

# FIRE AND RESCUE INTERNATIONAL

Integrated fire, rescue, EMS and incident command technology

Volume 2 No 5



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# Third United Nations World Conference on Disaster Risk Reduction

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The United Nations Office for Disaster Risk Reduction

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## Contents

- 2 Comment
- Competition**
- 3 FRI Images
  - Cover profile
- 4 Air Tractor flies in to boost local wildfire fighting
- News**
- 6 Massive fire engulfed the arrivals hall at Kenya's busiest airport
- 7 Government inability to invest in fire services to blame for JKIA blaze
- 8 Fukushima: worst nuclear crisis since Chernobyl
- 9 Cargo ship splits in two in Richards Bay
- 10 Netcare reaches first milestone in its Sinako training initiative
- 11 Series of earthquakes in New Zealand this year
- 12 Loss of fellow crew members numbs Arizona elite fire fighter
- 14 Cargo ship runs aground off South African coast and sinks
- 15 Thermal imaging robot to assist in structural fire fighting
- 16 Southern California wildfire injures 12 fire fighters
- 17 Train driver negligence causes major train crash in Spain
- 18 AFIS system gaining global ground
- 19 NSRI's sea rescue crew undergo fire fighting training
- 20 Heavy rains flood Sudan's capital city, Khartoum
- 21 Florida town shaken by night-time propane plant explosion
- 22 Raging forest fires persist for more than three months in Siberia
- 23 Singapore keeps hand on the pulse of emergency services
- 24 National search and rescue service being reduced to VIP courier
- 25 Truck stalwarts form fruitful partnership
- 26 Fatalities suffered in Portugal wildfires
  - Drone could save heart-attack victims
- 27 \$1,1-million federal grant funds specialist fire service
- 28 Aircraft repositioned in Ermelo to battle wildfires
  - NFPA's aircraft emergencies guide helpful to fire departments
- 29 Yosemite fire noted as fourth-largest in California
- Doctors without borders**
- 30 Humanitarian group acts as support-base to medical centres globally
- National incident management system**
- 34 Towards a national incident management (IMS) system – by Colin Deiner
- Fire safety**
- 40 PIER programme making strides in Johannesburg
- Resuscitation Council 2013 Symposium**
- 42 Healthcare professionals speak on matters of the heart: Resuscitation
- Leadership**
- 44 Where is your place? – by Wayne Bailey
- Confined space rescue**
- 46 Confined space rescue – by Colin Deiner
- Whats on?**
- 54 Fire, disaster and rescue related events across the globe
- Poem**
- 56 Footprints in the Black – by Paul Fazekas



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# Comment



Lee Raath-Brownie

We proudly present the 17th edition of **Fire and Rescue International (FRI)**. This edition features our usual news round-up, local and international, as well as hands-on know-how, practical advice, leadership matters, a charity organisation, fire safety and general industry information. We trust that you will find this edition both informative and useful.

**Cover profile**

Our front cover this month features FFA Aviation, a specialist wildfire fighter aviation company that recently added the Air Tractor AT-802F to its arsenal. This world-renowned bomber is the first of its kind to arrive in South Africa.

**FRI Images photographic competition**

One of our readers won R2 000 by submitting his photograph of a fire spreading. See page 3 for details. **CONGRATULATIONS!**

You too can be a winner. Submit your high-resolution photograph featuring a rescue, emergency, incident or fire scene and win R2 000 cash!

**News section**

The fire at Kenya's international airport kicks off our news section this month followed by various incidents ranging from the Fukushima spill, New Zealand earthquakes, US and Portugal's wildfires, Spanish train crash, Sudanese floods to the US propane plant explosion. We also share the thoughts of the only surviving member of the Granite Mountain Hotshots fire fighting crew of 19 who were killed in Arizona. This edition also features local news including the recent calamities of two ships on the South African coastline, training initiatives and we review recently held seminars and events.

**Doctors Without Borders**

We profile Medecines Sans Frontier (MSF) also known as Doctors Without Borders and explore their objectives, awareness drives, initiatives projects and challenges.

**National incident management system**

Colin Deiner writes about the possibility of implementing a national incident management system in South Africa and explains the reasoning behind the initiative; its objectives and advantages.

**Fire safety**

FRI profiles the Public Information, Education and Relations (PIER) project undertaken by the City of Johannesburg's Emergency Management Services. We overview the various awareness programmes within the PIER project, the CERT safety kit and the seasonal campaigns.

**Resuscitation Council 2013 Symposium**

FRI journalist, Sylvester Haskins, attended the Resuscitation Council 2013 Symposium and reviews and features the various topics of discussion.

**Leadership**

Wayne Bailey, a regular contributor to FRI, writes about finding your own niche on planet earth, building on your personal attributes and abilities and trusting your gut feel.

**Confined space rescue**

Technical expert, Colin Deiner, shares his experiences in confined space rescue and discusses the intricacies of working in such hazardous conditions. Deiner details the atmospheric hazards, the PPE, ventilation and breathing equipment required as well as the importance of adequate communication systems. Sharing his hands-on experience with FRI readers, he also discusses the rescue procedures and retrieval systems and explains the importance of training in your area, building relationships with companies, factories and buildings that could be a future confined space rescue incident.

A big thank you to all our readers, advertisers and contributors for their continued support. **Fire and Rescue International** is your magazine. Read it, use it and share it!

**Lee Raath-Brownie**  
Publisher





**This month's FRI images winner!**

## Congratulations to

**Adam Myburgh for his "Spread of fire" photo taken with a Nokia E5.**

### Photo description:

Rubbish dump fire turned into a vehicle fire Melkbos Strand in 2008

**Well done!**

**Adam Myburgh wins this month's prize money of R 2 000!**

## Submit your rescue, fire or EMS photo and win R2 000!

Fire and Rescue International (FRI) has introduced a monthly photographic competition to all its readers. This exciting competition offers you the opportunity of submitting your digital images of fires, fire fighters, disasters, emergencies and rescues.

### The rules are simple:

- All photographs submitted must be in jpeg format and not bigger than 4 megabytes.
- Photographs must be in high resolution (minimum 1500 pixels on the longest edge @ 300dpi) for publishing purposes
- **Allowed:** cropping, curves, levels, colour saturation, contrast, brightness, sharpening but the faithful representation of a natural form, behaviour or phenomenon must be maintained.
- **Not allowed:** cloning, merging/photo stitching, layering of two photos into one final frame, special effects digital filters.
- Fire and Rescue International (FRI) reserves the right to publish (printed or digitally) submitted photographs with acknowledgement to the photographer.
- Winners will be chosen on the merit of their photograph.
- The judge's decision is final and no correspondence will be entered into afterwards.
- Brief description should accompany photo.

### Entries must include:

Name of photographer  
Contact details (not for publishing)  
Email: (not for publishing)  
Name of photograph  
Brief description of photograph including type of fire  
Camera, lens and settings used

All entries must be emailed to:  
**lee@fireandrescue.co.za.**

**>>ENTER NOW!**



The first Air Tractor AT-802F arrived in South Africa



Photograph: Joe Dreyer, Lowveld Media

# Air Tractor flies in to boost local wildfire fighting

**For more than a decade now, the Air Tractor AT-802F has served with distinction at the front lines of wildfires around the globe.**



Johan Heine co-managing director of the FFA Group at the launch

South Africa's ability to fight unwanted wildfires has received a boost with the addition of the world-respected Air Tractor-802F to the FFA Group's fleet of wildfire fighting aircraft.

The Air Tractor is globally acknowledged as one of the best, most accurate wildfire fighting 'bombers' ever built.

"We are absolutely delighted to be able to add this highly efficient and very effective wildfire fighting aircraft to our fleet," said Johan Heine co-managing director of the FFA Group. "It will certainly make a huge contribution to wildfire fighting capability in virtually any environment; from fighting forest fires to runaway veld and fynbos fires in the Western Cape.

The Air Tractor was designed, developed and first flown in the USA. It carries fire retardant or foam hopper between the engine and the cockpit. Since its introduction and production in the 1990s, it has delivered its 500th Air Tractor this year, 2013.

The Air Tractor AT-802F has earned respect at the front lines of wildfires around the globe. As an initial attack air tanker, the AT-802F is regarded within the aerial fire fighting circles as a fast, manoeuvrable aircraft that is both operationally effective and very economical to operate. Short-field performance capability, fast ferry speeds and rapid turnaround on the ground are significant advantages when response time is critical.

Equipped with Air Tractor's patented constant-flow fire retardant dispersal system (FRDS), the AT-802F allows pilots and aerial fire controllers the flexibility to select the optimal coverage level for the fire size and fuel source, whether it's a grass fire or heavy forest canopy. The aircraft deploys an advanced, patented computer-controlled fire gate to deliver retardant or foam on fires. Its' accuracy is particularly valuable in suppressing wildfire to allow ground based fire fighters douse the flames.

The 802F pilot selects the coverage level, the amount of fire retardant to be dropped and the ground speed. The FRDS computer then automatically controls the hydraulically-actuated fire gate doors, making continuous ▶

Rinus van Raaij, piloted the AT-802F from Spain



Photograph: Joe Dreyer, Lowveld Media

► door opening adjustment to deliver a consistent coverage level from the start to the end of the drop. The computer even adjusts the delivery to account for changing airspeed and turbulence. Because the computer controls the drop, the pilot is free to fully concentrate on flying the aircraft.

The FFA Group acquired the aircraft from Air Tractor Europe earlier this year. It was flown to Nelspruit, landing Monday 9 September 2013 without incident.

The Air Tractor was flown to South Africa after the completion of the registration and certificate of airworthiness process required by the South African Civil Aviation Authority. The six-day flight began in Valencia, Spain on Wednesday, 4 September.

According to Heine, the new Air Tractor 802F will be used initially in fire fighting operations on contract to Sappi through the Lowveld and Escarpment Fire Protection Association (LEFPA) and then in the Western Cape with the Western Cape disaster management centre from 1 December 2013 during the summer fire season. ▲



Photograph: Joe Dreyer, Lowveld Media

The Air Tractor AT-802F has earned respect at the front lines of wildfires around the globe

# Massive fire engulfed the arrivals hall at Kenya's busiest airport



A fire at the Kenya's international airport gutted the international arrivals hall

A massive fire engulfed the arrivals hall at Kenya's, Jomo Kenyatta International Airport (JKIA), forcing one of the busiest airports in sub-Saharan Africa to close down, with all inbound flights rerouted to neighbouring cities.

According to local media reports, the fire gutted the international arrivals hall, where passengers pass through immigration and retrieve their luggage. The blaze left many passengers stranded outside of the airport grounds, as the flames and smoke billowed into the sky before dawn on 7 August this year.

Cabinet secretary for Kenya's transport and infrastructure, Michael Kamau, said that the fire began at 05h00 in the immigration section of the arrivals hall. "This is a major crisis," said Kamau.

Inbound flights were rerouted to neighbouring cities including the port of Mombasa and Eldoret, in the country's northwest and outbound flights were being grounded as fire crews in the city fought to extinguish the blaze, reported Kamau.

The fire broke out on the 15<sup>th</sup> anniversary of an attack on the US Embassy in Nairobi in which 224 people died. The

Jomo Kenyatta Airport Authority was not able to immediately identify the cause of the fire, but stated that there were no signs that terrorism was at play in the fire.

Images on Kenyan media showed flames rising high in the sky and billowing clouds of black smoke out of the main arrivals and departures terminal, with dozens of police and fire trucks at the scene.

Emergency teams and fire fighter's battled the fire at the international arrivals hall for five hours before it was contained. Firefighter's tackling the blaze were 'running dangerously low on water', prompting an appeal by Kenyan officials to road commuters to give way to trucks ferrying water to the airport.

JKIA serves as a regional hub for east Africa, with many long-distance international flights landing at the site to then connect to countries across the region.

In a press briefing, Kenya's interior secretary, Joseph Ole Lenku, said that 'security has been heightened' after the fire, adding 'we recognise the central role the airport plays to this economy'.

Kenya relies on horticulture exports to generation close to one billion Dollars (90 billion shillings) of foreign-exchange earning annually. The country supplies a third of the fresh flowers sold in European countries.

It was also peak season for tourism in Kenya, which relies on the industry to generate over one billion dollars (96 billion shillings) of revenue a year, its second-biggest source of foreign exchange.

Meanwhile, Kenyan authorities scrambled to return JKIA to normal operations in the days following the blaze, with Kenyan president Uhuru Kenyatta saying that the country will find out who or what was responsible for the fire.

Kenyatta said that a temporary terminal with a capacity of 2.5 million people or 6 850 people per day would be constructed within weeks, while authorities would try to fast-track the construction of a new terminal, which is set to open in March 2014.▲

## Banks offer funding for rebuild of Kenya airport

In light of the devastating fire that caused extensive damage to the Jomo Kenyatta International Airport (JKIA), Kenya Airports Authority announced that it received funding offers to build a new terminal at its main airport. Kenya's transport minister announced that three banks have made full funding offers for the build of the new terminal and a second runway that would cost \$653-million.

The plans to expand the ageing airport have been considered before the blaze in August this year, however, authorities have come under pressure to speed up the expansion after the blaze destroyed the arrivals terminal.

Kenya Transport secretary, Michael Kamau, said that the new terminal and runway will provide a further capacity of 40-million passengers, which is seen by government as a necessity to cope with the anticipated boost to the economy that the expected exploitation of newly discovered oil reserves in Kenya's Turkana County will bring.

Kamau did not identify the banks that offered funds to the Kenya Airports Authority, which is a Government parastatal. He said, however, that the lenders would not require a government guarantee, suggesting the lenders are confident they can recoup their money on the project expected to get under way this year.▲



# Government inability to invest in fire services to blame for JKIA blaze

The Kenyan National Fire Brigades Association (KENFIBA), secretary-general, Francis Omolo Liech, says that the blame of the JKIA blaze should fall on the Kenyan Government.

Omolo Liech questioned the security around the airport, which is supported by two fire brigades, the JKIA Fire Brigade and KAA Fire Brigade and how these fire fighting services could not detect the fire at its early stage. "A place like JKIA should be fitted with smoke and heat detectors connected to fire brigades for quick response," says Omolo Liech.

Unlike in Kenya and possibly many other African states, developed countries like China, UK, America, Germany and Japan, where disasters are envisaged and proactive measures are taken to mitigate the impacts of potentially destructive fires,

as in the case of the JKIA airport fire, according to Omolo Liech. The airport blaze left many stranded on the outskirts of the airport grounds. Nairobi, Kenya and its international airport is an essential hub for sub-Saharan passenger traffic, transporting 6,3 million passengers a year on more than 40 international airlines from Europe, the Middle East, Asia and the rest of Africa. "Kenya should be serious with its disaster preparedness operations. The Government should not wait for disaster to happen. African governments that are lagging behind should implement control mechanisms to encounter any pitfall or disasters that are likely to happen," contends Omolo Liech. He says that East African countries should form a body to oversee disaster preparedness and management and follow suit of the example set by the Southern African Development Community (SADC) member states. Omolo Liech

says that fires, famine, flooding, landslides and building collapses are among the disasters that frequently occur in Kenya and 'yet nothing has been put in place to deal with these disasters when they happen'. He contends that in developed countries, children are given education in disaster preparedness at primary school, which makes for a more proactive community in the dealing with disasters. "In Kenya, a country with a population of over forty million people, there are only 489 fire fighters. This is a big letdown. This is one of the reasons why the blaze at Jomo Kenyatta International Airport could not immediately be extinguished. Another reason is the equipment and another contributing factor is response. The response here is mainly reactive rather than proactive, because of lack of equipment thus the fire fighters do not answer the distress calls confidently," states Omolo Liech.▲

## Short Courses in Disaster Risk Management

The African Centre for Disaster Studies have the following Short Courses on offer for 2013

- Executive course in Disaster Risk Management:  
First Session: 9-14 September 2013 Second Session: 11-15 November 2013
- Basic Course in Disaster Risk Management: 16-18 September 2013
- Disaster Risk Management Planning and Assessment Course: 05-07 November 2013
- Advanced Course in Disaster Risk Management: 08-10 October 2013
- Basic Course in Disaster Risk Management with UNAM (University of Namibia  
- via interactive white board): 14-18 October 2013

All of these courses will be held in Potchefstroom

Cost per individual: R4500

Cost per group (5 or more from same institution): R3800 per person

For a quotation and to book your spot contact:

Christo Coetzee, christo.coetzee@nwu.ac.za, 018 299 1006

Kristel Fourie, kristel.fourie@nwu.ac.za, 018 2991624

# Fukushima: Worst nuclear crisis since Chernobyl

*A Fukushima nuclear building damaged in the earthquake and tsunami of 2011*

Japan's nuclear crisis escalated to its worst level in two years in late August, as contaminated water with dangerously high levels of radiation had leaked from a storage tank at the Fukushima nuclear plant, into groundwater and the ocean.

On 21 August this year, Tokyo Electric Power Co (TEPCO) announced that the contaminated water was leaking from a storage tank at its nuclear plant, located north of Tokyo.

Japan's nuclear regulation authority (NRA) feared that the plant's operator TEPCO, was unable to cope

with this new disaster at the nuclear plant, which suffered severe damage after the tsunami and earthquake that struck Japan in 2011. It was the world's worst nuclear accident since the Chernobyl nuclear disaster in Ukraine in 1986, where radioactive particles were released into the atmosphere, spreading across many parts of Europe.

The NRA said that it was concerned about leakage from other similar storage tanks, which were hastily built to store water washed over melted reactors at the station to keep them cool. TEPCO pumps thousands of metric tons of water

through the wrecked nuclear plant to cool its melted cores, in order to mitigate the effects of the damaged nuclear facility at Fukushima. As a result, leaking of the tainted water run-off entered groundwater and the ocean.

A spokesman for the NRA stated that the agency plans to upgrade the severity of the crisis from a level one anomaly to a level three (serious incident) on an international scale for radiological releases.

Upgrading the warning to level three will mark the first time Japan has issued a warning on the International Nuclear Event Scale (INES), since three reactor meltdowns at the plant after the massive earthquake and tsunami in March 2011. This disaster resulted in the evacuation of 160 000 people after a meltdown at three metal-rod reactors. The tsunami crashed into the Fukushima power plant north of Tokyo, resulting in radioactive contamination of air, sea and food.

## Nuclear disaster

A maximum INES level seven was declared at the battered plant after explosions led to a loss of power and cooling two years ago, confirming Fukushima as the worst nuclear accident since Chernobyl a quarter of a century earlier. ▶



*Excessive radioactive elements was leaking into the ocean in Japan in August, raising fears of it entering the food chain through fish*

# Cargo ship splits in two in Richards Bay

*The MV Smart bulk carrier ran aground soon after departing the Port of Richards Bay in August*

A coal carrying vessel ran aground at the Port of Richards Bay, KwaZulu-Natal, South Africa on 19 August this year, experiencing engine failure soon after it departed the Port, reported the Transnet National Ports Authority (TNPA).

TNPA chief harbour master, Captain Rufus Lekala, said in a statement that the vessel, MV Smart, carrying 147 650 tons of coal ran aground off the Port's entrance channel as it was leaving the Port of Richards Bay. Lekala stated that the MV Smart loaded at the Richards Bay Coal Terminal (RBCT) and was no longer under the TNPA pilotage when it ran aground. "Three TNPA tugs tried to assist the vessel but to no avail. The vessel has buckled and broken in two and is partly submerged."

Lekala said that there were twenty-three crew members, including the Master of the MV Smart, who were airlifted from the vessel by a TNPA helicopter. TNPA said it was closely monitoring any impact on the environment and there is no anticipated economic impact on the Port of Richards Bay.

Environmentalists say the damage caused by the crippled cargo vessel,

could have been far worse, but the situation needed to be monitored carefully. Ship salvors removed the fuel first before salvaging the ship's fully laden coal cargo. Captain Saroor Ali of the SA Maritime Safety Authority (SAMSA) says that the operation has been successful so far. Ali said, however, that fine coal dust had washed out on to sea.

Wildlife and Environment Society of South Africa national coastal project manager, Ted Knott, said that while coal is a natural substance, such high quantities as was on board the MV Smart, is almost sure to have some effect on the biodiversity of the environment. "It will most likely affect your filter feeders. It will probably be ingested by fish and could affect their breeding and basic survival," stated Knott.

The Department of Environmental Affairs stated that a contingency plan was in place to ensure that the environment and health of marine species in the area were protected. No oil spill from the vessel had been reported in the weeks following the incident and as part of the contingency plan the department reported that containment booms were deployed around the vessel

to protect the coastline against any possible pollution during the salvage operations.

By 4 September, all heavy fuel oil had been removed from the capsized MV Smart bulk carrier, according to a statement from SAMSA. An estimated 1 769 tons of fuel oil and 129 tons of diesel was removed from ship, as part of phase one of the salvage.

On 9 September, the Department of Environmental Affairs reported that it approved an emergency request from SAMSA and its salvage team to dump the 10 000 tons of coal from the vessel into the sea as an interim measure. "MV Smart, a bulk carrier that ran aground in Richards Bay last month, has split in two, making it almost impossible for the salvor's to carry out other alternative dumping solution," stated the report on the Department of Environmental Affairs website.

The approval of emergency dumping of coal came after extensive consultation between the Department, SAMSA, the salvors, the uMhlatuze Municipality, Ezemvelo KZN Wildlife and the Provincial Department of Agriculture, Environmental Affairs and Rural Development. ▲

► TEPCO has been criticised for its failure to prepare for the disaster and been accused of covering up the extent of the problems at the plant, with the NRA questioning the ability of the plant operator to deal with the disaster. "This certainly exceeds Tokyo Electric's ability in some respects," NRA chairman, Shunichi Tanaka, said at a media briefing when asked whether the operator could handle the crisis.

Chinese officials expressed shock at the news that Fukushima was still leaking contaminated water two

years after the disaster and urged Japan to provide information in a 'timely, thorough and relevant way'.

"We hope that the Japanese side can earnestly take effective steps to put an end to the negative impact of the after-effects of the Fukushima nuclear accident," said China's Foreign Ministry in a statement made to an international news agency in August this year.

Japan's chief cabinet secretary, Yoshida Suga, said at a news conference in August, "Any way

you look at it, this is deplorable." Suga added, "The government will make every effort to halt the leak of contaminated water as soon as possible."

Meanwhile, Russia repeated an offer made two years ago to help Japan clean up its battered Fukushima nuclear station. State-owned Russian nuclear utility, Rosenergoatom's first deputy general Vladimir Asmolov, said, "In our globalised nuclear industry we don't have national accidents, they are all international." ▲

# Netcare reaches first milestone in its Sinako training initiative



Netcare CEO, Richard Friedland and Netcare transformation manager, Nceba Ndzwayiba with three of the Sinako project 2012 graduates

Private healthcare provider, Netcare Healthcare Holdings (Netcare), which operates and manages the largest hospital, private ambulance service and doctor network in the world, has initiated a programme to provide employment opportunities for people with disabilities.

The programme, called the Sinako project, offers learnership opportunities to young members of the community, as well as Netcare employees with disabilities.

The first learners in the learnership initiative recently graduated from the programme, which has garnered 'overwhelming' interest, marking a milestone for the company, reports Netcare.

A graduation ceremony for the first intake of students in the Sinako programme was held in August this year and was attended by the Ministry of Women, Children and People with Disabilities director general, Veliswa Baduza.

Baduza praised Netcare for demonstrating best practice and good corporate citizenship in this arena, saying, "Netcare has shown this leadership by reaching the national target that government has set for

companies; to employ two percent of people with disabilities in their total staff complement. Most companies are currently failing to meet the two percent target, so Netcare is providing them with a roadmap that includes using learnerships as part of an organisation's recruitment strategy."

Netcare reports that it offered 73 learnerships and internships to people with disabilities in 2013. The organisation received over 2 000 applications within a day of advertising the programme. Netcare reports that sixty-eight new recruits commenced their duties in August this year.

Netcare's transformation manager, Nceba Ndzwayiba, says, "Offering such a programme requires a mind shift; we should acknowledge people with disabilities for their capabilities rather than focusing on their challenges. The intervention requires a thorough analysis and elimination of organisational, environmental and attitudinal barriers that may restrict those with disabilities and deny their right to enjoy equal access to opportunities and benefits in the workplace."

Ndzwayiba adds, "As a starting point, we should ask ourselves what modification or adjustment to a job

or to the working environment we need to make to enable a person with a disability to have access to, or participate in, employment with us."

## Upskilling youth

The Sinako project was introduced to assist individuals with disabilities who had not completed Grade 12, or did not have a post-Grade 12 qualification, to become more employable, states Netcare chief executive officer, Dr Richard Friedland. "Young persons with disabilities often don't complete their studies due to a number of limiting factors, such as the costs involved or transport difficulties. The learnerships provide these individuals with technical skills and experiential learning required to be employable in the labour market," he adds.

The Netcare trainees enrolled in NQF-registered programmes; either in business administration NQF 4, as a basic and post-basic pharmacist assistant; or in professional cookery, reports the company. The professional cookery programme was offered in partnership with the South African Chefs' Association. The business administration and professional cookery learnership programmes are carried out over a year whereas the pharmacist assistant learnership programme runs over two years. Netcare aims to offer positions to learners who successfully complete their learnership.

Ndzwayiba says, "Of the 50 learners who enrolled for our first learnership programme under the Sinako project in 2012, 35 were unemployed youth and most of them have already been offered permanent employment by Netcare."

Owing to the success of the 2012 Sinako project, Netcare announced that it is extending the 2013 Sinako programme to include internships for students with a disability who may have a degree or diploma in human resources, financial management, accounting, economics, administration, pharmacy and nursing. ▶



# Series of earthquakes in New Zealand this year

A section of the main highway in Seddon was closed following the 6.5 earthquake in August

A magnitude 6.5 earthquake struck New Zealand near the small island town of Seddon, with at least six aftershocks of 5.0 magnitude or stronger taking place in August this year.

The earthquakes shook central New Zealand, damaging homes and roads and sent office workers scrambling for cover in the nation's capital, Wellington, which was worst affected by the aftershocks of the quake in Seddon. However, there were no reports of serious injuries.

Several homes near the epicentre were severely damaged, with chimneys collapsing and roofs caving in, said police spokesperson, Barbara Dunn. She said a bridge was severely damaged on a main highway in the small island town of Seddon and that rocks and debris had fallen onto the road. Police closed a section of the highway.

Wellington officials reported that there was no major damage to the city's infrastructure or office buildings. The US Geological Survey said the epicentre of the initial earthquake

was 94 kilometres west of Wellington at a depth of 10 kilometres.

A quake of similar strength struck Wellington three weeks prior to this occurrence in Seddon, smashing windows and affecting water mains and power lines. A day after the earthquake in July, emergency launched a major clean-up of Wellington following the earthquake, as aftershocks continued to rattle the New Zealand capital.

"We've dodged a bullet," said New Zealand Civil Defence Ministry spokesperson, Vince Cholewa of the most recent earthquake in August this year. "There are buildings that have lost some plaster. Some cracks in walls, nothing major," reported Cholewa.

A number of people were freed from elevators that stopped in buildings in the central business district, reported Wellington police.

New Zealand's Wellington-based stock exchange, NZX, temporarily halted trading following the quake. Initially reported a high magnitude

of 6.8, the earthquake hit a depth of 9.6 kilometres.

GeoNet seismologist, Caroline Little, said that the earthquakes in New Zealand had followed an unusual pattern. "Normally you get a big quake and then the aftershocks get smaller in magnitude," she said.

Little said the earthquake in July was on a fault line near Seddon that had not previously been mapped. She said it was too early to determine if the earthquake in August was on that same fault.

A different fault line runs through Wellington and many in the city fear an earthquake along that fault could result in a major disaster.

New Zealand sits at the southwestern edge of the Pacific Ring of Fire, which is an area of high seismic and volcanic activity that stretches through Japan, across to Alaska and down the west coasts of North and South America. A severe earthquake in the city of Christchurch in 2011 killed 185 people and destroyed much of the city's downtown area.▲

► The higher learning institutions are producing graduates with disabilities but 'they often struggle to find jobs due to a lack of work experience', noted Ndzwayiba. "The Netcare internship programme aims to bridge this gap and enables line managers within Netcare to draw from this pool to fill vacancies that arise."

## Capabilities of the disabled

The Sinako programme acknowledges the capabilities of the disabled, as opposed to focusing on their disabilities, states Ndzwayiba. He

says that an intervention on behalf of disabled members of society requires a thorough analysis and elimination of organisational, environmental and attitudinal barriers that may restrict the rights of these individuals to enjoy equal access to opportunities and benefits in the workplace.

Dr Friedland says, "The youth are our future and we are committed to making a meaningful contribution to the development of young people in South Africa, inclusive of those with disabilities. We are pleased that we are making progress towards

our goal of increasing the number of permanent employees with disabilities to four percent of our more than 20 000 strong workforce by 2015. This figure is currently at 2,25 percent."

"We at Netcare are sincerely appreciative of the support we have enjoyed from the Ministry of Women, Children and People with Disabilities, the Ministry of Labour, and the Office of the Premier of Gauteng in our efforts to create an inclusive, demographically representative workforce," concludes Dr Friedland.▲

# Loss of fellow crew members numbs Arizona elite fire fighter



The sole surviving member of the Granite Mountain Hotshot crew speaks at a memorial service for his fellow fire fighters in Arizona

The survivor member of the 20-member crew of elite fire fighters that died in the Arizona wildfire in June this year, Brendan McDonough, spoke to media after weeks of isolation.

McDonough says that he went 'numb' after learning that the 19 men he considered his brothers had been killed in the Arizona wildfire. He wondered why he alone was spared in what he called a 'horrible, freak accident'.

The Granite Mountain Hotshot crew, who formed part of the Prescott Fire Department in Arizona, were attempting to create firebreaks to combat a wildfire in the region on 30 June this year, when the wildfire suddenly turned after being whipped up by the wind and overtook the 19 fire fighters.

McDonough was the Granite Mountain Hotshots' lookout and was

not with the rest of the crew when shifting winds caused the wildfire to overtake his crew. McDonough himself left his post for safety after notifying the men of the rapidly changing weather.

"Why wasn't I there with them?", asked McDonough of himself, speaking with US media. "That's all I could think, to pray for their safety." He said, "I came to a point where I just didn't have any more tears."

McDonough said that his emotions plunged when he heard ringing phones from the crew vehicles, saying that he knew they were calls from family members trying to reach the fallen fighters. "I sunk. Sunk into my seat. I sunk into myself," he said.

McDonough repeatedly asked himself why he survived and his fellow Hotshots did not. He said that

his time with the crew had been both the best and worst memories of his life. As far as the tragedy of losing his best mates, McDonough says that he tries not to dwell on the incident. "That's not going to help anyone," he said. "That's not going to remember my brothers the right way."

McDonough now remembers the impact his fellow crew members had on his career as a fire fighter. "I wouldn't have traded the years I spent with those men for anything in this world," he told a local media agency in Arizona. He added, "They made me the man and father I am today. How successful I am physically, emotionally and spiritually – I owe it to them."

The wildfire in Yarnell Hill, Arizona destroyed 200 homes and burned about 900 hectares two days after it was started by a lightning strike on 28 June. ▲



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# Cargo ship runs aground off South African coast and sinks



The German-owned cargo vessel that ran aground off Buffels Bay in the Western Cape

German cargo ship, Kiani Satu, ran aground off Buffels Bay near Knysna in the Western Cape, South Africa, on 8 August this year and ultimately sank after more than a week of efforts by the South African Maritime Safety Authority (SAMSA) to salvage the vessel.

The fully laden ship carrying 330 tons of fuel oil and 15 000 tons of rice, was sailing from Cape Town to Gabon when it purportedly had engine failure, causing it to drift onto sand and rocks.

The National Sea Rescue Institute (NSRI) were the first responders to the incident after the ship issued an emergency signal at approximately 03H00 on 8 August, reporting engine problems and the risk of running aground.

The decision was made by the ship's Captain to abandon the ship and the safest method was to deploy a helicopter and hoist the crew off the ship while NSRI rescue boats stood by to assist if necessary. The 19 crew members on board the ship were safely brought ashore after being rescued by Titan Helicopters' Sikorski 76 helicopter.

A salvage crew of SAMSA maritime salvors freed the vessel from a sand bank and towed the ship out to sea with the hope of preventing an oil spill. However, about 15 tons of fuel eventually leaked through a crack in one of the damaged tanks of the ship, which was a 157 metre-by-59-metre vessel weighing almost 17 000 tons. The oil spill from the Kiani Satu leaked into the ocean and drifted offshore.

The fuel from the freighter threatened to pollute an area in Knysna renowned for its nature and natural beauty, as well as damage its tourist-based economy.

SAMSA spokesperson, Nigel Campbell, said that drilling of the tanks to remove the remaining oil of the ship was undertaken in the days following the initial oil spill. The oil was placed into plastic tanks and flown off the ship. To lighten the load, SAMSA also took to airlifting more than 600 kilograms of food.

After pumping out more than a hundred tons of fuel, conditions had become too dangerous to continue working on the vessel and the salvage crew on board the ill-fated vessel was airlifted to safety.

On 21 August, after two weeks since the ship ran aground, the Knysna Municipality said that the Kiani Satu vessel had sunk in 1 000 metres of water. The sinking of the Kiani Satu was part of SAMSA's contingency plans, revealed Campbell. "Our first plan was to refloat the ship and then conduct a structural assessment to see if we could take the Kiani Satu to a South African port."

However, the risks became too high as the structural integrity of the ship had been compromised, which deemed it unsafe to bring to a national port. The Kiani Satu was then floated far out to sea and sank in a predetermined location.

The Environmental Affairs department stated that there was no remaining oil threat to the Garden Route coast. There had been no reports of any oil in the water since the initial spill on 14 August. The Department of Environmental Affairs monitored the situation from the air, using their aerial pollution surveillance aircraft, the Kuswag 9.

Meanwhile, Knysna Municipality spokesperson, Athane Scholtz, said that about 350 people worked on the clean-up of the oil spill. The Goukamma Nature Reserve – a marine protected area, situated along the scenic Garden Route on the Western Cape's southern coast was worst affected by the oil spill, but was reopened by 21 August, after clean-up operations were conducted in the area, reported Scholtz.

Biodiversity conservation group, Cape Nature, joined the cleaning operations after the Kiani Satu oil spill at Marine Protected Area and the Goukamma Nature Reserve, along with the Southern Cape Fire Protection Association (SCFPA), NSRI Knysna and SANParks.

Cape Nature, upon inspection of the Goukamma Nature Reserve and Marine Protected Area on the 3 September, discovered that sand movement initially covered the ►



# Thermal imaging robot to assist in structural fire fighting

Engineers in the Coordinated Robotics Lab at the University of California, San Diego in the US, have developed new image processing techniques for rapid exploration and characterisation of structural fires by small robotic vehicles.

A sophisticated on-board software system takes the thermal data recorded by the robot's small infrared camera and maps it onto a three-dimensional (3D) scene constructed from the images taken by a pair of stereo Red-Green-Blue (RGB) cameras.

This allows small mobile robotic vehicles to create a virtual reality picture that includes a 3D map and temperature data that can be used immediately by first responders as the robot drives through a building on fire.

The research is part of a plan to develop novel robotic scouts that can help fire fighters to assist in residential and commercial blazes. Researchers will present their results at the International Conference on Robotics

and Automation to be held from 31 May to 5 June 2014, in Hong Kong.

The robots will map and photograph the interior of burning buildings by using stereo vision. They will use data gathered from various sensors to characterise the state of a fire, including temperatures, volatile gases and structural integrity while looking for survivors. Working together both collaboratively and autonomously, a number of such vehicles would quickly develop an accurate augmented virtual reality picture of the building interior.

They would then provide it in near real time to rescuers, who could better assess the structure and plan their fire fighting and rescue activities. Jacobs School of Engineering at UC San Diego professor of mechanical engineering, Thomas Bewley, said, "These robot scouts will be small, inexpensive, agile and autonomous.

"Fire fighters arriving at the scene of a fire have 1 000 things to do. To be useful, the robotic scouts need to work like well-trained hunting dogs,



*Sedgeway-like robot provides 3D map and temperature data to assist first responders*

dispatching quickly and working together to achieve complex goals, while making all necessary low-level decisions themselves along the way to get the job done," said Bewley.

This project represents collaboration between researchers at the Jacobs School of Engineering and the University of Illinois at Urbana-Champaign, the San Diego Fire-Rescue Department and local corporate partners. ▲

► high beach oil, which was again uncovered by wind. To address the newly exposed areas, Cape Nature staff supervised clean-up operations consisting of 22 Working on Fire (WoF) staff that arrived on 4 September to assist with the manual clean-up. The clean-up was expected to remain active for two weeks from the first week of September.

The 22 WoF fire fighters were drawn from a fire protection based in the Southern Cape that is managed by the SCFPA.

The Department of Environmental Affairs stated that it would carry the major cleaning costs of the wreck. Minister of Water and Environmental Affairs, Edna Molewa, noted that since 2006, an insurance policy has been installed for cases like the Kiani Satu, as many cargo ships travel around the southern tip of Africa. ▲



*Conservation groups like Cape Nature assisted in the Kiani Satu oil spill clean up near Knysna in the Western Cape*



*A home engulfed in flames in the Silver Fires that struck California in August this year*

# Southern California wildfire injures 12 fire fighters

A raging wildfire in California, US, dubbed the 'Silver Fire', burned through more than 7 500 hectares across a desert range in Riverside County about 144 kilometres from a heavily inhabited area of Los Angeles, California.

Thousands of people were forced to evacuate from the homes as the wind-whipped wildfire swept across Riverside County's San Jacinto mountains in southern California. The blaze destroyed 26 homes and one commercial structure, according to California state fire agency, Cal Fire.

The San Jacinto wildfire prompted California Governor, Jerry Brown, to declare a state of emergency in Riverside County. In this way, victims of the fire can be eligible for federal disaster assistance when they are allowed to return, reported US media.

In total 48 structures were destroyed across Riverside County in the towns of San Jacinto and Cabazon in Riverside County including 21 outbuildings.

Fire fighters battling the Silver Fire fully contained the massive blaze by the

evening of 12 August, according to the Riverside County Fire Department. At the height of the wildfire, nearly 1 500 fire fighters including 68 fire crews battled the blaze.

The wildfire injured 12 fire fighters and one civilian, who suffered serious burns from head-to-toe. Cal Fire Riverside fire chief, John R Hawkins, told a local media organisation that the injured civilian 'very, very tragically was very badly burned'.

The wildfire spread towards the desert resort city of Palm Springs in Riverside Country, where numerous evacuation orders was issued to communities in the area.

California Department of Forestry and Fire Protection spokesperson, Daniel Berlandt, assured that crews were 'making very good progress' at the time of the wildfire in early August, stating that a group of water-bombing helicopters, as well as a team of bulldozers carved out fire breaks to halt the fires progress.

Mandatory evacuations were in effect for more than 500 homes, while several campgrounds in the

area were also closed. Shelters were set up for evacuees at high schools in the nearby towns of Hemet and Beaumont.

Cal Fire reported that several other wildfires had struck the state of California in August, including in Riverside County and the Sierra National forest, adding to the 40 000 hectares that have already burned across California thus far.

Weather.com lead meteorologist, Michael Palmer, said that the dry conditions are the big factor. "They are in a drought," said Palmer. Temperatures in the area were in the high 20 and low 30 degree Celsius as fire fighters battled the San Jacinto wildfire, with high winds further complicating fire fighting efforts.

While there was significant property loss in the Silver Fire, Berlandt, of the California Department of Forestry and Fire Protection said that fire fighters successfully saved many more homes than were lost in the blaze. Berlandt said that 'hundreds of homes' were still standing 'because of the aggressive efforts of those fire fighters.▲



Rescue workers help a man injured in the train crash near Santiago de Compostela, Spain

# Train driver negligence causes major train crash in Spain

A high-speed train derailment in Spain resulted in the death of 79 passengers and caused serious injuries to 150 others close to the pilgrimage town of Santiago de Compostela, Spain on 24 July, this year.

The train was purportedly travelling at twice the speed limit of the area at the time of the accident. The train was racing at 196 kilometres per hour as it approached a bend that required the driver of the train to reduce speed to 80 kilometres per hour and the point where the eight carriage train careered off the tracks.

The spectacular crash brought hundreds of locals to the site to help rescue the victims as the cars filled with smoke from the many small fires ignited by the crash. The local fire department was conducting a one-day strike when the crash happened. However, the fire fighters realised that a need was present and responded to the call without hesitation, effectively cancelling the day's strike.

It was Spain's deadliest train accident in decades, with multiple deaths suffered at the site of the crash. A surviving passenger of the crash, Ricardo Montero, spoke to a leading

radio network in Spain after the crash, saying 'when the train reached that bend it began to flip over, many times, with some carriages ending up on top of others, leaving many people trapped below. We had to get under the carriages to get out'.

Rescue workers lined up bodies covered in blankets alongside the tracks and some passengers were pulled out of broken windows. Residents said other rescuers used rocks. At least one car caught fire with smoke billowing from the scene, while another broke into two parts as residents of the urban neighbourhood alongside the tracks tried to help victims out of the toppled cars.

Spanish authorities reported that 66 people caught up in the crash remained in hospital a week after the accident, 15 of whom were critical, including one child.

The train was on a route that uses both a high-speed and a conventional track system. On the high-speed sections, a sophisticated security system automatically slows down trains that are going too fast. The accident happened on a conventional section of the track where the older security system in

place only automatically stops trains going above 200 kilometres per hour and where it is up to the driver to respond to prompts to slow down.

The driver of the train, Francisco Joe Garzo Amo, failed to apply the brakes after receiving three warning signals to reduce speed in the two minutes before the train hurtled off the tracks, according to Spanish investigators.

The Superior Court of Justice of Galicia, which is leading the investigation, issued a statement saying the train's two data-recording black boxes showed the excessive speed that the train was travelling in the moments before the crash.

The train's black box data recorders showed the last warning came just 250 metres before the dangerous curve where the accident occurred. Garzo Amo faces multiple charges of negligent homicide for the tragedy. The investigation has increasingly focused on him and his failure to brake as the train hurtled into a high-risk curve.

Meanwhile, hundreds of mourners attended a memorial mass for the victims in the cathedral in Santiago de Compostela, which was broadcast live on Spanish television. ▲



The CSIR team of scientists that developed the mobile AFIS app for Apple and Android devices

The Advanced Fire Information System (AFIS) was the talking point at the Council for Scientific and Industrial Research (CSIR) conference centre where CSIR senior scientist and remote sensing specialist, Dr Philip Frost, was invited by the Southern African Institute of Forestry (SAIF) to discuss the breakthrough satellite-based fire detection system.

SAIF, a professional association of forestry related professionals geared towards delivering a professional service to forestry, facilitated the meeting where Dr Frost discussed the application and benefits of the AFIS technology to various establishments, including the forestry industry.

"We don't try to compete with other technology, we are complementary," stated Dr Frost. "If forest companies invest millions into camera system to protect their assets, we cannot compete with that, but we can add value."

Dr Frost said that the CSIR-Meraka Institute is developing a platform so that stakeholders and various role players in the fire industry can package data and improve their fire management practices. "So, we are saying 'add this to your portfolio'."

The CSIR received no funding from government to develop the system that is now being implemented by countries worldwide. Dr Frost said,

however, that the AFIS technology is an essential service that is made available at no cost to its users.

**AFIS origins**

Frost says that the AFIS began in 2004, when the CSIR started a project with State power utility, Eskom. "In working with Eskom over many years we developed a system that is designed for power companies," he stated.

The AFIS product was showcased at the CIGRE World Power Utilities Conference 2012 in Paris, which is an event that provides an open forum for experts from the worldwide electrical power industry to enhance their knowledge, share best-practices, discuss new developments, while building a network of partners.

Today, the AFIS system is being implemented by governments, fire associations, national parks, forestry companies and other power utilities in other countries around the world. The CSIR provides mobile alerts to these organisations to fire occurrences within their respective areas of operations or jurisdiction.

Dr Frost provided a list of countries where the AFIS system has been implemented, or where large organisations have shown interest in the technology. These include Kenya and Ghana in Africa, Serbia and Scotland in Europe, Working on Fire (WoF) in Chile, South America, as well as Australia and California, US.

**AFIS features:**

- Real time fire protection
- Fire history (spanning 12 years)
- Mobile alerting via cell phone text or email)
- Daily five-day Fire Danger Index (FDI) forecast
- Hourly FDI updates from AWS nationally
- Mobile AFIS App
- AFIS field terminals
- Fire incident and permit reporting tools

Dr Frost explained that there are AFIS field terminals or control rooms placed throughout the Southern African Development Community (SADC) area. These control centres make use of C-Band satellite communications system, to relay information to organisations in the SADC region.

"People are trained to use information and have provision of near-real time MODIS data," mentioned Frost. "Fire managers aren't there to utilise information for remote areas. So, we developed a mobile system for phone on Android and Apple platforms," he explains.

**Satellites**

The CSIR uses a fleet of earth observation satellites to source the data that enables the detection of wildfires in Africa and in other parts of the world. The information is captured by the CSIR's satellite receiver and is processed at the CSIR's information communications technology (ICT) centre.

There are four satellites being used by the CSIR to collate its fire data namely;

- The Polar Orbital satellite: passes across South Africa each day at 10h30
- Aqua MODIS: Passes South Africa daily at 14h30
- Geo Station Satellite (Africa and Europe):
- Images are provided from this satellite every 15 minutes through the day.
- It is very from earth, so images are in lower resolution that those provided by other satellites
- NPP satellite: This NASA satellite collects data on both long-term climate change and short-term weather conditions ▲



*NSRI crew member instructed on the use of a fire hose*

## NSRI's sea rescue crew undergo fire fighting training

South Africa's National Sea Rescue Institute held a fire fighting course for its volunteer crew at the Station 20 base in Shelly Beach and Station 32 in Port Edward, KwaZulu-Natal earlier this year.

The comprehensive fire fighting course was undertaken by qualified NSRI volunteers, who were instructed in basic fire fighting over two days. The first day of the programme focused on a theory module and on day two the NFIS provided a practical fire fighting module.

The NSRI's training course supervised by the Shelly Beach training officer, Jan Coetzee, said that splitting the course into theory and practical modules over two days was necessary in order to get all the NSRI crew in one place at the same time for an extended period. "By dividing it into two modules, we ensured that our crew got the very best out of the training," said Coetzee.

While the training offered by the NSRI has traditionally been focused on first aid, fire fighter training has become an important element in the training provided by the institute. Coetzee says that both station commanders, at Shelly Beach and Port Edward, have made fire fighting a high priority. "Fire fighting is not a skill that we take lightly," stated Coetzee.

A fire fighting certificate was issued to the participants in the course, which was presented by the National Fire Investigation Services (NFIS), which is based on the south coast of KwaZulu-Natal. The NFIS offers occupational health and safety (OHS) training nationwide, including fire risk assessment and fire evacuation planning.

NSRI Shelly Beach station commander, Mark Harlen, says that Station 20 has not provided fire training at Shelly Beach in the past. "This is the first time we have done this fire fighting training at Shelly Beach. Normally it is incorporated with Durban's NSRI Station 5," says Harlen.

Since it is a sea rescue institute, the NSRI does not have a group of dedicated fire fighters. However, all its sea rescue

crew undergo training in various emergency disciplines, including fire fighting, mentions Harlen. He says that the fire fighter training done at NSRI is undertaken on a yearly basis.

"We have done it at Shelly Beach in the past, but that was almost 10 years ago." NSRI Station 20 will again look at conducting a fire fighting course at Shelly Beach. "I think that in the future we will continue to do it ourselves. It is much more convenient," says Harlen. ▲

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# Heavy rains flood Sudan's capital city, Khartoum



*More than 20 000 homes were destroyed or damaged in the floods in Sudan*

**T**he east-central African country of Sudan was overcome with heavy rains in August this year, resulting in the death of at least 36 people and leaving as many as 100 000 residents displaced in the capital city of Khartoum.

More than 20 000 houses were destroyed or badly damaged after heavy rains flooded the suburbs of Khartoum. Eight other regions in Sudan's River Nile states were also affected by the heavy rains and flooding.

Thousands more people were displaced in Elegu, which is a north Ugandan town that borders South Sudan. The floods struck after a nearby river overflowed its banks following hours of torrential rains.

Elegu is a vibrant border town with varying businesses including local bars and lodges and markets with cross-border trade between Uganda and South Sudan.

The International Federation of Red Cross and Red Crescent Societies (IFRC) and the Sudanese Red Crescent, which is the biggest humanitarian organisation operating in Sudan, provided aid in the form of mobile shelters and hygiene kits, which was distributed to affected people.

About 1 500 Red Cross volunteers were mobilised by the disaster relief organisation to assist with the emergency response. Sleeping mats, hygiene kits and 2 000 tarpaulins were distributed to affected people and a further 300 tents from Red Crescent were deployed as mobile health clinics.

Some 700 volunteers from the Red Crescent's Khartoum branch were deployed to carry out evacuation in Khartoum and the River Nile states, as well as provide psychosocial support and offering first-aid services to the affected population. With support from Sudan's civil defence, Sudanese Red Crescent volunteers evacuated people to higher ground. ▲

In August, weather forecasters reported that more rains were expected in the region until October this year.

IFRC country representative for Sudan, Aisha Maulana, said, "The Sudanese Red Crescent staff and volunteers, headed by Secretary General, Osman Gafar, have turned around what might have been a terrible Eid celebration, giving hope to thousands through the relief distribution the day before Eid." The Eid celebration marking the end of the Ramadan Islamic month of fasting started on 7 August this year.

The IFRC along with the Sudanese Red Crescent launched an emergency appeal to assist with the flood-affected families, which would support the worst-affected Sudanese states. Assistance from the IFRC would include non-food items, water, sanitation and hygiene interventions, as well as emergency health care. ▲

*A massive explosion at a propane plant in Florida injured eight workers at the facility*

# Florida town shaken by night-time propane plant explosion

**A** series of explosions injured at least eight people at a gas plant in the US state of Florida in late July this year.

The initial explosion blew the roof off the Blue Rhino propane plant in Tavares late on the evening of 29 July, with explosions continuing for about an hour after, causing a large fire at the gas plant.

A spectacular blaze from the plant lit the night sky and was out three hours after the explosion began, according to Tavares fire chief, Richard Keith.

Fifteen workers were found safe after initially being feared missing, while two others managed to escape unhurt. They only 'scattered' after the initial explosions at the plant, said local officials.

Florida authorities evacuated people living within 0,8 kilometres of the plant, however, emergencies crews later reported that the fire was contained and there was no immediate danger to the public.

The night-time sky in Tavares flickered in hues of orange, owing to the massive explosion at the Blue Rhino gas plant. Trucks parked at the plant went up in fireballs as the cylinders they were carrying exploded. Fire fighters had to wait up to four hours before they could approach the fire, as conditions were too dangerous to approach the site.

Florida officials reported that four people involved in the plant explosion were in a critical condition across two area hospitals.

The Tavares plant north-west of Orlando, Florida refilled propane tanks typically used for outdoor cooking. There were about 53 000 tanks, each of 75 litres in capacity, at the plant before the explosion.

About 4 000 to 5 000 tanks were refilled each night and were stacked on plastic pallets four or five high behind the filling station, former plant supervisor, Don Ingram, told local media.

"The fact that there are no fatalities is a blessing," said Tavares administrator, John Drury. "This was a big deal and a lot of people responded quickly."

The Occupational Safety and Health Administration fined Blue Rhino in 2011 over a 'serious' safety violation involving tools and equipment. It is not clear whether safety violations had anything to do with the incident in July this year. ▲



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# Raging forest fires persist for more than three months in Siberia



NASA's Terra satellite captures smoke from multiple fires in Siberia



A map of Russian regions affected by the raging wildfires of July and August this year



Around 1 600 fire fighters and about 412 fire equipment units was being used to fight the forest fires in Siberia

**H**undreds of wildfires raged across Siberia in June this year, prompting the Government to declare a state of emergency in several eastern regions of the country that was still battling wildfires in September.

In July and August, Siberian cities were cloaked in smoke as winds whipped up the raging wildfires in five regions in the country, covering an area over 90 square kilometres.

Around 3 000 people and 42 aircraft were battling the wildfires at its peak in late July, however, there was no threat to locally populated areas or businesses, reported local authorities. Extreme temperatures hampered the fire fighting operations. Thick smoke held back containment work and prevented emergency planes and helicopters from reaching the worst-hit areas. Hot and dry weather with

an average temperature of up to 35 degrees Celsius, persisted in July and August, adding fuel to the forest fires.

Siberia authorities were forced to close down two airports in the cities of Tomsk and Omsk, owing to heavy smoke and poor visibility, which had far reaching effects into neighbouring countries. Ecologists feared that the blaze in Siberia and eastern Russia would become a real catastrophe.

While the local authorities claim they have the situation under their control, Greenpeace ecologists are convinced that though summer fires have become commonplace in Russia's Siberia and Far East, this year it is a real catastrophe.

In late July, Greenpeace activist in Russia, Maksim Yaroshenko, told a local media organisation that this year could see a record area

affected by fires, if the conditions persisted as it was throughout July.

Greenpeace ecologists believe the reasons for the catastrophe lie in the country's inability to fight wildfires, due to calamitous changes in legislation. Forest management has become gravely dilapidated since 2000, when the Federal Forestry Service was liquidated.

A new and highly ineffective Forestry Code introduced in 2006 appeared to be the last straw. It abolished centralised state forest control, distributing its functions among regional authorities.

From 2006 to 2010, the number of forestry employees shrank by half. Now it is unclear who bears responsibility for prevention and battling wildfires, reported a Russian media agency. ▲



*Singapore Civil Defence Force recently released its mid-year fire statistics report*

# Singapore keeps hand on the pulse of emergency services

**T**he Singapore Civil Defence Force (SCDF) recently released its mid-year emergency services statistics for the period January to June 2013.

The SCDF statistics included all fire incident statistics, as well as emergency ambulance and fire safety enforcement statistics. The SCDF reports that it responded to 2 125 fires between January and June this year, which is a decrease in the number of cases experienced during the same period last year. The SCDF reports that this is the lowest first-six-month figure recorded since 1999. The average number of fires during this period over the last 15 years is 2 487.

According to the SCDF, the downward trend in the number of fires over the years can be attributed to greater public awareness and the concerted public education efforts by SCDF and its community partners, which includes the National Fire and Civil Emergency Preparedness Council (NFEC), Community Emergency and Engagement Committees (C2E) and grassroots leaders.

While fire incident calls were at an all-time low, the SCDF's stats report

reveals that there was an increase in the number of non-emergency ambulance calls, while emergency ambulance calls similarly not seeing any decrease in the first six months of 2013.

The SCDF's emergency ambulance service (EAS) responded to 76 024 ambulance calls in the first half of the year to June 2013, which was an increase of 8.4 percent when compared to the same period last year. Of the 76 024 calls that the SCDF responded to from January to June 2013, 73 146 of these were emergency calls. The remaining calls were non-emergency calls, which totalled 1 433 and a further 1 445 calls were false alarms.

Non-emergency ambulance calls showed a 28.1 percent increase when compared to 2012, when a total of 1 119 non-emergency ambulance calls were received by the SCDF from January to June.

The SCDF states that it will step up its public education efforts on the use of its emergency ambulance service (EAS), in order to curb the increase in the number of non-emergency ambulance calls made to its emergency call centre. This would

be done through exhibitions and the distribution of literary material to raise public awareness.

In another positive affirmation of its public awareness initiatives around fire safety, the SCDF reports that it has had a decline in the number of fire hazard abatement notices (FHANS) issued in the first six months of this year.

The SCDF conducts fire safety enforcement checks regularly to ensure that safety standards are well observed and fire hazards are detected and rectified. There were 6 205 enforcement checks conducted between January to June this year by the SCDF. A total of 1 093 FHANS were issued, representing a decrease of 38 cases or three percent when compared to the same period in 2012, when 1 131 FHANS were issued.

The inspections conducted by the SCDF include its response to public feedback and once verified by the defence force, enforcement actions are taken, reports the SCDF. The defence force states that 'such public feedback reflects the high level of fire safety consciousness of our community and more importantly, helps to keep offenders on their toes'. ▲

# National search and rescue service being reduced to VIP courier



*Financial allocations for the SAAF's search and rescue operations are being cut*

Search and rescue is a major component of the work done by the South African Air Force (SAAF) at its helicopter squadron bases in Cape Town and Durban, but financial allocations for these operations have been cut, while VIP transport has not suffered the same fate, according to defence and security news portal, Defence Web.

15 SAAF squadron based at AFB Durban, which is regularly involved in mountain and sea rescues, now spends more time using its Oryx medium transport helicopters to ferry South African National Defence Force (SANDF) commander-in-chief, President Jacob Zuma, from King Shaka International airport to his Nkandla homestead than any other tasks executed by the defence force, reported Beeld newspaper.

In response to these reports, the Democratic Alliance (DA) party shadow deputy defence and military veterans' minister, David Maynier, said it appears the squadron 'appears to have been reduced to operating as an airborne taxi service for the President', stated the Defence Web.

According to the paper, two Oryx are involved with every presidential

flight between the KwaZulu-Natal airport and the homestead. The first is for the President and his immediate entourage, while the second carries members of his security detail and baggage. The second helicopter is also earmarked as a standby aircraft in the case of number one becoming unserviceable. The newspaper estimates the cost of fuel alone for the four flights that a Presidential weekend entails is around the R36 000 mark.

"Twenty-two Squadron at AFB Ysterplaat finds itself in a similar situation, with the bulk of its budget going to VIP transport and only a small amount to training," Beeld reported.

Maynier pointed out that 590 helicopter flights for VIPs were undertaken between 2009/10 and 2012/13 at a cost of R60 million. In the same period, 291 ferry flights were completed at a cost of more than six million rand.

"A significant portion of these flights were probably to transport the President from King Shaka to his private residence at Nkandla. It is not hard to conclude the SAAF is being reduced to an airborne taxi service for VIPs, especially the President,"

said Maynier. "The Department of Defence appears to have a skewed sense of its budget priorities."

Both squadrons have a long and successful history of search and rescue, offshore and in the Drakensberg as well as the Cape mountain ranges. This capability now appears to be another the SAAF is in danger of losing.

Speaking on condition of anonymity, a person close to the SA Search and Rescue Organisation (SASAR) said, "Mountain flying is a high-risk activity as any pilot will tell you. Hoisting out of a helicopter is also a very high-risk activity.

"Do both in an Oryx at night in dubious weather and risks increase exponentially. Even highly experienced pilots and highly experienced rescuers need to practice this continually. Globally, rescuers die doing this every year - and that's with practice. When you wipe out the training budget, what happens is that rescuers and pilots lose their currency in these procedures and this happens quickly. Yet when a general aviation pilot goes down at night in some mountainous terrain, it's going to be hard for most people involved to say 'we're not current, we're not going out'. Result: you may get away with it. Or you may not, in which case crews and volunteers are going to die and more SAAF material is going to get destroyed.

"Longer term, pilots continue moving out of the air force to places where they actually get to fly, trained rescuers move on without being replaced by younger ones (it takes up to a decade to get to a senior level of proficiency in helicopter-based mountain rescue). We've already lost some of the more technical capabilities involved with helicopter rescue simply because they're no longer practiced and there are no longer pilots around that can do them or certify others to do them.

"If these cuts are prolonged, we may end up losing this capability altogether. And that means South Africa becomes incapable of safely fulfilling our UN agreed mandate under SASAR to provide aeronautical search and rescue in our area of responsibility." ▲

*Hino SA and Marcé' embarked on a partnership for the fire engine market*



# Truck stalwarts form fruitful partnership

**H**ino South Africa (SA) has embarked on a fruitful partnership with specialist vehicle conversion company, Marcé Fire Fighting Technology, which is based in Pretoria, South Africa. The joint venture has already resulted in the delivery of several fire engines based on Hino truck chassis-cabs.

Hino SA's senior sales manager, Ignatius Greeff, says, "This cooperation has enabled Hino to offer a comprehensive range of fire fighting vehicles and we are particularly impressed with the relationship we enjoy with the management of Marcé and the excellent quality they build into the innovative fire engines they produce."

Three fire engines, built by Marcé Fire Fighting Technology on Hino 500-Series 1322 four-wheel drive chassis were delivered to Free State provincial authorities recently for use in the Dihlabeng municipal area, which includes Bethlehem, Clarens, Fouriesburg, Paul Roux and Rosendal.

Hino SA reports that this latest order on Marcé follows a previous contract for five units for the Eastern Cape regional authority, which was built on 4x2 Hino chassis.

The development of the Marcé-built Hino fire engines has included them being subjected to a stringent series of tests at the Gerotek technical centre, west of Pretoria and included slalom at 80 kilometres per hour, as well as driving on the ride and handling circuit, both with the water tank full and half full. The maximum tilt angle was measured at 28 degrees on the tilt platform. "We are delighted at the positive results of these tests, which were conducted by Gerotek personnel," says Greeff.

Marcé Fire Fighting Technology, which was formed in 1998 and operates from premises in Centurion, near Pretoria, started as an importer of fire fighting vehicles and equipment, but in 2001 the company management realised that there was great potential in local manufacture, providing high quality standards were met.

This is what they have done, most successfully, using local designs with additional input coming from regular visits to relevant global exhibitions for the emergency services. "My wife, Danielle, has been the driving force in this business, which is named after her favourite brand of champagne from a small vineyard in the Loire Valle in

France," says commercial director Jan Steyn.

The company moved into its current design, engineering and manufacturing base last year to cater for the rapidly growing demands for its vehicles. This building also houses the head office.

Hino SA reports that there is very tight control on quality as virtually all the components, including the composite sections for making double cab body extensions, are made on site, using the latest technology and modern equipment. This includes a large painting booth that delivers a very high quality level of finish.

The company employs 150 people on the Centurion site, with 120 related directly. There are branches in Polokwane, Stellenbosch, Namibia, Mozambique, Zimbabwe, Botswana and various agents in Africa, so its reach is growing rapidly. "We face strong competition from both local and international companies, but believe we now measure up to the world's best in terms of quality and innovation. We are very aware that we cannot afford to take any short cuts because we are in a life and death business," concluded Steyn. ▲

# Fatalities suffered in Portugal wildfires



Portugal's Prime Minister, Pedro Passos Coelho, says fire officials are tightening safety procedures after an 18-year-old fire fighter became the sixth fatality among emergency crews battling summer wildfires in the country's capital city, Lisbon.

Authorities said the fire fighter died in hospital from injuries he sustained in a major blaze in late August, which killed a 21-year-old female fire fighter at the scene. Another fire fighter hurt in that blaze was rushed to hospital after sustaining serious injuries.

The Portuguese Forest and Nature Conservation Institute says wildfires charred more than 94 000 hectares of forest up to the end of August. That is 25 percent more

**Wildfires charred more than 94 000 hectares in an exceptionally hot summer in Portugal this year**

than in the same period last year amid an exceptionally hot summer.

Minister Coelho described this year's fire season as 'deeply tragic'. The female fire fighter who earlier died in the forest blaze was the fifth fatality suffered among emergency crews in a month.

Summer wildfires in Portugal scorched large areas of parched countryside in the country's capital and in other areas north Portugal. ▲

## Drone could save heart-attack victims



*Drone technology to assist heart-attack victims*

A new initiative by German nonprofit organisation, Definitez and drone developer, Height Tech, uses drone technology to parachute defibrillators to heart-attack victims and emergency responders.

The Defikopter will pick up the slack when human response time to an emergency is too slow; at least this is the idea behind the robotic technology.

The drone would be controlled by a global positioning system (GPS)-enabled smartphone app, which lets users request an emergency defibrillator. It can travel within a radius of 10 kilometres and fly at speeds of up to 70 kilometres per hour.

In addition to avoiding traffic jams that would slow down ambulances and other on-the-ground vehicles, the drone would be useful in areas that are sparsely populated, or have difficult terrain for travel.

The American Red Cross reports that 'For each minute defibrillation is delayed, the chance of survival is reduced approximately 10 percent', so a drone's quick response time may make all the difference. ▲



# \$1.1-million federal grant funds specialist fire service

*Portland accepted a federal grant for fire fighters*

**F**ire fighters in the city of Portland in Oregon, US, received a federal grant of \$1.1 million that will see the confined space rescue unit being funded for the next two years.

The Portland City Council reported that it accepted the grant, which will fund 12 fire fighters in the confined space rescue unit of Portland Fire Department.

In July, the city was notified that additional funding was available and its request had been approved after it was turned down in February this year.

Portland Fire Department fire chief, Jerome Lamoria, said that the grant would continue to fund the department's confined space rescue unit, which specialises in rescuing injured workers in hard-to-reach spaces. Lamoria said that about a dozen businesses were interested in signing contracts with the confined

space unit, reports a Portland news organisation.

The US Occupational Safety and Health Administration require businesses whose workers operate in confined spaces to have access to a safety team. A business can put together its own team, hire a contractor or develop a memorandum of understanding with a local fire department to meet the requirement. While only two contracts had been signed, there is potential for the department to generate \$376 500 for the city, stated Lamoria.

The Portland Fire Department is also looking to train other confined rescue units, which could generate more revenue. "I'm very proud of the accomplishments we've made," Lamoria said. "This grant gives a great opportunity to build on the success of the confined space rescue program."

Meanwhile, public safety consulting firm, Public Safety Solutions Inc, was

hired in January to review the Portland Fire Department. The consulting firm reported in March that Portland employs 2,81 fire fighters per 1 000 residents, not including staffing for the fireboat and the airport. That's well above the average of 1,77 per capita in 51 other New England communities.

The Portland Press Herald found that Portland employs 3,54 fire fighters per 1 000 residents, based on overall employment and the 2010 census. That was the highest rate among 50 communities surveyed.

Lamoria continues to work on implementing changes to the fire department that were recommended by the consultant. He is expected to present his recommendations to the council in the coming months.

City manager Mark Rees said by accepting the grant the city would be able to use the revenue generated from the confined space rescue contracts for other budget items. ▲

# Aircraft repositioned in Ermelo to battle wildfires

The Mpumalanga Umbrella Fire Protection Association (MUFPA) and Working on Fire (WoF) join forces with the Msukaligwa Municipality's Emergency Services to station a helicopter and Cessna spotter aircraft in Ermelo, South Africa.

The aircraft will be stationed at the Ermelo Airport with the support of the Ermelo Aviation Club and will assist with fighting wildfires.

Speaking at the Msukaligwa's fire department MUFPA manager, Trevor Wilson, said that the reason for moving the aircraft to Ermelo is that the Msukaligwa Municipality is the only local municipality with disaster management funding directly allocated to the use of the aircraft.

He added that a passion for fire fighting as well as the political will to drive the project is the strongest in Msukaligwa and that with the aircraft based locally, they could be dispatched for a mission attack directly under the management of the fire department.

"I have no objections, because we have the money allocated for this and we are in an area that is fire prone most of the time," said Msukaligwa safety director, Daniel Maluleka.

National Disaster Management and the Department of Agriculture, Forestry and Fisheries (DAFF) cover the standby fee of R300 000 a month. A helicopter attack crew of nine people manage the helicopter.

Wilson said that the Working on Fire team will be utilised in addition to eight to 10 other people that were to be recruited with the aim of forming group of highly trained heli-attack fire fighters.

FFA Aviation's national operations manager, Mike Assad, added that extra fire fighting staff would be recruited from local unemployed people. "These people are trained to live, eat and sleep wildfire. Because they live in high fire risk areas, the best result is that they pass the knowledge on in their local communities and

that also makes a tremendous difference," stated Wilson.

Assad added that the advantage of having a spotter aircraft is that when smoke is visible in the distance, it takes a spotter aircraft 10 minutes to reach the area and to assess the severity of the fire, while it can take a vehicle 45 minutes or more to get there.

Spotter pilots are also trained to assess fire behaviour and can send photos to the fire department from where quick decisive measures can be taken.

A mobile reservoir is sent to the fire for the helicopter to refuel when necessary.

Wilson presented a satellite map of Mpumalanga of last year's fire season, depicting fires from August to October, with a visible difference in the number of fires in Msukaligwa compared to anywhere else.

The aircraft and pilots were expected to be moved to the Ermelo Airport by early August, this year. ▲

## NFPA's aircraft emergencies guide helpful to fire departments

Andrew Holler of Fire Services Today reports that the National Fire Protection Association (NFPA) 402 guide for aircraft rescue and fire fighting operations is helpful for all fire departments.

The NFPA 402 is written to assist airport fire departments as well as structural fire departments with information on preparing for and responding to aircraft emergencies.

"With so many recent aircraft incidents, emergency service organisations may be looking to review their response procedures to these emergencies. Many of these

emergencies have taken place in areas off airport properties without staffed aircraft crash rescue fire fighting (ARFF) capabilities," reports Fire Services Today.

The Federal Aviation Authority (FAA) reports that there are over 19 700 airports in the United States. Of these airports, 5 170 are open to the public and over 500 offer commercial airline services.

In 2011, according to the National Transportation Safety Board (NTSB) in the US, there were 1 550 aircraft accidents in the US. Fire Services Today reports that the sheer number

of incidents demonstrates the need for a level of understanding when it comes to aircraft emergencies for all first responders regardless of their proximity to a major airport.

A chapter in the NFPA 402 document on structural fire department operations at aircraft rescue and fire fighting (ARFF) incidents provides specific guidance to non-airport fire departments that are faced with an aircraft emergency.

The guide provides information on specific aircraft emergencies, aircraft construction, extinguishing aircraft fires and many other areas. ▲

# Yosemite fire noted as fourth-largest in California



*Yosemite wildfire is the fourth largest seen in California*

**T**he Yosemite National Park wildfire was still growing at the start of September this year, at which time officials reported that the then two-week old blaze was only 40 percent under control.

By the end of September, the wildfire was still not completely quelled as fire activity was still reported in isolated areas and fire crews were still patrolling and extinguishing any remaining hot spots near containment lines after more than five weeks of battling the blaze.

California officials stated that the wildfire burning in and around Yosemite National Park had become the fourth-largest in California history.

California Department of Forestry and Fire Protection (CalFire) spokesman, Daniel Berlant, said the so-called Rim Fire, which has been burning for two weeks, has now scorched 994 square kilometres of countryside.

The blaze is larger than the 1 932 fire that covered 890 square kilometres in Ventura County. However, California's worst wildfire remains the 2003 San Diego County blaze that killed 14 people.

At the start of September, CalFire reported that more than 110 buildings

had been destroyed and around 5 500 more, including 4 500 homes, were at risk.

The blaze has also threatened the reservoir that supplies most of San Francisco's water, as well as ancient Sequoia groves. "This is a gnarly fire," stated National Park Service director, Jon Jarvis. "It's got high attention, huge fuels, big flame lengths and lots

of really, really dry, climate-driven conditions," stated Jarvis.

The fire has unleashed a smoky haze that has worsened air quality more than 160 kilometres away in Nevada.

Nearly 4 000 people were involved in fighting the blaze at its peak, which started during the afternoon on August 17. ▲



*Fire fighters battled the Yosemite blaze for more than five weeks*

# Humanitarian group acts as support-base to medical centres globally



Doctors Without Borders provides medical support in the event of humanitarian emergencies or socio-political conflict



Daniel Berman

**M**edecines Sans Frontiers (MSF), otherwise known as Doctors Without Borders, is an international medical humanitarian organisation that operates in more than 60 countries including South Africa. The organisation provides medical support in the event of humanitarian emergencies or socio-political conflict.

MSF has two underlying objectives namely; providing medical assistance to people affected by armed conflict, epidemics, healthcare exclusion, natural and man-made disasters and speaking out about the plight of the populations that it assists.

In Africa, MSF runs a total of 247 different projects in 29 countries across the continent. These Africa-centred projects accounted for 68 percent of the organisations total expenditure in its global humanitarian activities in 2012. The humanitarian services provided by MSF include nutrition and

vaccination campaigns, response to epidemics, war surgery and the provision of emergency medicine, as well as operating feeding centres for malnourished children and providing support to hospitals and clinics.

MSF South Africa general director, Daniel Berman, says that the organisation employed more than 20 596 national and international medical or non-medical fieldworkers and staff in Africa in 2011.

In 2012, a total of 3 333 doctors, nurses and other medical personnel went on assignment with MSF as medical humanitarian volunteers, globally. These medical workers mostly consisted of medical professionals and people interested in humanitarian work, who actively approach MSF's recruitment offices.

#### **Awareness drives**

MSF is not as established in South Africa as in other parts of the world and, as ►



► such, the organisation currently is engaged in an awareness building drive at South African universities with medical faculties in the country. The organisation is also involved in other awareness projects in South Africa through media campaigns and fundraising and advocacy initiatives.

"At these sessions and at other events, including medical conferences, we explain the work we do and how South African medical professionals can apply to work with us in the field for contracts of six months, nine months or one year, depending on the project," explains Berman.

There are instances where South African medical professionals who've worked in the public sector join MSF for short-term assignments and then return to work in government hospitals months later, where they share their experiences and new skills with others, mentions Berman.

He says that this approach has been taken to cultivate long-term relationships with the local medical fraternity in South African and beyond.

### MSF volunteers

The medical fieldworkers employed by MSF receive a basic monthly allowance for their humanitarian work done with MSF, however, this is afforded to these volunteers to cover costs of personal items and MSF takes care of all housing, food and travel expenses.

"Given the levels of remuneration MSF offers to compensate our staff, it is clear that people who choose to work with MSF are not motivated by financial gain. It is really the volunteer spirit, which sustains humanitarian work," pronounces Berman.

One such volunteer spirit is Cape Town, South Africa-born, Dr Mohammed Dalwai, who worked for MSF's emergency hospital in Pakistan for a few months this year and earlier was placed as an MSF fieldworker in the northern-African country of Libya in 2011.

Dr Dalwai joined MSF 'wanting to make a difference'. He published a paper on using the South African triage score (SATS), which is a process of determining the priority of patients'



Dr Mohammed Dalwai

treatments based on the severity of their condition, in Pakistan earlier this year. Dr Dalwai says that the triage score has proven to decrease waiting times, improve patient satisfaction, improve patient flow and decrease morbidity and mortality.

SATS was first piloted in Jooste Hospital, Cape Town. It was introduced by the Cape Triage Group (CTG), now known as the South Africa Triage Group, which was convened in 2004, mentions Dr Dalwai. "SATS was specifically designed for a low resource setting where there is minimally trained staff."

Dr Dalwai is currently completing a PhD at the University of Cape Town in Emergency Triage. He is researching areas that the triage score can be best implemented in emergency scenarios and also runs a non-governmental organisation called The Open Medicine Project South Africa (TOMPSA), which empowers healthcare workers using mobile technology. "One of our projects is an automated triage system for healthcare workers," says Dr Dalwai.

In joining MSF's humanitarian work in Pakistan and Libya, Dr Dalwai counted among 77 southern Africans that have gone on assignment with MSF since 2006.

### South African initiatives

In South Africa, MSF has adopted a different approach in its humanitarian work, which the organisation has geared towards treating the human immunodeficiency virus (HIV) and tuberculosis (TB). Berman says that while there are many non-medical staff recruited locally in South Africa,

these medical volunteers are placed in MSF's international humanitarian programmes.

MSF is currently collaborating with South Africa health activist groups, such as the Rural Health Advocacy Project (RHAP) and the Treatment Action Campaign (TAC) and Section 27. These collaborative projects have been created with the aim of developing a more effective novel drug stock monitoring system for TB and HIV treatment. Berman explains, "This work started in December 2012 when MSF, alongside TAC, responded to the needs of the people living with HIV and TB, who were left without access to life-saving treatment during a period of drug 'stock-outs' in Eastern Cape, which affected thousands of people."

MSF also maintains good relationships with the National Department of Health, as well as provincial departments of health in the Western Cape, KwaZulu-Natal and Limpopo.

### Pioneering projects

MSF has made a notable impact on the lives of people in Khayelitsha in the Western Cape, South Africa, where the organisation has helped scale up treatment to more than 20 000 people in the last 12 years, mentions Berman. He says that MSF has pioneered approaches to treat HIV in South Africa since 1999, as a first provider of antiretroviral treatment in the public sector and by decentralising HIV treatment strategies and integrating TB treatment.

Today, MSF continues to provide medical support to clinics in Khayelitsha through mentoring and operational research on HIV and TB treatment. The organisation pilots community-based treatment models to relieve the burden on the strained health care system and on people living with HIV.

In KwaZulu-Natal, the province with the highest HIV prevalence in South Africa, MSF initiated a programme that aims to radically increase testing and treatment coverage in order to significantly reduce incidence of HIV in targeted areas over the next five to seven years.

### African conflicts

Earlier this year, 4.1 million people ►



MSF runs a total of 247 different humanitarian projects in 29 African countries, including South Africa

► were affected in a rebel coup of the city of Bangui in the Central African Republic (CAR), plunging the nation into chaos, says Berman.

MSF sent medical reinforcements to Bangui, CAR to provide additional support to the Community Support hospital in the region, where over 16 000 people were treated between 22 March and 16 April this year, reports Berman. He says that MSF also continues to lobby with NGOs and Governments for the continued provision of humanitarian aid to CAR.

"In the Democratic Republic of Congo, MSF acts as one of the biggest health providers in the country, investing not only huge resources, but also with a longstanding presence, having been in the country since 1981," says Berman.

In the West African country of Mali, MSF scaled up its medical and humanitarian programmes for over 100 000 Malian refugees after a military coup in the country in March 2012. In Mauritania, which neighbours Mali, MSF provides support to four primary health care centres that assist with the influx of Malian refugees that fled the country last year.

**MSF challenges**

Berman says that building awareness of the humanitarian projects undertaken by MSF in this country and in the international community counts among the challenges faced by the organisation.

The other challenges faced by MFS include the recruitment of multilingual fieldworkers and medical personnel who can speak the local dialect of the various African nations. "In terms of recruiting medical staff, a recent challenge was the increased demand for French-speaking African staff to work in our growing projects in Mali, Mauritania and Niger, as well as for more experienced staff, such as medical and project coordinators," mentions Berman.

"As we begin to recruit more French-speaking medical staff from DRC and Congo Brazzaville and as our South African expats gain more MSF operational experience, we will begin to be able to answer these needs," states Berman.

**Funding MSF**

A total of 4,6 million individual donors and private foundations made up the majority of the funding received

by MSF in 2012, making up 89 percent of the organisation's overall funding base, reports Berman.

This model of fundraising throughout the 25 offices that MSF holds around the world, enables the organisation to respond rapidly to the onset of medical needs of people caught in conflict and disaster, explains Berman. "It means MSF can act without having to endure delays with sourcing funding for emergencies. But more importantly, the source of these funds, who are ordinary people from all over the world, means that our assessment of medical needs and the delivery of life-saving medical care is independent, impartial and neutral, which avoids following the political agendas of governments or other institutions," he says.

The humanitarian group's financial budget differs annually and is based on the scope and adaptation of projects. This entails that MSF's budget is adapted to its responses to any arising emergency situation or protracted crises around the world, explains Berman.

In 2012, MSF's operational budget expenditure projects in Africa alone amounted to R5,5 billion.▲



# **(NNMU) SAASVELD / SAIF FIRE SYMPOSIUM 2013**

**(NMMU) Saasveld and Southern African Institute of Forestry  
(SAIF) invite you to the 9<sup>th</sup> Fire Management symposium**

**Date:** 5 November (Tuesday) 2013  
**Venue:** Pietermaritzburg/Howick - Lythwood Lodge  
**Time:** 8:00 -17:15

This event marks the 9<sup>th</sup> Fire Management symposium to be presented by (NMMU) Saasveld and the Southern African Institute of Forestry (SAIF). One of the aims of this symposium is to transfer technical knowledge to fire managers. In the light of the catastrophic veld fires that destroy thousands of hectares in South Africa yearly, this is a worthy occasion and are annually attended by ± 200 people. During this event fire managers and authorities from different disciplines and different land uses (Nature Conservation, Agriculture, Disaster Management, Forestry, Local authorities, etc.), will come together to network and exchange ideas. This is a unique opportunity not to be missed. The focus of this year's event will be on Incident command Systems (ICS) and alternatives to the use of Gramoxone in the preparation of fire/trace belts.

Symposium Fees = R350-00 (Vat Incl.)

**BOOKING IS ESSENTIAL, by 25 October 2013**

**Please RSVP to: Sonia Roets**  
Tel: 044-8015091 (08h00-16h00); Fax 044-8056691

[Sonia.Roets@nmmu.ac.za](mailto:Sonia.Roets@nmmu.ac.za)



# Towards a national incident management (IMS) system

By Colin Deiner, Chief Director, Disaster management and Fire Brigade Services, Western Cape Government



The US Federal Emergency Management Agency (FEMA) incident management assistance team in Florida

The fact that large numbers of personnel and equipment respond quickly to an incident, is a poor indicator of a successful operation unless the actions are controlled, organised and coordinated. Incident management is the vehicle that allows us to control, organise and coordinate an incident.

Incident management should be implemented on ALL incidents. From a routine minor incident ie single jurisdiction - single agency – single resource to a major disaster ie multiple jurisdiction – multiple agencies - multiple/international interest groups – multiple and complex resources.

Many people will not see the need for the establishment of an incident management system on a relatively small incident, such as a motor vehicle accident and simply go through the motions of extricating the patient, medical treatment and

transportation to definitive medical care. In most cases, this would not be a problem and not much should go wrong. The question however is: How will the same team manage a major incident if they are not using the smaller ones to hone their skills and gain a good understanding of the system? What you do on the small incident, you will do on the large incidents.

### What is incident management?

The incident management system organises, controls and coordinates the response to meet incident needs. It provides a framework where similar functions are grouped, responsibilities are identified and lines of authority are established.

An incident management system should be designed to be simple and easily understood by all personnel. It should also be designed to suit the incident and to reach a successful conclusion thereof.

An incident management system is very much like a large symphony orchestra where there is only one person conducting several disciplines, each with a different instrument to play. They are well practised in their instruments and understand where they fit into the performance and when they should play their specific role. They have a particular set of sheet music, which they fully understand and practise regularly. In the end, you achieve a perfect performance that is the sum of each member's efforts.

Similarly, an incident management system has only one conductor (incident commander) controlling several emergency service disciplines (fire, rescue, emergency medical services, traffic law enforcement etc), all carrying out their unique activities using their specifically learned skills and equipment to achieve a successful and safe conclusion to an incident. ▶

## ► A short history

The incident management (ICS) concept was formed in 1968 at a meeting of fire chiefs in Phoenix, Arizona. Primarily the program was built to take after the management hierarchy of the US Navy and it was mainly for fire fighting of wildfires in California and Arizona. During the 1970s, the incident command system was fully developed during massive wildfire fighting operations in California and following a series of catastrophic wildfires in California's urban interface. Property damage ran into the millions and many people died or were injured. Studies determined that response problems often related to communication and management deficiencies rather than lack of resources or failure of tactics.

ICS became a national model for command structures at a fire, crime scenes or major incidents. The ICS system was used in New York at the first terrorist attempt on the twin towers in the 1990s. In 2003, the system went national with the passage of Homeland Security Presidential Directive 5 requiring all federal, state and local agencies to adopt the National Incident Management System to manage emergencies in order to receive federal funding. The National Incident Management System (NIMS) came about as a direct result of the terrorist attack on the twin towers in New York on 11 September 2001.

## So how does it work?

The incident management system must be clearly established from the beginning of an incident. The agency with primary jurisdictional authority over the incident designates the individual at the scene responsible for establishing command. This person must then take over the following duties:

1. Assume and announce command and establish an effective operating position (incident command post)
2. Rapidly evaluate the situation (size-up); identify priorities and set objectives
3. Establish, maintain and control the communications process
4. Identify the overall strategy and develop an incident action plan
5. Assign resources consistent with plans and standard operating procedures (SOPs)



The State of West Virginia external operations centre

6. Develop an effective IMS organisation
7. Implement measures to identify and track on-scene resources
8. Review, evaluate and revise (as needed) the incident action plan
9. Provide for the continuity, transfer and termination of command

## Chain of command and unity of command

An orderly line of authority within the ranks of the incident command organisation must be established and every individual involved in the incident must have a designated supervisor to whom he or she reports at the scene of the incident in order to clarify reporting relationships and eliminate the confusion caused by multiple, conflicting directives.

Incident managers at all levels must be enabled to control the actions of all personnel under their supervision. In incidents involving multiple jurisdictions, a single jurisdiction with multiagency involvement, or multiple jurisdictions with multiagency involvement, a unified command system must be implemented.

The unified command system must allow agencies with different legal, geographic and functional authorities and responsibilities to work together effectively without affecting individual agency authority, responsibility or accountability.

By ensuring that each individual on scene has a designated supervisor you are also ensuring that an effective accountability system has been implemented.

## Organisational structure

The incident commander is responsible for overall management of the incident. This includes command staff assignments required to support the command function. The incident command organisational structure should develop in a modular fashion that is based on the size and complexity of the incident, as well as the specifics of the hazard environment created by the incident. These people should be located at the incident command post (ICP) to ensure smooth communication and integrated decision making.

Depending on the incident, the command function can be conducted as a single incident command or a unified command structure.

A single incident command (IC) system is implemented when an incident occurs within a single jurisdiction and there is no jurisdictional or functional agency overlap. A single incident commander must be designated with overall incident management responsibility by the appropriate jurisdictional authority. In some cases where incident management crosses jurisdictional and/or functional agency boundaries, a single IC may be designated if agreed upon.

Unified command (UC) is established when an incident occurs within a multi-jurisdictional incident or where there is a jurisdictional or functional agency overlap; a single incident commander must be designated with overall incident management responsibility by the appropriate jurisdictional authority. ►

# National incident management system



An incident management system has only one conductor (incident commander) controlling several emergency service disciplines (fire, rescue, emergency medical services, traffic law enforcement etc)

► The unified command system must enable agencies with different legal, geographic and functional responsibilities to coordinate, plan and interact effectively. The unified command system must allow all agencies with jurisdictional authority or functional responsibility for the incident to jointly provide management direction through a common set of incident objectives and strategies and a single incident action plan (IAP).

Each participating agency must maintain its authority, responsibility and accountability.

### Command and general staff

The incident command structure consists of two types of staff: command staff and general staff.

The command staff may include a public information officer, a safety officer and a liaison officer, who report directly to the IC/UC and may have assistants as necessary depending on the nature, scope, complexity and location(s) of the incident(s).

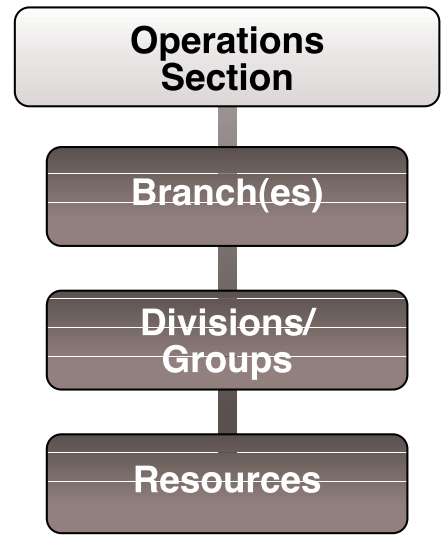
The public information officer is responsible for interfacing with the public and media and/or with other agencies with incident-related information requirements.

The safety officer monitors incident operations and advises the IC/UC on all matters relating to operational safety, including the health and safety

of emergency responder personnel and is responsible to the IC/UC for the systems and procedures necessary to ensure on-going assessment of hazardous environments, including the incident safety plan, coordination of multiagency safety efforts and implementation of measures to promote emergency responder safety as well as the general safety of incident operations. The safety officer has immediate authority to stop and/or prevent unsafe acts during incident operations.

The liaison officer is incident command's point of contact for representatives of other governmental agencies, NGOs, and the private sector (with no jurisdiction or legal authority) to provide input on their agency's policies, resource availability and other incident-related matters.

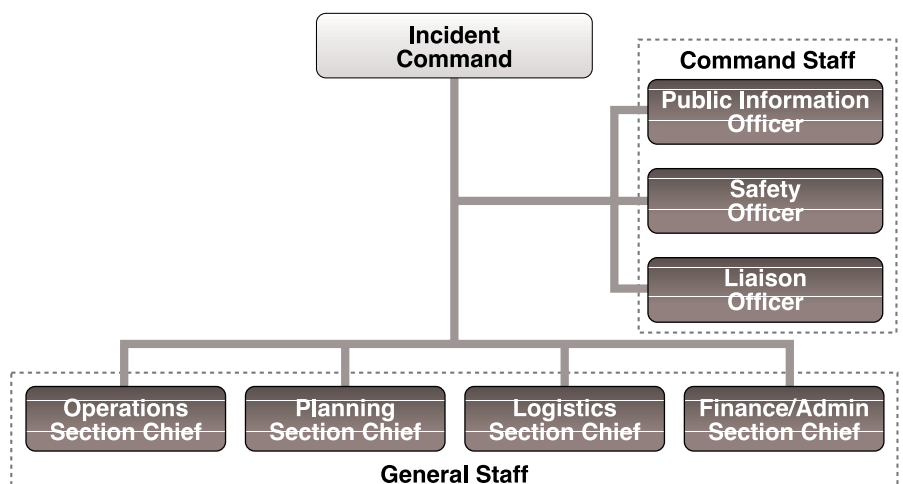
Additional command staff positions may also be necessary, depending on the nature and location(s) of the incident or specific requirements established by incident command. For example, a legal counsel might be assigned to the planning section as a technical specialist or directly to the command staff to advise incident command on legal matters, such as disaster declarations, the legality of evacuation and quarantine orders, or legal rights and restrictions pertaining to media access.



The general staff is responsible for the functional aspects of the incident command structure and may consist of the operations, planning, logistics and finance/administration section chiefs.

### Operations section

The operations section is responsible for all tactical activities focused on reducing the immediate hazard, saving lives and property, establishing situational control and restoring normal operations.►



► The major elements of the operations section will have the following functions:

• **Operations section chief:**

The operations section chief is responsible to incident command for the direct management of all incident-related tactical activities. The operations section chief will establish tactics for the assigned operational period. An operations section chief should be designated for each operational period and responsibilities include direct involvement in development of the IAP.

• **Branches:** Branches may be functional, geographic, or both, depending on the circumstances of the incident. In general, branches are established when the number of divisions or groups exceeds the recommended span of control.

• **Divisions and groups:** Divisions and/or groups are established when the number of resources exceeds the manageable span of control of incident command and the operations section chief. Divisions are established to divide an incident into physical or geographical areas of operation. Groups are established to divide the incident into functional areas of operation. For certain types of incidents, for example, incident command may assign evacuation or mass-care responsibilities to a functional group in the operations section. Additional levels of supervision may also exist below the division or group level.

• **Resources:** Resources may be organised and managed in three different ways, depending on the requirements of the incident.

1. Single resources: Individual personnel or equipment and any associated operators.
2. Task forces: Any combination of resources assembled in support of a specific mission or operational need. All resource elements within a task force must have common communications and a designated leader.
3. Strike teams: A set number of resources of the same kind and type that have an established minimum number of personnel. All resource elements within a strike team must have common communications and a designated leader.



*Incident management should be implemented on ALL incidents*

The planning section collects, evaluates and disseminates incident situation information and intelligence to the IC/UC and incident management personnel. This section then prepares status reports, displays situation information, maintains the status of resources assigned to the incident and prepares and documents the IAP, based on operations section input and guidance from the IC/UC.

The logistics section is responsible for all service support requirements needed to facilitate effective and efficient incident management, including ordering resources from off-incident locations.

A finance/administration section is established when the incident management activities require on-scene or incident-specific finance and other administrative support services. Some of the functions that fall within the scope of this section are recording personnel time, maintaining vendor contracts, administering compensation and claims and conducting an overall cost analysis for the incident.

### Public information

Where in the past incident commanders had to deal with media on a fairly irregular basis, they now have to deal with a much more intense public interest focus on their activities. The advent of the internet has necessitated media houses to continuously update their news web pages, which mean that they are continuously calling for new information on a particular incident. The fact that South Africa also now has three 24-hour television news channels has increased that pressure

even more. You no longer have to just find the time to do one interview for the news at eight. It now becomes an almost hourly activity and IC/UC must be prepared for this. For this reason the incident management system must implement processes, procedures and systems to communicate timely, accurate and accessible information on the incident's cause, size and current situation to the media, public, responders and additional stakeholders, both directly affected and indirectly affected.

The appointment of a public information officer (PIO) is essential. The public information officer must support the incident command structure as a member of the command staff and must also handle inquiries from the media, the public and elected officials on:

- emergency public information and warnings;
- rumour monitoring and response;
- media relations;
- other functions required to gather, verify, coordinate and disseminate accurate, accessible, and timely information related to the incident; and
- Information on public health, safety and protection is of particular importance.

### Conclusion

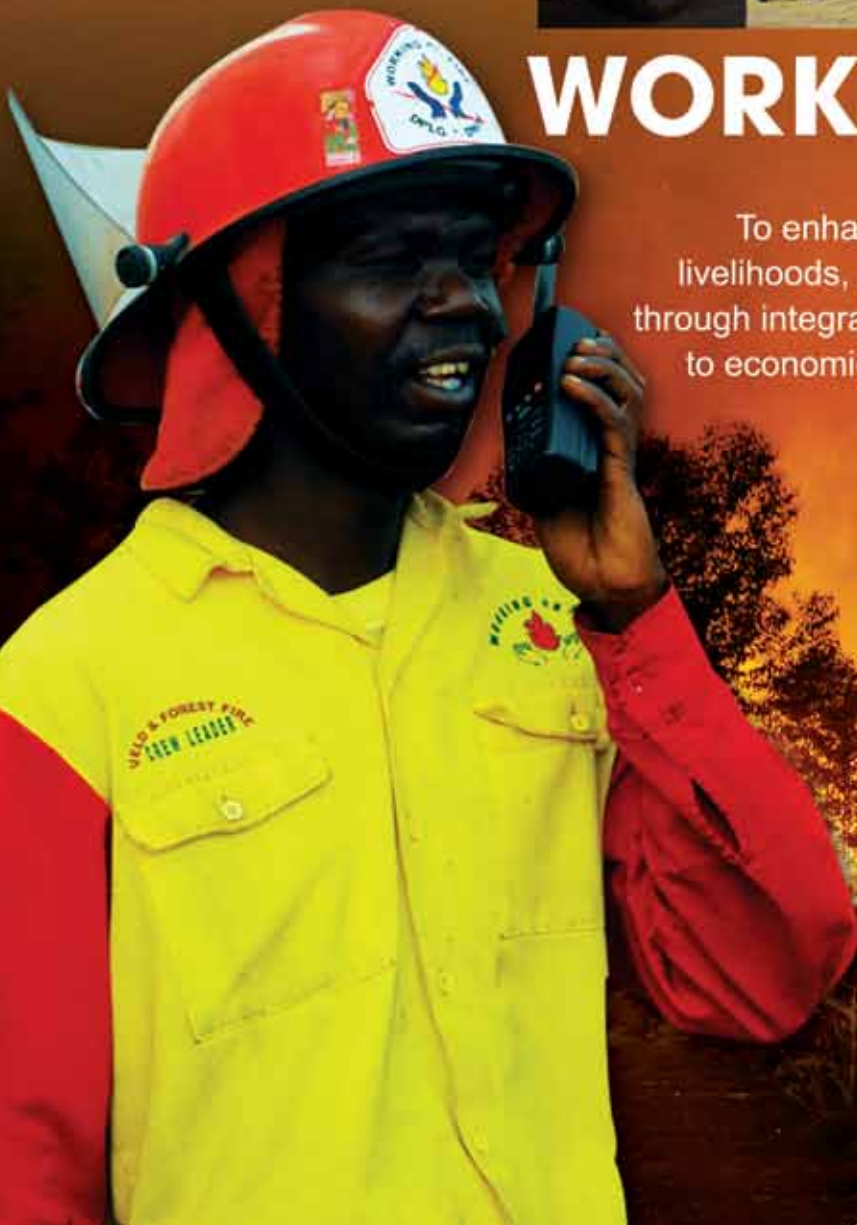
I finally wish to congratulate the National Disaster Management Centre and in particular the Head of Centre, Ken Terry, for his farsightedness in establishing a National Incident Management System. This has been a long time coming and once made mandatory for all role players, will have us all singing from the same page. ▲



# WORKING ON FIRE

## SCHOLARSHIP FUND

To enhance the sustainability and protection of life, livelihoods, ecosystem services and natural processes through integrated fire management in order to contribute to economic empowerment, skills development, social equity and accelerated service delivery.





The **WORKING ON FIRE (WOF)** Programme is one of the most successful components of the South African governments Expanded Public Works Programmes designed to alleviate poverty through skills training and the creation of job opportunities. The WOF Programme draws beneficiaries from impoverished communities and transform formerly unemployed and in some cases unemployable youth into fit, disciplined and trained veld and forest firefighters, which are deployed at over 100 bases in fire prone areas across South Africa. South Africa has created a world record proportion of women in the ranks of these firefighters, where some 30% are young women.

The impact of this programme has been widely recognized through the accolades which it has been awarded over the years. Not only has the WOF Programme made a huge contribution to South Africa's veld and forest fire fighting capabilities, but the modest remuneration which the WOF Programme beneficiaries receive is a critical relief measure from the depths of poverty experienced by so many in South Africa. Their income represents a real contribution to the lives of the beneficiaries, their families and communities where they live.

WOF beneficiaries not only receive specialized training in various fields related to their veld and forest fire fighting work but are afforded to progress in the ranks of the WOF structure to become Type II then Type I crew leaders as well as branching out into the management and administration functions in the programme. Some 84 former fire fighters have already progressed into such positions such as instructors, regional managers, media and community liaison officers, financial clerks, stores and procurement administrators, etc.

The WOF Scholarship Fund is intended to provide resources to aspirant current and former wildland fire fighters still engaged by WOF to pursue further formal training to improve their skills and knowledge. The fund will be managed by a committee consisting of former fire fighters and programme managers, chaired by the executive chairman of FFA Operations, the company implementing the WOF programme.

Contributions will be solicited from the general public, both domestically and abroad, corporate social investment resources and public and private institutions both in the form of general contributions and targeted funding initiatives. Individuals or institutions may also choose to sponsor a WOF beneficiary pursue their further studies or training. The intention will be to register the WOF Scholarship Fund as a public benefit entity to allow for tax deductible contributions from the corporate sector. All contributors to the WOF Scholarship Fund will receive annual statements on the utilization of funds and beneficiary progress.

You are urged to make a contribution to this fund which will greatly enhance the ability of the WOF Fund beneficiaries to improve their skills and knowledge and in so doing improve their employment opportunities and contribution they can make to their communities. Contributions can be made via the enclosed pledge form.

**For further information, please contact:**

The Executive Chairman,  
FFA Operations T/A WORKING ON FIRE,  
Email: [Abrahams@iafrica.com](mailto:Abrahams@iafrica.com)  
Tel: +27 (0) 82 557 5069.

Also see the WOF website at [www.workingonfire.org](http://www.workingonfire.org)

**Or deposit your donation in the following Bank Account:**

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Synock Matobako

# PIER programme making strides in Johannesburg

The Public Information, Education and Relations (PIER) project undertaken by the City of Johannesburg's Emergency Management Services (EMS), South Africa, is nearing its tenth year or decade since it was launched.

PIER is a programme developed in the US and adopted by the City of Johannesburg's EMS and adopted to South African conditions. PIER division chief for the City of Johannesburg EMS, Synock Matobako, says that the key objective of the programme is fire and life safety education with the objective of proactive injury and fatality prevention. "What this programme says is – that you don't have to wait for incidents to take place before you act," states Matobako.

The programme seeks to create maximum exposure and education about safety relating to fire and injury prevention, through various public awareness initiatives throughout Johannesburg at primary and high schools, as well as in urban and rural communities.

Matobako explains that PIER is a proactive programme. "The programme identifies risks and

looks at how to prevent incidents before they happen," he says. "We are looking at people getting injured and dying and we hope to reduce that."

In conducting proactive safety campaigns at schools, the City of Johannesburg EMS builds on the traditional relationship between fire station and school kids and community members, who already have an affinity with fire brigades and fire fighters. "Before, we had school kids and community members visiting the fire stations and fire fighters doing demonstrations, but it was not structured," explains Matobako.

### Awareness programmes

The City of Johannesburg EMS now implements various projects that are designed to teach young school learners early childhood development (ECD) about fire safety and injury prevention. The 'Learn not to burn' (LNTB) is one such initiative undertaken by the City of Johannesburg, that assists preschool and primary school teachers incorporate life and fire safety education into the classroom curriculum.

The school emergency response teams (SERT) is another PIER

programme undertaken by the City of Johannesburg for high school learners. In this programme, high school learners are trained by PIER representatives on safety and medical topics, such as first aid for home and school.

Another initiative called the Cadet programme was also introduced into the PIER project and targets young school children across all regions in Johannesburg. These children visit the City of Johannesburg's Basic Emergencies, Safety and Fire Education Centre (BESAFE), where they are trained and equipped to be 'fire ambassadors', mentions Matobako. "These kids then teach their peers on safety issues," he says. "The aim is to generate a pool of fire fighters amongst school kids and at the same time give them the option of fire fighting as a career."

According to Matobako, most fires were started by children, but this is coming to a 'complete stop' as these kids are being educated and informed on issues relating to fire safety. "Adults are putting children at risk. This still happening, but at a lower scale and we hope to eradicate it," asserts Matobako. ▶

► He says that there has been a forty percent fire reduction in the communities, where the PIER programme has been implemented. "We have seen an improvement in our fire incidence reports," says Matobako. "So, it means the programme is working."

### CERT programme

Another PIER project undertaken by the City of Johannesburg is the community emergency response teams (CERT) programme, which has had the greatest impact on the occurrence of fires, especially in informal settlements, states Matobako.

The provision of a fire safety kit forms part of the CERT initiative. The Jozi (Johannesburg) safety kit includes an assortment of appliances commonly used in informal dwellings. It is designed to promote fire safety and reduce incidences of fire in these communities.

Matobako mentions that there have been more than 1 000 Jozi safety kits that have been distributed in communities in Johannesburg over the last few years. In 2013, the City of Johannesburg EMS made provision for the kits to be included in its annual budget, when in the past it was funded in partnership with various businesses.

Financial constraint has prevented PIER at the City of Johannesburg's EMS to distribute the safety kit to all the communities that are reached in the programme, reports Matobako. "We would love for each informal settlement to have the kit," he says. However, only predetermined informal settlements are issued units of the Jozi safety kit. The kit contains a lantern – to replace candles, which cause most of the fires in informal settlements, as well as a 'safer' paraffin stove that is approved by the National Regulatory for Compulsory Specifications (NRCS). Other items in the safety kit include a bucket, which can be filled with sand or water to put out fires; a paraffin bottle, with a safety can that can only be opened by an adult and helps prevent paraffin poisoning in children who might drink it; as well as a solar powered light and a small first aid kit.

PIER coordinators also target certain individuals in the communities



*The Jozi safety kit*

who act as CERT Champions for its CERT programme. "CERT is growing," announces Matobako. "In communities, we have what we call 'champions' made up of community persons that show special interest in these programmes," says Matobako. "When there are incidents in the community these champions can deal with these incidents as first responders."

### CERT safety kit

- Bucket
- Safe paraffin stove (SABS) Lantern (instead of candle)
- Paraffin safety bottle (cap)
- Burn shield or first aid kit to treat burns
- Smoke detectors

### Seasonal campaigns

Apart from the PIER programmes run by the City of Johannesburg's EMS, there are additional seasonal fires and safety awareness campaigns undertaken by the City, reports Matobako. He says, "In summer, we address the issue of swimming pool safety and we also have a lot of informal settlement floods and in winter we have the candle safety campaign," he explains.

Matobako says the City of Johannesburg EMS has most recently embarked on a new initiative that involves installing smoke detectors at old age homes in partnership with

a security company, Yelled Security. "We have also started a programme on sign language where we teach deaf people on fire safety and teach emergency services members to communicate with deaf people on issues of fire safety. As we all know that these are vulnerable and at high when fires happens."

### Challenges

Informal settlements are highly mobile communities and as a result there is a challenge in having a stable base of informed and educated members of the community instructed in the PIER programme. Matobako explains, "We find that people that have been trained in one community moved and we a new group of people residing in the same area where we have trained. Their shacks are also built close to each other, which makes it easy for fire to spread quickly. There are no street names and addresses, which results in delayed responses by ambulances and fire engines the scene of an incident."

Despite this challenge, Matobako believes that the PIER programme has made an impact in the communities that are exposed to the initiative. He says, "For young learners the programme is being taught in schools and kids are starting to learn the emergency number (10177) and they are now teaching adults the number." ▲

# Healthcare professionals speak on matters of the heart: Resuscitation

The Resuscitation Council of Southern Africa hosted its annual symposium at the Linder Auditorium, located at the Education Campus of the University of the Witwatersrand in Johannesburg, South Africa, on 3 August this year.

The Resuscitation Council Symposium 2013 was themed 'From science to survival' as it explored the advancements made in medical and scientific technology towards achieving better results in the field of cardiovascular care and resuscitation. Healthcare luminary, Professor Vinay Nadkarni, who is based at the Children's Hospital of Philadelphia in the US, was the international guest speaker at this year's symposium.



Professor Vinay Nadkarni

The symposium presented an opportunity for healthcare professionals, including paramedics and emergency medical service (EMS) workers to gain a greater insight and understanding into cardiopulmonary resuscitation (CPR) in the prehospital environment, as well as in-hospital care.

A range of speakers explored various topics related to CPR, including ethical guidelines and legislation aimed at healthcare professionals that face the threat of litigation when making life and death decisions in the field.

## Resuscitation taskforce

Professor Vinay Nadkarni, an internationally recognised physician-scientist, is also an associate director of the Centre for Resuscitation Science at the University of Pennsylvania School of Medicine in the US. He discussed various ongoing research in the field of resuscitation science and provided insight into new technologies and systems being implemented in the global medical fraternity.

Professor Nadkarni highlighted the activities of the International Liaison Committee on Resuscitation (ILCOR), which is an organisation that acts as a forum for liaison for principle resuscitation organisation worldwide and in which he acts as co-chair. ILCOR recently launched its 'Taskforce 2015' that issues guidelines on topics related to resuscitation, in order to issue advisory statements.

Professor Nadkarni discussed the challenges facing healthcare professionals, as outlined in the advisory statements of the Taskforce. Based on these advisory statements, the following questions were posed to the medical resuscitation fraternity; how can we deliver the best emergency cardiovascular care to a patient; how can we get bystanders to act (ie provide CPR) and how can we achieve early recognition and response or rapid response teams (RRT) to sudden cardiac arrests (SCAs). Professor Nadkarni advised that aggressive post resuscitation care saves lives and issued a challenge to healthcare professionals, saying that the fraternity should 'question



Advocate Kurt Worrall-Clare

everything we do so that we can better perform for our patients'.

## Litigation:

Advocate Kurt Worrall-Clare discussed various concerns related to health-related litigation in his presentation titled 'Protecting yourself from litigation'. Worrall-Clare noted the general ethical considerations in healthcare, which includes integrity, autonomy, human rights and best interest and wellbeing of patients. "Where there is good communication with a patient, there is less chance and cases of litigation," he advised.

He highlighted autonomy or self-determination of patients as one of the essential ethical considerations, saying that human beings have the right to make their own decisions in the medical fraternity in the best interests of their own health. Self-maleficence is another ethical consideration that healthcare should be aware of, noted Worrall-Clare. This implies that healthcare professionals should act in such a way that does not cause harm to those whom they treat. Worrall-Clare stated that ►



# The Resuscitation Council Symposium 2013

## From Science to Survival

► these medical healthcare workers should ask of themselves 'have I explained the risks associated with my medical intervention'?

In terms of specific ethical considerations in resuscitation practices, Worrall-Clare posed the following rhetoric for healthcare professionals, 'when to resuscitate and when not to' and 'if you intervene, when do you stop?' Worrall-Clare cautioned that 'ignorance of the law is not any excuse', urging his audience to become knowledgeable of the National Health Act 2003, in order to be better protected against possible litigation.

### Minimal CPR training

Other speakers at the Resuscitation Council's symposium included a prominent and accomplished group of medical professionals, such as University of Cape Town and Stellenbosch University head of the division of emergency medicine, Professor Lee Wallis, who termed his presentation 'Survival'. He highlighted the challenges facing middle-income-countries (MICs), according to a World Bank classification, based on per capita income, such as Zambia, which he said had minimal training in CPR and 'no culture of volunteerism and no EMS service'.

Professor Wallis discussed the fundamental objectives of a health care system saying that it should improve health of a population; respond to those people's needs and provide financial protection against the costs of health care. "EMC and health care have a big overlapping" relationship, he opined.

### Drowning

Netcare 911 Faculty of Emergency and Critical Care medical education principle, Jurgen Kotze, delivered a presentation on the statistics



Professor Lee Wallis

related to 'drowning' accidents, which he highlighted as a 'grossly underestimated topic, both internationally and locally, from a prehospital perspective'. Kotze noted that drowning is the third leading cause of unintentional injury related death worldwide, adding that there is an estimated 500 000 deaths by drowning annually.

### Neonatology

Professor Sithembiso Velaphi, a specialist paediatrician and head of department of paediatrics at the Chris Hani Baragwanath Academic Hospital discussed new developments in neonatal resuscitation and juxtaposed this with the early science and practice in neonatology.

Youth cardiac arrests: Senior lecturer in the division of Emergency Medicine at the University of the Witwatersrand, Dr Peter Anderson, revealed that people under the age of 18 years old account for 40 percent of all SCA occurrences, which is categorised differently from sudden cardiac death (SCD). Dr Anderson discussed the



Professor Sithembiso Velaphi

need and challenges in conducting clinical evaluation of physical health and ability amongst youth, who engage in sports.

More than just survival: Principal specialist and head of department of emergency medicine at Chris Hani Baragwanath Academic Hospital, Professor Roger Dickerson, said that the purpose of his work and his colleagues within the cardiovascular resuscitation fraternity is to 'ensure that patients that survive pulmonary resuscitation come back as active citizens'. It is not just about survival, but survival with neurological function.

The Resuscitation Council's 2013 Symposium proved to be an intensive and highly engaging platform where leading medical specialists were able to share their knowledge and explore new and best practice in Resuscitation. The various discussions by these specialists was followed by feedback from the audience, who were challenged and intrigued by the issues addressed by respective speakers and their presentations.▲

# Where is your place?

By Wayne Bailey

What if you are a stand alone person as you go through your days? You might ask yourself, "How do I find my own niche on planet earth?"

First of all, be secure in what you do. Whatever you do, do it well and be known as the "Go to" person when your expertise is needed. Being secure in what you do, you will be open to change. If you're not changing, you're not growing. John Maxwell says "If we're growing, we're always going to be out of our comfort zone."

I suggest you take time to get to know yourself. I call it windshield time. The next time you're on the road for an hour or more, cut the radio off or way down and get to know yourself. For me, the quiet time is an opportunity to think out my challenges and grow.



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062 FRN Vol1No12

What are your gifts? Are you using them to the best of your ability? Gifts like hospitality, sales, mentoring to name a few.

When was the last time you asked a peer or someone that you trust on what your short comings were? If you're short or curt with people, you may not want to go in or continue work in the hospitality field. We all need feedback and positive criticism. The key is not to take offense, but to work and improve in those areas.

When you do find yourself on a team, trust your leader. If he or she is mentoring you, they know for them to succeed, you must succeed first. Zig Zigular says "You will get all you want in life if you help enough other people get what they want." Know they have the best interest out for you. If not, find a new team.

Last but not least, rely on your gut feeling and experience once you get this under your belt. Oscar Wilde said "Experience is the name every one gives to their mistakes.△



Wayne Bailey



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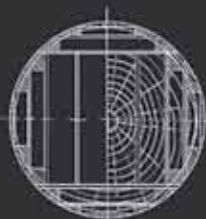


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# Confined space rescue

By Colin Deiner, Chief Director, Disaster management and Fire Brigade Services, Western Cape Government

*If the confined space presents a respiratory risk, the entry team should bring a supply of breathable air for the victim and place it on the victim as soon as possible*

## Scenario 1

A 22-year-old worker enters a toluene storage tank that is three and a half metres in diameter and seven metres high. Although a self-contained breathing apparatus was present, the worker was not wearing it when he entered the tank to carry out a cleaning task. The worker is overcome and collapses onto the floor of the tank and he subsequently dies before the fire department arrives. Upon arrival, the fire department attempt to rescue the worker, fire fighters begin cutting an opening into the side of the tank. The tank explodes, killing a 32-year-old fire fighter and injuring 15 others.

## Scenario 2

A 27-year-old sewer worker enters an underground pumping station via a fixed ladder inside a one metre diameter shaft. Because the work crew is unaware of procedures to isolate the work area and ensure that the pump has been bypassed, the transfer line is still under pressure. Therefore, when the workers remove the bolts from an inspection plate that covers a check valve, the force of the waste water blows the

inspection plate off, allowing sewage to flood the chamber and trapping one of the workers. A co-worker, a supervisor and a member of the local emergency services attempt a rescue and die. The first two deaths appear to be due to drowning and the latter two appear to be due to asphyxiation as a result of inhalation of 'sewer gas'.

## Scenario 3

The fire department responds to a request from a local resident to remove the remains of a dead animal from a seven-metre water well. The fire fighters decide to first pump the water out of the well. One fire fighter climbs down into the well on an aluminium ladder and builds a wooden platform at the two-metre level. A second fire fighter climbs down into the well to help position a gasoline engine-powered pump as it is lowered down to the platform. The two fire fighters start the engine but are unable to prime the pump. Within a few minutes the first fire fighter becomes dizzy and exits the well. The second fire fighter remains in the well and becomes unconscious. In a rescue attempt,

the first fire fighter climbs back down into the well, turns the engine off and then collapses unconscious over the engine. By this time, the engine has run for approximately eight to nine minutes. Within minutes several other fire fighters responding to radio emergency calls arrive at the scene. Over the next three hours, eight fire fighters enter the well in rescue attempts. Only two of the rescuing fire fighters are wearing breathing apparatus. The first fire fighter is rescued and revived. The second fire fighter and two other fire fighters attempting the rescue are tragically killed in the line of duty.

The above scenarios would most definitely require the response of a confined space rescue team and many people's response to these incidents would be to doubt whether any emergency service would allow their staff to conduct themselves in such a manner. The scary part is that all of the above incidents did happen.

Emergency responders are not exempt from the law (although some of us sometimes like to think ▶





*Communication between the entry team and the rescue team on the outside will be crucial to ensure that the raising operation goes smoothly*

► so) and must follow the provisions of the Occupational Health and Safety (OHS) Act when entering confined spaces even if it is in an emergency situation.

How do we plan our response to confined space rescues?

This can best be addressed if we take the time to find the answers to the following questions:

1. What laws and regulations exist concerning confined space rescue?
2. What type of equipment is needed for confined space rescue?
3. What components are needed for an effective confined space rescue standard operating procedure (SOP)?
4. What is the state of readiness of our emergency service to perform confined space rescue?

The problem of confined space rescue was identified a long time ago. In fact, up until 2001 the highest number of rescuer casualties worldwide was due to confined space incidents. According to the 1986 National Institute for Occupational Safety and Health (USA) report, up to

60% of confined space fatalities were rescuers. There are literally thousands of people working in confined spaces on a daily basis. The potential for an accident and subsequent emergency response is huge.

Confined spaces can masquerade in many different shapes and sizes and can be found in a multitude of configurations. Many are located below ground, however some are found above ground, inside buildings, on the roads, railways and even on water.

### **The law**

Working in confined spaces in South Africa is governed by regulations in the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), which requires an employer or a user of machinery to take steps to ensure that a confined space is entered by an employee or other person only after the air therein has been tested and evaluated by a person who is competent to pronounce on the safety thereof and who has certified in writing that the confined space is safe and will remain safe while any person is in the confined

space, taking into account the nature and duration of the work to be performed therein.

Should this not be possible, steps must be taken to ensure that any confined space in which a hazardous gas, vapour, dust or fumes may exist, or that might have an oxygen content of less than 20 per cent by volume, is purged and ventilated to provide a safe atmosphere therein and measures necessary to maintain a safe atmosphere therein have been taken; and has been isolated from all pipes, ducts and other communicating openings.

Should this also not be possible and you absolutely have to enter the space, you should then do so wearing the appropriate respiratory protection, use a safety harness (with someone on the other end!!) and have someone trained in cardiopulmonary resuscitation (CPR) available to assist if things don't go so well.

The regulation also requires that where the hazardous gas, vapour, dust or fumes are of an explosive or ►

## Confined space rescue



Should a vertical lift be required, a rescue team outside the space should be established who will identify and set up the necessary anchor points as well as the mechanical raising system to safely move the patient upwards and out

- ▶ flammable nature, an employer shall further take steps to ensure that such a confined space is entered only if:
  - the concentration of the gas, vapour, dust or fumes does not exceed 25 per cent of the lower explosive limit of the gas, vapour, dust or fumes concerned where the work to be performed is of such a nature that it does not create a source of ignition; or
  - such concentration does not exceed 10 per cent of the lower explosive limit of the gas, vapour, dust or fumes where other work is performed.

### What is a confined space?

For a space to be classified as a 'confined space', it should comply with the following criteria:

- Be large enough and so configured that a person can bodily enter and perform assigned work; have limited or restricted means for entry or exit; and not be designed for continuous occupancy.

If one looks at the OHS Act requirement for people entering confined spaces, the following can be added:

- contains or has known potential to contain a hazardous atmosphere; contains material with the potential for engulfing an entrant;
- has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls, or a floor that

- slopes downward and tapers to a smaller cross-section; or
- contains any other recognised serious safety or health hazard.

### Confined space hazards

The greatest danger in confined spaces is hazardous atmospheres. Hazardous atmospheres can be divided into three categories: asphyxiating, flammable and toxic.

Asphyxiating atmospheres are atmospheres that contain less than 19,5 % oxygen. Below this concentration a person's respiratory function may be compromised and such an atmosphere is therefore considered to be oxygen-deficient.

Between 15 to 19% oxygen, people could demonstrate a decreased ability to work strenuously. Their coordination could be impaired and persons with coronary, pulmonary or circulatory problems could demonstrate serious symptoms of impairment.

A more deficient atmosphere will continue to negatively impact on people and in extremely low concentrations (five to 10%) convulsions, cessation of respiration and finally death will be the ultimate result.

Flammable atmospheres are those that will present a serious fire or explosion hazard if a flammable

gas or vapour is present at a concentration greater than 10% of its lower flammable limit (LFL) or if a combustible dust is present at a concentration that obscures vision at a distance of two metres, or less.

Flammable atmosphere can also arise from oxygen-enriched atmospheres. Oxygen-enriched atmospheres are generally those containing more than 23,5 per cent oxygen.

Toxic atmospheres refer to any atmosphere containing gases, vapours, or fumes known to have poisonous physiological effects. The most commonly encountered toxic gases are Carbon monoxide (CO) and Hydrogen sulphide (H<sub>2</sub>S). These atmospheres may be caused by a manufacturing process, a product stored, or a work activity being performed in a confined space.

Exposure to an atmosphere containing more than 100 parts per million (ppm) will result in severe headaches and eventually, as the concentration increases, unconsciousness and eventual death.

Hydrogen sulphide exposure is much more severe with an atmosphere as low as 1 000ppm being potentially fatal.

Other than the three hazard classes mentioned above, one should also not lose sight of all the potential physical hazards that also exist in confined spaces. Physical hazards in confined spaces are those associated with (1) limited opportunities for entry and exit; (2) limited size of entry and exit points; (3) limited size of the confined space itself; (4) sharp objects; (5) irregular, dirty and slippery walking surfaces and (6) stored flowing solids ie sand, grain, gravel, etc.

Electrical and other energy-related hazards must, as a legal requirement, be isolated before the space is entered to do any work. Emergency services must also have their own procedures in place to isolate and lock-out energy hazards before they attempt any rescue operations.

### Entry control

Most responsible employers will generally have a robust confined space entry control system whereby an entry permit will be generated ▶

# Fire and Technical Rescue Equipment

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Email: jimmy.c@fremtac.com  
[www.fremtac.com](http://www.fremtac.com)



*For confined space rescue, it is essential that a purpose manufactured (confined space) harness be selected*

► before work is conducted. This permit will include all the details relevant to purpose of entry, the authorised employees within the space, the hazards within the space to be entered and the measures used to isolate and eliminate the hazards before entry was allowed.

But as we have all come to learn: Emergency services don't primarily exist for responsible employers!!

While the equipment requirement for employers doing confined space work is generally well defined, there is no official equipment requirement for emergency services. What you will need and how much of it will largely depend on your appreciation of the risk and (sadly) your budget.

A strict procedure must be in place for emergency responders to adhere to before entering a confined space for rescue purposes. The procedure must provide guidance for hazard identification, testing and evaluation, entry procedures, ventilation, breathing apparatus, protective equipment, and rescue and victim removal systems.

The first priority upon arrival should be to obtain the entry permit (assuming one has been generated) and/or interview the supervisor. The information you obtain from these sources will allow the incident commander to appreciate the type of hazards they will be dealing with, the shape and configuration of the

confined space and the number and possible condition of the victims.

This information will allow the incident commander to develop the plan of action that will in turn guide the activities of all responding personnel (more about this later).

### Equipment

Most responsible employers will procure their own confined space equipment and will keep it serviced and available for use by their own internal response teams. The equipment may, however, be exclusively configured for the specific risk on their premises and may not have the versatility required by emergency services.

The equipment inventory for confined space rescue response must include atmospheric monitoring devices, ventilation systems, breathing apparatus, personal protective equipment, extrication devices, lighting equipment, energy hazard controls and elevation rescue equipment.

An impressive array of highly researched equipment is available for this rescue discipline. Instead of dealing with each bit of kit individually, I will just share some thoughts on certain categories.

### Atmospheric monitors

Atmospheric monitors should be able to provide the rescuer with an audible warning of the following conditions:

- Methane: produced by the

fermentation of organic material (shafts containing leaves and water, or sewers) or released through leaks in gas pipes;

- Hydrogen sulphide: produced by decomposing organic material;
- Carbon monoxide: produced by incomplete combustion, eg smouldering fires in cable ducts, or released through leaks in exhaust gas pipes or as exhaust fumes from heating systems or motor vehicles;
- Lack of oxygen due to the consumption of oxygen during the decomposition of organic material, during smouldering fires or when oxygen is displaced by gas leaks (eg methane from gas pipes). Atmospheres below 19,5 %;
- Oxygen rich atmospheres (caused in areas where personnel work with oxygen) means that substances of low flammability in normal atmospheres, burn more easily, more quickly, and at higher temperatures. Explosive fires can be caused. Atmospheres with oxygen concentrations in excess of 23,5 % by volume.

When working in confined spaces, it is important to remember that concentrations of hazardous atmospheres can also change while the work is in progress. Due to the relative density and behaviour of these products, concentrations may be more intense at different points in the space. Given that this is the case, personal measurements should be done at regular intervals and at various pre-identified locations.►

### ► Ventilation equipment

A portable, intrinsically safe confined space blower with sufficient ducting able to effectively improve the atmosphere inside a confined space, is an integral part of a rescue team's inventory. Blowers provide fresh air on a continuous basis, maintain the atmosphere at acceptable oxygen levels and provide a means of egress of the contaminated air.

Blowers could be used either to draft the air out of the space or, more preferably, to force air into the area, causing a positive atmosphere inside and expelling the contaminants out of the space.

If sufficient ducting is available, the blower can be set-up in an area with enough fresh air to sustain the atmosphere inside the confined space.

### Breathing equipment

Breathing support equipment comprises the standard self-contained breathing apparatus (SCBA) and airline breathing apparatus.

Self-contained breathing apparatus are open circuit apparatus with a cylinder of compressed air supplying air to the user via a full face mask. Various sizes are available giving working times up to 45 minutes. These times are shorter when the user is operating in a highly stressful environment. In air temperatures of 36 degrees Celsius, for example, safe wearing time may be no more than 20 minutes. Under these circumstances, the tasks must be accomplished quickly and effectively and if it is appreciated that accessing a patient, treating and packaging the patient and exiting the confined space should take up more time than this, the practicality of an SCBA is questionable. The bulkiness of an SCBA also limits the movement of the wearer in a confined space and can preclude the use of a confined space harness. Certain modern SCBAs have however, been designed to wear over a harness.

Airline breathing apparatus are used where working times beyond 45 minutes are required. Airline breathing apparatus broadly comprises fresh air, constant flow and demand flow systems, sometimes used in conjunction with a small



*Any manufacturing or processing equipment must be shut down prior to entry*

backup cylinder. Demand flow airline systems can probably at best provide 100 metres range, with simple fresh air lines limited to less than 10 metres.

Any airline system will require a careful process of line management that could limit the movement through a space with many angles or turns.

Another option would be to use a closed circuit SCBA offering two hours or more duration. This option will provide the same challenges as the open circuit SCBA and also requires specialist training. These systems are generally used by mines rescue teams.

### Communication equipment

An adequate communication system will be needed and should enable communication between those inside the confined space, those outside the confined space and to call for help in the case of an emergency.

Portable powered communications equipment for confined space operation falls essentially into two categories; 'wireless' and 'wired'. These two categories essentially comprise radio systems and hardwired intercom systems. For confined space and tunnel working, the following four technologies are generally available:

- Mobile radio using free space propagation, possibly with repeaters;
- Mobile radio using leaky feeder guided propagation;

- Hard-wired point to point intercom systems; and
- Low frequency wire-guided inductive communication systems.

The mobile radio technology is reliant on open space or line-of-sight environments and, although reliable, they have an unpredictable range depending on the configuration of the confined space.

Active portable repeaters can increase the coverage but the deployment may not always be practical. This technology is most useful for surface attendant to rescue service communications.

Leaky feeder guided propagation is not suitable for rapid deployment. It is however better suited to fixed tunnel communications and is used extensively in the Gautrain rapid rail system for emergency communications. For this technology repeaters are required every 300 to 500 metres.

Hard-wired point-to-point intercom systems allow for point-to-point communications only and provide integrated communications equipment suitable for fixed cable lengths only. The technology does provide for secure, good quality, interference free and intrinsically safe communication. One of the more innovative manufacturers has developed a hard-line system which runs inside an NFPA grade rescue rope. This decreases the ►

## Confined space rescue



*The bulkiness of an SCBA also limits the movement of the wearer in a confined space*

▶ number of attachments and snag hazards and is ideal for confined space rescue.

Wire-guided low frequency inductive communications are new to the confined space environment but have a proven record in the underground mining environment. This technology inductively couples the signal into communications wire allowing communications between any points along the entire length of the wire (20 metres to 10 kilometres).

The systems rapid deployment capability, lightweight cable and reels, push-to-talk, simplex, open channel operation and intrinsically safe features makes it ideal for rescue and rapid deployment tunnel communications.

A predominant communications-related concern is the difficulty in communicating whilst using breathing apparatus. In a high-stress rescue situation, the importance of effective communications for decision-making and relaying of safety related messages is critical. In low visibility, high-noise environments even face-to-face communication through breathing apparatus is problematic.

Modern breathing apparatus and communications system design has seen the introduction of integral speech ports and diagrams, face piece integrated microphones, throat microphones and bone microphones. Specialist microphones

are increasingly being adapted to interface with intercom and portable radio systems.

### Retrieval systems

For confined space rescue, it is essential that a purpose manufactured (confined space) harness be selected. This type of harness is designed to ensure a vertical centre of gravity with multiple attachment points, shoulder lift points and fall arrest points. A practical new addition to confined space harnesses are handgrips that have been added to the back for assisting the rescuer out of tight spaces. The harness should also have attachment for hooking on communication devices and gas detection monitors.

### The rescue procedure:

#### Assessment phase

The first in response team must conduct an immediate assessment of the hazards present and implement measures to secure and control them.

As mentioned earlier, the first arriving unit should try to get as much information as possible, which includes obtaining a copy of the entry permit and interviewing an attendant or witness to the accident to determine exactly what happened. If no witness is present, the rescue team should look for clues on the scene that may indicate what has happened.

A determination of the number of victims involved, how long they have been inside the space, the mechanism of injury and the survivability profile of the victim(s) is imperative.

Depending on the survivability profile of the victim(s), the incident command must make an early decision as to whether the operation will be conducted as a rescue or recovery.

Should it be conducted as a rescue and it is in any way possible communications with the victim must be established as soon as possible.

Part of the initial assessment should be to gather as much information about the actual confined space as possible. Determine what type of products are stored or used in the space; what known hazards are present ie electrical, mechanical, stored energy etc and how stable is the space structurally.

Also, try to obtain a diagram of space, including points of ingress and egress.

### Safety

A safety zone (hot zone) must be established. The size of this zone will be determined by the atmospheric conditions, wind direction, size and shape of the space.

It might also be necessary to initiate ventilation as soon as possible. Also, consider the removal of all vehicles and machinery emitting exhaust fumes that could enter the confined space where the victims might be located.

Incident command should establish a safety sector that will be responsible for determining the hazards and contaminants within the confined space. The safety officer and his/her staff must monitor the space to determine oxygen level, flammability and toxicity. Based on these findings, the safety officer should advise incident command of the proper level of personal protective equipment.

All gas monitors must be activated in fresh air and the following parameters must be followed: ▶

- ▶ Audio-alarm activated;
- Calibrated to 10% of the LEL of the calibrant gas; and
- Audio-alarm set at:
  - oxygen-deficiency: 19,5% and oxygen-enrichment: 23,5%
  - flammability: 10%
  - toxicity: carbon monoxide 35ppm and hydrogen sulphide 10ppm

Any manufacturing or processing equipment must be shut down prior to entry. All equipment involved in the confined space operation must be locked out and maintained in a zero-energy state until operation is terminated. Secure and lockout utilities, including electrical, gas and water and secure or blank off any product that is flowing into the space.

### Ventilation sector

Incident command should assign ventilation sector who should consult with the safety sector to determine the proper type of ventilation for the space ie positive or negative pressure ventilation.

Consideration should also be given to where the discharged air from within the confined space is being discharged to.

### Entry team

Only trained confined space rescuers should be utilised as the entry team. A back-up team should also be on standby.

The correct level of personal protective equipment should be worn by all entry and backup teams. This shall include rescue type helmet, gloves, proper footwear, eye protection, appropriate skin protection, fall arrestor and a rescue rated harness as a minimum.

If the confined space has a flammable atmosphere, entry personnel should have intrinsically safe or explosion-proof communication and lighting equipment.

Prior to entry into the confined space, the entry team should check all diagrams and other pertinent information regarding the layout of the space and all personnel should be made aware of the action plan and all emergency evacuation signals and routes.

### Patient rescue and extrication

Upon reaching the victim, entry personnel should do an immediate primary survey. If possible, emergency medical care should begin immediately. In the event of a fall injury, C-spine management should be prioritised. If the confined space presents a respiratory risk, the entry team should bring a supply of breathable air for the victim and place it on the victim as soon as possible.

After the immediate life threatening injuries have been addressed, the victim(s) should be prepared for removal from the space. This may include using a spinal immobilisation device and stretcher capable of supporting a vertical lift out of the space. The entry team should have determined the appropriate method of extrication. Should a vertical lift be required, a rescue team outside the space should be established who will identify and set up the necessary anchor points, as well as the mechanical raising system to safely move the patient upwards and out.

Communication between the entry team and the rescue team on the outside will be crucial to ensure that the raising operation goes smoothly. If the space is too narrow, it might not be possible to attach a medical rescuer to the stretcher to monitor and support the patient on the way out. If possible, spend some extra time to ensure that the patient is adequately packaged and that no snag hazards will prevent the smooth upward movement of the litter.

### Treatment sector

Immediately after reaching the point of egress, the entry team should transfer the victim to the treatment sector. A decontamination site might have to be set up to remove any product that may have contaminated the victim before removal to a hospital.

Also remember to decontaminate all staff and equipment if necessary.

### Termination

Once all victims have been removed and all personnel have exited the confined space, incident command should ensure that the entire area has been made safe before handing over to the owner of the



*All gas monitors must be activated in fresh air*

site and leaving the scene. This may include taking a final reading of the ambient atmosphere.

### Finally

In this article I have really tried to stress the fact that a seemingly routine call to remove a victim from a confined space could turn into a tragedy if not approached in a safe and professional manner. History has proved this.

Granted, we can't have confined space rescue equipment on all our response units. It is therefore that we need to try to identify the sites in our response areas that may pose the biggest risks for confined space entrapment and ensure that when we get the call our response is swift and functional.

Confined space rescue training is not difficult. For a start there is no shortage of training props. Many companies will be happy to allow you onto their premises to exercise your skills. By building these relationships, you will not only be able to hone your own skills, but also build the relationships with the industries in your community that will one day help you save a life. ▲

# 2013

## October

### 2 – 3 October 2013

#### FPASA Fire Technology Seminar

This programme is designed to expose learners to fire safety beyond the textbook.

**Venue:** Emperors Palace Convention Centre  
Kempston Park, South Africa

**Contact:** Christine van der Westhuizen  
Tel: 011 397 1618/9  
email: college@fpasa.co.za

For more information visit: [www.fpassa.co.za](http://www.fpassa.co.za)

### 5 – 6 October 2013

#### 32<sup>nd</sup> Annual National Fallen Fire Fighters Memorial Weekend

Every October, the foundation sponsors the official national tribute to all fire fighters who died in the line-of-duty during the previous year. Thousands attend the National Fallen Fire fighters Memorial Weekend in Emmitsburg, Maryland. The weekend features special programs for survivors and co-workers along with public ceremonies.

**Venue:** National Emergency Training Centre,  
Emmitsburg Maryland, USA

**Contact:** Tel: 00 301 447 1365

For more information visit:  
[www.firehero.org/news/events/oct.html](http://www.firehero.org/news/events/oct.html)

### 7 – 10 October 2013

#### Oregon Emergency Management Association (OEMA) Annual Conference

**Venue:** The Valley River Inn,  
Eugene Oregon, USA

**Contact:** Robbie Roberts  
email: Robbie.Roberts@nwnatural.com

For more information visit:  
[www.oregonemergency.com](http://www.oregonemergency.com)

### 8 – 9 October 2013

#### Seventh National Emergency Management Summit

Over the past ten years an extraordinary confluence of events, both environmental and geopolitical, has created a heightened risk and awareness of natural disasters, epidemics, and terrorism in the United States. The National Emergency Management Summit seeks to assess these risks and articulate practical approaches to strategies for planning, response and recovery.

**Venue:** Tropicana Casino and Resort Atlantic  
City New Jersey, USA

For more information visit:  
[www.emergencymanagementsummit.com/](http://www.emergencymanagementsummit.com/)

### 9 October 2013

#### FPASA Fighting Evacuation Training

Basic theory and practical exercises for the use of portable fire extinguishers and hose-reels on incipient stage fires, duties and responsibilities of fire marshals during an emergency and practical evacuation exercise

**Venue:** 105 Springbok Road, Bartlett  
Boksburg, South Africa

**Contact:** Christine van der Westhuizen  
Tel: 011 397 1618/9

email: college@fpasa.co.za

For more information visit: [www.fpassa.co.za](http://www.fpassa.co.za)

### 9 – 11 October 2013

#### Land Rehabilitation Society of South Africa 1st Annual Conference

The conference will provide an insight into land rehabilitation, providing information to this project to various stakeholders

**Contact:** Tel: 072 808 6379

email: admin@larssa.co.za

For more information visit:  
[www.larssa.co.za/conference](http://www.larssa.co.za/conference)

### 11 – 25 October 2013

#### ATA International Training Emergency Medical Care Program

International trauma life support and advanced trauma life support courses with practical experience training in an observer capacity and an extended course in a volunteer capacity which would include registration with the Health Professions Council of South Africa

**Venue:** 11 Riley Road, Bedfordview,  
Johannesburg, South Africa

**Contact:** Nicole de Montille  
Tel: 011 450 4263

email: nicole.demontille@ata-international.com

For further information visit:  
[www.ata-international.com](http://www.ata-international.com)

### 13 – 18 October 2013

#### Emergency Preparedness and Hazmat Response Conference

This national conference continues to bring the highest quality training and education to all involved in emergency management and public safety, as well as industry personnel. The conference includes an exhibit hall with more than 80 vendors, halfday, two-day training programs and numerous breakout sessions.

**Venue:** Renaissance Baltimore Harborplace,  
Baltimore, USA

For more information visit:  
[www.emergencypreparednessconference.org](http://www.emergencypreparednessconference.org)

### 14 – 18 October 2013

#### Fire Prevention and Safety Strategies

Content fully revised in 2011, now covers the theory of fire, legislation, components/operation/use of extinguishers, flammable liquids and gases, hot work, fire hazards of electrical equipment/installations, components/operation/site control of sprinklers and automatic fire detection systems, the organisation and management of fire teams and occupational fire brigades

**Venue:** 105 Springbok Road, Bartlett,  
Boksburg, South Africa

**Contact:** Christine van der Westhuizen  
Tel: 11 397 1618/9

email: college@fpasa.co.za

For more information visit: [www.fpassa.co.za](http://www.fpassa.co.za)

### 14 – 18 October 2013

#### Confederation of Fire Protection Association's (CFPA) Fire Prevention and Safety Strategies Course

The course will cover the theory of fire legislation, flammable liquids and gases, fire hazards of electrical equipment, sprinklers and automatic fire detection systems, the organisation and management of fire teams and occupation fire brigades

**Venue:** FPASA College, 105 Springbok Road,  
Bartlett, Boksburg,  
Gauteng, South Africa

**Contact:** Christine van der Westhuizen  
Tel: 011 397 1618

email: college@fpasa.co.za

For more information visit: [www.fpassa.co.za](http://www.fpassa.co.za)

### 15 – 17 October 2013

#### 9<sup>th</sup> EARSeL Forest Fire Special Interest Group Workshop

The event will focus on quantifying the environmental impact of forest fires

**Venue:** Coombe Abbey, Warwickshire, UK

For further information visit: <http://www.earsel.org/SIG/FF/9th-workshop/index.php>

### 15 – 17 October 2013

#### 35<sup>th</sup> International Conference of Safety in Mines Research Institutes

The leading event for mining safety and health researchers to focus on minimising risks to personnel in the global mining industry

**Venue:** Central Hall Westminster, Storeys Gate,  
London, UK

**Contact:** Melanie Boyce  
email: melanie.boyce@iom3.org

For more information visit:  
<http://www.iom3.org/events>

### 18 – 20 October 2013

#### World Rescue Challenge London

The event will see all the fire fighters from across the world competing with each other in emergency rescue skills. World Rescue Challenge London provides healthy rivalry between the different teams and aims at improving their performances through different drills

**Venue:** ExCeL Exhibition Centre,  
London, United Kingdom

**Contact:** Tel: 00 44 20 85551200

For further information visit: [www.londoneer.org](http://www.londoneer.org)

### 21 – 23 October 2013

#### Air medical transport conference

The conference offers over 150 educational sessions covering topics in a variety of disciplines including safety, core clinical, specialty clinical, management, aviation, research and communications.

**Venue:** Virginia Beach, Virginia, USA

For more information visit: [www.astna.org/](http://www.astna.org/)

### 21 – 25 October 2013

#### Confederation of Fire Protection Association's (CFPA) Certificate in Principles of Fire Safety Engineering Course

The content of this course is based on BS7974:2011 – Application of fire safety engineering principles to the design of buildings and includes input drawn from associated published documents (PD's)

**Venue:** 105 Springbok Road, Bartlett,  
Boksburg, South Africa

**Contact:** Christine van der Westhuizen  
Tel: 11 397 1618/9

email: college@fpasa.co.za

For more information visit: [www.fpassa.co.za](http://www.fpassa.co.za)

### 21 – 26 October 2013

#### IEEE International Symposium on Safety, Security and Rescue Robotics

The 11<sup>th</sup> IEEE International Symposium continues its tradition of attracting cutting-edge papers in the theory and practice of robots for all types of safety, security and rescue applications

**Venue:** Linköping, Sweden

For more information visit:  
[www.ssr-conference.org/2013/](http://www.ssr-conference.org/2013/)

### 22 -24 October 2013

#### Mine Safe

Themed on Zero Harm this event is hosted by SAIMM, AMMSA and SACMA, with input from DMR, Chamber of Mines, NUM, Solidarity and UASA

**Venue:** Emperors Palace, OR Tambo Airport,  
Johannesburg, South Africa

**Contact:** Tel: 011 834 1273 /7

email: raymond@saimm.co.za

For more information visit: [www.saimm.co.za](http://www.saimm.co.za)

### 22 – 25 October 2013

#### National Wetlands Indaba 2013

The theme of this 2013 Indaba will be 'Wetlands as ecological infrastructure

**Venue:** Cape St Francis Resort and  
Conference Centre,

Eastern Cape Province, South Africa

For more information visit:

<http://indaba2013.wetlands.za.net/>



### 23 – 24 October 2013

#### Fire Sector Summit 2013

The annual Fire Sector Summit is a must attend fire event providing a unique blend of networking, conference, discussion and debate alongside an exhibition, featuring the very latest in product and technical advancement

**Venue:** TBA

For more information visit: [www.fia.uk.com](http://www.fia.uk.com)

### 24 – 26 October 2013

#### Fire India

Fire conglomerates from around the world will have their presence once again in the event displaying the latest and improved technologies

**Venue:** Bombay Exhibition Centre, Goregaon, Mumbai, India

**Contact:** Isha Taneja  
Tel: 00 91 11 4505 5500

For more information visit: [www.fire-india.com](http://www.fire-india.com)

### 25 – 30 October 2013

#### International Association of Emergency Managers (IAEM) 61st Annual Conference

The IAEM annual conference provides a forum for current trends and topics, information about the latest tools and technology in emergency management and homeland security and advances IAEM committee work

**Venue:** Silver Legacy Hotel and Reno Events Centre, Reno, Nevada, USA

**Contact:** Tel: 001 703 538 1795  
email: [info@iaem.com](mailto:info@iaem.com)

For more information visit: [www.iaem.com](http://www.iaem.com)

### 28 October 2013

#### Basic Fire Fighting Module

The basic theory of fire, methods of extinguishment, components, operations and practical use of fire extinguishers and hose reels. This is a suitable annual continuation or refresher training for persons who have attended the fire fighting and evacuation module

**Venue:** 105 Springbok Road, Bartlett, Boksburg, South Africa

**Contact:** Christine van der Westhuizen  
Tel: 11 397 1618/9  
email: [college@fpasa.co.za](mailto:college@fpasa.co.za)

For more information visit: [www.fpasa.co.za](http://www.fpasa.co.za)

### 28 – 31 October 2013

#### ARFFWG 24th Annual Conference and Training Symposium

This four day conference will be packed with seminars, workshops and the opportunity to network with fellow airport fire fighters and industry experts from around the world

**Venue:** Embassy Suites, 5055 International Boulevard, North Charleston, South Carolina, USA

**Contact:** Barbara Haas  
Tel: 00 817 409 1100  
email: [info@arffwg.org](mailto:info@arffwg.org)

For more information visit: [www.arffwg.org](http://www.arffwg.org)

### 28 October – 01 November 2013

#### Rural Metro Emergency Management Services Hazmat Awareness Course

This comprehensive course covers everything from an introduction to hazardous materials, properties of hazardous materials, hazard and risk assessment to command, safety and scene control

**Venue:** Grey town Training Academy

**Contact:** Germaine Gilbert  
Tel: 033 345 0080  
email: [GermaineG@ruralmetrosa.com](mailto:GermaineG@ruralmetrosa.com)

For more information visit:  
[www.ruralmetrosa.com](http://www.ruralmetrosa.com)

### 30 October 2013

#### Basic life support for healthcare providers' course

This course is intended for participants who provide health care to patients in a wide variety of settings. The course teaches the skills of CPR and choking for victims of all ages including ventilation with barrier devices, pocket masks, bag-valve-mask devices with supplemental oxygen and the use of automated external defibrillators

**Venue:** 16 Lotus Street, Roodepoort, South Africa

**Contact:** Heather Roestorff  
email: [heather@emergency-care.co.za](mailto:heather@emergency-care.co.za)  
For further information visit:  
[www.emergency-care.co.za](http://www.emergency-care.co.za)

## November

### 4 – 8 November 2013

#### Rural Metro Emergency Management Services Level III First Aid Course

This comprehensive course covers everything from describing first aid equipment and explaining their basic application to intervening in minor medical emergencies and carrying out CPR

**Venue:** Grey town Training Academy  
**Contact:** Germaine Gilbert  
Tel: 033 345 0080

email: [GermaineG@ruralmetrosa.com](mailto:GermaineG@ruralmetrosa.com)  
For more information visit:  
[www.ruralmetrosa.com](http://www.ruralmetrosa.com)

### 4 – 15 November 2013

#### Advanced Fire Prevention

The content was fully revised in 2011 and now addresses fire risk management, fire safety legislation, suppression system, fire growth and development, means of escape, flammable liquids and gases, structural protection, business continuity and fire safety management

**Venue:** 105 Springbok Road, Bartlett, Boksburg, South Africa

**Contact:** Christine van der Westhuizen  
Tel: 11 397 1618/9  
email: [college@fpasa.co.za](mailto:college@fpasa.co.za)

For more information visit: [www.fpasa.co.za](http://www.fpasa.co.za)

### 4 – 29 November 2013

#### Rural Metro Emergency Management Services Fire Fighter II Course

This comprehensive course covers everything from rescue and extrication to foam and foam making equipment

**Venue:** Grey town Training Academy  
**Contact:** Germaine Gilbert  
Tel: 033 345 0080  
email: [GermaineG@ruralmetrosa.com](mailto:GermaineG@ruralmetrosa.com)

For more information visit:  
[www.ruralmetrosa.com](http://www.ruralmetrosa.com)

### 5 – 7 November 2013

#### 4th Biennial Emergency Medicine in the Developing World Conference

The theme for the conference will be 'Opportunity and Innovation' and a wide range of expert speakers will be covering extensive topics in emergency medicine, which will be of relevance to prehospital, nursing and medical emergency care workers

**Venue:** Cape Town International Convention Centre, Cape Town, South Africa

For more information visit:  
[www.emssa2013.co.za/](http://www.emssa2013.co.za/)

### 5 – 8 November 2013

#### A+A 2013

A+A is the world's largest and most important specialist trade fair for all aspects of safety, security and disaster management with

quantitative and qualitative first class product ranges, numerous special events and informative meetings

**Venue:** Dusseldorf, Germany

For more information visit:  
[www.aplus-a-online.com/](http://www.aplus-a-online.com/)

### 7 – 10 November 2013

#### The VCOS Symposium in the Sun

This is the only national symposium devoted to the leaders of volunteer and combination departments. The education offered at the symposium is designed to enhance your leadership skills in a way that will motivate your department and create a greater impact on the entire community you serve

**Venue:** Hilton Clearwater Beach, Clearwater Beach, Florida, USA

For more information visit:  
[www.iafc.org/microsite/VCOSsymp/](http://www.iafc.org/microsite/VCOSsymp/)

### 7 – 10 November 2013

#### International Technical Rescue Symposium 2013

The International Technical Rescue Symposium gathers persons from across the spectrum of rescue disciplines, including mountain rescue, the military, law enforcement, park services, water rescue, outdoor recreation, fire service and rescue teams, along with equipment manufacturers and distributors. It provides an open forum through which to share news and views on advances in equipment and techniques, technical problems, and issues of mutual concern

**Venue:** The Albuquerque Marriott, 2101 Louisiana Blvd, Albuquerque, New Mexico, USA

For more information visit:  
[www.cmcrescue.com/ITRS-W14.aspx](http://www.cmcrescue.com/ITRS-W14.aspx)

### 7 – 10 November 2013

#### 2013 Colorado State EMS Conference

The conference audience includes emergency medical service (EMS) providers, managers, administrators and allied health professionals involved in some aspect of emergency care in Colorado and the western United States

**Venue:** Keystone Resort and Conference Centre, Keystone, Colorado, USA

For more information visit:  
[www.speakerready.com/abstracts/EMSAC/](http://www.speakerready.com/abstracts/EMSAC/)

### 8 – 22 November 2013

#### Emergency Medical Care Programme

ATA International Training offers the following courses International Trauma Life Support and Advanced Trauma Life Support courses with practical experience training in an observer capacity and an extended course in a volunteer capacity, which would include registration with the Health Professions Council of South Africa

**Venue:** 11 Riley Road, Bedfordview, Johannesburg, South Africa

**Contact:** Nicole de Montfille  
Tel: 011 450 4263

email: [nicole.demontfille@ata-international.com](mailto:nicole.demontfille@ata-international.com)  
For further information visit:  
[www.ata-international.com](http://www.ata-international.com)

### 11 November 2013

#### South African Qualification and Certification Committee

This is an assessment session only

**Venue:** 105 Springbok Road, Bartlett, Boksburg, South Africa

**Contact:** Christine van der Westhuizen  
Tel: 11 397 1618/9

email: [college@fpasa.co.za](mailto:college@fpasa.co.za)  
For more information visit: [www.fpasa.co.za](http://www.fpasa.co.za)

## *Footprints in the Black*

Through the black I walk  
Sharpened shovel in my hand  
The wind so slight drifts through  
This very different land

The smell of freshly blackened ash  
Is strong and all around  
A silent shroud surrounds me  
As I scan the blackened ground

I wander yet with purpose  
Waiting for that sign  
Then pause ever so often  
As I head away from the line

Suddenly it is near me  
That unmistakable smell  
I stop and breathe in deeply  
That thing I know so well

I think of those before me  
Of time I won't get back  
I turn and look behind me  
At footprints in the black

**Author: Paul Fazekas**  
Sioux Lookout Fire #48  
(July 1, 2003)



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# 13 October

A NOT SO OBVIOUS CONVERSATION  
LIVING WITH DISABILITY AND DISASTERS



“Many seemingly ‘easy’ pieces of advice, like “evacuate in advance of a disaster”, become much more complicated when you are living with a disability.”