

FIRE AND RESCUE INTERNATIONAL

Integrated fire, rescue, EMS and disaster management technology

Volume 1 No 7



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Comment

We are proud to present the seventh edition of Fire and Rescue International to our readers.

Cover profile

Our cover profile this month focuses on Working on Fire International's research and development division who presented a workshop on the role of fire in ecosystems and grassland management at the Kanha Tiger Reserve in India. The workshop was followed by practical demonstrations infield.



Lee Raath-Brownie

FRI Images photographic competition

Our fifth winner of the FRI Images competition is announced this month and won R2 000 cash! The winning photograph was submitted by a reader in India. See page 3 for details. **CONGRATULATIONS!**

Email us your high resolution photographs and you too could be a winner!

News section

The monthly news section features articles on NASA's new satellite data on visualisations of earth's fires since 2002, December's high death toll on South Africa's roads, a new fire types concept handbook that was launched in Spain, several buildings that collapsed in Rio de Janeiro, the new paediatric ambulance for the Cape Winelands and the recent forest fires on Reunion Island.

Hazmat

Our monthly in-depth technical feature focuses on Hazmat in this issue and Colin Deiner, chief director, Disaster Management and Fire Brigade Services: Western Cape Provincial Government, wrote about the criteria for setting up a hazardous materials response team. His article, I'm sure, will once again make readers think and we would appreciate your feedback on these complex issues.

Technical

Lenny Naidoo of Rural Metro Emergency Management Services, Pietermaritzburg, South Africa, submitted an interesting article on the operating of winches at accident scenes in which he raises the concern of complacency on the part of the tow-truck operator as well as the fire and rescue personnel on an accident scene.

DMISA conference

We review the recently held Disaster Management Institute of South Africa's (DMISA) annual conference which was held in Somerset West, Western Cape, South Africa.

We also feature the recently held European Forest Fire Networks Project's (EUFOFINET) workshop and follow their on-going progress.

Fire and Rescue International is your magazine. We serve those who serve others. Share your views, experiences, ideas and suggestions with fellow readers.

Send us your comments, submissions, emails and photographs!

Let's serve together!

Lee Raath-Brownie
Publisher

This month's FRI images winner!



Calling all budding photographers! We want your photographs!

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: >>ENTER NOW!

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.



Congratulations to

Photographer

Manoj Chandran Deputy
Conservator of Forests (Working
Plan) Pithoragarh Forest Division,
Pithoragarh, Uttarakhand, India

Name of photograph

Forest fire in a Himalayan
pine forests

Photo description:

This is a ground fire on needle
litter of *Pinus roxburghii* forests in
the Western Himalayas in India.
Around 50 hectares were burnt
in this incident on the night of
30 April 2008.

Camera:

Canon EOS 350D
Lens: 300mm
Settings: 1 second exposure,
taken at 20h00 at night
without flash, using
Aperture Priority
programme mode

Manoj Chandran wins this
month's prize money of R 2 000!

Well done!

Burning for tigers in India

By Lynne Trollope



Working on Fire International's (WoF-Int) research and development division was invited by Dr HS Pabla, principle chief conservator of forest (wildlife) and chief wildlife warden, Madhya Pradesh, to present a workshop on the role of fire in ecosystems and grassland management at the Kanha Tiger Reserve in India during November 2011.

Lectures on techniques for the ecological assessment of rangelands and the role of fire in ecosystem management were presented at the workshop followed by practical demonstrations in the field.

The WoF-Int research and development division has a highly successful research and ecological management partnership with the manager and ecological management team in the community-owned, Mun-Ya-Wana Private Game Reserve, in northern Kwa-Zulu Natal, South Africa. The company, AndBeyond, is responsible for overall management of the reserve and Les Carlilse of the Mun-Ya-Wana (Phinda) board of directors was responsible for the invitation being extended to Professor Winston Trollope. AndBeyond is also assisting the Tiger Reserves in Madhya Pradesh with animal capture and translocation.

The Kanha Tiger Reserve or National Park is located in the state of Madhya Pradesh in the Central Highlands of India and receives a mean annual rainfall of 1 700mm during the monsoon rainy season, from July to approximately mid-September. It is a flagship reserve,

940 square kilometres in extent, and is renowned for the conservation of Tigers (*Panthera tigris*) and the highly endangered hard ground Barasingha (*Cervus duvauceli branderi*), or Swamp Deer, from extinction. Kanha Tiger Reserve supports the last world population of this deer species. Animal species generally seen in the National Park are Chital, Sambar, Barasingha, Barking deer and Chousingha deer species, the huge buffalo-like Guar, Langur (a monkey species), wild pig, jackal, sloth bear, wild dog, panther/leopard, and tiger.

The topography of the Reserve is dominated by the Maikal ranges of the Satpura Mountains. Flat hill-top plateaux, varying degrees of slopes, and rolling meadows in the valleys provide unique settings and ecotones for creating diverse habitats for a range of wildlife species. Tall Sal (*Shorea robusta*) forests and mixed deciduous forests, where bamboo is abundant as the undergrowth on the mid-slopes, provide the main habitat for tigers, bears and leopard. The meadows and plateaux provide habitat for the ungulate or deer populations, the main prey species for the tigers.

Kanha Tiger Reserve is one of nine pioneering National Parks to be included in Project Tiger in 1973-1974, with the aim of tiger and Barasingha conservation in the Kanha ecosystem. The management objectives are to be achieved by increasing the prey population for the tigers and co-predators, and stabilising and increasing the sharply declining population of the endangered and food specialist hard ground Barasingha through

different management practices. Anthropogenic (human caused) grasslands developed in the forest communities due to agricultural and grazing practices of the 45 forest villages in the current day National Park/Reserve. The villages were re-located outside the Reserve by the government of Madhya Pradesh from 1970 onwards and the grasslands have been maintained by the practice of cool, early season, annual burning in December/January and heavy grazing by deer and Guar. Fire protection from intense wildfires in the dry summer months for the past forty years and the heavy grazing has resulted in the progression of the grasslands to more unpalatable grass and herb (weed) species and the encroachment of the forests into these vital grassland habitats.

Barasingha have very specific habitat requirements, needing tall grass patches during the breeding season to hide their new born fawns from predators. Competition for the nutritious green grazing from the Chital or spotted deer on the burnt meadows and the increased threat of tiger predation, who now concentrate their hunting activities on the open meadows, has resulted in the Barasingha abandoning the central grasslands for other more favourable 'keyhole' grassland habitats scattered in the forest. The change in the grass species in the meadows towards the less palatable species and the incredible amount of biomass or grass growth during the wet monsoon season is also affecting the predator/prey ratio, ie less Chital and Sambar are available as prey. Large amounts of mature grass may look good, but in old, ►



Professor Winston Trollope demonstrating the use of the Disc pasture meter to the directors and field staff of the Bandhavgarh Tiger Reserve in India

► moribund grass the protein content declines rapidly providing very little nutritional grazing value for the large herds of Chital that concentrate in the meadows during the "wet". They then disperse into the forests in search of shorter more nutritious grasses increasing the difficulty of hunting for the tigers.

The WoF-Int team gained insight into the challenges of managing these incredible forest and grassland ecosystems during field trips in four tiger reserves in Madhya Pradesh - Kanha, Bandhavgarh, Panna and Pench. Dr Pabla, the directors and the management staff of these Tiger Reserves, should be congratulated on their dedication and commitment to preserving tigers and other threatened species, both plant and animal, and are fully cognisant of the challenges of climate change affecting the prevailing weather patterns. Already declining rainfall is ascribed to climate change and this is resulting in a greater threat

from intense wildfires during the hot, dry summers.

Professor Trollope introduced the directors and staff to the simple, rapid but reliable methods of assessing and monitoring vegetation that provide easy but pertinent means of creating and managing a decision support system, based on ecological criteria, for prescribed burning. If the vegetation is in a pioneer and highly susceptible state, it is not at all advisable to burn the area. It should rather be allowed to progress to a more stable state through management and protection from wildfires. On the other hand, if the rangeland is moribund (old and unpalatable) and has progressed in the plant succession to climax grass and/or herb species that have little nutritional value for grazing animals, then prescribed burning is an important management tool. Forest and invading plant species can also be controlled or eradicated using fire. Knowledge of weather patterns

and prevailing weather conditions at the time of prescribed burning is vital to successful fire management and/or fire suppression. WoF Int uses the Lowveld Fire Danger Index (FDI) system developed in South Africa, where the fire danger rating is calculated using a simple equation and is then categorised into blue, green, yellow, orange and red days according to the prevailing temperature, relative humidity and wind conditions. During wet or very humid, cool days (blue days), prescribed burning is not possible whereas fires burning on red days with high temperatures, low relative humidity and high wind speeds, are uncontrollable and highly dangerous. A grass curing factor indicating the ratio of dry grass to moist green grass is included in equation to calculate the FDI and based on the danger categories (green, yellow or orange), recommendations are prescribed for burning to safely achieve different management objectives. ►



Chital deer – favoured prey species for tigers



Dr Mohanta and Professor Trollope measuring the amount of grass on the Bumhnidadar Plateau in the Kanha Tiger Reserve



The highly endangered hard ground Barasingha



Chris de Bruno Austin demonstrating the construction of dry line firebreaks.

► Chris de Bruno Austin, CEO of WoF-Int, demonstrated the construction of dry line firebreaks using fire and applied a controlled burn at the request of the reserve managers in an enclosure used for the translocation of black buck, another endangered species, at Kanha Tiger Reserve. Burning demonstrations were also conducted at Bandhavgarh and Panna Reserves with the enthusiastic participation of the management and field rangers.

The visit to India was highly successful, the exchange of knowledge by both parties was most enlightening and the probability of exchange programs developing to the benefit of the incredibly beautiful, sleek, endangered tigers and majestic Barasingha deer is good.

WoF-Int would like to thank their Indian hosts for their hospitality and highly stimulating scientific exchange plus the privilege of seeing twelve tigers! ▲



The enthusiastic fire suppression team at Kanha Tiger Reserve.

World's largest fire fighting force deployed in Arafat

Civil Defence forces in Hajj, were mobilised to form the largest ever fire fighting network in the world, ensuring the safety of annual Hajj pilgrims at Arafat, Saudi Arabia.



More than 2,9 million Muslim pilgrims attended the 2011 Hajj ritual

There were no fire-related incidents at Arafat during the biggest ever gathering of Muslims thanks to the elaborate safety measures implemented by the forces. As many as 31 Civil Defence units swung into action to implement the forces' emergency plan, according to their commander, Brigadier General Abdullah Hassan Jadawi.

More than 2 000 officials and members of the Civil Defence took part in implementing the plan.

Jadawi said these units were equipped with highly advanced machinery and maintained a constant vigil at various parts of the holy site since the arrival of pilgrims, until their departure.

"There were cohesive coordination among various units and teams to ensure protection for civilians as well as their safety, in addition to implementing precautionary supervisory measures," he said.

"In cooperation with the Ministry of Hajj, we also implemented a disaster plan to face any emergency situation in case of rain and flooding as well as any accidents like fire," he said, adding that forces that dealt with safety and precautionary supervision,

were on duty around the clock to remove obstructions on the roads or passages to the tents that may hinder any rescue, fire fighting or medical evacuation operations.

Jadawi said a new regulation to confront emergency situations was implemented at Arafat during the 2011 Hajj. "This involved the participation of some 1 400 members of the precautionary supervision

More than 2 000 officials and members of the Civil Defence took part in implementing the plan.

teams to operate the fire fighting network across the plains of Arafat, after dividing the holy site into nine zones, which were further divided into small quarters. Each quarter was under the supervision of an officer.

Major fuel spill at Miami International Airport

Four people were taken to local hospitals after a substantial fuel spill at Miami International Airport, Miami, Florida, USA.

The spill happened at the commercial jet hangar, according to a report from the Miami Herald. About 7 500 litres of fuel leaked from an aircraft due to some type of mechanical issue.

No flights were disrupted due to the leak, an airport spokeswoman said.

Four people were exposed to the fuel and were taken by paramedics to two hospitals — Hialeah Hospital and University of Miami Hospital — for treatment, according to Miami-Dade Fire and Rescue.

The fuel was cleaned up in about three hours. It was turned over to environmental officials for proper disposal.

These units had easy access to any tents or areas under their jurisdiction to extinguish fires or undertake rescue operations," he said, adding there were over 1 300 fire extinguishers at Arafat.

History

Hajj is the oldest and most sacred ritual of Islam. The pilgrimage focuses on the holy city of Mecca, the birthplace of the Prophet Muhammad. It is the largest pilgrimage in the world and is to be performed at least once by every able bodied Muslim, who can afford it. Saudi officials say more than 2,9 million Muslim pilgrims took part in the annual Hajj rites. ▲

Visual tour of earth's fires

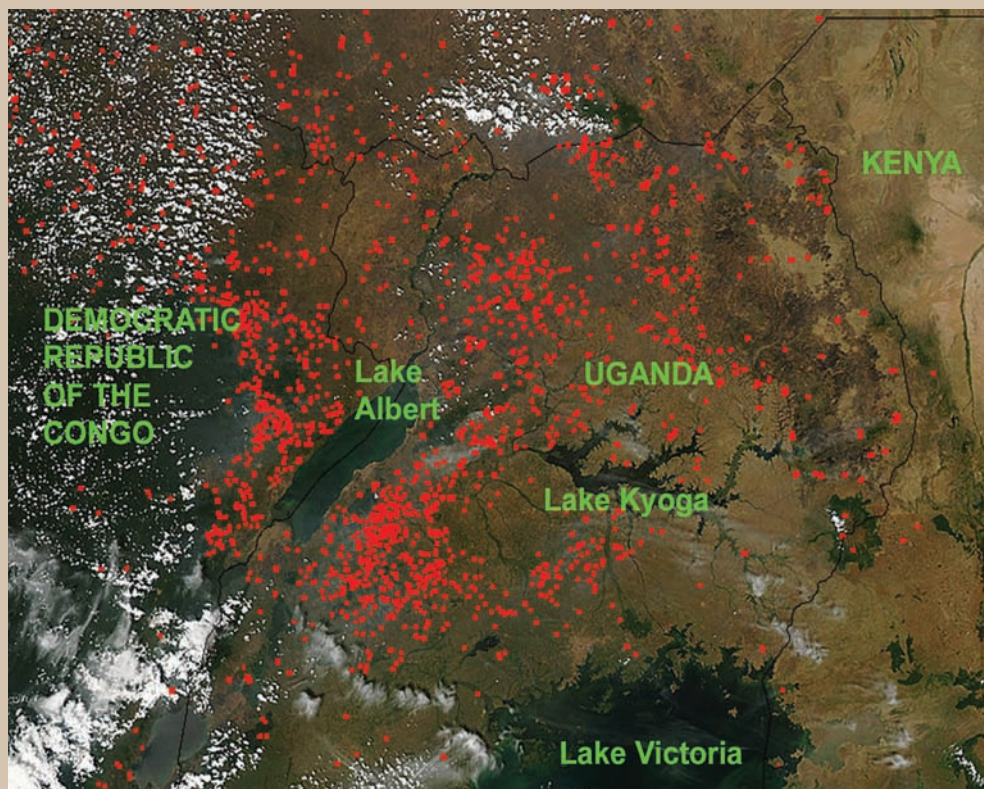
NASA has released a series of new satellite data visualisations that show tens of millions of fires detected worldwide from space since 2002. The visualisations show fire observations made by the MODerate Resolution Imaging Spectroradiometer (MODIS), instruments on board NASA's Terra and Aqua satellites.

NASA maintains a comprehensive research program using satellites, aircraft and ground resources to observe and analyse fires around the world. The research helps scientists understand how fire affects our environment on local, regional and global scales.

"What you see here is a very good representation of the satellite data scientists use to understand the global distribution of fires and to determine where and how fire distribution is responding to climate change and population growth," said Chris Justice of the University of Maryland, College Park, a scientist who leads NASA's effort to use MODIS data to study the world's fires.

One of the new visualisations takes viewers on a narrated global tour of fires detected between July 2002 and July 2011. The fire data is combined with satellite views of vegetation and snow cover to show how fires relate to seasonal changes. The Terra and Aqua satellites were launched in 1999 and 2002, respectively.

The tour begins by showing extensive grassland fires spreading across interior Australia and the eucalyptus forests in the north-western and eastern part of the continent. The tour then shifts to Asia where large numbers of agricultural fires are visible first in China in June 2004, then across a huge swath of Europe and western Russia in August. It then moves across India and Southeast Asia, through the early part of 2005. The tour continues



Widespread agricultural burning occurred in central and western Uganda. Smoke and fires were detected by NASA's Aqua satellite. The fires are marked in red and smoke is light brown in colour. Clouds appear in white.

across Africa, South America, and concludes in North America.

The global fire data show that Africa has more abundant burning than any other continent. MODIS observations have shown that some 70 percent of the world's fires occur in Africa. During a fairly average burning season from July through September 2006, the visualisations show a huge outbreak of savanna fires in Central Africa driven mainly by agricultural activities, but also driven by lightning strikes.

Fires are comparatively rare in North America, making up just 2 percent of the world's burned area each year. The fires that receive the most attention in the United States - the uncontrolled forest fires in the West - are less visible than the wave of agricultural fires prominent in the Southeast and along the Mississippi River Valley. Some of the large wildfires that ravaged Texas in 2011 are visible in the animation.

NASA maintains multiple satellite instruments capable of detecting

fires and supports a wide range of fire-related research. Such efforts have yielded the most widely used data records of global fire activity and burned area in the world. NASA-supported scientists use the data to advance understanding about Earth's climate system, ecosystem health, and the global carbon cycle. NASA's Applied Sciences Program seeks out innovative and practical benefits that result from studying fires. For example, the program has found ways to integrate space-based wildfire observations into air quality models used by the US Environmental Protection Agency that help protect public health.

NASA will extend the United States' capability to monitor and study global fires from space with the launch this month of the National Polar-orbiting Operational Environmental Satellite System Preparatory Project. The satellite is the first mission designed to collect data to increase our understanding of long-term climate change and improve weather forecasts. ▲

NASA image courtesy Jeff Schmaltz, MODIS Rapid Response Team

Reunion Island devastated by worst forest fires seen in 20 years

400 French fire fighters were sent to help battle the blaze

French authorities sent reinforcements to battle a wildfire raging through the National park of Reunion Island; a unique ecosystem designated a World Heritage Site.

A total of 171 fire fighters arrived on the French overseas territory in the south-western Indian Ocean, local prefect Michel Lalande said, bringing to 400 the number of French reinforcements sent to help battle the blaze.

The fire erupted in October 2011 in La Reunion National Park and according

to local officials, affected more than 2 600 hectares of land.

The park, which covers more than 100 000 hectares or 40 percent of Reunion, was last year granted World Heritage Site status by UN cultural agency UNESCO, which praised its "variety of rugged terrain and impressive escarpments, forested gorges and basins creating a visually striking landscape."

UNESCO raised concerns about the fire in a statement, saying it was "the

worst the area has seen in 20 years. Key areas of endemic plants seem to be seriously affected as well as other key micro-habitats for biodiversity. Among wildlife, several rare species are under threat," a UNESCO spokesperson said.

French environmentalists have accused authorities of reacting too slowly to the fires. The French Green Party denounced "the drastically inadequate response" by state and local authorities to the fire, which it called "a true national catastrophe." ▲

Delhi airport gets modern aerial fire fighting equipment

The Delhi International Airport Limited (DIAL) inducted a "turn-table ladder" or TTL, a state-of-the-art fire fighting apparatus, which it will use for fire fighting and evacuating passengers during an emergency situation.

With this acquisition, the DIAL has become the first airport in the India to use the TTL.

The hand-over ceremony was held along with a live demonstration of the TTL operation by the airport rescue and fire fighting team.

Inaugurating the Rosenbauer turn table, DIAL chief executive officer,

Prabhakara Rao, said: "The TTL is a boost to our world-class fire fighting and rescue capabilities. We are already in possession of 11 Rosenbauer crash fire tenders, which are situated at four fire stations. We have a deep sense of responsibility and like to be prepared for any emergency. Our fire tenders are a vast improvement over the ones we had in the past. Each vehicle has 12 500 litre of water capacity and 1 500 litre of foam compound."

The TTL is used to gain access to fires occurring at a greater height using a large telescopic ladder. It can be

raised to a height of 32 metres and turned horizontally and vertically.

The TTL will be used for aerial fire fighting and rescuing trapped occupants from high rise buildings and for evacuation of passengers in big aircrafts like A-380.

It is also suitable for rescue operations involving mass evacuations of uninjured and casualties during an emergency situation in an aircraft, where the TTL can be deployed in shorter time. It is also easy to manoeuvre; it can be deployed in confined spaces and relocated easily for other duties. This multi-tasking unit can also be used as a crane. It is also capable of executing other high rise tasks via a sky lift option. TTL's advanced rescue cage has four side accesses and stretcher support for loads up to 200 kg. ▲

Prevention of large wildfires using the Fire Types Concept Handbook

By Daniel Kraus, senior researcher, European Forest Institute (EFI), Germany



The handbook gives an overview on the current state and the development of European forests over the last 50 years. The causes of the increase of large wildfire events are discussed, with a focus on land use changes and policies that aimed to increase fire suppression capacity.

The "Fire Type Concept" and the analysis of spread patterns are presented and described for forest and landscape planning to identify strategic management points. Furthermore the use of fire as a forest and landscape management tool is discussed, and effective prevention strategies depending on fire generation and management activities are introduced for individual fire spread types.

Pau Costa, the lead author of the handbook, tragically died during the Horta de St Joan Fire in 2009. The Pau Costa Foundation on Fire Ecology and Management was named after him. ▲

On 27 October 2011, the handbook *Prevention of Large Wildfires using the Fire Types Concept*, was officially presented to the public at the Centre Tecnològic Forestal de Catalunya (CTFC) in Solsona in Spain.

The handbook is an outcome of the European Union Fire Paradox Project (6th Framework Programme) and was conceptualised as a joint effort by the Catalan Fire Service (Cos de Bombers de la Generalitat de Catalunya) and the European Forest Institute (EFI).

The aim of the handbook is to set the context of the large wildfire problem in Europe and deliver a planning tool for forest and land managers for the prevention of large wildfires since several European regions, particularly in Mediterranean countries, have been characterised by dramatic land use changes in the last few decades. The abandonment of farmland and reduced grazing has led to an increase in wildland areas and forest lands. These changes in the landscape have contributed to a more aggressive spread of large wildfires all over Europe. Over the last few years, the occurrence of large wildfire episodes with extreme fire behaviour has affected different regions of Europe.

In this context, the aim of this handbook is to introduce the methodology of the "Fire Types Concept" as a prevention and pre-suppression tool. This handbook includes the integration of fire use into forest planning in order to prevent large wildfires. It can be used as a tool to complement and support forest policies.

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SA road deaths: head-on collisions biggest worry



More than 900 people were killed on South Africa's roads in December 2011, according to Road Traffic Management Corporation (RTMC) spokesperson, Ashref Ismail.

Road Traffic Management Corporation (RTMC) spokesperson, Ashref Ismail, aired their concern about the number of head-on collisions on South African roads

"We are extremely concerned about head-on crashes," he said.

national prosecuting authority, we will continue to ensure that we are more aggressive in dealing with irresponsible drivers," Ndebele said in a statement.

"Out of the 16 major fatal crashes since 1 December 2011, 13 were head-ons. These are the most devastating because the [victims'] chances of survival are so low."

"Drivers arrested for any offence must have their driving licences seized as well as suspended and/or cancelled."

19 killed in horror Free State crash

Nineteen people were killed when a minibus taxi and a car collided head-on in the Free State Province, South Africa, police reported.

Sergeant Mmako Mophiring said both the car and minibus taxi caught fire after they collided on the R26 between Frankfort and Tweeling.

"Some of the people were burned beyond recognition after the impact," he said.

He said it was alleged that the accident occurred when the car, with four occupants, tried to overtake another car on the barrier line but instead collided with the on-coming taxi.

The taxi was travelling from QwaQwa and heading towards Johannesburg.

Four occupants from the car and fifteen from the taxi died on the scene. ▲

The following have been found to have been among the most common causes of the crashes:

- Speeds too high for conditions, especially, during inclement weather and at night;
- Dangerous, reckless and/or inconsiderate driving, particularly barrier line infringements;
- Abuse of alcohol by drivers and pedestrians;
- Fatigue, especially amongst public passenger drivers;
- Vehicle fitness, particularly tyre failure and defective brakes, and
- Pedestrian negligence (jay walking, walking on freeways, not visible at night and drunken walking).

His spokesperson Logan Maistry said the National Road Traffic Act placed a duty in courts to "suspend or disqualify a driving license for a person found guilty of drinking and driving, reckless and negligent driving".

People found to be driving over the speed limit by 30km in urban areas and 40km an hour outside urban areas, also risked having their licenses suspended or disqualified.

A first offence would result in a confiscation for six months, a second for five years and a third or subsequent offence would merit a 10 year cancellation or suspension of a licence, he said.

The non-wearing of seatbelts, whilst not a contributor to crashes, has been found to have been a major contributor to fatal or serious injuries following a crash.

The total death toll on South African roads for the period 1 December 2011 to 11 January 2012 was 1 475. A total of 1 704 people were killed on South Africa's roads for the same period in 2010/2011 and 1 304 deaths were recorded for the same period in 2009. The highest number of fatalities was in the province of KwaZulu-Natal, Gauteng Province was second highest while the Eastern Cape recorded the third highest death toll. ▲

Transport Minister Sibusiso Ndebele called for the courts to be quicker to confiscate and suspend the driver's licences of motorists found guilty of road traffic violations.

"In conjunction with the ministries of police and justice, as well as the

Volcanic ash complicates fire fighting in Argentina

The Puyehue volcano in Chile

Ash filling the air from the Puyehue volcano in Chile and smoke from charred forest remains, kept helicopters and tanker aircraft from attempting to control fires in the Argentine province of Chubut near the Chilean border.

"The volcanic ash hindered the use of helicopters and tanker aircraft to fight the flames," Chubut emergency management office director, Evaristo Melo, reported.

Wildfires in the Patagonian province have burned more than 3 000 hectares, officials said.

More than 300 fire fighters worked on land to try and control the flames, with the help of reinforcements from Chile, a gesture for which Chubut Governor, Martin Buzzi, issued a statement expressing his thanks to the neighbouring country.

Buzzi, who did not hesitate to say that the fire was set intentionally, announced that the provincial government will be plaintiff in an upcoming lawsuit to assign guilt.

"We will do all it takes to catch those responsible for putting at risk an entire people and a heritage of humanity," the governor said.

No one has yet been injured "nor is any community in danger," Melo said,

adding that more than 50 people have been evacuated, both locals and the tourists who were camping near the tourist town of El Hoyo, the most affected by the fires, and a red alert was declared.

This area is on the Andes near the border between Argentina and Chile, a country affected over the past few days by a wave of wildfires in which seven fire fighters have been killed along with a local resident who was caught in the flames.

In the neighbouring province of Neuquen, also on the Chilean border,

some 3 000 hectares have also been burned.

Officials in Chubut and Neuquen both said last week that the heat wave and severe drought in the country made it all the more difficult to control the fires.

Though the area's first rains began falling, Chubut Production Minister Sergio Bohe told local television that the situation was now worse since the scant rain brought with it high winds that spread the flames and make the fire fighters' job both more difficult and more dangerous. ▲



Volcanic ash hindered the use of helicopters and tanker aircraft to fight wildfires in Argentina



A fire fighter stands in the rubble of a building that collapsed in downtown Rio de Janeiro, Brazil

Three buildings collapse in Rio de Janeiro

Three buildings collapsed in downtown Rio de Janeiro, Brazil, in the latest incident highlighting the failure of authorities to improve the city's infrastructure amid preparations to host soccer's World Cup and the Olympics.

17 people died while several were injured in the incident. Rescue crews pulled numerous people alive from the debris, City Mayor Eduardo Paes told reporters at the site.

A loud explosion preceded the collapse, which left the surrounding area covered in debris and dust, witnesses said.

"It was like an earthquake. First some pieces of the buildings started to fall down. People started to run. And then it all fell down at once," a witness who identified himself as Gilbert told the media.

A number of people were trapped in the wreckage, cable broadcaster Globo News said. City authorities assessed the risk of collapse of a damaged adjoining building, local newswires reported, without giving the source of the information.

It's not yet known why the 20-story building suddenly collapsed, but authorities say they suspect unauthorised construction work inside the large, 72-year-old building created structural damage that led to the fall.

Officials believe the falling building wrenched down two neighbouring office buildings of approximately the same age.

The collapsed buildings in Rio's historic centre contained a wide range of businesses. Most tenants were gone by the time of the

tragedy, but some had remained to finish leftover work. Several of the missing was attending a computing course.

Rio's Regional Council of Engineering has said the last time they authorised refurbishing in the 20-story building was in 2008. But Mayor Eduardo Paes said a license from city hall is not required for internal construction projects, and the responsibility for such projects lies "exclusively in the hands of workers."

TV images showed cars covered with concrete and steel rods. Light, the electricity distribution company serving the city, cut power to the area to avert the possibility of fires after a strong smell of gas was detected, the TV broadcasters said.

Rio de Janeiro is struggling to address concerns over poor infrastructure as it ►



17 people were killed in the building collapse



Rescue workers searched tirelessly for survivors

► prepares to co-host the soccer World Cup in 2014 and the Olympic Games two years later.

The incident came months after an explosion apparently caused by a gas leak ripped through a restaurant in downtown Rio, killing three people and igniting concerns over the state of the city's infrastructure.

In recent months, Rio's inhabitants have had to deal with unexpected

explosions of sewer lines and landslides in some city slums caused by heavy rain and deforestation.

The collapsed buildings, which housed a bakery and an Itau Univac Holding bank branch, were near the headquarters of state-controlled companies including oil producer Petrograd and development bank BODES.

Traffic in the area and service in neighbouring subway stations was

suspended, the TV channels reported. City officials said the accident should not cast doubt on Rio's ability to organise and host the upcoming Olympics and World Cup.

"This was an isolated incident that occurred on private property," the mayor's office said in a statement. "The case is entirely unrelated to the preparations for the 2014 World Cup, the 2016 Olympic Games and other events that are already part of the city's calendar." ▲



Stihl introduces new brushcutter/clearing saw with intelligent engine management

The Stihl FS 460 C-EM K clearing saw cuts medium brush, small trees up to 60mm in diameter and very thick grass quickly and effortlessly

Featuring state-of-the-art engine management technology, the rugged new Stihl FS 460 C-EM brushcutter and C-EM K clearing saws are designed to deliver optimum power at all times, and greater performance and ease of use in fire prevention and management.

Stihl brushcutters and clearing saws are used countrywide by various fire fighting organisations to prepare fire breaks before the start of the fire season and to clear grass ahead of veld fires. The new Stihl FS 460 C-EM brushcutter and C-EM K clearing saw provide even greater speed, manoeuvrability and ease of operation in these critical applications.

The brushcutter version comes standard with a brush knife for the cutting of grass, while the clearing saw has a shorter shaft and circular saw blade for cutting light to medium brush, small trees up to 60mm in diameter and very thick grass quickly and effortlessly.

Both feature the field-proven Stihl M-Tronic intelligent engine

management system, first introduced on the Stihl MS 441 C-M chainsaw.

M-tronic

The Stihl M-Tronic engine management system automatically adjusts to changes in altitude, temperature, fuel quality and air-filter cleanliness, eliminating the need for manual adjustment of the carburettor. It also has a memory function that automatically restores previous settings so that full engine performance is ensured after every new start when external conditions are the same.

M-Tronic can tell the difference between a warm and cold start and electronically calculates the exact quantity of fuel required. This means that flooding of the engine is virtually impossible.



The Stihl FS 460 C-EM is the first Stihl brushcutter to feature the field-proven Stihl M-Tronic electronic engine management system, first introduced on the Stihl MS 441 C-M chainsaw

Less fuel

The new Stihl FS 460 C-EM and C-EM K are powered by a two-stroke engine with stratified charge, resulting in more power, up to 20% lower fuel ▶

Stihl FS 460 C-EM/K brushcutter/clearing saw specifications

Displacement	45,6cc
Power output	2,2kW
Weight (without fuel, blade & guard)	8,5kg
Fuel capacity	0,75 litres

The heat is on

Introducing STIHL's mighty little blower

Getting equipment into the veld for the management and control of fires can be an exercise in frustration. Enter the STIHL BG-KM 100 R blower, a powerful space-saving solution used by Working on Fire in the Kruger National Park.

The BG-KM blower, which can be dismantled easily for storage behind a bakkie seat or next to a bakkie sakkie, forms part of the STIHL KombiSystem. Designed to save space, time and money, the KombiSystem enables you to buy just one power unit with a split shaft, and then choose from a multitude of attachments that can be stored, transported and attached with little effort and are lightweight and easy and very simple to use.

Unique innovation from STIHL transforms the KombiSystem into a compact yet fully-fledged high-performance blower – the ideal tool for veld fire management.

Blowing power

Different KombiEngines are available to suit various blowing applications, with blowing power increasing with the size of the power pack. Depending on the KombiEngine used the blower's performance is between that of the STIHL BG 85 hand held blower and the STIHL BR 550 backpack unit.

Maximum air throughput at the nozzle is 800–950 m³/h and air velocity is 54–64 m/s with a standard round nozzle. A flat fan nozzle is also available.

Unique innovation from STIHL transforms the KombiSystem into a compact yet fully-fledged high-performance blower – the ideal tool for veld fire management.

The 1.05 kW 31.4 cc KM 100 R blower used for fire management in the Kruger National Park weighs in at only 6.3 kg, enabling long hours of use in the veld. It comes with a single strap harness, facilitating carrying and reducing operator fatigue. The D-shaped loop handle is designed for difficult terrain and confined conditions and also saves on storage space.

The KombiSystem brushcutter attachment will also be of use in fire management. The quick-release coupling means the blower can be converted within seconds to a brushcutter,



Alex Held of Working on Fire, operating a STIHL BG-KM 100 R blower in the Kruger National Park.

and vice versa. Fitted with the brushcutter attachment, the unit weight is only 6.5 kg.

Other KombiSystem attachments include a trimmer, power sweep, bristle brush, hedge trimmer and pole pruner as well as pick tines.

In the line of fire

The BG-KM blower is used mainly for cold fires, and where control and assistance is needed to clear a line for backburning. It works best in fine fuels such as savannah and leaves.

The blower should be used at the base of the flames and from the side of the fire and not the head, where flames are too intense.

KombiSystem Highlights

A push-in connection with a tommy screw enables you to simply turn the screw by hand

to release the coupling sleeve and then remove the attachment. The quick-release coupling and split-shaft design allow units to be dismantled into two parts for easy transport and storage in a small space, and then quickly reassembled without the need for any tools.

The KM 100 R is powered by the STIHL 4-MIX engine, which combines the benefits of 2-stroke and 4-stroke engines to deliver high torque and low emissions.

Other features include a multi-function control handle, a decompression valve for easy start-up, an electronic ignition for reliable starting and trouble-free running, and an effective anti-vibration system.

For more information, contact STIHL toll free on 0800 336 996 or visit www.stihl.co.za

Lack of protective gear hampers Mumbai firemen's efforts

When Mumbai chief fire officer, H N Muzawar, stepped out to meet state officials in November 2011 after hours of fighting the blaze at Manish Market, Mumbai, India, he was gasping for breath.

Muzawar's eyes were red and his voice had acquired a hoarse timbre after prolonged exposure to the noxious fumes. Despite the fact that Mumbai has had at least four major fires this year alone, and promises from the government to update fire fighting equipment, the national newspaper's reporters found several firemen outfitted in only basic fire gear.

While around 100 firemen were deployed at the blaze at Manish Market, there were only 20 sets of breathing apparatus available. The others worked without basic equipment like face masks and protective glasses. "We don't have enough equipment ... right now, we can only provide breathing apparatus to those who are going

inside the shops," said a fire officer at the main control site.

Muzawar denied there was any shortage of safety equipment. "It is not possible to ensure that every fireman gets safety gear, but we have enough to ensure that those who step into the fire are protected."

At the spot, several firemen were seen wearing handkerchiefs wrapped around their faces to avoid inhaling the smoke. None of the fire fighters had protective glasses and the fumes made it difficult for them to see clearly. Fire officer Suddesh Durgawale was admitted to Nair Hospital after falling sick due to smoke inhalation. Three more officers were admitted to the hospital with minor injuries. Face masks were handed out only after the arrival of police commissioner Arup Patnaik, though the firemen had arrived at the scene very early on the morning of the fire.

After the 26/11 terror attacks (Mumbai 2008), the Brihanmumbai Municipal Corporation (BMC) had promised

to procure the latest fire fighting equipment, including three-layer ensembles, approved by the National Fire Protection Association that would safeguard against explosions and flash fires. The fire department was also supposed to purchase safety gear like face masks and glasses for every fireman, in addition to acquiring remote-controlled water monitors that could fight fire from half a kilometre away.

"This equipment is essential to ensure the safety of our men. However, due to bureaucratic delays, we haven't been able to upgrade our stock," said a fire officer who did not wish to be named. He said that while masks, glasses and even fire-proof jackets had been purchased in the past two years, they hadn't been distributed to fire stations. The BMC cut the budget of the fire department by 30% in 2011.

Additional municipal commissioner Manisha Mhaskar said: "It is wrong that there isn't enough fire fighting equipment. We have ensured that everything is in place." ▲

► consumption than regular two-stroke engines and low emissions. A power output of 2,2kW and a weight of only 8,5kg provide an excellent power-to-weight ratio.

Starting is simplified with ErgoStart and a semi-automatic choke lever and stop switch that automatically return to the start position. A four-point anti-vibration system enables optimal control and helps to reduce user fatigue, as do a comfortable lightweight harness and easy-to-adjust bike handle. The handle swivels to make storage and transport easier. Other features include a large, 0,75 litre translucent fuel tank for longer running times and less refuelling, and a vertically pleated, paper air-filter element for an extended service life.▲

A vertically pleated, paper air-filter element ensures an extended service life in tough conditions





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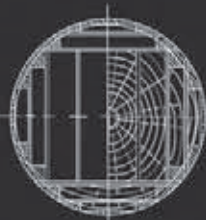


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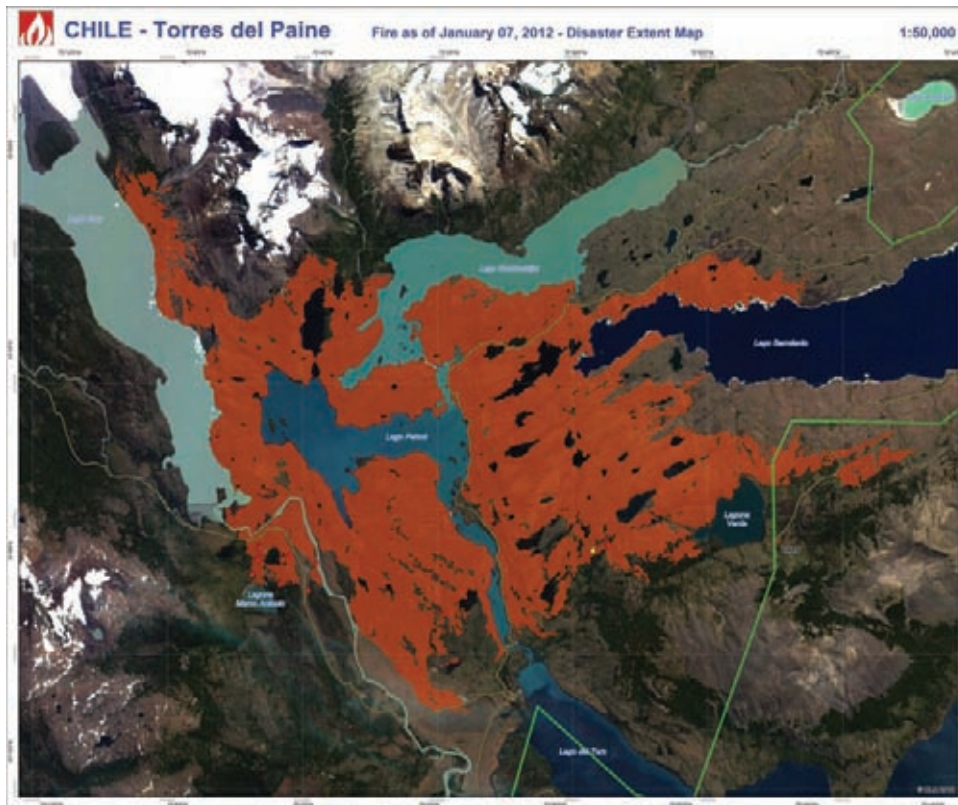
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The German Remote Sensing Data (DLR) centre for Satellite Based Crisis Information (ZKI) used RapidEye satellite imagery to map the extent of the fire damage. The map shows a RapidEye image on 7 January 2012. Fire hot spots indicated on the map are mapped using MODIS data on 3 and 4 January 2012. The extent of the burnt area is approximately 16 900 ha.

Chile buries seven fire fighters

A sudden wind shift caused a raging wildfire to engulf a group of fire fighters in southern Patagonia, Chile. The blaze killed seven and badly burned two other fire fighters.

The wildfire began in the rugged, scenic Torres del Paine National Park in southern Patagonia, multiple reports stated.

The blaze was fanned by the region's notorious high winds. Winds in the area reached 65 to 95 kilometres per hour, data accessed by AccuWeather.com showed.

According to the Global Drought Monitor, drought severity in the area of Torres del Paine was minor to moderate as of December 2011.

More than 50 different fires broke out across the region during that period. These fires have burned hundreds of homes and forced the evacuation of thousands of people. Some 50 000 hectares of woodland and brush were destroyed.

Lulls in the wind along with occasional showers aided fire fighters in their effort to fully contain the blaze.

Arson expected

In another incident the home of a Mapuche Indian leader in Chile was destroyed in a suspicious blaze in an area ravaged by forest fires, which officials say may have been caused by radical indigenous activists.

Police said hooded assailants also torched the home of a retired military officer and fired at officers in the forest region of Araucania, as the seven fire fighters killed there last week in the massive wildfire, were buried.

Jose Santos Millao, who represents the Mapuche Indians on the National Corporation for Indigenous Development, told reporters his house had "no electricity," making the source of the blaze suspicious. No one was hurt.

Chilean President Sebastian Piñera invoked controversial anti-terror legislation after the seven fire fighters

- private contractors for forestry company Mininco - were killed in a mountain forest near Carahue.

"We have reliable information that makes us presume there is criminal intent behind these fires," Piñera said.

Interior Minister Rodrigo Hinzpeter hinted that the blazes may have been the work of the Arauco-Malleco Coordination Group (CAM), a fringe group of Mapuche land activists that had claimed arson attacks that destroyed a fire fighting helicopter and other forestry vehicles in December 2011.

Araucania is a hub for the Mapuche Indians, who make up six percent of Chile's 18-million-strong population. Mapuche activists claim their ancestral lands in the region have been taken over by forestry companies.

Fires have also struck the forest regions of Biobio and Maule, some 500 to 700 kilometres south of the capital, Santiago. ▲

New paediatric ambulance to service the Cape Winelands

The Children's Hospital Trust in South Africa handed over a fully equipped, paediatric ambulance to the Western Cape Government Health's Emergency Medical Services (EMS) as part of the partnership between Western Cape Government Health's EMS and the Children's Hospital Trust.

The new Cape Winelands neonatal and paediatric ambulance is one of four ambulances that have been specially equipped to accommodate new-born babies and toddlers. This is part of an initiative to meet EMS annual strategic objectives in line with the millennium goals and to enrich and strengthen mother and child emergency medical care in the province.

"Western Cape Government has allocated R2 million of their budget to purchase four state-of-the-art ambulances. The furnishing of these ambulances by the Red Cross Children's Trust is a great aid as it affords Health budget relief," said Theuns Botha, Western Cape Minister of Health.

The ambulances will be the first of their kind in the Cape Winelands district, serving the communities of Paarl, Worcester, Robertson and Ceres. Previously, EMS worked with one paediatric ambulance based in Cape Town. The ambulance would be dispatched outside of the city if Air Mercy Service (air ambulance) was not able to respond to a paediatric call, which took resources out of the area of need.

Dr Cleeve Robertson, Director of EMS within Western Cape Government Health, said, "Babies require specific equipment for intensive care transfers between facilities. This ambulance provides a comprehensive suite of everything required to safely transfer a sick baby or child into health facilities."

The newly furnished ambulance will be designated to the Worcester Hospital as it is the only hospital in the region that provides a paediatric unit.▲



The new paediatric ambulance will be designated to the Worcester Hospital



The ambulance is specially equipped to accommodate new-born babies and toddlers

Advanced hazmat and decontamination solutions from Marcè



Marcè decon cabins



Trellchem Splash 900 suits



The Marcè octagonal shower

Specialist fire fighting equipment manufacturer, Marcè, offers a wide range of professional hazmat and decontamination equipment for today's emergencies.

The range of shower cabins include the Decon Cabin 150 shower cabin with a pre-decontamination basin, the larger Decon 200 shower cabin and Decon Cabin 400 shower cabin with two shower compartments.

All shower cabins allow for rapid erection.

Decon Basins 150, 250 and 500 are inflatable decontamination basins that are lightweight and ready to use within seconds. The hazmat showers include a foldable shower and octagonal shower in stainless steel.

Marcè also offer several mass decontamination systems and

a comprehensive range of mass decontamination parts including air shelters, hydrophor pumps, hotboxes, inducers, water manifolds, waste pumps and bins, fluid bags, brushes, decon pistols, conveyors, elevation grids, lighting, blowers, heaters and generators.

Suits for decontamination procedures on offer are the Trelchem Splash 2000P and the Trelchem Splash 900.▲

LED lights from Marcè

Fire fighting equipment specialists, Marcè Fire Fighting Technology, stocks a comprehensive range of LED (light-emitting diode) lights. These lights can be used as a source of light in places where high temperatures cannot be tolerated.

The basic characteristics of LED lights are:

- Less power consumption
- Long service life: the average life expectancy of Generation 3,1 watt LED's is up to 100 000 hours. LED's have a lamp life of up to five to ten years. The lamps can be significantly reduced maintenance costs
- Strong security and reliability: it radiates low heat, has non-thermal radiation, is a cold light source and can accurately control the angle of light pattern and light-emitting

- LED's are beneficial to the environment as it is a recyclable waste with no pollution

An added advantage of LED light bars is that it lasts long. This is mainly because LED lights do not use a filament, and cannot burn out. This is very valuable to officers and other emergency vehicle operators as a burnt out light bar can be a nightmare while responding to an emergency. This also makes it a cheaper option in the long run as LED light bars do not require constant replacing.

Marcè is a one-stop shop for LED emergency lights and many other items like flashlights, dash lights, deck lights, marker light and sirens. It is critical to ensure that your vehicle warning lights and sirens provide you with maximum safety on the road.



Various LED emergency vehicle lights available from Marcè

Marcè supplies the fire services, Police, EMS and construction companies with reliable and cost effective solutions. ▲



Decon areas may require substantial real estate to operate from depending on the severity of the event risk, the time to be spent on scene, the complexity of entry operations and the extent of support activities (triage, patient transport, rehab and logistical support in the form of breathing air, water and materials supply-chains)

Setting up a hazardous materials response team – what you need

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

“Every incident you respond to is a hazmat incident until it is conclusively proved that no hazardous materials are present” – this phrase has been used by hazmat instructors for as long as I can remember and is probably more relevant today than the first time it was said.

The rapid industrialisation taking place all over the world has exponentially increased the presence of hazardous materials in locations close to human settlements. It has unfortunately also led to an increase in hazardous waste and the illegal disposal thereof. The cut-back environment in which emergency services are expected to operate has increased the challenge in mainly two areas: the first being the fact that very few fire departments in this country are able to employ specialist hazmat

units (more of that later) and the second being the lack of capacity to enforce environmental laws to its fullest extent.

As the cities we live in evolve and become more hi-tech, so will its reliance on the use of chemicals. These chemicals get used in a wide spectrum of processes, almost too much for us to comprehend. The logical expectation from public is that they will be stored and handled responsibly and when they are disposed of it will be in a safe manner using excepted methods. The biggest problem with this perception is that we don't realise that all this compliance carries with it a hefty price tag and for many unscrupulous operators it is far easier (and cheaper) to just dispose of the chemicals on some trash heap or into some water source close by. This irresponsible behaviour is

on the increase and really comes back to haunt us when homeless people start scouring these heaps for food, people use the water for consumption or some unfortunate fire fighter responds to a trash fire saturated with some evil chemical which will either kill him immediately or destroy his health permanently.

The most common hazmat response in this country must be to transportation accidents. This is not specifically due to the fact that they occur more frequently than incidents at fixed sites but more because of the fact that they are not that easy to hide. A truck landing on its side on the N1 is a fairly newsworthy event. Although the regulation of hazardous materials road transport is a lot easier and generally better implemented, the response in many cases leaves a lot to be desired. ▶



Siting work areas - in an ideal world needs to be upwind, uphill and at an adequate distance from the affected area to assure safety through distance, time and adequate escape options should the area need to be vacated

▶ Due to the large areas of this country not adequately covered by fire services, most responses to accidents are done by the regional or provincial ambulance service in the territory. This is sometimes supported by a private emergency medical service or ambulances situated at power stations or mines through some mutual assistance agreement (if they are in the area). How often don't we see news coverage of some unfortunate individual being extricated from the wreck of a heavy cargo truck on some rural road by emergency responders dressed in short sleeve flight suits or work uniforms with white shirts, while a "skull and crossbones" sticker lurks ominously on the tank container in the background. In fact, I've seen it happen in many cities as well!

The most important thing these rescuers should have done (and we hope they did), is to identify the cargo involved. It is from here where all future decisions should flow.

Some history

The origin of hazardous materials response can be traced back to the New York Fire Department (FDNY) in the 1940's. The FDNY deployed a "Fire Gas and Chemistry Lab" which used a delivery van of the day. It was only operational for a few short years. There is a bit of uncertainty as to who was next in line to set up

a "chemical response unit", but it seems that it did happen in Chicago when a fire fighter called Ted Latis started a company level response to flammable liquid fires after a BLEVE (boiling liquid expanding vapour explosion) involving a rail tank car on the south west side of the city. There is also evidence of the first heavy rescue truck to be deployed in 1941 in the Cincinnati Fire Department responding to all hazmat incidents in their city. In terms of what we call a "hazmat team" today, I think you can call Jacksonville, FL the "first hazmat team in the US". It was organised by Captain Ron Gore. The Houston hazmat team followed shortly after, going in service in September 1979.

Following Jacksonville and Houston, several departments on the east and west coast developed teams as well as Chicago. Most of those teams came on board in the early to mid 80's. The gradual development and evolution of hazmat teams received a major boost from the US Government in 2002 following the perceived threat of "weapons of mass destruction" which gripped the world after the 911 attacks in New York and Washington DC.

In South Africa, most of the big city fire services employed the services of "hazchem" vehicles, which were generally staffed on an ad hoc basis by fire fighters also booked

on other appliances during their shift period. The exposure enjoyed by South African fire fighters to international practices post 1994 was a major factor in the development of local hazmat response strategies and techniques. The first technician level, hazmat training course was conducted at the then Boksburg Fire Department in the mid-eighties. The South African petro-chemical industry has also been a leading catalyst in establishing emergency response to hazardous materials training. The partnerships established by the Southern African Emergency Services Institute (SAESI) with the Oklahoma State University and the International Fire Services Accreditation Committee in the mid-nineties, enabled local fire fighters to follow a qualification path from awareness to technician level. Today it is a requirement of all fire fighters to achieve the awareness and operations level while many services employ a number of hazmat technicians to deal with the technical aspects of their hazmat responses.

Do you need a hazmat team?

Like all special operations hazmat teams are expensive and personnel intensive. The need for any city to have a hazmat team should be an imperative and not even be debated. Realistically however, we are forced to operate in a cut-back environment which limits our human resources to the many routine "in-your-face" incidents we have to deal with and the money provided for equipment generally focuses on the more vital equipment such as fire hose, breathing apparatus and PPE. So how do you make the decision?

Risk assessment

The first thing you need to do is to develop a realistic picture of the potential for a hazardous materials incident to occur in your community. A hazards analysis will help you to identify the facilities that manufacture, store, and/or use hazardous materials; the specific hazardous properties of the materials as well as how the materials are utilised and stored. You should also be able to ascertain which safety and control measures are in place in these facilities which will be ▶



A typical open decon unit

- ▶ able to assist you in dealing with a possible incident.

Together with the fixed facilities it is also necessary to identify transportation corridors (eg highways, waterways, air, and pipelines) through which hazardous materials are transported.

Once you have this picture you need to do an estimation of the human population, public buildings and systems, and environmental features that would be affected (including the extent of the effect), in the event of an incident.

Finally an investigation should be done of the frequency and scope of past incidents, which should assist you in estimating the likelihood of any future incidents and the severity of any consequences to human beings and the environment.

You need a system

After completing the analysis you should have a reasonable picture of the hazardous materials present in your community as well as the risk it poses to life and health. You will then have to address the following two questions:

1. Do we need a hazmat team?
2. What level of team should we operate at?

The simple approach could be to rely on the many private chemical response operators that have been established in recent years. This approach does have many advantages: firstly, this is their primary activity and they generally employ highly skilled technicians with good and current equipment. Secondly, they take responsibility for recovering the costs of the clean-up operation which could be a nightmare if left to your own bean counters. If this approach is to be followed, it is extremely important to develop watertight agreements which defines clear responsibilities and functions and ensures that these operators are able to work within the hazardous materials incident management system which must be in place. Where I would have suffered a minor cardiac incident some years back if anyone even thought of recommending this approach to me, I think we should realise that with the huge budget constraints we currently face many smaller services have no choice but to go down this road. The main

concern I have here however, is that the responsibility to deal with the risks of hazardous materials still rests with formal fire and rescue services and this is a responsibility we cannot delegate. A further concern relates to the emergency intervention phase of a hazmat incident for which private operators are not normally geared for.

The second, and more involved approach, would be to establish a formal response system which includes all possible stake holders. These include the fire service, police, traffic services, roads department, hospitals and emergency medical services, the media, public works personnel, contractors, and environmental authorities. The bottom line is that your hazmat team is one component of a greater system including all these role players. Only when your response system is fully planned, trained, and operational, will you develop a more accurate picture of whether you need a hazmat team and what its role would be.

The formal hazmat team

The first consideration relates to training. Hazmat training in South ▶



A closed decon unit for use when high-risk chemicals are involved

► Africa is derived from the United States "National Fire Protection Association (NFPA), Standard 472, Professional Competence of Responders to Hazardous Material Incidents". Within this standard there are five generally accepted levels to which hazardous materials responders should be trained:

First responder awareness level

This level of training applies to persons: (1) who are likely to witness or discover a hazardous materials release; and (2) who have received prior training in initiating an emergency response sequence by notifying the proper authorities.

This is the first step in hazmat training and should not only be presented to trainee fire fighters, but also to any other first responder who may in the course of their duties encounter a possible hazardous materials incident. People who have completed this level will be able to recognise a hazardous materials event and activate the necessary resources needed to deal with the incident.

First responder operations level

Individuals at this level form part of the initial response group at the site of an actual or potential hazardous materials incident. They protect persons, property, and/or the environment at risk from the effects of the release. They will respond in a purely defensive manner. Their primary function is not to stop the release but to contain it, if possible, from a safe distance, while preventing additional exposures.

All fire department members should be trained to this level before the next step in the development of the team is taken.

Hazardous materials technician

This is the primary technical intervention phase to which every member of the hazmat team must be trained. Technicians are responsible for spill control and plugging and patching the source of the release. We must at this point also appreciate that activities at this level might not only be limited to product control. What if we have a hazardous cargo truck driver trapped in the cab of

a vehicle spewing some evil form of liquid death who needs to be extricated from his predicament? As if that isn't enough I remember an incident in 2001 on the East Rand, when technicians had to remove one ton contaminated acid containers using forklifts. All this while wearing level A suits!

Hazardous materials specialist

This highly specialised level has not yet been fully implemented in South Africa and is designed to respond with and provide support to hazmat technicians. Their duties require a more directed or specific knowledge of the various substances involved in the incident. People at this level have training equal to the technician level but specialise in specified areas. Areas that come to mind here are explosives, petrochemicals, poisons etc.

Hazardous materials incident commander

This is the person responsible for the management of the entire operation. In addition to his/her knowledge of hazardous materials, he/she should ►

▶ also be familiar with the department's incident command system, any unified command structures and the roles and responsibilities of other agencies involved. Incident command systems relying on the use of private contractors to carry out the technician level activities, must ensure that any agreements reflect exactly what is required from all parties as well as defining the boundaries in which they should operate.

Once the above structures are identified and people are trained in sufficient numbers to the desired levels the basis of a hazmat team is formed.

Equipment

In all probability the most expensive component will be the acquisition and maintenance of the equipment required to furnish the team. If you can afford the luxury of a custom-built hazmat unit you should not have much trouble in equipping it. In most cases however, this might not be possible and you might want to consider refurbishing an old fire truck (just throw off the body, tank and pump and slap a whole lot of compartments onto it) or finding a similar vehicle with reasonably good carrying capacity, which can be transformed into a hazmat unit. A fundamental mistake I have seen on some hazmat units is the tendency to build an "integrated" unit which includes the equipment storage, command post and decontamination area all together. This is totally undesirable for a number of reasons. The first (and most important) being the fact that you might compromise your entire equipment cache and command staff by moving them into a position too close to the red zone in an effort to utilise the decon chamber. Noise from recharging breathing apparatus would also make any command functions difficult to perform. In various cases services have made use of maritime containers to house the various modules such as command, equipment stores and decon and by means of a prime mover and crane been able to strategically site them to the greatest advantage.

The downside here is most probably going to be the limitations of having one prime mover for three (or more) pods.

The next big cost item will be the personal protective equipment (PPE). Here again the level of hazmat response will dictate the type of PPE required and the cost thereof. The main objective here is maximum respiratory and dermal protection when: (1) entering atmospheres containing unknown substances; or (2) entering atmospheres containing known substances in unknown concentrations. If your approach will be largely defensive, you will probably be able to get away with a good level B protection programme (maximum respiratory protection utilising self-contained breathing apparatus [SCBA] and a lesser degree of dermal protection). You will obviously have to think very carefully about this because we know that the incident will almost always dictate what level of protection we need. Level A (maximum respiratory protection by utilising SCBA and maximum dermal protection from a totally encapsulating chemical suit) is a necessity when working in a situation where your technicians will come into direct contact with the product. Generally though, the majority of your responses will only require level B protection.

Two vital things to keep in mind: (1) there is no "one-size-fits-all" solution. Chemical suits do not offer protection against all chemicals. A lot of work has been done in recent years to manufacture a fairly good general use type of suit, but even then it will not provide comprehensive protection under all conditions. Most manufacturers provide what is called a "suit compatibility chart" with their product. Nowadays it takes the form of a DVD and will give you information on the compatibility of the suit to a particular chemical as well as the "safe working time" to which the garment can be exposed to the chemical. The best practice here would be to look at the risk and acquire a small selection of suits which can be used for specific incidents. (2) Chemical suits cannot survive on its own. The suit is only one

component of an entire ensemble which consists of boots, over-boots, under-gloves, over-gloves, hardhats, personal alarms, communications systems and breathing apparatus. This is then all taped up with a purpose made chemical resistant sealing tape. A comprehensive procedure for donning chemical PPE must form part of your team's standard operating procedures (SOP) and must be strictly monitored. Any damage to the suits and it must be replaced. In many cases it would be ok to decontaminate the suits after an incident and put them back into service. This needs to be carefully controlled and no unnecessary chances should be taken.

Many hazmat teams I know of tend to make use of standard 300bar breathing apparatus which generally provide the wearer with an effective 20 minutes of work time. When you consider that the technician needs to enter the hot zone from a safe area, perform his/her work, exit the zone and go through a decon process you don't have to be a rocket scientist to realise that this is totally impractical. Two solutions exist: (1) airline systems (2) long duration breathing apparatus. I would recommend the composite 90 minute duration SCBAs due to the fact that it sits inside the suit and does not, like the airline system, create an "imperfection" where it enters the suit. Airline systems also limit the distance of operation and can cause snag hazards when moving in and around piping etc. The composite cylinder SCBA is usually of aluminium construction and has a form of carbon-fibre wrap and provides a number of advantages specifically in terms of its weight and obvious duration. The main consideration when selections are made must be around the time it will take from when the suit is donned by the wearer and sealed off. The wearer may have to wait for a while in his/her suit before entering the hot zone and then walk quite a distance to the worksite. Once the job is completed he/she has to return to the decontamination site, go through the decon process before removing his/her suit. Also consider that the wearer might be working ▶

- ▶ in hot weather under extremely stressful conditions which might have an adverse effect on oxygen use.

One of the main indicators for suit selection will be the properties of chemical involved. It is here where correct and accurate monitoring plays its role. It would be prohibitively expensive to purchase all needed monitoring equipment and it is for this reason that we need to go back to our initial risk assessment and try to find some sort of compromised solution. I use the word "compromise" advisedly because this is the one area where this decision can come back to haunt you.

The first approach must be to acquire a "multi-gas" detector which provides you with information on a wide spectrum of gasses. The biggest limitation of many of these detectors is that the detector needs to know what it is looking for. In other words: you have to have prior knowledge of the possible released gas and then set the detector up to monitor the atmosphere for it. Many services will generally make use of a confined space alarm system which will at least provide data on oxygen quality, flammability and carbon monoxide levels.

For a technician level hazmat team the following classes of monitoring kit should be available:

- Combustible gas monitor/alarm which detects the presence of flammable gases and indicates the approximate concentration of the gas/vapour in percentage concentrations of the lower explosive limit (LEL).
- Oxygen level monitor which measures the level of oxygen in the atmosphere. Despite the fact that the team will be wearing respiratory protection it is important to know if excessive oxygen is present or if some other gas or vapour is using or displacing the available oxygen.
- Calorimetric tubes which measure the concentration of a specific chemical or chemical family in parts per million (ppm) or percentage concentrations. The wide spectrum of tubes available will require that you include this in

your risk assessment and decide on a range of tubes that will cover most eventualities. Remember that these tubes only have a limited shelf-life and have to be replaced after a period of time or after use.

The possible risk to which your team may respond, could dictate that other gas specific detectors, pH paper and flame ionisation and photo-ionisation detectors be included in their arsenal.

Once the team is kitted out and knows what product they are dealing with they will have to enter the hot zone and try to control the released chemical. The equipment required for these tasks will range from non-sparking tools to over drums and will be once again dictated by the specific risks that could be presented. In many cases a bit of imagination would save you a lot

Finally, if you need specialised equipment such as intrinsically safe radios and lighting you will need to acquire it.

of money. Buying a state-of-the-art, pneumatic leak sealing bag might look very good but could become a very expensive donation when it gets badly damaged by an aggressive chemical on which it was used. A wide range of industrial plugging and patching devices do exist which can also be used in hazardous materials emergencies. The first prize would obviously be to equip the team with purpose-made, chemically resistant plugging and patching kit. Understanding however, that the "chemically resistant" part of it could be subjective.

Finally, if you need specialised equipment such as intrinsically safe radios and lighting you will need to acquire it.

Information systems

It is very surprising to find out how few emergency services actually do have an up-to-date chemical

information system. Very few fire services and even less ambulance services have access to even the most basic chemical information and most responders normally rely on emergency response guidebooks which, although valuable, cannot provide comprehensive information on the properties of the product, the emergency response procedures, patient treatment protocols, definitive medical care and rehabilitation of the contaminated area. A number of products capable of providing this information are commercially available and can be fashioned to cater for a specific risk profile. A good solution here would be to access a number of open-source applications such as the "Wiser" chemical hazard information system. This will need some planning and a bit of training for your communications people but will assist your information and planning officer and incident commander with a roadmap for the management of the incident.

Decontamination

Probably one of the most misunderstood aspects of hazmat response is decontamination. I have seen many state-of-the-art decon units being commissioned by fire services with impressive looking showers and changing facilities but with no capacity to deal with the run-off of the decontamination process. Equally, when I have seen some sort of run-off management capacity there has been virtually no method of disposing the contaminated water safely. Once water from a wet decon process has made contact with the contaminated suit and equipment, it is also contaminated and needs to be disposed of correctly. It is a fact that many products can be diluted (and thereby neutralised) by means on copious amounts of water and may not require further disposal of the decon water. We will almost always have to contain the decon run-off and dispose of it in an acceptable manner, usually at an approved facility.

As with all equipment the nature of the product to which the team is exposed will dictate the type of decontamination required. ▶



A typical hazmat area at night. Photograph courtesy of the Sterling Volunteer Fire Company

▶ Wet decontamination is most commonly used to decontaminate personnel, tools, and large equipment. For this water, hoses, brushes, buckets, cleaning agents, tarps, pools, pumps, and tanks to hold the contaminated water, are needed. Plastic chairs are also helpful for responders who need to take off PPE. Durable disposal bags should also be provided for bagging items that will not be reused and need to be disposed of, such as inner gloves, disposable under-suits, tape, etc.

Dry decontamination will normally be used in situations where the product involved will have a negative reaction to water and usually involves bagging everything that comes out of the hot zone. This process could require brushes to remove gross contamination and bags to collect all affected materials.

The majority of equipment needed for decontamination is disposable products that need not be bought at high cost. It must be stressed however that durable, leak resistant bags, tarps and pools that can handle a fair amount of abuse, should be provided.

When planning your decontamination procedure remember that the

decon team must be provided with the same level of protection as the entry team. When an entry team has come into physical contact with a hazardous chemical and leaves the hot zone it is effectively bringing that product with it to the decon area, thereby potentially contaminating people in that area. I have often seen decon teams clad only in level B protection (or fire fighting gear) whilst decontaminating responders in level A suits.

How big should my team be?

The minimum size for the hazmat team is six people. This is made up of two entry team members, a two-man back-up team who will relieve the entry team to complete unfinished work or act as a rescue team and a two-man decon team. This is of course assuming that all other activities on scene such as water supply, incident command, scene safety, medical screening have been taken care of.

Here again the importance of a well thought out system comes to the fore. A quick arrangement of rotating your six members (eg entry team is replaced by back-up team in hot zone...decon team becomes back-up team...and entry team does a quick turnaround to assume

the decon role), will provide you with an effective “force multiplier” which might just get you through the day without too many headaches.

Conclusion

In this article I have focussed on what is needed to establish a hazmat team. I have deliberately kept away from operational issues and will focus on that in future articles. The most important message I can leave with you is the old adage of “knowledge is power”. There is no way that any fire service can deal with all possible hazmat incidents. It would just be too impractical and too expensive. By establishing a good response to the types of incidents you are likely to encounter and by developing escalation plans to deal with a major incident which might require possible national resources (and testing those plans) you should be able to respond to this very technical challenge. A hazmat incident commander must be able to (more than anything else) think on his/her feet and think big.

I am hoping that this article motivates you to just go back and have another look at how your team is structured and if they will be able to survive the next “liquid death” release they will have to respond to. ▲

International hazmat conference

The International Association of Fire Chiefs (IAFC) hazmat conference will be held from 17 to 20 May 2012 at the Baltimore Marriott Waterfront in Baltimore, Maryland, USA.

For nearly 30 years, hazmat teams and leaders have attended the International Response Teams Conference for its informative education sessions, outstanding subject matter presented by experts, unique field trips and hands-on training opportunities, an intimate education experience in a convenient location and affordable registration rates which include all pre-conference and regular education sessions, meals and networking.

The conference will provide the latest classroom, hands-on and field trip-based training on what's new in hazmat, covering all aspects of

hazmat, including transportation, safety, weapons of mass destruction (WMD), safety equipment and gear, terrorism, mass decontamination, bioterrorism and much more.

The conference offers a unique field trip to the DuPont Experimental Station, the main research site for the DuPont company. The field trip will cover hazmat tactics, hands-on air monitoring and risk assessment as well the use of a variety of chemicals.

The closing session of the conference will feature a presentation on the Fukushima Daiichi nuclear accident where speakers Michael Hildebrand and Adam Leary will be looking at decontamination issues and challenges.

Exhibition

The International Association of Fire Chiefs (IAFC) hazmat conference

includes a comprehensive exhibition of hazmat related vehicles, apparatus, services and gear and also boasts an outdoor demonstration area of hazardous materials and equipment.

International Association of Fire Chiefs (IAFC)

For over 135 years, the IAFC has been providing leadership to career and volunteer chiefs, chief fire officers and managers of emergency services. The IAFC represents the leadership of more than 1,2 million fire fighters, and its members are the world's leading experts in fire fighting, emergency medical service, terrorism response, hazardous materials, natural disasters, search and rescue, and public-safety legislation.

Visit www.iafc.org/hazmat for more information and to register for the conference.▲

The NFPA in the USA awards 2012

Warren E Isman Educational Grant to the Salina Fire Department Hazmat Response Team

The National Fire Protection Association's (NFPA) Fire Safety Educational Memorial Fund Committee selected the Salina Fire Department Hazmat Response Team (HMRT) from Salina, Kansas, USA, as the recipient of the 2012 Warren E Isman Educational Grant.

"The Salina Fire Department Hazmat Response Team is a proven leader in community involvement, education, emergency communications, and implementing cutting edge technologies," said Ken Isman, chair of the Warren E Isman Task Force, a subcommittee of the Fire Safety Educational Memorial Fund Committee and son of the late Chief Warren Isman. "We are pleased to provide this award to members of Salina's Hazmat team and support continued training as it applies to this particular field."

Award recipients select a conference where they can attend specialised hazardous materials training and education sessions. The selected team has the opportunity to gain

knowledge and enhance their ability to excel in this specialised field. The funds from the 2012 Isman Grant will make it possible for the Salina Fire Department HMRT to attend the International Association of Fire Chiefs' (IAFC) International Hazardous Materials Response Teams Conference in Baltimore, Maryland, in May 2012. The Salina Fire Department HMRT is a dual fire and EMS service providing fire suppression, EMS, hazmat as well as technical rescue response for the city of Salina. The department's Hazmat Team is also under contract with the state of Kansas serving as a State Regional Hazardous Materials Response Team. They respond to an average of 130 hazmat-related incidents a year ranging from small fuel spills to highway tanker roll-overs.

The \$5000 grant is available to any established incident response team from a fire department, police department or other public-funded program. Qualified applicants are evaluated on leadership qualities, communication abilities, and must

have been trained in accordance with NFPA 472, Standard for Competence of Responders to Hazardous Materials/ Weapons of Mass Destruction Incidents, and NFPA 473, Standard for Competencies for EMS Personnel Responding to Hazardous Materials/ Weapons of Mass Destruction Incidents. The deadline for 2012 applications is 15 September 2012.

Established by the International Association of Fire Chiefs (IAFC) following Warren Isman's death in 1991, the grant is named in honour of a man who was known to value training and education. He was the former fire chief in Fairfax County, Virginia, USA, a senior instructor for the University of Maryland Fire Service extension program, and author of three fire-related textbooks. Isman served on the IAFC board of directors and was chair of both NFPA's technical committee on Hazardous Materials Response Personnel and IAFC's committee on hazardous materials. NFPA's Fire Safety Educational Memorial Fund was established in 1992.▲



The hazmat trailer was supplied by Rural Fire Rescue (RFR)

New hazmat trailer for Alfred Nzo District municipality

Alfred Nzo District Fire and Rescue Service was established in 2002. The Service currently deploys one fire engine which is based at its main fire station situated in Mount Ayliff. Due to the rapid growth in the district, the Fire and Rescue Service has become strained in its respond to fires and emergencies with only the one engine from the main station.

Rural Fire Rescue was recently appointed to supply a fully equipped, hazmat trailer to the Alfred Nzo District Fire and Rescue Service to compliment the current fire engine.

The new hazmat trailer is designed for use on difficult off-road conditions with a 2200mm ground clearance and has the capacity to carry a load of up to two tons.

The design, a box type superstructure manufactured from 1,6mm mild steel, includes five heavy duty aluminium industrial roller shutter doors with heavy duty durable locks, two on each side and one situated at the rear of the trailer. The exterior is spray painted fire engine red while the

entire interior is rubberised. The locker layout was designed according to the specifications requested by the Alfred Nzo District Fire and Rescue Service. It includes three heavy-duty, slide-out shelves and five LED lights, one per locker, coupled to the trailer lights.

Two rotating LED warning lights are fitted on top, towards the rear of the trailer while two LED flasher lights were fitted at the rear of the trailer for enhanced visibility from the rear.

The under body of the trailer has been treated with stone chip painted.

Equipment

The new hazmat trailer boasts the following equipment: a quick response decon shower system; polypropylene shovels; a Hazmat Hooligan tool; a level A fully encapsulated suit; level B fully encapsulated training suits; gas detector; wooden cone and wedge kit; internal pipe, drum and pinhole plugging kits; external pipe and tank sealing plate kits; a windsock and a 17-piece non-sparking tool kit.

Additional to the equipment, a 3,5 horsepower silent generator and

pneumatic extendable light mast was fitted to the trailer to enhance visibility of the scene at night time incidents.▲



The hazmat trailer is fitted with a pneumatic extensible light mast for night operations

Operating winches at accident scenes

By Lenny Naidoo, chief fire officer, Rural Metro Emergency Management Services, South Africa

A common spectacle at motor vehicle accidents is the large number of tow-trucks and emergency services vehicles in attendance. Whilst the clearing up of the roadways is the mandate of the Road Traffic Inspectorate, fire services will under normal circumstances be present whilst the clear-up operation is undertaken by a tow-truck operator.

This article has a twofold purpose.

1. To make fire and rescue practitioners aware of the inherent dangers associated with winch operations
2. To educate fire and rescue practitioners on the correct approach in using winches on fire appliances

It is concerning that when winching operations take place, complacency may set in on the part of the tow-truck operator as well as the fire and rescue service personnel on scene. Has anyone ever asked the question: What training has the tow-truck operator had? I certainly have not seen any legislative requirements with respect to training and certification for winch operations. On scene, we take it for granted that the person controlling the winch is competent to do so. We may therefore “drop our guard”, become complacent and not really look at the winch operation from a safety perspective.

Although, admittedly, there are hardly any incidents of winching operations going bad, it does not mean that all is well. It could just be pure luck that incidents do not occur. In any operation involving the use of equipment which could result in injury, the following elements are essential in ensuring the successful and efficient operation of said equipment:

1. Valid industry norms and standards
2. Training and certification requirements
3. Inspection, maintenance and testing procedures
4. Mandatory record keeping
5. Quality assurance



Safety stipulations

1. Do not exceed load capacity
2. Wear approved safety goggles and heavy duty gloves during the operation
3. The clutch must never be disengaged whilst under load. Always engage clutch before starting
4. Keep clear of the wire rope during operating and do not try and guide the rope under tension
5. Place heavy salvage cover over wire rope, three metres from hook to absorb the force released if the wire rope breaks
6. Do not use the winch for lifting or moving people
7. Position a spotter to ensure it is safe to operate the winch.
8. Do not use the vehicle to pull on the wire rope
9. Do not use loose clothing or jewellery whilst operating the winch. Keep bystanders away from the scene
10. Hook onto the object using the tow strap or chain; never wrap a wire rope around the object as it may damage the rope
11. Keep at least five turns on the drum, the wire connection to the drum is not intended to sustain a load

12. Do not operate the winch at extreme angles
13. If the object to be pulled must be pulled at an angle in relation to the winch, use a pulley and an anchor point. See figure A

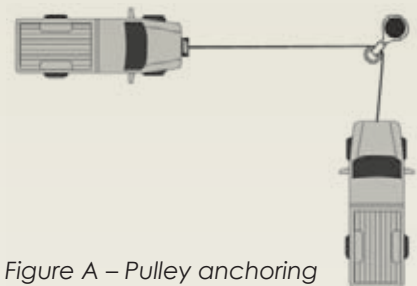


Figure A – Pulley anchoring

Operating a winch

1. Ensure you understand the maximum load capacity of the winch and all the instructions
2. Examine the wire rope and winch, do not operate the winch if the rope is frayed or damaged
3. Ensure:
 - 3.1 The vehicle's handbrake is engaged
 - 3.2 The vehicle's transmission is in neutral
 - 3.3 The vehicle's wheels are chocked
 - 3.4 The vehicle is started
4. To pull out the wire rope, move the clutch handle to the release ►

- ▶ position, slide the loop of the hook strap over the hook, then pull on the hook strap to pull out the wire rope. Warning, leave at least five full turns of wire rope on the drum
- 5. Hook onto the object using a pulling point, tow strap, tree strap, or chain
- 6. Attachment point must be centred in loop of hook and the hook's safety clasp must be fully closed



Figure B – Correct and incorrect hook attachment

- 7. Re-engage the clutch by moving the clutch handle to the engaged position, and make sure the vehicle to be winched is free to move - release handbrake whilst ensuring the vehicle to be winched is controlled
- 8. Attach the controller



Figure C – Pendant connection

- 9. When it is safe to do so, use the power switch on the pendant controller to retract the wire rope and winch the item as desired. Do not power the hook all the way into the fairlead to prevent damage

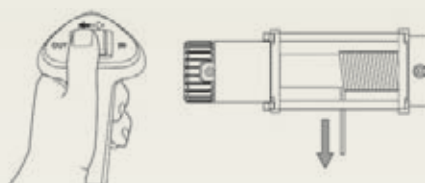


Figure D – Pendant controls

Caution: do not use the winch in a constant duty application; it is designed for intermittent use only. Keep the duration of the pulling job as short as possible. If the motor becomes very hot to the touch, stop and let it cool down for several minutes. Do not pull for more than

one minute at or near the rated load. Do not maintain power to the winch if the motor stalls. Double line rigging will help prevent overloading and should be used whenever practical, see double line rigging

- 10. When finished pulling the load, reverse the direction of the winch just enough to release tension on the wire rope so that you can unfasten the hook from the load and reel in the wire rope
- 11. Avoid damage to the winch by not winching for more than the prescribed duty cycle time. The duty cycle defines the amount of time, within a 15 minute period, during which a winch can operate at its maximum capacity without overheating. For example, a winch with a 5% duty cycle at its maximum load must be allowed to rest for at least 14 minutes, 15 seconds after every 45 seconds of continuous operation. Failure to carefully observe duty cycle limitations can easily over stress a winch contributing to premature winch failure

Double line rigging

- a. A double line system should be used whenever possible. It reduces the load on the winch, allowing it to work longer with less heat buildup. It reduces load on the winch in two ways:
 - It utilises the lower layers of wire rope that have higher capacity, and
 - It halves the load on the winch through pulley action
- b. Connect the wire rope for a double line system as shown in Figure E below. Use a pulley block (sold separately) properly rated for the load to be pulled and

designed to be operated with this winch's wire rope

- c. Loop the wire rope around the pulley and connect to another part of the vehicle's chassis or to a separate anchor point. Do not anchor the wire rope back to the winch or winch mount

Note: if anchoring the winching vehicle, only attach the anchor line to the front of the vehicle. If the anchor line is attached to the rear of the vehicle, the vehicle's frame may be damaged by the forces exerted by winching.

Maintenance

- 1. Before each use, inspect the general condition of the winch. Check for loose hardware, misalignment or binding of moving parts, cracked or broken parts, damaged electrical wiring, corroded or loose terminals, and any other condition that may affect its safe operation. Examine the wire rope. Do not use the winch if the wire rope is frayed, kinked or damaged
- 2. After use, wipe external surfaces of the winch with clean cloth
- 3. Lubricate the wire rope occasionally with a light oil
- 4. The winch's internal mechanism is permanently lubricated. Do not open the housing. However, if the winch is submerged, it should be opened, dried, and re-lubricated by a qualified technician as soon as possible to prevent corrosion

As fire fighters, we are the custodians of safety and we are expected to be on the lookout for any unsafe acts. Never drop your guard once a vehicle rescue is performed and the operation swings to vehicle recovery. ▲

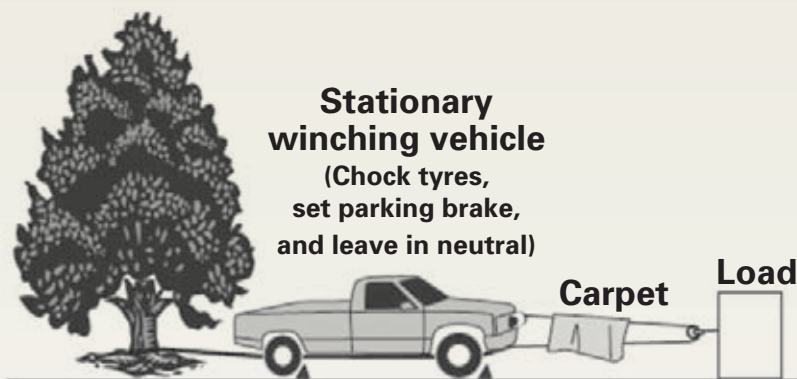


Figure E – Double line setup



Annual DMISA conference

conveys vital information to major role players

The Disaster Management Institute of Southern Africa (DMISA) recently held its annual conference at the Lord Charles Hotel in Somerset West, Cape Town, South Africa. The theme of the conference was 'Evolving Disaster Risk: Challenges and Opportunities for Resilient Communities'.

The conference was held in conjunction with the South African

Weather Service, the City of Cape Town, the Provincial Government of the Western Cape and the National Department of Cooperative Governance and focused on the development and ultimately the sustaining of resilient communities in South Africa and how the relevant disaster management organisations could mitigate the impacts of climate change in the most vulnerable and high-risk areas.

president and founding member of DMISA. The ritual commemorated those people who have passed away in the line of duty. Schalk Carstens, president of DMISA, gave an introduction to the association, its vision, mission, objectives and a brief history of the organisation and its members.

Alderman Jean-Pierre Smith, member of the Mayoral Committee: Safety and Security for the City of Cape Town, welcomed delegates, guests and speakers and officially opened the conference. He commented on the investment the City made in its fire service, which was doubled, and that it also upgraded its training centre. He further more said that several learnerships were created by the Cape Town Disaster Management Centre and its number of staff increased. Alderman Smith complimented the newly revamped centre and its staff and highlighted the fact that it applied best practices. He concluded with a brief overview of the Conference of Parties (COP) 17 which was held in Durban and also emphasised the Climate Smart Cape Town project. ▶

The opening ceremony incorporated the customary DMISA candle lighting ritual, presented by Pat Reid, past



The customary DMISA candle lighting ceremony



Schalk Carstens, president of DMISA

► Colin Deiner, Chief Director, Disaster Management and Fire Brigade Services and Head of the Disaster Management Centre for the Provincial Government of the Western Cape presented the keynote address which featured several facts and figures regarding the population growth and urbanisation. "The size of our cities will double by the year 2025", said Deiner. He also stressed the fact that the informal settlements are growing at a rapid rate and that it is at risk from outbreaks of unknown diseases brought upon by the number of illegal immigrants. This is exacerbated by the topography of these settlements and the high crime rate resident to these areas. Deiner also alluded that the country's poorest of people are highest at risk.

Deiner furthermore discussed the link between technology disasters and natural disasters and used Japan's tsunami disaster (including the Fukushima catastrophe) and the Haiti earthquake as examples of each. He also mentioned several other historic events and through these events demonstrated that natural disasters could trigger technological disasters as was the case in Fukushima but that technological disasters could also impact on natural disasters. Deiner presented delegates with numerous notable past events and stressed the importance of including hazardous materials response team in disaster management planning as well as scenario planning – visualising the consequences of the disaster how the teams would respond. Deiner concluded with a descriptive overview of Rescue South Africa's efforts in Japan.

Sabelo Gwala of South African Local Government Association (SALGA) gave an insightful presentation on the status of disaster risk management at South African municipalities. He presented the statistics featured in the status assessment done by SALGA and highlighted a number of areas for concern.

Conference

Copious papers were presented at the DMISA conference – too numerous to be able to do justice to it all in this brief overview. However, Fire and Rescue International (FRI) will attempt to publish a summary of most of the papers so that our

readers are able to get a gestalt of the conference.

Disaster risk management, steps toward sustainable urban management and development and community resiliency



Dr Bethuel Ngcamu

Dr Bethuel Ngcamu presented Bijan Yavar, vice chancellor at the International University of Chabahar Research and Technology in Iran and managing director of Millennium Enlightened Planners Engineering Company (MEPCO)'s paper on 'Disaster risk management, steps toward sustainable urban management and development and community resiliency. The paper emphasised that poor people facing poverty are more vulnerable facing disasters and that this vulnerability not only limits the development of a city, but also causes the gradual destruction by means of social aspects. To empower people facing disasters, a disaster management framework is needed in which modern methods are incorporated so that the city and urban spaces can be developed from different points of view. Dr Ngcamu explained how disaster management could affect sustainable urban management and then described how disaster management could assist in generating sustainable urban management and development. In his conclusion Dr Ngcamu detailed lessons learnt that could be used as models in similar parts of the world.

The Namibian disaster risk reduction school manual and system strengthening initiative
The Namibian disaster risk reduction

(DRR) school manual and system strengthening initiative, prepared by Sheila Imrie, Rowena Hay, Andiswa Mlisa, Louise Hackland of Umvoto Africa and Goeril Tomren of United Nations Children's Fund (UNICEF) in Namibia also formed part of the presentations at the DMISA conference. The initiative came to fruition due to the annual seasonal flooding in the north and north-east areas of Namibia. In 2009, the Namibian government declared a national emergency after the highest flood level in fifty years causing extensive damage to socio-economic infrastructures in the six northern regions. The floods had a severe impact on the education sector in Namibia affecting 328 schools and around 94 000 learners across the six regions. Given the previous floods (2004, 2008, 2009) and droughts (2005, 2006, 2007) that have affected the region, climate variability trends and model changes in flood, drought and wild fire hazards could be of particular use to mitigate risk and future impacts from natural disasters. The 2010 recommendations of the education sector covered a range of initiatives to make education activities more resilient to disasters, of which one was to prepare for future emergencies by developing a school manual on emergency preparedness and response. A second combined initiative was to improve data management and information flow for hazard monitoring and modelling, early warning, and communication during a disaster. The presentation detailed the findings of the Namibian study (both from the field and collated reference material), gave an overview of the key elements of the DRR school manual and training material, and describes the systems strengthening initiatives that were recommended and set up for implementation by the Ministry of Education.

The impact of HIV/AIDS as a disaster on the population structure of Lesotho

Johannes Belle of the University of the Free State's Disaster Risk Management Training and Education Centre for Africa (DiMTEC), presented a study on the impact of HIV/AIDS as a disaster on the population structure of Lesotho. Belle said that the aim of this research was to investigate health care workers' perception of ►

► HIV/AIDS in Lesotho, the impact of HIV/AIDS on the demographic profile of Lesotho and whether HIV/AIDS was managed as a disaster using certain disaster management principles. Primary data (questionnaires and an interview) and secondary data (national population censuses as well as data from surveys and reviews) were generated to describe the impact of HIV/AIDS on the population structure of Lesotho. Twenty-nine medical officers, 80 nurses and seven medical laboratory technicians completed the questionnaire. The modal age group of the respondents was 25 to 39 years and length of service fell within the one to five years group. HIV/AIDS affected and changed the death rate and birth rate of Lesotho, which influenced the population structure of Lesotho. The age composition, the sex ratio and the dependency ratio was also changed because HIV/AIDS affected mostly the active age group, and women had a higher risk of infection. Although the HIV/AIDS pandemic was declared a disaster in Lesotho, the Lesotho Disaster Management Authority did not play the central coordinating role in the management thereof, but aided the Lesotho National AIDS Commission.

Socio-environmental damage, a looming facet of illegal gold panning: a case study of the illegal gold panners of Gwanda District in Zimbabwe

This paper was prepared by Dumile Bhebhe, UFS-DiMTEC; Andries Jordaan, director at DiMTEC and Olivia Kunguma of UFS-DiMTEC and focused on the illegal gold panning in Zimbabwe that is alleged to generate serious health hazards associated with lack of proper hygiene standards. Gold panning also has negative socio – environmental effects on the land, the ecosystem and on other aspects of human life, like the spread of infectious diseases and HIV/AIDS. The research methods applied was qualitative and quantitative. Face-to-face interviews, questionnaires and observations managed to provide an in built triangulation for the study. Purposive sampling techniques were used and a total sample of 94 respondents was drawn from gold panners, non-panners and relevant stakeholders. The stakeholders comprised of local government officials, environmental management

authorities and officials from local mining organisations while non-panners included those people living with panners along the river banks and neighbouring communal settlers. The study established that gold panning activities, which are poverty driven, have immensely contributed to environmental damages such as deforestation, river siltation, soil erosion, water pollution and the destruction of aquatic based food chains as a result of disposing waste materials and the use of chemicals such as mercury and cyanide. The results of the study recommended that a coordinated approach should be provided to panners to provide them with some basic training in environmental management and the disaster risk reduction management skills. Training will assist in reducing the environmental damages and other related disasters emanating from gold panning.

The Global Risk Report and implications for the South African risk environment

Theuns van der Linde of SRK Consulting presented a brief overview of a number of risks identified in the Global Risk Report 2011, as compiled by the World Economic Forum. The paper aimed to provide some background information on some of the identified risks, as well as provide an overview of the South African situation with regard to selected risks. The focus was not necessarily on traditional 'disaster risks', but rather considered cross-impacts and interconnectedness of risks and investigated dangers such as global governance failures, macroeconomic imbalances, illegal economies, and cyber-security risk, and the possible implications these risks hold for South African communities. Van der Linde also alluded to the endeavours to propose generic risk reduction approaches and to increase resilience to identified global risks.

Wildfire risk assessment for the Northern Cape, South Africa

Abel Jordaan of UFS-DiMTEC presented a paper on the recent wildfire risk assessment done at the request of the Department of Agriculture for the Northern Cape Province. As Southern Africa is one of the world's fire hotspots where millions of hectares burn annually and is a region known for an environment that



Abel Jordaan

sustains burning, marked by distinct dry and wet periods, combined with low development which necessitates the use of fire in land use management, inadequate policies and institutional infrastructure for fire management, accounts for the high vulnerability to uncontrolled fires. He underlined the fact that wildfires are part of the eco-system management environment. The frequency with which this happens differs across southern Africa, resulting in different probabilities of fire. The Northern Cape is the province in South Africa with the lowest wildfire risk, yet hundreds of thousands of hectares burnt annually. The risk assessment methodology followed during this assessment relied heavily on local knowledge and the similarities between this assessment and the results obtained from the assessment done by Forsyth et al (2010) is remarkable. Jordaan emphasised that the national fire danger atlas was done at a macro scale, this assessment at the meso-scale and the district municipalities should do the micro-scale assessments with more detail.

The water 'bomb': pollution and mismanagement of the Wonderfonteinspruit

Eric Stoch of the Stoch Group gave a presentation on the pollution of the Wonderfonteinspruit, situated between Taung to the south-west and Mogale City in the north. The water 'bomb' burst when the first report of pollution along the Wonderfonteinspruit was presented to the Deputy Minister of Water Affairs, Herman Martins on the ►

► 3rd of November 1967. Stoch described the crop damage that was first noticed and elaborated on various other problems that arose during the following years. Various neighbours, fertiliser experts, plant pathologists, soil scientists and agronomists were consulted. No answers were found until it was discovered that only the lower section of the irrigation scheme reliant on mine water was affected. The upper section of the irrigation scheme using spring flow had no similar problems. A high level inter-departmental committee was appointed by the Minister of Mines to investigate the farmers' concerns as animals were showing signs of distress, abortion and birth anomalies. The mining houses were unimpressed and, inter alia, threatened with legal action. The possibility of radiation was raised at the meeting with the Deputy Minister of Water Affairs who had supplied the mines with a copy of the farmer's memorandum and invited them to participate at the meeting. After nearly four years of research and investigation into the concerns of the farmers, the impact on agriculture could not be refuted. Although the mines denied any responsibility and produced some results that showed no radioactivity beyond the background of the measuring instrument, the results obtained from the then Atomic Energy Corporation found activity above the limit. Stoch furthermore discussed water supply and quality in South Africa and said that water was prominent in the negotiations leading up to the promulgation of the Bill of Rights and a Constitution that guaranteed a safe environment. He also stated that new legislation has been enacted and that the Government took pride in the fact that this irreplaceable resource now belongs to the people.

Drought risk assessment for extensive farming in the Northern Cape Province

The University of the Free State's DiMTEC division presented the results of a drought risk assessment done in the Northern Cape (NC) Province. The Department of Agriculture in the Northern Cape commissioned a drought disaster risk assessment for the province as part of their disaster management planning. The methodology applied in the risk assessment combined the drought

hazard with its economical, social and environmental impacts as well as the affected groups to prepare and cope with drought. The Standard Precipitation Index (SPI) was used as the preferred index for the drought hazard and this was calculated by using the WR90 precipitation data – which covered an 80-year period – for each tertiary catchment. Detailed analyses of meteorological data were done and the sum of drought severity calculated for each catchment. Through SPI data, the probability, intensity and duration of dry periods were calculated in order to inform drought severity, which was then used as a hazard value in the risk equation. The value for hazard was then combined with an index for economic, social and environmental vulnerability as well as the coping capacity of affected groups. Tertiary catchments were used as basis of calculation and results of the different variable as well as the drought risk map for the NC are shown on GIS maps. Some of the main findings were that the increase of drought incidence in the NC is not the result of less rain since mean annual rainfall increased over the past 100 years. The incidence of wet extremes increased since the 1970's and the peak seasonal precipitation is later in the season. The study also concluded that natural resource management and factors such as over-grazing, rather than climate change, should carry the blame for the high incidence of drought in the province.

Data availability and requirements for flood hazard mapping in South Africa

Zelda Els of Aurecon presented a study done on the data availability and requirements for flood hazard mapping in South Africa. Els said that the aim of the study was to evaluate if the existing data in South Africa is adequate for flood hazard mapping or if additional data was required. The research done reviewed the literature on disaster risk management, floods, flood hazard mapping, and different types of existing flood modelling methodologies. It also determined the minimum data requirements needed for flood modelling and carried out an assessment of available data in South Africa. The research team had to evaluate the flood mapping results to identify limitations and proposed

recommendations should alternative data sources be required for flood modelling in South Africa. The findings included that the selection of methodology for the flood modelling was limited by available data sources. It also evaluated the current available software packages to create flood hazard maps and analysis processes.

Importance of education in disaster risk management



Prof Dusan Sakulski

Prof Dusan Sakulski of UFS-DiMTEC, gave a brief overview of the study programme at the Faculty of Sciences at the University of Novi Sad in Serbia. The BSc Honours in disaster risk management is a four-year programme in eight semesters which includes one month practical in each year. "We want to produce champions", said Sakulski.

An integrated disaster risk assessment model for local government in South Africa



Dr Mal Reddy

► Dr Mal Reddy of the Durban University of Technology presented a paper that was undertaken as part of a Doctoral degree. The focus of the research was to develop an appropriate disaster risk assessment model for local government in South Africa. The research findings acknowledged disaster risk assessment as a proactive disaster reduction mechanism directed towards disaster risk reduction. The national and international imperatives of disaster risk assessment and disaster risk reduction were interrogated as the basis for leading the comparative study of the three disaster risk assessment models. The comparison and evaluation of these models (that is the community-wide vulnerability and capacity assessment (CVCA) model, community-based risk reduction model and the South African disaster risk assessment model) revealed the prominent characteristics, commonalities and distinction between these models. These findings further enunciated the important guiding principles and characteristics of a disaster risk reduction model and inform the development of the proposed disaster risk assessment model for local government in South Africa. The effective and successful implementation of the developed model would warrant the necessary policy intervention by government to be mandated into practice.

Building resilience: integrating disaster risk reduction into the school curriculum in Tanzania

Pat Reid of DMISA discussed a facilitator's training kit that was developed for the Tanzania National Platform for Disaster Risk Reduction in cooperation with its development partners. She elaborated on the methods designed for 'training the trainer' and its integration into the school curriculum in Tanzania. The project discussed what consists of a safe school and what makes a school safe. The facilitators training kit's design challenges, mechanisms, implementation and project duration were all detailed.

A national disaster management perspective on progress in South Africa

An insightful presentation by Modiegi Sethusha, acting head of the National Disaster Management

Centre (NDMC) on the progress of disaster management in South Africa followed. Government's strategic priority was to establish and strengthen the disaster management capabilities across all government departments and that the main objective was to improve the proactive monitoring and responsive capability of the NDMC. She furthermore detailed the structures, the work in progress, the various educational and training services and the policies and strategies put in place by the NDMC.



Modiegi Sethusha

The intelligent city centre – an integrated platform for collaborative crisis management

Tsepo May and Dr Mweene Monze of IBM presented the IBM intelligent operations centre for smarter cities which included a progress report on CityForward, a free, web-based platform that enables city officials world-wide to view and interact with city data while engaging in an on-going public dialogue. The example of the city of Rio de Janeiro's speedy implementation of the intelligent operations centre was used to demonstrate to delegates the effectiveness of the system.

Metamorphic risk – disaster versus operational risk

Aurecon's Simon van Wyk discussed the difference between disaster and operational risk and said that risk management equals more than an assessment, evaluation or treatment of a particular risk niche (disaster or operational), therefore a consolidation of both risk niches which result in a comprehensive risk assessment within a certain context. He also stated that there should be

a paradigm shift from 'traditional' approaches and concepts of disaster risk management to a fresh focus on operational risk management as an integral part of disaster risk management. "For every Rand spent on disaster risk reduction, five Rand is saved", said Van Wyk.



Simon van Wyk

Analysis of the efficacy of cash transfers in addressing food insecurity for Mutare urban communities of Zimbabwe

Alice Ncube of UFS-DiMTEC gave an overview of the efficacy of cash transfers in addressing food insecurity for urban communities in Mutare. She explained that the need for social protection initiatives to protect vulnerable groups in Zimbabwe led to this study and that the aim was to determine the impact and efficacy of a Catholic Relief Services food security guided cash transfer program in Mutare. Ncube presented the results of the program which showed that the cash transfer program targeted the vulnerable groups in the community, which included the elderly, chronically ill, widows, disabled, and destitute. Most (76%) of the money borrowed by non-beneficiaries was spent on food and this led to the conclusion that the targeted area was highly food insecure.

Disaster preparedness by local government

Dr Bethuel Ngcamu of the Mangosuthu University of Technology presented a case study based on Foreman and Kenny Road informal settlements in the Ethekwini Municipality. These informal settlements, as so many others like it, are prone to emergencies and disasters such as floods, fires and ►

► storm surges which negatively impact on people living in these vulnerable areas. He also stated that if the disaster frequency is to be reduced, then safety must also be sought as a major goal in comprehensive strategic planning to reduce disasters and that disaster identification and reduction at an international and national level must be supplemented by local activities.

Climate is what you expect; weather is what you get – South African Weather Services’ role in forecasting both



Dr Mnikeli Ndabambi

Dr Mnikeli Ndabambi of the South African Weather Services (SAWS) presented an overview of SAWS’ services and discussed the severe weather warning system detailing lightning detection and flash flood guidance system. He described the elements of an effective early warning system (EWS) and stressed that EWS are only good when effective, otherwise it wastes valuable resources. Dr Ndabambi also stated that the South African Regional Flash Flood Guidance System (SARFFG) will be satellite based and operational in early 2012.

The rocky road to Conference of Parties (COP) 17-CMP7 in Durban

Dr Debra Roberts of Ethekwini Municipality presented a somewhat humorous, albeit alarming discussion on the current state of climate change negotiations with references to the outcomes of COP15 held in Copenhagen and COP16 in Cancun. She elaborated on the political challenges in negotiations of political differentiation and briefly alluded to the possibilities that COP17 could offer.



Dr Debra Roberts

Maritime warnings and guidelines: storm surge early warning system

The South African Weather Service’s Johan Stander presented a paper on maritime warnings and guidelines with reference to the storm surge early warning system. He said that the key objective of was to standardise the procedures and processes for the issuing of storm surge alerts in line with standard processes of the multi-hazard early warning system as applied in South Africa and that this will also act as a guideline for the dissemination and communication of such information. Stander described the types of warning systems and alerts and detailed the criteria for issuing storm surge alerts. Stander furthermore explained the process flow for storm surge alerts and the inputs for such a system including real-time buoy data and the transition of waves from open sea to in shore. He likewise described the outputs of a storm surge alert system and the dissemination of severe weather alerts.



Johan Stander

Addressing urban disaster risk and resilience through a ‘green lens’

Maryna Storie, senior researcher at the Gauteng City-region Observatory (GCRO) gave delegates an insightful presentation on the concept of developing and maintaining sustainable human settlements in the face of climate change and its pressures and effects. She also reviewed what the ‘greening’ of the economy and government policies and strategies mean. She explained the greening policies and strategies and gave a brief overview on the nuts and bolts of the economy. Storie also presented the audience with the formulae for calculating a vibrant economy (VE), a resilient society (RS) and sustainability.

Prof Dusan Sakulski of UFS-DiMTEC presented, in conclusion, an internet application for disaster risk reduction, a web site where a user can easily link to various information sources and extract alphanumeric and graphical information from any web page of the application. The web address for the Northern Cape is <http://dimtecrisk.ufs.ac.za/nc/> and Prof Sakulski suggested to delegates to go online and visit the web site to get the best overview of the uses and applications of the site.



Maryna Storie

The DMISA annual conference was concluded with the closing ceremony, special awards and adoption of conference resolutions. Schalk Carstens, president of DMISA thanked all participants, sponsors and delegates with special reference to the sponsorships of SAWS, the City of Cape Town, the National Disaster Management Centre (NDMC) and the Disaster Management Centre: Provincial Government Western Cape.▲



Delegates at the EUFOFINET workshop were given a demonstration of the Wildfire Simulation Training Facilities they have developed

Photographs: Giacomo Pacini, Regione Toscana, Italy

EUFOFINET – sharing good practice in wildfire prevention and suppression throughout Europe



By Dr Robert Stacey, Project Officer, Northumberland Fire and Rescue Service, UK

The European Forest Fire Networks Project (EUFOFINET) is a 24-month project that will be delivered between October 2010 and October 2012. EUFOFINET is an ambitious and innovative project which aims to strengthen regional and local approaches to wildfire prevention and suppression through European cooperation and collaboration. The key objective of the project is to facilitate the transfer of good practice among the project partners and external experts.

EUFOFINET involves 13 partners from eight European countries, including Greece, France, Italy, Spain, Denmark, Poland, Slovak Republic and the United Kingdom and is co-financed with European Regional Development Funding (ERDF) through

the INTERREG IVC Programme. The project is coordinated by the Association of Municipalities of Attica (TEDKNA, Greece), with Office National des Forêts (France), ENTENTE pour la Forêt Méditerranéenne (France), Region of Tuscany (Italy), Region of Thessaly (Greece) and Northumberland Fire and Rescue Service (UK) co-leading individual components within the project.

Despite several decades of excellent partnership-working throughout the Mediterranean region, the dominant experience is that Pan-European systems have yet to be developed to resolve difficulties at wildfire incidents. Also, while wildfire is a well established cause for concern in the Mediterranean, it is now becoming an increasingly visible

problem in northern Europe. The involvement of a number of northern European partners in EUFOFINET is significant as it reflects the growing concern for wildfire across the whole continent. Furthermore, it is symbolic of the need for practitioners from across Europe, from the North and the South, to work together to share and develop effective techniques and strategies for wildfire suppression and prevention.

The EUFOFINET project will address key themes related to wildfire: detection and prevention of wildfires; wildfire suppression strategies; mapping risks and hazards; training and simulation strategies; and, restoration of land burned by wildfire. The project themes will be addressed during the seven project workshops. These events will ▶



A prescribed burn done by the NFRS

- ▶ be hosted by seven of the project partners and will allow the partners and a select number of external experts to discuss and debate current practices. The workshops will conclude with the identification of examples of good practice that can be transferred in part or in full to any European country.

Alex Bennett, acting chief fire officer for Northumberland Fire and Rescue Service, said: "We are looking forward to hosting our workshop in March 2012 and preparations are already underway. Our involvement in the EUFOFINET project has been very rewarding so far. We believe that during the coming year the project will help Northumberland and all European partners to develop and refine best practice for the management of wildfires, which can be tailored to local conditions."

Following the completion of all seven workshops, the EUFOFINET partners will develop individual action plans which will outline how they will integrate and implement some of the best practice that has been exchanged during the project. The EUFOFINET action plans will be tailored to local circumstances but in essence they will act as a driver for positive change across Europe as they will be designed to make a significant impact on local, regional and perhaps even national wildfire and environmental policies.

Another key activity of the EUFOFINET Project will be the development of a common glossary of terminology for wildfire for use in all European countries. This task is being led by Northumberland Fire and Rescue Service. At present there is no single glossary of terms for use in Europe, with different countries and organisations using different terms and definitions. This can and does cause confusion between practitioners. The glossary will be an instrumental tool for helping to establish a common understanding across Europe and will enable European countries to work together more effectively and safely at wildfire incidents. In addition, the glossary will become an important training tool for new and existing personnel. ▶

- The EUFOFINET partners are:
- Association of Municipalities of Attica (TEDKNA) (Greece) – Project coordinator
- Region of Tuscany (Italy)
- ENTENTE pour la Forêt Méditerranéenne (France)
- Office National des Forêts (ONF) (France)
- National Forest Centre (Slovakia)
- Region of the North Aegean (Greece)
- Galician Public Safety Academy (Spain)
- Frederikssund-Halsnæs Fire and Rescue Department (Denmark)
- Forest Research Institute (Poland)
- Northumberland Fire and Rescue Service (United Kingdom)
- Castilla y Leon Wood and Forest Service Centre (CESEFOR) (Spain)
- Region of Thessaly (Greece)
- Region of Epirus (Greece)

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Photographs: Giacomo Pacini, Regione Toscana, Italy



The NFRS demonstrating a fogging system



Photographs: Giacomo Pacini, Regione Toscana, Italy

The EUFOFINET workshop which was held in Valabre, France, in November 2011



Photographs: Giacomo Pacini, Regione Toscana, Italy

The EUFOFINET workshop was hosted by ENTENTE

► EUFOFINET will culminate with an international conference in Brussels in the summer of 2012. This event will enable the project partners to present some of the examples good practice that have been identified, exchanged and developed during the project. The event will be attended by Fire and Rescue Services, Foresters, government officials and other stakeholders in the European wildfire community.

of a European network of experts regarding wildfire issues. This network will facilitate and stimulate continued exchanges of good practice beyond the life of the project.

By coordinating activities and outputs that will help to improve prevention and response to wildfires, EUFOFINET will ultimately help to reduce the number and impact of wildfires in Europe.

of Acting Chief Fire Officer Alex Bennett and Assistant Chief Fire Officer Paul Hedley, Northumberland Fire and Rescue Service (NFRS). ▲



A Northumberland Fire and Rescue Service (NFRS) fire fighter

An important legacy of the EUFOFINET Project will be the creation

This article has been produced with the kind permission and cooperation



The matrix of municipalities in the Free State

Reducing risk

through integrated fire management in the Free State and Northern Cape

By **Roelof Geysler**, *WoF general manager, Free State and Northern Cape*

Implementing an integrated fire management plan for the Free State represents a complex challenge. The mosaic of fuel hazards, the distribution of social, economic and environmental assets, diverse fire management priorities of the major role players, twenty local and five district municipal jurisdictions, remote and mountainous terrain, and unpredictable fire weather, etc, all contribute to this complexity. Furthermore, although the area probably does not experience as many fires as other regions, fires can occur throughout the year, and these often occur simultaneously as multiple incidents.

Firstly, a word of thanks to the fire fighters on the ground - the first line involved in the practical implementation of integrated fire management and risk reduction in the provinces. The ground teams attended to 178 of the 360 fires which have burnt in the province this past fire season.

Looking at the statistics to date, and depending on how long the season will last, it can be stated that 2011 was a mild year, as the province burnt 274 000 hectares to date, compared to the 470 000 hectares burnt in 2010 and the ten year average which is 236 000 hectares.

By committing all its services to the Free State Umbrella Fire Protection Association, Working on Fire provides a one-stop service to all landowners in the province.

It is possible to reduce both the risk of veld fires and the cost of these disasters when they do occur, through better implementation and by further buy-in of all landowners with regards to integrated fire management.

The impact of veld fires in natural vegetation on emerging farmers, particularly the rural poor, cannot be overstated. It is those living on the margins, making a living off the land, that are always the most vulnerable.

“...the ability to deal with a crisis situation is largely dependent on the structures that have been developed before chaos arrives. The event can in some ways be considered as an abrupt and brutal audit: at a moment’s notice, everything that was left unprepared becomes a complex problem, and every weakness comes rushing to the forefront. While we cannot do away with natural hazards, we can eliminate those we cause, minimize those we exacerbate, and reduce our vulnerability to the most.”

(Abramowitz, 2001)

In the case of rural informal settlements (and also in the case of some of the urban settlements), these are located physically on the margin, in the transition zone between densely settled land and land carrying high fuel loads. Whether these fuel loads are the result of alien invasive plants or the lack of integrated veld management (including fuel reduction strategies), the consequences are the same. It is a high fire risk, and it is the inhabitants of the adjacent settlements that bear the brunt of such unmanaged risk. Very often direct losses are in the form of loss of life, disability due to vegetation fires, loss of housing and possessions when thatched or wooden dwellings ignite, and loss of grazing, crops, livestock and subsistence natural resources.

Integrated fire management that applies to the planning, organisation and management of a safe, effective and efficient fire management organisation or governmental agency, should incorporate a full range of fire management activities - from prevention, awareness, early warning, detection, mobilisation and suppression of unwanted and damaging fires, through to appropriate use of natural or human-caused fire in maintaining ecological values and integrity of certain ecosystems, to the use of fire to reduce the accumulation of natural fuel and residue loads from commercial or non-commercial activities and the rehabilitation of ecosystems damaged by, or dependent on, fire.

A disaster reduction strategy must therefore be built on sustainable development policies, which take into account the potential risks for disasters and plan to reduce these risks, involving everyone and providing not just help, but hope. ▲



WORKING ON FIRE

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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 would 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
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Redmond Fire and Rescue

receives Oshkosh's new generation Striker aircraft rescue and fire fighting (ARFF)



The first new Oshkosh Striker 3000 ARFF vehicle is now on duty with the Redmond Oregon Fire and Rescue Department in Redmond, Oregon, USA

The new generation Oshkosh Striker aircraft rescue and fire fighting (ARFF) vehicle is now on duty at Roberts Field, Redmond Municipal Airport (RDM) in Redmond, Oregon, USA. This is the first production model of the all-new Striker design.

RDM is owned and operated by the City of Redmond for the tri-county area. It is the fourth largest commercial service airport in the state, serving all of Central Oregon. The airport

offers approximately 46 arriving and departing flights daily to and from Denver, Las Vegas, Phoenix, Mesa, Portland, Salt Lake City, San Francisco, and Seattle. RDM also serves air cargo and general aviation traffic, including extensive corporate and business travel.

"The new generation Striker has immediately made a significant and positive impact on our emergency response capabilities," said Dave

Pickhardt, Redmond Fire and Rescue Department deputy fire chief. "Placing the new Striker into service has been a smooth transition, and the vehicle is currently being driven and tested extensively by our entire team while we train on it."

"We are very excited to see the first new generation Oshkosh Striker on duty with the Redmond Fire and Rescue department," said Jeff Resch, Oshkosh Airport Products Group vice president and general manager. "This is an important milestone for everyone at the Airport Products Group, as the new generation Striker takes its rightful place as one of the world's premier ARFF vehicles with unsurpassed performance and safety capabilities."

The new generation Striker features advanced safety systems and delivers innovative fire suppression technology, excellent chassis performance, and outstanding reliability and durability. The 6x6 axle configuration, with Oshkosh TAK-4 all-wheel, independent suspension and Oshkosh rear steering system, offers a smooth ride and excellent off-road capabilities. The 700hp, Tier 4i/Euro Five emissions compliant, turbo charged engine is mated to a seven-speed electronic automatic transmission for smooth power delivery and a top speed greater than 113 km/h. The engine power pack components are readily accessed through walk-in doors on either side of the engine compartment for easier servicing.

"The new Striker is easy to operate, outstanding to drive, and its fire fighting systems are very smooth," added Chief Pickhardt. "I've driven it, pumped it, and crawled all over the new vehicle, and the overall design is excellent. The central driving position, forward looking infrared (FLIR) system, and backup camera provide our operators with excellent visibility under the toughest conditions." ▲

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The new Pierce Arrow XT pumpers at the Rapid City Fire Department in Rapid City, South Dakota (Photo courtesy of Joyce Sauer)

Rapid City Fire Department acquires Pierce Arrow XT pumpers

Rapid City Fire Department in Rapid City, South Dakota, USA, has recently placed two Pierce Arrow XT pumpers into front line duty. The department's Pierce fleet now includes six front line engines, one reserve engine, one aerial, and five wildland brush trucks. In addition, the Department runs five Medtec ambulances.

"We're a high call volume department, and can put more than 32 000km on a pumper in a single year, so ruggedness and durability are key," said fire chief Mike Maltaverne of the Rapid City Fire Department. "The Arrow XTs have been a great fit for Rapid City – they're heavy-duty and have proven themselves to be extremely reliable. In fact, you'd be hard pressed to find any Pierce truck sitting in our maintenance facility. They're always in service – and that's a good thing for our department's bottom line."

"Pierce is proud to be the emergency response vehicle of choice for the

Rapid City Fire Department, as they deliver a wide range of essential emergency services throughout their region," said Jim Johnson, Oshkosh Corporation executive vice president and president, fire and emergency. "The Arrow XT is built from the frame rails up to deliver reliability and performance, and we're pleased to see these meet the diverse challenges they encounter in the Mount Rushmore state."

The Arrow XT pumpers are each equipped with a Detroit Diesel 470hp engine, 3,86m-long aluminum body, 25 centimetre raised roof cab, seating for four fire fighters, and three EMS cabinets inside the cab. The vehicles also feature frontal impact and side roll protection systems, TAK-4 independent front suspension, Command Zone advanced electronics, a 5,7 m³ per minute pump, 3 410 litre water tank, Husky 12 foam system, 94,6 litre foam cell, and lowered cross lays.

"Pierce and the team at Front Range Fire Apparatus do an excellent job for us," added Chief Maltaverne. "It makes a big difference for our fire fighters and incident commanders to know that we've got good, functional, and well maintained fire apparatus. Everyone who works here definitely loves the Pierce apparatus we're running."

The Rapid City Fire Department is comprised of 135 paid fire fighters who respond to 14 000 calls annually in a protection district of 143 square kilometres and a population of 67 000. The department provides structural and wildland fire suppression, hazardous materials response, technical rescue, EMS and advanced life support, aircraft rescue and fire fighting (ARFF), as well as comprehensive public education and prevention initiatives.

Pierce dealer, Front Range Fire Apparatus of Longmont, Colorado, provides local service and support. ▲

I wish you could see

I wish you could know what it is like to search a burning bedroom for trapped children . . . flames rolling above your head, your palms and knees burning as you crawl, the floor sagging under your weight as the kitchen below you burns.

I wish you could comprehend a wife's horror at 3h00 in the morning as I check her husband of forty years for a pulse and find none . . . I start CPR anyway, hoping to bring him back, knowing intuitively it is too late, but wanting his wife and family to know everything possible was done to try to save his life.

I wish you knew the unique smell of burning insulation, the taste of soot-filled mucus, the feeling of intense heat through your turnout gear, sound of flames crackling, the eeriness of being able to see absolutely nothing in dense smoke . . . sensations that I've become too familiar with.

I wish you could understand how it feels to go to work in the morning after having spent most of the night, hot and soaking wet at a multiple alarm.

I wish you could read my mind as I respond to a building fire, "Is this a false alarm, or a working fire?" "How is the building constructed?" "What hazards await me?" "Is anyone trapped?"

Or to an EMS call, "What is wrong with the patient?" "Is it minor or life-threatening?" "Is the caller really in distress or is he waiting for us with a 2x4 or a gun?"

I wish you could be in the emergency room as a doctor pronounces dead the beautiful five-year old girl that I have been trying to save during the past 25 minutes, who will never go on her first date or say the words, "I love you Mommy", again.

I wish you could know the frustration I feel in the cab of the engine, squad car, or my personal vehicle, the driver with his foot pressing down hard on the pedal, my arm tugging again and again at the air horn chain, as you fail to yield the right-of-way at an intersection, or in traffic. When you need us however, your first comment upon our arrival will be, "It took you forever to get here!"

I wish you could know my thoughts as I help extricate a girl of teenage years from the remains of her automobile. "What if this was my sister, my girlfriend, or a friend?" "What is her parents' reaction going to be when they open the door to find a police officer with hat in hand?"

I wish you could know how it feels to walk in the back door and greet my parents and family, not having the heart to tell them that I nearly did not come back from the last call.

I wish you could know how it feels dispatching officers, firemen, and EMT's out, and when we call for them and our heart drops because no one answers back, or to hear a bone chilling 911 call of a child, or wife needing assistance.

I wish you could feel the hurt as people verbally, and sometimes physically abuse us, or belittle what we do or as they express their attitudes of "It will never happen to me."

I wish you could realise the physical, emotional and mental drain of missed meals, lost sleep, and forgone social activities, in addition to all the tragedy my eyes have seen.

I wish you could know the brotherhood and self-satisfaction of having saved a life, or preserving someone's property, or being able to be there in time of crisis, or creating order from total chaos.

I wish you could understand what it feels like to have a little boy tugging at your arm asking, "Is Mommy okay?" not even being able to look in his eyes without tears from your own, and not knowing what to say.

Or to have to hold back a long-time friend who watches his buddy having rescue breathing done on him as they take him away in the ambulance. You know all along he did not have his seat belt on, a sensation that I have become too familiar with.

Unless you have lived with this kind of life, you will never truly understand, or appreciate who I am, who we are, or what our job really means to us . . .
I wish you could though.

Author unknown

KRP

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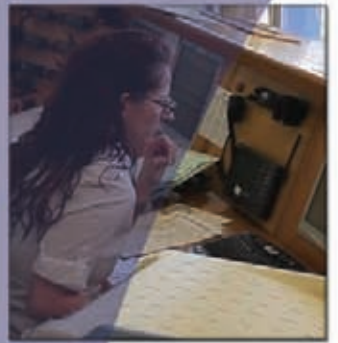
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