade to use the boats and engines in the unfortunate event of another such disaster in the future. All boats and engines taken to Mozambique were donated to the country.

2001: earthquake in India devastates an area the size of the UK

On the morning of 26 January 2001, a powerful earthquake hit the North Western Indian state of Gujarat. It measured 7.9 on the Richter scale and tremors were felt in neighbouring states, Delhi and over the border into Pakistan. The epicentre of the quake was located about 50km North East of the city Bhuj. The scale of the devastation and the damage done by the quake was colossal. As a comparison, an area the size of the UK was affected.

India was celebrating Republic Day at the time of the earthquake. This meant that the schools and public buildings were closed and that many people were at home. In addition to killing more than 25,000 people and injuring more than 150,000 others, the quake left a million people homeless and destroyed or damaged more than a million buildings.

In response to the Indian Government appeal for assistance, the UK Fire Service Search and Rescue Team (UKFSSART) were mobilised. Duty teams included Lancashire, Greater Manchester, Lincolnshire, Cheshire, and a search dog team from Leicestershire Fire and Rescue Service were also put on standby. One of the search dog handlers spoke Gujurat and became an essential asset during the team deployment.

The UKFSSART comprising 29 members was supplemented by a further 30 members of two other voluntary organisations.

The British teams took off for India aboard an RAF Tri-Star from RAF Brize Norton, in Oxfordshire. After arrival at Ahmamabad Airport, the team's equipment was loaded onto a fleet of buses and lorries provided by the Gujarat people, which DFID representatives on the ground had organised.

Huge piles of rubble

Twelve hours of travelling later, the sight that awaited the team in the city of Buhj was one of near total devastation. Huge areas of the city had suffered massive damage to the buildings and structures, while others had collapsed completely leaving nothing but huge piles of rubble for as far as the eye could see. There were thousands of displaced people in the roads and towns on route; the collapse of buildings and damage to the infrastructure was extensive. Rescue operations began within minutes of arrival in the city, and it wasn't long before a live casualty was located and handed over to the Indian Army.

"The team searched over 75 buildings during the deployment. In total six persons were rescued alive by UK teams."

Prior to arrival one member from each team had been identified to form a support team. Their role was to establish the camp and record events, organise water, food, interpreters and transport. Our Base of Operations was established on a cricket pitch close to the city's central government offices, and the rescue operations continued. At this time, the UK teams were the first international rescuers.

The Indian Army had begun recovery operations in many of the areas where UKFSSART members were asked to commence search for live casualties. This created some small conflicts that required some intervention. This was amicably resolved and the teams were allowed access to search before the Army recommenced their recovery. From that point on relations with the Indian Army were exceptional, leading to closer working and cross training during the following days.

Unified response

On day two, the UK teams were supplemented with the arrival of 35 Turkish rescuers and a team of Japanese rescuers with search dogs; followed some hours later by a French team, also with search dogs. All agreed to be coordinated through the UK structure. Contact was also made with both German (THW) and Russian teams operating in the same region.

Rescue efforts were hampered in the first couple of days with the lack of specialist heavy lifting equipment. However, the Indian Army Engineers were subsequently able to organise additional equipment, which began to arrive in large quantities. This allowed the teams to revisit some of the buildings that had been likely to contain voids where casualties may have been trapped and alive but which had previously been impossible to reach.

Equipment donated

As the rescue phase of operations was closed, and before departure, the teams left a considerable amount of rescue equipment, tents, sleeping bags and cooking facilities. The rescue equipment was donated by the teams to the Indian Army rescuers and the remainder to the local charities to support some of the displaced population. The donation was supported by DFID.

The team searched over 75 buildings during the deployment. In total six persons were rescued alive by UK teams. A further three persons were rescued by teams working from the UK camp, under the UK command structure. Many more were recovered, unfortunately deceased. The confirmation that missing loved ones had become victims, being the only comfort possible to give the surviving relatives.

Team profile: Lancashire

The Lancashire Fire and Rescue Service team members form part of the search and rescue element of UK ISAR and also provide members to the UK Emergency Medical Team.

Lancashire Fire and Rescue Service first deployed firefighters to the Armenian earthquake, in 1998, before the inception of UKFSSART and has since deployed to various disaster zones over the years as part of UKFSSART and UKISAR.

Countries the team has deployed to include Macedonia, Turkey, Mozambique, India, Algeria, Pakistan, Haiti, Japan and, in January 2018, one of Lancashire's team members deployed to Bangladesh for three weeks as part of the Emergency Medical Team.

The team has undertaken capacity building projects in India as part of the Aga Khan Development foundation and participated in medical training in South Africa.

2003: combined response to earthquake in Algeria

On 21 May 2003, the most powerful earthquake to have affected North Africa since 1980, struck northern Algeria. This tragic disaster led to the death of more than 2200 people, injured more than 10,000 and left at least 180,000 homeless.

Measuring 6.7 on the Richter scale, the earthquake completely flattened the town of Zemmouri, situated at the epicentre. Powerful tremors measuring up to 5.8 continued throughout the week, adding to the destruction and loss.

Up to half of the hospitals and health centres in the affected area were destroyed, leaving the remaining services overwhelmed with casualties.

The 16-strong team from UKFSSART joined a combined UK team, with almost 100 personnel departing from Stansted Airport to join the rescue efforts. The UKFSSART team were actively engaged in rescue operations for one week, and included crews from Lincolnshire, Grampian, Greater Manchester and Lancashire fire and rescue services.

2003: Boxing Day earthquake strikes Iran

On 26 December 2003, at 05:27 local time, an earthquake measuring 6.6 on the Richter scale struck south-eastern Iran's Kerman Province. The epicentre of the earthquake, with a depth of 10km, was near the city of Bam, 180km south east of the provincial capital of Kerman and 975km southeast of Tehran.

There were over 100,000 people living in Bam and the surrounding area, all of whom were affected by the earthquake. The earthquake resulted in the deaths of over 33,000 people, with up to 30,000 others injured.

Initial estimates stated that 80 percent of houses in the immediate area of Bam were destroyed. This left approximately 50,000 residents homeless, with a definitive number difficult to establish as many had fled Bam, and others had found refuge with relatives elsewhere in Iran.

Eighty major aftershocks were recorded, causing further damage to remaining structures.

The UK team comprising firefighters, doctors and dog teams from Essex, Hampshire and Kent, together with rescue specialists from other UK-based volunteer rescue organisations, flew from Stansted Airport on a plane funded by the UK Government. The deployment was swift, with the team in the air only six hours after mobilisation.

Search and rescue

On arrival in Kerman, parts of the UK team were almost immediately flown the 200km to Bam and were conducting search and rescue operations, approximately 28 hours after the earthquake struck.

A second aircraft, planned for the rest of the team, failed to become available, and five hours later the first task facing the remaining volunteers was to get to the affected area on roads severely damaged in the 'quake. This journey gave an insight into the scale of devastation, included stops to help clear sections of road, and assist the stream of people departing a region that the UKFSSART were desperately trying to reach. After 14 hours by road, the vehicles finally made it through. The team slept for the remaining two hours of darkness and then set up camp at first light, while trying to get a work area allocated by the local authorities. The combined teams were deployed to an area designated as Zone 5 by the local authorities, and spent all day checking buildings and conducting searches where possible live casualties may have been.

It was clear that the type of construction meant that virtually all the buildings crumbled into small pieces and left no survivable voids. All the international teams working in other zones reported the same results and the collective opinion was that there was very little probability of anyone being rescued alive.

No live casualties found

The UK team returned to report that all viable sites in Zone 5 had been cleared and no live casualties were found. The search was extended the next day, to include other areas and the team responded to several specific reports of possible live casualties. The same pattern emerged with all alerts proving false with no live rescues made.

After three days, the authorities decided to accelerate the relief effort for the 50,000 survivors who were now homeless and scale down the search and rescue operation.

While the deployment failed to conduct any live rescues, it nonetheless provided the local population with confirmation and closure, of relatives who had become victims of the earthquake, and proof that the world cared. The team's efforts were clearly appreciated, and as in other deployments, it was immensely humbling for the team to be treated so kindly by people who had suffered such a tragedy.

Team profile: Hampshire

HAMPSHIRE FIRE AND RESCUE SERVICE

Hampshire Fire and Rescue Service UK ISAR team members provide three elements of the overseas disaster response. Since its inception, Hampshire has provided a search and rescue capability. This has now been expanded to include providing the Base of Operations function and, more recently, members of the Emergency Medical Team.

Hampshire team members have also been involved in the training of other countries' search and rescue teams, including two visits to Montserrat before and after the volcanic eruption, training in Italy, Tajikistan, Poland, Sweden, Malta, Gambia, Chile and Kenya.

One of the lighter moments the team enjoyed was after months of building work at Fort Widley, in preparation for Exercise Orion, they were delighted when the first crew arrived to see vans on fire, a huge dust cloud heading in their direction and 30 casualties screaming at them on top of a rubble pile; the looks on their faces was priceless!

As the UK ISAR team enters its 25th year, Hampshire Fire and Rescue Service looks forward to a continuing commitment and improving capability with many new and younger members joining to maintain and develop the team.

2005: team of 38 deploys to Pakistan earthquake

The 8 October 2005 earthquake in Kashmir is remembered as one of the worst natural disasters in South Asia. The 7.6 magnitude earthquake affected the northern regions of Pakistan, Afghanistan and India. An estimated 75,000 people were killed, mostly in Pakistan-administered Kashmir.

In response to the devastating earthquake, the Department for International Development (DFID) played a vital role in the immediate response to the disaster, sending out the first search and rescue team to start work in Pakistan, and working with more than 30 organisations on the ground, providing essential supplies and support over the following months to cope with the aftermath.

Combined UK team

The UK Fire Service Search and Rescue Team (UKFSSART) were mobilised following an official request for assistance by the Government of Pakistan. The team comprised 38 UKFSSART members from services including West Midlands, Grampian, Greater Manchester, Lancashire, Leicestershire and Lincolnshire. Once again, UKFSSART would form a combined UK team that also included four separate Non-Government Organisation volunteer rescue teams.

The scale of destruction became clear to all members of the team during helicopter flights to the Base of Operations, located at the foot of the Himalayas.

The search and rescue operations were some of the most distressing that teams had encountered.

Together with teams from both DFID and the Foreign and Commonwealth Office, the combined UK team departed from East Midlands Airport, arriving in Islamabad on the afternoon of 9 October.

Elements of the team were immediately deployed to Muzaffarabad in Kashmir by helicopter to commence search and rescue operations, with limited equipment. Remaining team members, and a more complete range of specialist equipment followed, once further helicopter transport could be secured. The apocalyptic scale of destruction became clear to all members of the team during those helicopter flights to the Base of Operations, located at the foot of the Himalayas.

Live casualty rescues

The search and rescue operations were some of the most distressing that teams had encountered, with several schools located, where there had been significant loss of life. In spite of this, a substantial number of live casualty rescues were undertaken. The UK teams rescued a total of 13 people, seven in Islamabad and six from the Muzaffarabad area. This was approximately 50% of the total live rescues carried out by all the international rescue teams responding to the disaster.

In addition to undertaking rescue operations, the West Midlands contingent of the team had a significant role in coordinating the international relief effort. Through a link with the German army, the team arranged for helicopters to be flown into remote areas; this assisted with the deployment of other international search and rescue personnel, and the vital provision of aid supplies into areas that were not accessible by road.

Professionalism demonstrated by all

Speaking in an interview after his return to the UK, Keith Ring, the UK Fire Service Team Leader at the time, said, "This deployment was one of the longest ever undertaken by UKFSSART and certainly the most successful, with a total of 13 live rescues being undertaken by teams from the UK. The success of the deployment was down to the fact that we were mobilised quickly, arrived in country early and the professionalism demonstrated by all team players who had to work in extreme conditions in a country whose infrastructure had totally collapsed. Scenes encountered were very harrowing and we all wished we could have done more. However, given the constraints that we had to work within I am convinced that we could not have achieved more."

Keith added, "The UK contingent demonstrated to the UN that we are able to offer a very professional response to this type of disaster and I am certain that we will find ourselves being more involved in the future with the whole range of humanitarian aid."

The UK teams rescued a total of 13 people, seven in Islamabad and six from the Muzaffarabad area.

Team profile: Leicestershire

LEICESTERSHIRE FIRE and RESCUE SERVICE

Leicestershire Fire and Rescue Service was one of the original teams to be selected in 1993 to form the United Kingdom Fire Service Search & Rescue Team (UKFSSART).

The Leicestershire team at that time consisted of 12 original members; this gradually grew over the years to its largest number of 22 personnel. Recently this number has reduced due to the age profile of the team, with retirements from the service. In 2018, four new members have passed the arduous International selection process to become the latest members of this unique team.

The team has deployed to: Macedonia (1999), Turkey (1999), Algeria (2003), Indonesia, Pakistan, New Zealand, Nepal, Bangladesh (EMT).

Since 1993, the team has been proactive in numerous capability-building projects worldwide and have deployed team members to countless humanitarian disasters.

(From L to R): Vince Cooper, Ken Hughes, Chris Geary, Chris Pritchard with Maya, Dave Bate, Craig Hallam, Kal Diyar, Andy Hartley, Mark Bryers, Ian Holden, Steve Willatt, George Clarke, Chris Rollestone, Mark Ferguson, Ian Cotton (Polly), Pat Carnan with Abby, Ian Nuttall, Keith Moore and Rob Kitson.

Team profile: West Midlands

WEST MIDLANDS FIRE SERVICE

The West Midlands Fire Service UK ISAR members are responsible for providing the Command Support function during all deployments. This includes the operational command and coordination in the field and hosting the UK-based incident room, which coordinates with, and provides support to, all deploying services, the National Fire Chiefs Council, Government departments and the deployed team.

The West Midlands team has a long history of deployments and capacity building projects, which date back to the groundbreaking deployment for the British fire and rescue service to Northern Iraq in 1991. Since then, its members have deployed to Turkey, Pakistan, Indonesia, Haiti, New Zealand, Japan, and Nepal, not mention the infamous Birmingham tornado of 2005.

The team has, for several years, travelled to Tanzania to train fellow firefighters in vital life-saving techniques. During this time, links were also forged with the Matumaini orphanage, which is a boarding school for 195 children with physical disabilities. One of the aims of the school is to educate, encourage, and mobilise the children to a better way of living without viewing their disability as a hindrance. Previous visits have included major construction and refurbishment projects that have greatly enhanced life at the orphanage, along with the donation of wheelchairs and prosthetic limbs, which team members had collected from around the UK.

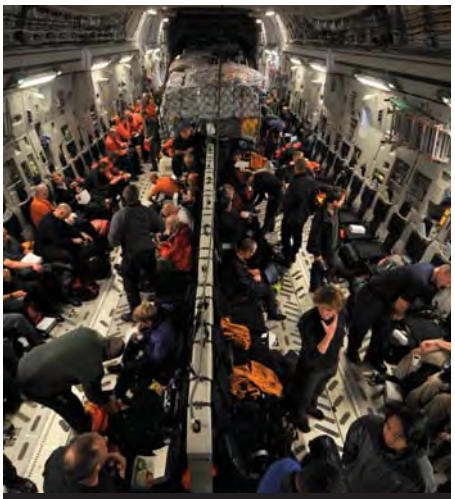
One of the lighter memories from international deployments occurred after the Japanese tsunami in 2011. Waiting in a large private aircraft hangar for flights home to be arranged, with colleagues from the USA. Exhausted, and tired of the songs being played over the internal speaker system, 'someone' loaded up YMCA, which resulted in some truly shocking dance moves from UK ISAR, and some very confused looks from the US search and rescue teams.

2009: Indonesia Earthquake

Over 1100 people died in the earthquake that struck the Indonesian island of Sumatra on Wednesday 30 September 2009. The 7.6-magnitude quake struck close to the city of Padang, the capital of West Sumatra province. The earthquake brought down hospitals, schools and shopping malls, cut power lines and triggered landslides, which impacted several remote villages. A second quake of 6.8 struck close to Padang a day later.

Early estimates suggested that around 250,000 families had been affected through the total or partial loss of their homes and livelihoods. Identified priorities included search and rescue, shelter, water and sanitation.

The UK ISAR response was mobilised to RAF Brize Norton. On the flight were a 64 strong UK Fire Service Search and Rescue Team, which included two search dogs, plus a DFID liaison officer, and search and rescue equipment.



On the flight were a 64 strong UK Fire Service Search and Rescue Team and search and rescue equipment.

The earthquake cut power lines and triggered landslides, which impacted several remote villages.

In support of the wider humanitarian requirements, the flight also included a two-person DFID humanitarian assessment team, a shelter expert for the aid agency Care, 386 shelter kits, and two million water purification tablets to be consigned to Save the Children on arrival in Padang.

A DFID Humanitarian Advisor working with the United Nations Disaster Assessment and Coordination team, was able to meet the plane and was joined by a member of staff from the DFID Jakarta office.

The team were assisted by Foreign and Commonwealth Office (FCO) staff from the British Embassy who fast tracked the immigration and visa process at the airport. The team unloaded the plane into eight trucks, two coaches and one Land Cruiser and left the airport for a stadium where they set up a Base of Operations with the Australian Team and the Save the Children charity.

Searching collapsed buildings

Within the first 48 hours, the search efforts were focused on the collapsed buildings within Padang. The severely damaged buildings included 241 schools and 45 health facilities. Telecommunications, electricity and water supplies, and road access to the affected areas were all severely disrupted.

Landslides

As operations moved out of the city, the team were deployed to the remote valleys, which had been devastated by the landslides triggered by the earthquakes. Accessing these isolated areas gave the opportunity for search and rescue operations to be conducted in locations that had received no other assistance since the earthquake had occurred, the recovery and repatriation of the deceased, and for the delivery of much needed aid supplies.

With the eventual closure of the rescue phase, UK ISAR personnel undertook a wider humanitarian role and assisted in the distribution of relief items supplied by DFID, including plastic sheeting and water purification tablets. The shelter kits would provide shelter for approximately 750 families. The purification tablets supplied, would ensure clean water for 180,000 people for a week.

The team unloaded the plane into eight trucks, two coaches and one Land Cruiser.

2010: 60 international USAR teams save lives 'beyond the rubble' in Haiti

Rescues conducted by the team included two-year-old Mia, who was recovered from a collapsed kindergarten where she had been trapped under the ruins of the building for three days.

The earthquake that struck Haiti on 12 January 2010 led to one of the largest international urban search and rescue response operations since the establishment of the International Search and Rescue Advisory Group (INSARAG). Sixty teams from around the world worked side-by-side with national responders and conducted over 130 live rescues. It was one of the most successful and visible international earthquake response operations ever conducted. Tragically, over 220,000 people did not survive and many thousands more suffered terrible losses in a country that remains vulnerable to many kinds of natural disasters.

During the 2012 after-action review of the Haiti response, INSARAG Chairman, Ambassador Tony Frisch, stated that, 'What became clear in Haiti, and not for the first time, is that the assistance provided by international USAR teams goes way beyond the technical USAR operations. Indeed, this assistance in saving lives 'beyond the rubble' may become one of the most important areas to be addressed by INSARAG as it further develops its methodology and prepares for future challenges.'

After flying out on 13 January, the team set up a camp within Port au Prince airport and began search and rescue operations, which included the organisation of medical evacuations and delivery of aid packages, with the help of US army helicopters.

The rescue team with Mia and her parents.

UK ISAR were the first international rescuers to venture out of the capital, reaching victims in the flattened coastal town of Leogane. Rescues conducted by the team included two-year-old Mia, who was recovered from a collapsed kindergarten where she had been trapped under the ruins of the building for three days, and a 60-year-old man who had been at home in bed at the time of the earthquake.

My Haiti diary

Words: ***Jim Chaston, Kent Fire and Rescue Service, UK ISAR***

13 January 2010

12:30: Pager message sent out to the Kent UK ISAR Team members to show their availability for a 10-day deployment to Haiti.

01:30: The selected team was telephoned and requested to be at the USAR centre at Maidstone for 05:00 with a departure time of 06:00. Usual period of chaos followed – pants and socks being thrown into a bag, unanswerable questions from the wife, a quick check of the internet for expected weather conditions, risk of disease and any security issues, quick kiss on the cheek for my sleeping kids.

05:00: The team gathered, completed all relevant paperwork and were soon on the way to Horley Fire Station in East Sussex, the designated rendezvous point. Snow was falling heavily, resulting in a delay of more than six hours leaving Gatwick: the fastest response ever by the UK team to a natural disaster was being hampered by our own natural freak weather conditions!

Flight landed at Halifax for a quick refuel, and then onto Santa Domingo in the Dominican Republic, 100km from our destination; waited for clearance to fly into Port au Prince, the epicentre of the earthquake. Haiti Airport was wrecked, as the control tower had been rendered useless by the quake, and all power, including the runway lights, was down.

By this time the plane crew's hours had expired. The Fixer (DFID Member whose role is to sort out any problems) organised three planes: the first, a small prop plane, would take an initial search team, including the dogs, to hit the ground running and immediately get to work in finding potential sites; the second, which the Kent team was on; and the third, a cargo plane to transport the 10-tonnes of equipment that is required by a Heavy Rescue team to work effectively, and to keep us alive.

14 January

04:00: Landed in the heart of Port au Prince. We were only the third international team to make it. An area was allocated to the UK team by the OSSOCC (On Site Search Operations Coordination Centre) for our BoO (Base of Operations) and a makeshift camp was set up in an area of airport grass, about 100m from the runway, inhabited solely by a large population of tarantulas!

Shortly after dawn, the command and control team was put into place, and teams were deployed by the OSSOCC to Sector 15, an area of the city as yet un-visited by any rescue team.

Our first glimpse of Haiti was a true view of devastation and human struggle of unimaginable proportions. Piles of dead lined the streets, causing a pungent stench that had already strangled any fresh air, 90 percent of the buildings had some form of damage, with well over 70 percent completely flattened. Shanty towns had started to sprout on areas away from buildings, with people living in the clothes they were wearing at the time the quake struck.

One of the reasons so many lives were lost was due to the construction methods using hollow block walls, concrete floors and concrete roofs. They had been built this way to hold them down by their sheer weight to protect the occupiers from hurricanes. Ironic that a construction method designed to save life from one form of natural disaster had caused so much death by another.

On arrival at Sector 15, a forward control point was established next to a supermarket and the teams quickly started scanning the area for places where people could be trapped. The UN guards would stay by the vehicles but would not follow us on foot.

The first day didn't provide any successful rescues, just large numbers of casualties located. We would get led to buildings by locals desperate for us to uncover their relatives, but searching only confirmed their worst fears.

We came across one group of locals who had managed to free a lady, for her only to die in front of them within a minute of being released. This is sometimes referred to as 'smiling death' or crush syndrome, the sudden release of toxins caused by crush injuries that travel to the vital organs on release.

A curfew was put upon rescue operations due to the civil unrest and the UN security team insisted that the UK team was confined to base at night. In earthquake scenarios, the normal work ethic is work now and rest later, so a heavy burden was placed upon the team's shoulders as we were driven back to BoO.

Our equipment had still not arrived, so we had another night under the stars, but a greater concern was our lack of water and food. Our equipment packs have enough to keep us going for up to 10 days, so as not to be a burden on the host country. But by now, the small amount that we had filled our day sacks with at the Dominican Republic had run out and there were no signs of our supplies landing.

15 January

Another cloudless dawn, another day of 40-plus temperatures in store. More dead lined the streets, with increasing numbers gathering in the makeshift shanty towns.

Back to Sector 15, where the Manchester team, along with Mid and West Wales, had located and released a young girl called Mia after hours of tunnelling deep under a pancaked building. She was little more than shaken up, with a few scratches, and was a great morale boost when confirmation came over the radios.

Our joy was short lived. We were requested to assist the Lancashire team who had located an 18-year-old girl called Honey who had been trapped by a complex collapse at a college. A tunnel had been dug that got right up to her, but the area was so small that you couldn't move your arms, let alone operate any sort of tool to free her.

Honey would talk about her five friends who were with her in the room at the time of the quake, but these were now the five rotting corpses we were crawling over to

reach her. More fatals were obviously above us, as the bodily fluids had already started to drip down through the rubble.

Remembering that at this point we still didn't have any of our heavy rescue equipment, only some light tools that the advanced party had flown with, we set about breaching through the layers of concrete above her with a pointed bar and sledgehammer, with every swing of the bar the structure moved and an evacuation was soon called.

After a heartbreaking team brief, it was decided that without our equipment we were only putting the team at an unacceptable risk of the tunnel collapsing, so we requested that a team with the correct equipment attended at first light.

That night, a solemn mood hung over the camp. Nobody in any of their careers had ever walked away from somebody needing help, and it's a feeling that we would never want to experience again.

Travelled back up to Sector 15 with a Dutch team and their equipment. They were taken by Lancashire to the college where Honey had been left. To their horror, they discovered that locals had started to de-layer the building during the night but had caused further collapse. On inspection, by crawling up the tunnel, it was confirmed that Honey had joined her five fellow classmates.

Meanwhile the Kent team had been called out of Sector 15, by some locals reporting that they could hear calls coming from a collapse. On investigation, by running a Canadian search dog seconded with us for the day, no signs of life were found. This became a typical scenario.

On the way back to our sector, we were again called to a children's' hospital, where a four-month old baby called Oliver was missing. The crew got to work climbing through the rubble looking for any possible voids to put the dog into. I managed to find one that appeared to go into the basement area, possibly where Oliver had been.

The dog by this time was overcome by the heat, and was close to heat exhaustion, so I crawled into the void with my colleague, Ian Selfe, behind. Silence of the area was ordered and I called Oliver's name into the depths of the rubble. A baby's cry was the reply, and I instantly turned to confirm with my team mate. Again, Oliver was shouted into the hole and again a baby's cry was heard. This time, however, we managed to confirm that the crying was coming from a street behind the building.

The sad confirmation was given to Oliver's carer, and again with heavy hearts we continued our walk back to our sector.

Once again our walk was ambushed by a young man saying he was in verbal contact with a trapped man. We were led around the back of a large four-storey building and climbed up onto a concrete flat roof with access into the second floor. The building had suffered badly in the quake, the first and second floor had pancaked with the remaining resting in lean-to collapses in every direction.

An assessment of the structure above us led to us proceeding with caution, and we used some of the blocks to build a makeshift shore to afford us some security in the event of further collapse. One of the fundamental views of a collapsed building is that it takes its shape for a reason, whether that be the furniture within it holding it up, or the elements that have failed becoming the new structural elements. Our experience told us to continue with caution.

Shouting at the trapped man and trying to pinpoint his reply, we agreed an area in which to start digging. I asked the locals who had started to gather to get any tools they could and shortly after, a shovel, cold chisel and sledge hammer arrived.

As far as we could tell, the man was possibly two layers of concrete floor beneath us. We started to dig down through a block wall that ran from bottom to top of the house as this was much easier than tackling the concrete with our hand tools. Progress was good and we soon uncovered the floor below, which was being supported by a wardrobe. A quick discussion raised the idea of cutting through the back of the wardrobe and hopefully entering the void through it. A risky idea, but a possibility we put on the back burner.

Team profile: Kent

Kent Fire and Rescue Service has been a part of UK ISAR since its inception back in 1993, but before UK ISAR was developed Kent also played its part with some of the first international deployments that led to the formation of UK ISAR as we know it today.

The current Kent UK ISAR team is made up from its USAR/Technical Rescue personnel. It comprises 14 personnel split across USAR whole-time and on call staff. The crew is highly skilled in all the USAR competencies as well as additional skills, such as rope rescue, chainsaw, hot cutting, water rescue and search management.

The Kent UK ISAR team has participated in many overseas deployments, including Armenia, Monserrat, both Turkey deployments, Iran, Indonesia, Haiti and Japan.

Within the team there are four personnel trained as Sector Medics, two of which also attended Advanced Medic training in South Africa, in 2015, to advance their trauma/casualty care skills. The team has attended and participated in most of the national exercises, including the successful INSARAG classification and subsequent reclassification in Germany, in 2016.

Recently, Kent has supported the new Emergency Medical Logistics Team, with four members joining the national team.

Kent Fire & Rescue Service

We carried on digging down through the wall and suddenly came across a foot. Unsure at first that it was attached to our live casualty, as he had already confirmed that he was lying next to a fatality, it moved, and we realised that we had pinpointed his location.

The Dutch team arrived and handed us their lightweight breaker, but along with their arrival came two aftershocks that rattled Port au Prince with a menacing reminder of the force of nature that caused this disaster. We fled the building, huddling on the corner of the flat roof as far from the building as we could.

About 20 seconds of hysterical nervous laughter followed, a quick drink of water and we re-entered to release our casualty from his concrete tomb. The breaker enabled us to create a bigger hole in the concrete as to afford a flatter extrication, reducing the chance of us killing him by pulling him out head down.

Ian Selfe crawled into the void and discovered that the man's arm was trapped by a plastic wash basket. This was quickly cut free and to our delight we pulled him from the void and handed a very weak but nevertheless alive man to the team medic.

We rested for about 10 minutes, drank what water we had left and returned to Sector 15 to carry on our task for the rest of the day. Travelling back to camp, we noticed that rather than the dead being wrapped in blankets and respectfully placed on the sides of the roads, they were now being left in tangled piles in the middle of the roads.

16 January

Deployed to Leogane, another small city, but 25km closer to the epicentre. We were the first rescue teams or aid to reach the area since the quake. A similar tale of devastation had occurred. Unfortunately we were too late to make any rescues and life was starting to get back to normal. As we walked the streets, the locals would invite us in to view their dead: children trapped where they had been sitting at their school desks, rows of hospital beds that lay under the concrete roofs that had taken the lives of so many.

A temporary BoO had been set up on a cow field, and had started being swamped by walking wounded and people carrying their injured hoping for help. Our team medics on that day were a credit to the UK. Their presence in the team is designed for the treatment of the team itself. Enough equipment is carried for a team member who becomes critically ill to be looked after up to repatriation to the UK.

Here came the moral dilemma. Do they help the locals and risk the safety of the team? Of course they did. They triaged and treated over 50 people on that cow field, including organising the evacuation by military helicopter of three people. Everything from open femur fractures, to a pregnant lady hideously dehydrated, was treated on the grass. Unsung heroes of such a mission had saved the lives of so many.

The drive back to camp that evening led us through a Red Zone, the highest risk of civil disturbance. Unfortunately, our local driver wasn't drilled in fire and rescue service good practice and had deployed at the start of the day without a full tank of diesel. It was decided that to break down would not have been a good idea, so a bucket of diesel was purchased for a bargain price of $200 from a local! When you consider that an average daily wage in Haiti is fewer than $2, this entrepreneur had made the most of a bad week.

17 January

More frustration. Just before our convoy was due to leave the airport, a riot started and gunshots rang out. The teams that had not yet left the airport were grounded for the day and the teams that had made it through were recalled. More than 30 international rescue teams spent 24 hours locked in camp.

18 January

Deployed to another red zone, under strict guard from a Sri Lankan UN Team. An armoured personnel carrier carried the troops, an indication that they meant business. We ended up splitting into twos to walk the streets in order to cover the area quicker. At no time did we feel threatened and we communicated well with the locals. Medical advice was given, reassurance that aid would be coming soon, and structural advice offered to the people still too scared to re-enter their homes.

19 January

When we returned to base in the evening, we were quickly re-deployed to a supermarket. Information was a bit patchy but allegedly a voice had been heard. On arrival, we were greeted by a monstrous pile of mangled concrete, formerly a five-storey department store. A local group had entered the basement that was undamaged, but holding up the wreckage of the floors above. Using hand tools they had released over 40 people in the days since the quake. A remarkable feat of courage and endurance.

20 January

We thought this was going to be the start of the wind-down of the rescue effort. The window of opportunity had closed, and the rescues that were continuing were like lottery wins: chance encounters with locals and rescue teams that could lead them through the streets to a back alley, where frantic digging was still being carried out.

This changed when we were shaken out of our sleeping bags by an aftershock that read 6.2 on the scale. Its epicentre was 100km away, and we were soon being air-lifted into the epicentre.

Fortunately for the people of Petit Goave, they were still sleeping in the streets, and nobody had been trapped by the latest buildings to collapse.

21 January

Started the process of breaking camp and organising our departure from Haiti for early Friday morning.

At its peak, a total of 52 rescue teams totalling 1820 rescue workers and 175 dogs were at work in Haiti. At the time of writing, 132 people had been rescued, four by the UK team. More than 150,000 people had been killed, 200,000 injured, 400,000 are living in makeshift shelters, and more than 200,000 children were walking the streets without parents.

Our first glimpse of Haiti was a true view of devastation and human struggle of unimaginable proportions.

My first view of Haiti was that they would never recover from this disaster. However, after a few days, my view had started to change. They gain such strength from their faith, and to still be alive is celebrated rather than their losses mourned. Provided that the challenges of disease, sanitation and the rebuilding of the infrastructure is overcome with the help of the civilised world, the people of Haiti will bounce back. A dogged determination to survive that radiates from so many of their faces.

Team profile: Lincolnshire

Lincolnshire Fire and Rescue has been involved in the UK fire and rescue service response to international disasters from the beginning and has contributed to many deployments and capacity building projects.

The team's first deployment was to Turkey and since then it has been deployed to earthquakes in Algeria, India, Pakistan, Haiti and Japan, and to Bosnia to assist in flood relief. The Lincolnshire team was at the forefront of the use of canine search teams and was one of the first UK teams to deploy canines, when Neil Woodmansey went to Pakistan with Search dog Holly.

The team has also been involved in many capacity building projects, including work in Rwanda, India and, most recently, Columbia. In India team members assisted in the training of local teams in USAR, rope rescue and swift water rescue techniques. In Columbia team members assisted in preparing a local team to undertake the INSARAG external classification as a USAR team. They were successful and are now able to deploy to disaster areas. These capacity building projects are vital to allow a quick local response to emergencies.

A realistic collapsed structure training venue has been constructed at an old RAF facility in Lincolnshire. This has allowed national and international teams to train and exercise in extremely challenging and realistic conditions to ensure preparedness for disasters.

Dangers on these deployments come in all forms. In Haiti brave firefighters were reduced to trembling wrecks at the camp site at which they were based as they soon realised the whole area was infested by 6in Haitian tarantulas that nested down in holes in the ground, but were also fond of settling in the damp, warm footwear of the teams. To those who had little fear of spiders this provided a constant source of entertainment as nervous arachnophobes gingerly checked all nooks and crannies in their kit for these hairy eight-legged adversaries.

2011: magnitude 6.3 earthquake strikes New Zealand's South Island

A magnitude 6.3 earthquake struck the Canterbury region in New Zealand's South Island at 12:51pm on Tuesday 22 February 2011 local time (23:51 on 21 February UTC). The earthquake was centred six miles south-east of the centre of Christchurch, New Zealand's second-most populous city. The earthquake caused widespread damage across Christchurch, especially in the central city and eastern suburbs, with damage exacerbated by buildings and infrastructure already weakened by a previous earthquake in September 2010.

Words: ***Sean Moore OBE, UK ISAR National Coordinator***

UK ISAR received a request from the Department for International Development (DFID) to assist with the rescue efforts, following a request for assistance from the New Zealand (NZ) Ministry of Civil Defence and Emergency Management. Interestingly, the NZ Government were extremely selective in terms of which teams were requested. In total, eight international search and rescue teams from New South Wales, Queensland, Singapore, USA, UK, Japan, China, and Taiwan, in addition to the three New Zealand Search and Rescue Task Forces, were on the ground and engaged in rescue operations (total 150 personnel from New Zealand and 429 from overseas).

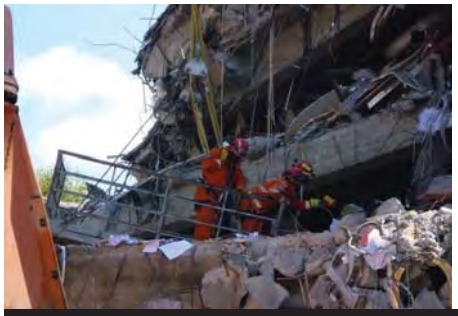
Heavy USAR team deployed

UK ISAR deployed a full heavy USAR team comprising 67 personnel, including command, logistics, medical, search, canine, hazmat and welfare components, on a passenger flight funded by Air New Zealand with 14 tonnes of equipment. On this occasion we also deployed a forward reconnaissance team of five personnel who flew in advance of the main team to ensure a smooth transition into the country through customs/immigration and to establish a plan of action for when the team landed.

On arrival in country the team was transported to the Base of Operations (BoO), which had been established in Latimer Square and positioned on the outskirts of the central business district and main scene of operations. The On Site Operational Coordination Centre (OSOCC) was also positioned here and was also the point from which all USAR operations were coordinated. The main national coordination group was operating from the National Crisis Management Centre in Wellington.

The team was tasked with two days of primary and secondary searches in damaged structures throughout the city but the main efforts were concentrated on the four-storey PGC House, headquarters of the Pyne Gould Corporation, which had collapsed, with 30 of the building's 200 workers still believed to be trapped inside. The team worked 12-hour shifts around the clock for five days and had complete control of the whole site, including inner cordon management.

Being the Operations Commander for the day shift, I was responsible for managing the safety of the team and liaising directly with structural engineers and demolition contractors who utilised heavy plant to literally deconstruct the building metre by metre, stopping after each metre of cutting/breaking to check for any signs of the people that we knew were still inside the building. When we did find victims we took great care, in conjunction with the NZ Police, and Disaster Victim Identification (DVI) teams, to recover them and their possessions with absolute dignity.



UK ISAR personnel working on the Pyne Gould building.

The team following a Maori church service, to which the teams were invited on completion of the rescue operations.

Emotional attachment

This site presented many issues, which challenged the technical capabilities of the team, but on conclusion of operations we were able to assure the NZ authorities that that all parts of the building had been systematically searched, and that all persons had been successfully recovered. Although we did not rescue anyone alive from this site we did recover 13 deceased persons, which brought huge relief and closure to many of the family and friends that we had met during the course of the operations. I personally will never forget the emotional attachment we had to this worksite, and just how much it means to not only carry out live rescues but to also recover and repatriate unfortunate victims from earthquakes, and other types of building collapse, back to their families and loved ones.

In total, 185 people were killed in the earthquake, making it the second-deadliest natural disaster recorded in New Zealand, with people from more than 20 countries being among the victims.

Team profile: Scotland

The 12 Scottish Fire and Rescue Service UK ISAR team members are made up of search and rescue personnel and include three sector medics and one search dog handler within the team.

The Scottish team search dog, Diesel, deployed to the Nepal Earthquake in 2015 and has taken part in many national and international exercises as part of the ISAR team.

The Scottish team has attended several earthquakes as part of UK ISAR – including; Algeria, Pakistan, Indonesia, New Zealand, and Nepal – and a gas explosion in Glasgow, in 2004.

Some team members (now retired) were deployed to Macedonia in 1999 for humanitarian aid, helping in refugee camps for five weeks. Others attended Sierra Leone, in 2005, to help rebuild a hospital.

One of the team's lasting memories from international deployments occurred after the Christchurch, New Zealand Earthquake in 2011. The team were honoured to attend a celebration Hāngi meal, hosted by the Māori community, in Christchurch. Following the meal, the team were taught how to do the haka.

Rapidly deployable government field hospital capability

UK ISAR has for the past two years been involved with the development of the UK Emergency Medical Team (UK EMT), which is a rapidly deployable Government field hospital, deployed following Sudden Onset Disasters anywhere in the world, and aiming to be operational within 72 hours.

UK EMT is a multi-stakeholder team with four main partners: UK Med facilitates the release of the field hospital's clinical staff from the NHS and provides them with relevant training; Humanity and Inclusion (HI), as a partner of UK Med, provides rehabilitation expertise; UK ISAR provides the logistics and site operations specialism for the field hospital platform; and DFID, via Palladium, delivers the infrastructure and overarching management.

UK ISAR personnel's responsibilities include: carrying out site assessments to determine the location of the field hospital; arranging transportation, unloading and staging of EMT equipment during the build phase; supervising and managing the construction of the Type 1 or 2 field hospitals; assembly, operation and maintenance of EMT equipment; providing support to catering services (patients and staff); management of vehicles and transport; establishing and maintaining continuous high flow clean water supplies; establishing staff/patient amenities, hygiene and sanitation; managing general and medical waste; managing and maintaining vector and pest control systems; establishing, operating and maintaining communication systems; supporting sterilisation processes, including the use of autoclaves; management of local staff (cleaning, security, transport); management of portering services within the hospital; provision of detailed briefings to staff on logistics related issues; and provision of and advice on health, safety and security guidelines and procedures, including but not limited to fire safety, electrical safety, vehicle and convoy safety, base camp safety and hospital safety.

Photo: Ged Richmond/Department for International Development.

Approximately 70 personnel from the current UK ISAR team have been selected and contribute to the UK Emergency Medical Logistics Team.

In December 2017, UKISAR deployed for six weeks as the Emergency Medical Logistics Team to Bangladesh to support the effort in treating an outbreak of Diphtheria. The EMT supported three sites on the world's largest refugee camp and assessed over 3000 people.

Team profile: Cheshire

Cheshire Fire and Rescue Service was one of the original services to answer the call, in 1991, to Northern Iraq and subsequent early missions. UK ISAR has developed somewhat since then and, with it, so has the Cheshire team.

Cheshire has concentrated on providing a search and rescue element and has, until recently, provided a search dog 'Bryn', handled by Steve Buckley, up to his retirement in 2017. Bryn was awarded the Award of Merit by the People's Dispensary for Sick Animals (PDSA), in 2017, for his lifetime's work, both at home and abroad.

Cheshire has been available for a wide variety of deployments, from early flooding deployment to Mozambique and earthquakes in Macedonia and Turkey. As the USAR capability in the UK developed, the Cheshire team held its place by training alongside neighbouring services and has contributed to deployments in: Padang, Indonesia (2008); Christchurch, New Zealand (2011); flooding in Bosnia (2014); and Nepal (2015).

A highlight for the team was singing with the Mauris at the Hāngi they put on for the UK team after the earthquake in New Zealand. To boom out Delilah by Tom Jones as the UK response to a Mauri traditional tune really broke the ice and paved the way for a great afternoon. To witness the Mauri culture throughout that deployment was very humbling for all that attended.

The current team is 12 strong and looking to train another search dog. The Cheshire team is also assisting with the establishment of the EMT field hospital capability.

Team profile: South Wales

South Wales personnel have been involved in UK ISAR since its creation. The present team is made up of 18 operational firefighters and commanders from across the South Wales area. All team members are recruited from the All Wales USAR Team, which ensures competency in the required skill sets.

The team has been involved in a number of deployments, including Mozambique, Macedonia, Turkey, Indonesia, New Zealand and, more recently, Nepal.

One notable experience was at the New Zealand earthquake where the team took part in a Maori spiritual ceremony at 03:30 with the Mayor of Christchurch. No form of cultural awareness could have prepared our team to sing Welsh and Maori songs. The team prides itself on its positive 'Can Do' attitude, always learning.

Team members have attended many exercises and training events, including Italy, Germany, Canada, Denmark, South Africa and, more recently, Sweden and Malta.

South Wales ISAR personnel have also played an important role in the development of rescue teams around the world, taking part in capacity building projects in Pakistan and Tajikistan, as well as training teams in the UAE.

2011: Japan earthquake unleashes tsunami and triggers a nuclear accident

On Friday 11 March 2011, a magnitude-9 earthquake shook north-eastern Japan, unleashing a savage tsunami that was up to 30m high. The effects of the earthquake were felt around the world. The degree and extent of damage caused by the earthquake and resulting tsunami were enormous, with most of the damage being caused by the tsunami. The earthquake and tsunami killed nearly 30,000 people. Of the 13,135 fatalities recovered by 11 April 2011, over 12,000 had died by drowning.

The earthquake triggered a nuclear accident at the Fukushima Daiichi nuclear power plant. The tsunami wave disabled the emergency generators intended to operate the pumps necessary to cool the reactors. The insufficient cooling led to three nuclear meltdowns, explosions, and the release of radioactive material into the environment.

Following a direct appeal from the Japanese Government, the British Government, through the Department for International Development, mobilised UK ISAR. The team of 65 personnel, including two rescue dogs and a medical support team, deployed with 11-tonnes of specialist rescue equipment, including heavy lifting and cutting equipment to assist with the location and recovery of those trapped in the debris.

"I struggle to comprehend how any community can move on from it. But people here are getting on and dealing with what's put in front of them."

Thick snow covered the ground in Kamaishi, which hampered mobility due to the amount of debris under foot, which was now disguised by the snow.

Coordinated operations

The team landed a Misawa US Air Force base in Misawa, Japan, on Sunday 13 March. It was here that contact was established with two international search and rescue teams from the USA. The UK and the USA-1 and USA-2 teams were assigned to travel together, establish a Base of Operations (BoO), and jointly coordinate our operations. Buses and equipment transport were arranged for our seven-hour road journey to the town of Ofunato.

Fishing boats that had been lifted clear of the harbour wall, now sat among the houses, hundreds of metres away from their original moorings.

All three teams set about establishing a joint BoO. Convention would be to establish this in tents away from any potentially damaged structures, however we had been allocated a school gymnasium, which after an extremely detailed structural assessment by the engineers from all teams, was utilised. In the freezing temperatures of the coming nights, all team members were thankful of this decision.

Immediate priorities included information gathering and joint planning to establish the areas of operations for our teams, as directed by the local authorities that were coordinating the activity. The entire town was divided into operational sectors to enable a thorough search to be conducted. The UK team were initially deployed to an industrial area around the harbour in Ofunato. While many team members felt that there would be little chance of locating survivors in this area. We deploy at the request of the affected nation and operate as requested. The area around the harbour had not yet been searched, and this was our assigned task.

Moving through the industrial areas, and slowly progressing into residential areas that surrounded the harbour, the sheer scale of devastation became ever more apparent; large fishing boats that had been lifted clear of the harbour wall, now sat among the houses, hundreds of metres away from their original moorings. The water marks on the few buildings that remained in place, gave an indication of the height of the wave as it had landed ashore, which simply didn't seem possible.

Search and rescue dog Bryn was injured during a search and was given several stitches to a cut by a UK ISAR doctor.

It was during this search that one of our search and rescue dogs, Bryn, was injured. He required several stitches to a cut, which was taken care of by one of our Doctors. The safety of all team members is our number one priority during a deployment.

More than words

While there were numerous body recoveries, there were no rescues conducted in Ofunato. On returning to our buses as the light started to fade, dozens of residents came out of their houses to thank us for being there. Many of these people had lost absolutely everything, and while the language barrier prevented substantial dialogue, a simple bow, or nod, and a shaking of the hand, said far more than any words could have.

On the Tuesday we were redeployed to a town called Kamaishi further up the coast, where once again, no search teams had previously been. It had been snowing prior to our arrival, and thick snow covered the ground, which hampered mobility due to the amount of debris under foot, which was now disguised by the snow. The search conditions were treacherous, and still the only discoveries that the team made were victims of the disaster.

Paul Burnham (left) and Rob Norman during a search of the residential areas.

During our search activity throughout the deployment, affected locals could be seen returning to what was left of their homes, gathering belongings that could be salvaged, and preparing for whatever comes next. During a press interview, Alan Downes from the Kent team captured this sentiment when he said, "We've seen total devastation in the areas affected. It's so significant, I struggle to comprehend how any community can move on from it. But people here are getting on and dealing with what's put in front of them."

With snow and falling temperatures hampering rescue efforts. Japanese authorities concluded that there was an extremely low chance of finding survivors, and rescue operations began to close.

Despite an extensive search operation, no survivors were found in the towns of Ofunato and Kamaishi.

2014: team of 33 undertake flood relief efforts in Bosnia Herzegovina

Following a request from the Department for International Development, in May 2014, UK ISAR deployed a specialist rescue team to help with the flood relief efforts in Bosnia Herzegovina.

The team of 33 firefighters, from Cheshire, Greater Manchester, Hampshire, Lincolnshire, Merseyside, Mid and West Wales, West Midlands and West Sussex, deployed equipped with a range of water rescue response equipment, including four rigid inflatable boats.

Three months of rain had fallen on the Balkans in just a few days, producing the worst floods since rainfall measurements began, 120 years ago. The heavy rain caused large-scale flooding and landslides, with water levels in some areas up to the second floor of homes. Fifty thousand people were directly affected by the flooding and its knock-on effects, with one million people living in the affected areas. Tens of thousands of people fled their homes.

Four inflatable boats

Team leader Nick Searle, from Merseyside Fire and Rescue, spoke to Sky News. He said, "It is a huge job but we have an enormous amount of experience between us. This is the first time we have been deployed to an overseas flooding disaster and we have brought four inflatable boats and have set up a command and control base."

Landslides, damaged roads and collapsed houses made the relief efforts more difficult. The team also faced the potential danger of unexploded landmines, dislodged by the floodwater, particularly in isolated areas.

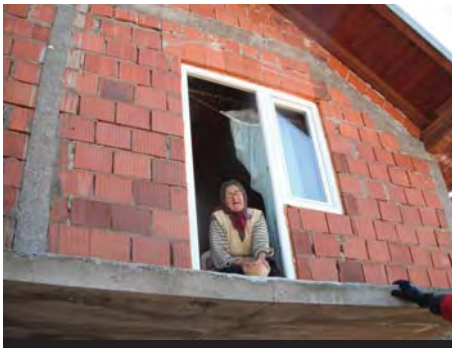
Working around the clock near the devastated communities close to the Bosnian city of Bijeljina, substantial achievements for the team included search and rescue operations with boats, which resulted in over 140 people being delivered to safety. For those who were more reluctant to leave their properties, the team delivered food, water and medical supplies to approximately 500 homes.

Although human life is always the team's first priority, the teams were also able to help transport food to livestock and animals who had also been cut off by the water.

Restoring power

In addition to directly undertaking rescues, the UK team conducted vital work with local engineers to reintroduce electrical power supplies across the region. This involved two boat crews working for two days near to a power station, and assisting by transporting personnel, and rerouting cables back to the main sub stations. Subsequently power was restored to many homes. It was during these infrastructure operations that a 3ft snake decided to take refuge in a boat crewed by crews from Merseyside and Lincolnshire. This resulted in a very rapid departure from the boat!

The heavy rain caused large-scale flooding and landslides, with water levels in some areas up to the second floor of homes.



For those who were more reluctant to leave their properties, the team delivered food, water and medical supplies to approximately 500 homes.

The rescue team endured arduous conditions during the deployment with temperatures over 30 degrees, ensuring that hydration was a priority for the crews who spent their days working in full protective dry-suits. However, the relief and sheer gratitude of those receiving assistance more than made up for any discomfort encountered.

Team profile: Merseyside

Merseyside Fire and Rescue Service (MFRS) joined UK ISAR in 2012 and since that time has provided USAR trained personnel and search dog assets to assist in capacity building projects in various locations around the world.

In 2014 MFRS UK ISAR personnel formed part of the UK ISAR'S inaugural flood response team and were deployed to Bijeljina, in Bosnia. Once in country they assisted in transporting electricians to main sub stations affected by the floods to reconnect the supply of electricity and assisted in humanitarian tasking by delivering food to local residents isolated in their homes.

More recently, team members have formed part of the Emergency Medical Logistics Team responsible for the setting up and running of electricity and water supplies for a fully functioning field hospital and assisting with general medical duties.

In the immediacy of Hurricane Irma, GM Kevin Longshaw was deployed to the British Virgin Isles as part of an assessment team. The hurricane made landfall along the North East Caribbean Islands on 6 September 2017, where it reached its peak intensity of 185mph winds, making this a Category 5 hurricane. While there, Kevin liaised with the local Chief Fire Officer offering guidance on fire fighting tactics, operations and the deployment of local resources. The team performed numerous wide area search assessments.

During the deployment in Bosnia, at a substation submerged in five feet of water, the local electrician shouted down from his ladder, "There is a snake on the window ledge that I have to work on." The teams in the boats, thinking he was joking, ignored him as he proceeded to throw the snake into the water. This was fine until the snake decided that it wanted to get out of the water and into the boat by climbing up the outboard engine. At which point all UK ISAR 'abandoned ship', leaving one of the locals to deal with the snake on the team's behalf. One of the interpreters stated that, 'The snake is more scared of you', but the seven firefighters in the water certainly believed it was the other way around!

Team profile: Mid and West Wales

Mid and West Wales Fire and Rescue Service (MWWFRS) ISAR team is made up of 16 team members that predominantly come from a specialist urban search and rescue background. The team comprises 13 search and rescue technicians, two deputy team leaders and a team leader. All team members are volunteers and have undertaken a stringent selection process to join the team.

Since 1991, MWWFRS ISAR team members have deployed to disasters in Iraq, Macedonia, Turkey, Mozambique, Indonesia, Haiti, Japan, Bosnia Herzegovina, Malawi and Bangladesh. The team has participated in many national and international disaster exercises and responds to local and regional disasters, including explosions, collapsed structures, mines incidents, confined space incidents and K9 search incidents.

MWWFRS ISAR team members have delivered search and rescue training in various locations, such as Monserrat, Thailand and Bulgaria.

The team are based at the USAR training centre at Earlswood, Swansea, where core training is undertaken. ISAR specific training is often undertaken at remote locations, such as the Brecon Beacons, where arduous conditions training is undertaken.

Three MWWFRS ISAR team members also support the UK Emergency Medical Team (UK EMT).

Gwasanaeth Tân ac Achub
Canolbarth a Gorllewin Cymru

Mid and West Wales
Fire and Rescue Service

2015: Nepal Earthquake

On 25 April 2015, a magnitude 7.8 earthquake struck an area between Kathmandu and Pokhara, Nepal. Due to the relatively shallow depth and size of the quake, coupled with many collapsed buildings in Kathmandu and the surrounding areas, international search and rescue support was requested by the Government of Nepal and the UK Government responded. In addition to the immediate rescue operations required, thousands of people needed medical attention, shelter, water and food.

The disaster took the lives of over 8000 people, injuring many thousands more. Over half a million homes were completely destroyed, along with damage to Government facilities and schools; nearly 1000 people urgently needed hospitals and clinics.

The UK ISAR team deployed to Nepal on Sunday 26 April at the request of the Department for International Development, with a total of 67 personnel. The team comprised USAR technicians from: Cheshire, Essex, Hampshire, Leicestershire, Scotland, London, South Wales, West Midlands and West Sussex. Additional management personnel were drawn from Lincolnshire, the National Resilience and Assurance team, South Wales, Leicestershire, West Midlands and, finally, medical and veterinary personnel from health trusts and private practices.

Valuable local knowledge

A DFID officer was embedded with the team, and proved to be an extremely valuable asset, using local contacts to organise transport, translators, airframe and repatriation plans. He also provided a valuable link to DFID country team and staff working at the airport to help with the transition of team personnel and equipment.

A flight diversion to New Delhi risked delaying the mobilisation of the team, so key parts of the team flew into Nepal on a Spanish Military flight and on normal passenger flights, which allowed personnel to embed themselves with British Gurkhas and gather intelligence prior to the main team landing in country.

The team Base of Operations was established at the British Embassy Nepal, which was hugely advantageous due to the location and proximity of the operational sites and levels of security available to the team.

Damaged masonry hangs over the entrance to a hospital.

Over half a million homes were completely destroyed, along with damage to Government facilities and school.

From time of deployment on 26 April, until the completion of a staged return on five separate flights, with the last two team members arriving back on Saturday 10 May 2015, the team achieved the following main outputs/outcomes:

- Search and body recovery operations in Kathmandu Sector Juliet, including recovery of personal effects of British and Russian nationals from collapsed buildings
- Wide area assessment operations in difficult to reach rural areas, in the Golche and Balephi Khola valleys. Seventeen villages were assessed for structural collapse, viable rescues, body recoveries, shelter, food, water, sanitation, health and medical care.
- Removal of dangerous overhanging debris from the Nepal College Hospital enabling the re-opening of 400 beds, two operating theatres and instilling confidence to the local community.
- Assistance to Save the Children, UK MED, British Gurkha Nepal and infrastructure support to the German Embassy and DFID field office
- Support to the UN Reception Departure Centre (RDC) and USAR Coordination Cell (UCC) responsible for the coordination of the rescue response, and handover to wider humanitarian operations upon completion of the rescue phase.

The team activities in Nepal included many actions that contributed to the wider humanitarian objectives of the response.

Wider humanitarian objectives

The team activities in Nepal included many actions that contributed to the wider humanitarian objectives of the response. Embodying the words of the International Search and Rescue Advisory Group (INSARAG) Chairman, Ambassador Tony Frisch, during the Haiti response that 'the assistance provided by international USAR teams goes way beyond the technical USAR operations. Indeed, this assistance in saving lives 'beyond the rubble' may become one of the most important areas to be addressed by INSARAG as it further develops its methodology and prepares for future challenges.'

Upon demobilisation, the team donated all of its welfare and medical equipment, including tents, generators, water purification systems, lighting, sleeping systems, and team equipment to assist Save the Children with its humanitarian objectives.

Search dogs integral to success

Search dog operations are an integral component of the search function when deployed overseas and are a requirement for UK ISAR to maintain its classification under the United Nations International External Classification (IEC) process for a Heavy Rescue capability.

The strategic requirement for UK ISAR deployments is to deploy with a minimum of four search dogs and to sustain operations for the rescue phase (which can be up to 10 days). To achieve this level of response, 10 search dog teams are required to be maintained and distributed across two rota groups on a four month on/off rotation, and must be available for a deployment within six hours of a request. They are provided on a voluntary basis and have deployed many times over the past 25 years.

Chris Pritchard and search dog Abby, from Leicestershire's UK ISAR team.

Locate the scent

The search dog teams are required to be able to search for entrapped persons in multiple collapse and partially collapsed structures and immediate areas, which are typically found in urban settings, and can cover large search areas quickly and effectively to locate the scent of live persons that are trapped and unable to self-rescue. Using this method to search ensures that teams do not have to put their human team members into dangerous situations without it being absolutely necessary.

It is essential that teams have a process to ensure that their search dog teams meet a minimum standard of performance before deploying overseas and they therefore undertake a four-stage process, which culminates in an initial test of competence to provide assurance that the search dog team are competent to be deployed internationally.

Whenever UK ISAR deploys, the search dogs are always highly visible components and offer reassurance to disaster affected communities that we are using the very best tools available to search for and locate missing victims of disasters. They are also very much loved by the media and are often the star attractions during press and media interviews.

Team profile: Essex

The Essex County Fire and Rescue Service UK ISAR members have deployed as part of the national UK team to missions in Macedonia, Iran, Indonesia, New Zealand and Nepal. Like other teams, Essex has a long history of deployments to global disasters, which date back to the humanitarian mission, Operation 'Agracola' to Macedonia, in 1999 (for which all UK team members received the NATO medal for Kosovo).

One of Essex's founding team members and original team leader/coordinator, Kim Collier, deployed to Rwanda on secondment to Her Majesty's Fire Service Inspectorate and DFID, to train local personnel in basic fire, search and rescue, and emergency service procedures. More recently, team members have also been part of capacity building projects in Abu Dhabi, instructing in hot cutting techniques, and Tajikistan, on two separate missions for general USAR capability and other specialist areas, such as basic rope and water rescue.

A proud moment for the team was when dog handler John Ball and his long serving dog Darcy, was awarded an MBE. Following the team's deployment to the Indonesian earthquake, in 2003, and upon return, the subsequent requirement for search dogs to go into six-month quarantine, John, John's wife Helen and Darcy campaigned tirelessly for a change in the law. They regularly attended Parliament and were eventually responsible for the subsequent change in law that now allows search and rescue dogs to not have to go into quarantine on return from deployments.

Team profile: West Sussex

West Sussex Fire and Rescue Service is responsible for the logistics for UK ISAR team deployments – 4.3-tonnes of specialist rescue equipment, stored at Horley Fire Station, near Gatwick Airport, can be boxed and made ready for transport within three hours of a call.

The West Sussex team has been involved in all ISAR deployments and capacity building in Pakistan, India and Tajikistan. Team members have also taken part in medical training in South Africa and logistics support for UK medical response to outbreaks of Ebola in Africa and Diphtheria in Bangladesh.

There's a fantastic sense of humour that seems to stay with an ISAR team throughout any task, however tired and hungry they are and however upsetting the task. This seems to lift the mood at any time of day or night and will always be one of the cornerstones of the team's ability to cope with whatever the situation requires. The Singapore USAR team leader was bemused, for example, when the sport of conkers was introduced to his team in Christchurch.

To remove some damaged masonry hanging over a hospital entrance, the team used a hoola hoop and aircraft cargo net, manoeuvred into position with ropes while rebar was cut using an electric saw taped to a 15ft length of bamboo, allowing the hospital to re-open the next day.

During the 2015 Nepal deployment, at a hospital in central Kathmandu, the team had been asked to look at some damaged masonry hanging over the entrance that meant they could not fully open the hospital. It was the kind of job that could have been done easily enough at home with a crane but none were available. The main issue was a block of brickwork hanging 40ft up on some rebar, with no easy access. The team came up with a catch net using the British Ambassador's daughters' hoola hoop to hold open a net made of aircraft cargo net; this was manoeuvred into position with ropes then the rebar was cut using an electric saw taped to a 15ft length of bamboo. Truly Heath-Robinson in the finest tradition of ISAR! This worked perfectly and the hospital was able to re-open the next day.

Team profile: London

London Fire Brigade (LFB) was part of the original UKFSSART responsible for mobilisation and government liaison. After a period of absence LFB took up a place on the UK ISAR operational response rota, in 2012.

Since 2012 the LFB members of the UK ISAR team have participated in many of the deployments, overseas training and capacity building projects. The brigade was responsible for developing the first ISAR extreme cold weather response course in Canada, in 2014, which focused on survival, navigation and wide area search in temperatures of -27°C. This course has continued annually for members of the wider UK team.

March 2015 saw the LFB team heading to Slovenia for a cave rescue course focusing on the rescue of live causalities from very difficult environments hundreds of metres below ground. This experience really stretched the team physically and provided valuable skills and knowledge for further deployments.

In 2016 the team developed a unique underwater shoring course, which took place at the Guardians Centre, Atlanta. The course, attended by teams from the USA, Canada and the UAE, provided the opportunity to develop protocols for timber shoring in different stages of flood, subsequently influencing FEMA training standards for timber shoring.

LFB members have contributed to UK ISAR capacity building projects in Pakistan, Portugal, India, Tajikistan and Bhutan, all of which provided excellent opportunities to test the team's preparedness to mobilise, pass on lifesaving skills to emerging rescue teams and extend cultural awareness.

Members of the team deployed to Nepal, in April 2015, following the Earthquake and more recently a team member assisted the EMT deployed to Bangladesh.

2016: United Nations INSARAG Reclassification as Heavy USAR team

In May 2016, UK ISAR reclassified under the United Nations International Search and Rescue Advisory Group (INSARAG) as a Heavy Urban Search and Rescue team, and in doing so, reaffirmed its position as one of the premier urban search and rescue teams in the world.

The 69-person team, deployed to the reclassification exercise venue in Weeze, Germany, after assembling in Kent, where the team undertook detailed pre-deployment checks and briefings, which included confirmation of all necessary vaccinations, passport requirements, and briefings on the country to which the team was being mobilised, including the extent of the simulated disaster that had occurred.

In this instance, the disaster in question was a continuous 36-hour exercise in the fictional country of Azuria, which had been ravaged by a hurricane, and would present specific challenges for the team, including: search, utilising four search dogs in order to locate casualties; cutting through reinforced concrete; heavy lifting of structural debris; casualty care; shoring of damaged structures; hot cutting; and confined space operations.

"As with any successful team, the hours of dedicated work and training that go unnoticed, are what produce the results required under scrutiny."

Constant evaluation

Prior to commencing the scenario, the team submitted an extensive portfolio of written evidence and were constantly evaluated throughout the exercise by a team of international urban search and rescue classifiers to ensure they demonstrated compliance with international USAR operations, measured against a comprehensive and detailed 142-point checklist, covering: political support, team management, logistics, command and control, medical support, search management, rescue operations, self-sufficiency, mobilising, training and administration.

Once in country, and within the exercise scenario, the team passed through an armed border control and were subjected to detailed immigration checks before establishing a Base of Operations, which allowed the team to be fully self-sufficient while deploying initial assessment teams out to areas that had been identified by the 'Azurian Government'.

The UK team was joined by teams from Spain, the Czech Republic and Italy at the training venue, which is a multi-agency training centre for national and international first responders and security organisations; it is one of the largest facilities of its kind in Europe.

The 69-person team, deployed to the reclassification exercise venue in Weeze, Germany.

Having identified priority worksites, and as part of round-the clock operational activity, the team set to work in order to demonstrate to the international classifiers how they have met, maintained, and in many cases exceeded the minimum standards established by the International Search and Rescue Advisory Group.

The team performed exceptionally well, and were judged as outstanding, with five areas of best practice identified, confirming its status as one of the very best search and rescue teams in the world.

Professionalism shone through

Classification Team Leader Sean Moore OBE said, "I am immensely proud of the teams' efforts leading up to and undertaking the INSARAG reclassification. The unstinting support and professionalism of our team members has shone through in every area of the exercise. Most importantly the attitude, good humour, and willingness to do whatever was asked of them was a joy to see, and was well noticed by the classifiers from the UN, and the other international teams within the exercise."

The team performed exceptionally well with five areas of best practice identified.

In order to deploy with a team strength of 70, UK ISAR has 249 members across the different services from which the team is drawn. A national management team ensures continual training, development, and maintenance of competence for international deployments is maintained. This in itself is no small task, and is a workload that takes place away from the media spotlight of high profile overseas deployments.

As with any successful team, the hours of dedicated work and training that go unnoticed, are what produce the results required under scrutiny. The team are able to couple this level of commitment with a wide range of operational experience from previous deployments.

The vast majority of the fire and rescue services that comprise the UK ISAR team also host National Resilience Urban Search and Rescue assets and work to a common USAR Concept of Operations; international operations come with additional complexities, and distinct limitations, in comparison. This is where the dedication, training and professionalism of every member of the United Kingdom International Search and Rescue team is tested, and the rigorous selection and training regime of its members is rightly validated. Yes, UK Urban Search and Rescue has many overlaps with the work and skill sets of the International Search and Rescue team, but the operational realities are very different.

Ultimately being a member of this shining example of our emergency services, is not about 142 areas on a UN checklist, it is about people; those who are trapped within a collapsed structure, those who are overwhelmed by the impact of a sudden onset disaster and require international assistance, and those dedicated people who are prepared to leave their own lives behind to go and deliver that assistance.

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