

FIRE AND RESCUE INTERNATIONAL

Integrated fire, rescue, EMS and disaster management technology

Volume 2 No 3



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Editor

Lee Raath-Brownie
lee@fireandrescue.co.za
Cell 082 371 0190

Journalist

Sylvester Haskins
edit@fireandrescue.co.za
Cell 071 641 3884

Advertising

advertising@fireandrescue.co.za
Cell 079 107 3967

Design and layout

Mael Sidonay
art@fireandrescue.co.za

Finance

Noddie Knibbs
accounts@fireandrescue.co.za

Circulation

Tamlyn Eksteen
subs@fireandrescue.co.za

Secretary

Tamlyn Eksteen

Administration

Miriam Moroane

Contributions**USA**

Marty Mayes

Africa

Colin Deiner
Andrew Ingram
Mark Smith
Mark Walklett
Hayden Hutton
Malcolm Procter

Publisher

Lee Raath-Brownie
FIRE AND RESCUE INTERNATIONAL
Tel 011 452 3135/6
Fax 086 671 6920
Box 8299 Greenstone 1616

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Comment



Lee Raath-Brownie

We are proud to present the 15th edition of **Fire and Rescue International (FRI)**. In this month's edition we feature our usual international news round-up, hands-on expertise, interesting snippets, a fire department and general industry information. We also launch the Toughest Fire Fighter Alive Challenge and review the SAESI 2013 conference, exhibition and competitions. We trust that you enjoy reading our magazine as much as we enjoyed writing it!

Cover profile

Our front cover this month profiles the National Sea Rescue Institute (NSRI) of South Africa's recent sea rescue exercise in conjunction with City of Cape Town Disaster Management.

FRI Images photographic competition

An action-packed photograph won one of FRI's readers R2 000. See page 3 for details. CONGRATULATIONS!

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

News section

The inauguration of Ofentse Sam Masibi as the new president of the Southern African Emergency Services Institute (SAESI) dominates our news section this month and is appended by the China earthquake and the Colorado wildfires. The Toughest Fire Fighter Alive Challenge to be held in Cape Town in August is launched in this issue. Other news articles include the amazing rescue of a South African surfer after being floating in Indonesian sea waters for more than 24 hours; the ER24 Branch of the Year award; a new wildfire pump for the wildland/urban interface; the European floods and US tornadoes, chopper crash and barge fires. We also discuss the use of blowers in wildfire mitigation.

Advancing handlines

FRI's technical article this month features the first of two indepth discussions by Colin Deiner. Deiner, in his usual frank manner, discusses the effective advancement of handlines in structural fire fighting. Discipline, concentration and training are paramount.

Fire station

FRI visited Lonehill Fire Station in Gauteng, South Africa and interviewed station commander Paul Chetty. Chetty shares his experience and the expertise of Lonehill Fire Station with our readers.

Extrication

Mark Walklett of Cape Town Fire and Rescue discusses the extrication Triple H system.

Training and education

FRI interviewed Benjamin van Nugteren of University of Johannesburg (UJ) and details the emergency medical care (EMC) bachelor's degree offered by UJ.

SAESI 2013

We review the successful SAESI 2013 conference, exhibition and competitions. We also feature the awards and congratulate Ofentse Sam Masibi in his new capacity as president of SAESI.

Risk mapping

Malcolm Procter shares research and a case study on the reduction of the incidents of wildfires through hazard and risk mapping.

We value our readers input and enjoy receiving comment, good or bad. Fire and Rescue International is your magazine. Read it, use it and share it!

Lee Raath-Brownie
Publisher



Congratulations to

Jaco Johnstone for his
“Walking where the devil dance”
photo taken with a Nikon Coolpix
L310 and a 21X optical zoom
wide lens

Photo description:

Warehouse fire in Ermelo,
Mpumalanga, South Africa, at
02h00 am on 18 March 2013. The
warehouse was used to store
merchandise for a supermarket
in Ermelo Town.

**Chief Jaco Johnstone
wins this month's prize
money of R 2 000!**

Well done!

This month's FRI images winner!

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

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

The rules are simple:

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

Entries must include:

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

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

>>ENTER NOW!





The AMS helicopter lifts a 'casualty' (actually a dummy) off the 'stricken ship' as Hout Bay's rescue boat moves in.

South Africa's National Sea Rescue Institute (NSRI) partakes in large sea rescue exercise

by Andrew Ingram, National Sea Rescue Institute

One of the largest sea rescue exercises to take place in South African waters happened in Table Bay, Cape Town, South Africa, in March this year. It involved over 300 personnel from all the organisations that would be needed to deal with a cruise ship disaster and included 101 'casualties.'

The sea rescue exercise, 'Operation Beachy', was organised by the City of Cape Town Disaster Management and took place at Mouille Point.

At 09h15 on Tuesday 12 March, a 'passenger cruise ship', actually the SA Navy frigate SAS Spioenkop, reported to Cape Town Port Control that she had run aground off Mouille Point in Table Bay.

The crew were fighting a blaze on board and the ship was listing badly. The Transnet National Ports Authority

Harbour Master assumed command of what rapidly escalated into a multi-emergency services, mass casualty rescue operation and a joint operations control centre (JOCC) was established at the port control tower in Table Bay, where representatives of the responding emergency services gathered to coordinate the 'rescue operation'. NSRI Table Bay, NSRI Bakoven, NSRI Melkbosstrand, NSRI Hout Bay, Cape Town Fire and Rescue Services, Western Cape Government Health EMS and the South Africa Police Services were all activated to respond to the scene.

Fire fighters, EMS paramedics and EMS rescue technicians were dispatched to accompany sea rescue boats so that passengers and crew could be evacuated and the fire could be brought under control. The Skymed rescue helicopter, Law Enforcement Marine Division rescue

craft, SAPS Sea Borderline craft, the SAPS Dive Unit craft, an EMS rescue craft and Transnet Tug Boats were also activated to respond.

Upon arrival at the scene, the first sea rescue boat to arrive at the 'casualty ship' assumed the on-scene command and fire fighters, EMS paramedics and NSRI rescue teams were put aboard to fight the fire, search for and free entrapped crew and passengers, medically triage and treat passengers and crew.

They were asked to rapidly evacuate all crew from a ship that 'may capsizes at any moment'.

While this was underway, a full scale shore emergency services contingent responded to the Mouille Point lighthouse.

Roads leading to 'the scene' were closed to the public and the area ►



Fire hose is pulled up onto the ship to fight the 'fire.'



Survivors are transferred from the Table Bay Rescue Boat Spirit of Vodacom to the Hout Bay rescue boat Nadine Gordimer.



Nadine Gordimer takes passengers off the 'burning ship' via a cargo net.

► was cordoned off while disaster management and metro EMS established an on-scene sub JOCC, a landing zone, emergency medical treatment facilities, a media and refreshment centre.

Cape Town Sports Stadium was taken under command by disaster management to act as a secure zone for sorting and treating casualties and to brief victims and relatives.

The first patients and survivors, as well as the ships manifest, were brought aboard sea rescue craft at 09h50. Disaster management administrative staff began to establish the number of passengers and crew on board as well as the casualties nationality.

The media and foreign consulates were briefed by the JOCC media representatives on regular intervals.

A search had begun for passengers unaccounted for and possibly lost over board. A SA Air Force 22 Squadron Lynx and an Oryx

helicopter arrived on scene and assisted in evacuating critically injured patients off the ship. They also aided in the search for survivors in the sea.

NSRI helicopter rescue crews were deployed from the helicopters to help winch casualties into the helicopter to be brought ashore. Treatment of injured passengers and crew took place on the shore at Mouille Point and at the Cape Town Stadium. Ambulances transferred the injured to local hospitals.

Customs officials dealt with clearing passengers, social services assisted with trauma counselling, the Department of Environmental Affairs cleaned up the "pollution spill," the Department of International Relations and Cooperation assisted with the foreign affairs, foreign consulates dealt with their countrymen and the Forensic Pathology Services took over the care of the deceased.

Throughout the exercise, the Ports Authority staff maintained

normal port operating procedures with regular shipping traffic, without interruption.

Only one real casualty resulted during this exercise, which involved one of the young woman volunteers who suffered some emotional stress after being winched off the ship by a helicopter.

She received trauma counselling and has recovered from her ordeal. During the exercise, we experienced a strange phenomenon of multiple 'white illuminating flares' sighted, nearly all at the same time. A search off Robben Island was launched by NSRI Hout Bay's sea rescue craft and nothing was found.

It is thought that what was seen was a meteor shower, which was also sighted from further inland. The Astronomical Society reported that this often happened at this time of year.

Brad Geyser, Sea Rescue JOC commander, said: "At one stage ►



Passengers who have been safely transferred onto the sea Rescue boat Spirit of Vodacom, some with their green triage tags visible.



An Oryx helicopter from the SAAF's 22 squadron lifts a passenger off the ship.



Two NSRI volunteers on Spirit of Vodacom get ready to go alongside Nadine Gordimer.

► during the exercise, nature threw the exercise a curve ball and fog rolled in, although only briefly, hampering the exercise but also giving us the opportunity to act as close to reality as possible, which is always a challenge during an exercise, as alternative arrangements had to be made for evacuating passengers, while helicopters could not do that leg of the rescue in the fog."

"Craft that did not have navigational equipment on board, had to be guided in the fog; these are real obstacles we often face in real rescues," said Geyster.

A lot was learned by the different Cape Town rescue agencies working together, on what in reality, would have been a disaster in the league of the Costa Concordia, which ran aground off Tuscany in 2012.

Through careful planning during the run up to the exercise, everybody, from customs and embassy officials to pollution crews, sea rescue volunteers, fire fighters, police divers and traffic officers, got a good idea of what would be needed if such a disaster really were to happen.

You can follow NSRI and read about the rescues as they happen on www.searescue.org.za. ▲



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Mobile: +2782 412 6319
Email: jimmy.c@fremtac.com

www.fremtac.com

SAESI presidency: the fulfilment of a life-long goal

After a career spanning more than two decades in fire services, former fire chief at the Potchefstroom City Council in the North-West Province, South Africa, Ofentse Sam Masibi, fulfilled the expectations of his mentors when he was elected as the South African Emergency Service Institute (SAESI) president in May this year.

Today, Masibi finds himself in two senior positions within the South African emergency services fraternity. He was recently appointed as the director of Ekurhuleni Emergency Services (EES).

Masibi applied for the EES director post in 2012, taking part in the interview process for the position that

old, when I began enquiring about fire services," he says.

Masibi decided to gain a qualification in professional fire fighting at the dawn of the new political dispensation, enrolling himself at Technikon Pretoria, now the Tshwane University of Technology, where he obtained a National Diploma in Fire Services and a BTech degree in Fire Technology.

Masibi's served time as a fire fighter at the Mafikeng Fire Department in the North-West Province followed by an extended tenure at the Potchefstroom's fire department in the North-West, where he started as a fire fighter and ascended to the fire chief officer.

"My love and passion for fire services grew day in and day out," says Masibi, who became a member of SAESI as a fire fighter early on in his career. "I appreciated the bond between fire fighters and the opportunity to grow and develop in the industry. Also, the institute and fire services did not see themselves as black and white. So, I immediately felt at home."

Passion rekindled

Masibi's passion had waned to a degree when he began working in the fire department of the Potchefstroom City Council under the then chief fire officer, Philip van Staden, who encouraged Masibi. Van Staden told the fledgling fire fighter to 'work smart, be disciplined, be focused, do the right thing and you will go to the top of the ladder'. "He rekindled the idea of working towards something and achieving certain goals," says Masibi. "At some point during this time, I had already abandoned the institute, but I began making a point of attending meetings and submitting reports to SAESI timeously," states Masibi.

Masibi would then serve the institute in different capacities; firstly as a station representative and then as a branch chairperson and ultimately serving as the chairman of SAESI's administration committee for 11 years. "I was nominated repeatedly ▶



Ofentse Sam Masibi

Masibi was inaugurated as the new president of the institute at the SAESI 2013 conference, exhibition and training event held in May this year, in which former fire chief and mentor, Mannes de Bruyn, addressed conference delegates congratulating Masibi in his newly appointed role as president of institute. Masibi began his fire fighting career under De Bruyn who was chief fire officer at the then Bophuthatswana National Fire Service in 1986.

"De Bruyn was among the people that contributed to me becoming a chief fire officer and taking my career seriously," acknowledges Masibi. He recalls a discussion between himself and De Bruyn that set the tone for the journey he would embark on in fire services ahead. "He told me 'Masibi, I see a potential leader in you and I see in you a future SAESI president in you'. He motivated me," says Masibi.

was vacated by former EES director, Joe Makhubela, in 2012. Masibi says, "The Ekurhuleni Council appointed me as director of emergency services. I applied like any other person and learned that I was successful on 24 April this year." He says that being appointed as the new EES director will add value to SAESI and his role as president of the institute.

Baptism by fire

Masibi first experienced the devastating impact of a wildfire at his father's farming property in Meetmekaar, a rural village in the North-West Province. "My father's harvest was totally destroyed by wildfires. We watched helplessly as fire destroyed the farm which was the meat and bread for our family and our workers. I decided that I must find out what you can do if confronted with an issue like this," remembers Masibi. "I was about 18 or 19 years

► in this role, which normally is a two-year term," mentions Masibi. The institute's financial and administrative affairs were in dire straits by the time Masibi took up the administrative committee chair. However, after running at a deficit, the institute had turned the corner by the time Masibi vacated his chairperson role in SAESI administration committee. "We managed to build reserves, but this is owing to the support from members, as well as the previous president."

SAESI president

Masibi was immediately thrust into his presidential duties when he took up the helm of the institute, tasked with managing the SAESI 2013 conference, exhibition and training event.

According to Masibi, the role that he will perform as the newly elected SAESI president will firstly be to strive to ensure that the fire services profession is recognised.

He says that his objective is to promote and enhance the profession and careers of fire fighters and emergency management services (EMS) personnel across the board. One of the projects SAESI has undertaken is to engage Government on recognising the institute as a council, implying that all fire fighters be licenced to perform fire services in the country.

Challenges

Masibi says that the recognition of the institute and the fire services from Government structure is an ongoing battle. "One of the challenges the institute is having is recognition, which leads to gaining financial assistance." Masibi adds, "We are still fighting to be recognised. We are speaking to Government and we are now getting good feedback and this is fulfilling to us."

Masibi suggests that fire services be exalted to a stand-alone national discipline as opposed to falling within the broader scope of the service portfolio administered by municipalities.

The recruitment of new members for the institute will be one of Masibi's key focuses in the first year of his tenure as SAESI president. He says, "We do not have all EMS persons, especially paramedics, as members. We will look at recruiting these individuals."

A second focus will be to have synergy and cooperation between role players and various stakeholders in fire and emergency services, states Masibi. "It will please my heart if, in the first term, I find we can work together for the same objective," petitions Masibi. "I think that if all of us come together and speak with one voice, we will be heard."

Owing to new legislation passed in recent years, SAESI cannot automatically deduct membership fees from fire fighters, who are now required to personally make payments to the institute at the respective banking institution. Masibi believes this new legislation has contributed to the membership losses the institute sustained in recent years. In addition, the failure of the institute to stay abreast of technological advancements, such as maintaining an electronic database and social media platform to engage its members, including newly recruited fire fighters, is part of the difficulties faced by the institute.

"My love and passion for fire services grew day in and day out"

"Technology is evolving daily. There are risks and dangers involved with that. We need to have our hands on the pulse in this regard," states Masibi. "We were a bit slow in moving with technology, but we are going to catch up with that." Masibi adds, "We realise the need to set up Twitter and Facebook to appeal to the Y-generation today who do not carry books and pens. They have mobile phones and tablets."

Member benefits

Masibi lists numerous benefits that the institute affords its members; focusing primarily on fire fighters. The institute adds value to fire fighters, who take pride in belonging to a professional institute, states Masibi. He says that fire fighter qualifications and certificates are subsidised by the institute, adding that students who achieve excellent passing grades are exposed to opportunities afforded by the private sector, such as

sponsoring international learnerships. "We are also making sure that the fire fighter profession is valued and acknowledged," mentions Masibi.

Making headway

SAESI has joined forces with the Institution of Fire Engineers (IFE), Institute of Licence Officers (ILO) and the Institute of Municipal Public Safety Southern Africa (IMPS-SA) to form the Southern African Association of Community Safety Institute (SAACSI). "It is an umbrella body that will be engaging with South African Local Government Association (SALGA) to make sure the efforts of the institute does not fall on deaf ears," explains Masibi.

SAACSI, which serves as an overarching body under the guidance of SALGA, took four to five years to develop before it was launched on 14 May during the SAESI 2013 event. Masibi mentions that outgoing SAESI president, Moshema Mosia, was nominated as president of the newly formed SAACSI by the majority members of the newly formed institute.

Masibi highlights the recruitment of new administrative personnel at SAESI, among the new developments at the institute in the past few months. Masibi believes that this is an indication that the institute 'is moving in the right direction'.

"Somewhere we failed ourselves and we realise that," concedes Masibi. "Our head office has not responded to members concerns effectively." The institute took decision to restructure the institute and employing new full-time and part-time personnel, including an office manager and clerical staff to aggressively market the institute and improve its database system.

In another positive move, the interventions projects undertaken by the institute will be fast tracked by a newly instituted SAESI executive committee, which will enable the institute 'to take a decision and implement it right away', reports Masibi. He says, "These are all strategies to regain our trust with members. We need to make sure that we take care of the relationships we have with the members of the institute." ▲

Two million people affected in China earthquake



Sichuan Province experienced a 7.0 magnitude earthquake in April



A total of 186 300 rural houses collapsed in the earthquakes in Sichuan



Rescue workers struggled to reach survivors after the earthquake and resulting landslides

A magnitude 7.0 earthquake in Sichuan Province, China killed at least 179 people when it struck the rural, mountainous region of Lushan County on 22 April this year.

The China Earthquake Administration, said at least 6 700 were injured in the earthquake that affected more than two-million local residents.

Rescuers and relief teams struggled to provide supplies to survivors of the earthquake, who proceeded to take shelter in tents, cars and other makeshift dwellings. Landslides soon occurred after the incident, cutting off roads and disrupting phone and power connections in the county.

Local emergency services including fire engines, ambulances and military vehicles containing emergency supplies waited in long lines along the main roads, which were impassable. Hardest hit villages were further up the valleys of the region, where farmers grow rice, vegetables and corn on terraced plots.

Rescuers were forced to hike into neighbouring areas like Baoxing County to reach survivors, while nearly all the buildings had been destroyed in a frightening minute-long shaking by the quake in neighbouring Longmen Village, said Chinese authorities.

Chinese Premier, Li Keqiang, travelled to the disaster area to direct rescue efforts, reported the State - Xinhua News Agency. According to Xinhua, the Chinese Premier stated that 'the current priority is to save lives'.

Tens of thousands of people moved into tents supplied by the Chinese Red Cross as aftershocks continued to plague the region. Government mobilised thousands of soldiers and others, sending excavators and other heavy machinery as well as tents, blankets and other emergency supplies. Two soldiers died after their vehicle slid off a road and rolled down a cliff, State media reported.

An international media agency in Sichuan reported that locals were still awaiting rescue and essentials like drinking water, food, medicines and tents two days after the earthquake struck.

However, the Chinese Red Cross stated that it had deployed relief teams with supplies of food, water and medicine and rescue equipment to the disaster areas.

Philanthropic organisation, Thomas Reuters Foundation, says that immediately following the earthquake the central government allocated 47 000 tents, 199 000 sets of quilts, 10 000 set of clothes, 10 000 bedding sets, 70 000 boxes of instant food and 40 000 bottles of drinking water to the affected areas.

According to a report by humanitarian group, ACT Alliance, 8 791 aftershocks have been recorded, over 186 300 houses in rural areas and 6 700 houses in urban areas totally collapsed, with over two million people affected in the Sichuan earthquake.

Amity Foundation, a member organisation of ACT Alliance, initiated its disaster contingency plan and dispatched the Amity Emergency Response Team to the earthquake area within hours of the incident. The team was divided into several groups for needs assessment, procurement, logistics, distribution, evaluation and monitoring.

Amity assisted the affected communities in the remote, mountainous areas of Tianquan and Baoxing counties, where destruction of property and infrastructure were just as serious as Lushan County.

In the aftermath of the earthquake, the Amity Foundation stated that it planned to assist the most vulnerable families in rebuilding quake-resistant homes and ensuring sustainable clean water supplies, as well as provide psycho-social assistance in the form of community activities. The earthquake that struck Lushan this April was along the same fault line as the devastating magnitude 7.9-earthquake that struck the region on 12 May 2008 – noted as one of the worst natural disasters to strike China in recent decades. ▲

Colorado battled through its most destructive wildfire in June

The wildfires in Black Forest destroyed 509 homes near Colorado Springs in the US

The most destructive wildfires to hit the state of Colorado in the US continued to burn at various locations across Colorado, US, two weeks after the coordinated fire fighting operations began on 5 June, this year.

The wildfire in the Rocky Mountains that runs from Colorado into the neighbouring country of Canada strained the regions fire fighting resources. Rocky Mountain Type I incident commander, Pete Blume, said, "This is a significant fire with significant problems and we are not going to see any significant containment until we have significant changes in the weather."

According to US officials, the first wildfire was caused by a lightning strike in a remote area of the Rocky Mountains, located in southwestern Colorado, while a second lightning strike sparked a fire further east of the Rocky Mountains. Authorities then said that the two fires then joined, causing a fast running wildfire that headed towards popular tourist areas in Colorado. A third lightning strike, sparked a fire to the west, creating what is now called the West Fork Complex – a combination of three fires; the West Fork fire, the Windy Pass fire and the Papoose fire, which is said to be the largest and most intense to ever hit the area. The fire burned more than 31 000 hectares in the area by 25 June, with zero containment and potential for growth, said local officials.

The West Fork Complex fire would likely burn for months, according to Blume. He said that the fire fighter crews are not expecting to make any real gains against the wildfire until the summer monsoon season brings cooler temperatures and rains, which is expected in early July.

The most significant damage to property as a result of the wildfires took place in Black Forest near Colorado Springs, where 509 homes were destroyed after a wildfire struck the region on 11 June. The Black Forest wildfire was one of two wildfires in the region that forced mass evacuations and resulted in the death of two people. About 750 fire fighters battled the blaze that was 100 percent contained after two weeks of coordinated fire fighting efforts by local authorities. Black Forest county spokesperson, Dave Rose, said that the fires in the region appeared to be the most destructive in terms of property lost in Colorado's history.

Meanwhile, an erratic blaze raged through the Rio Grande National Forest, a popular summer retreat in the

southwestern Colorado Mountains, causing tourists and business owners to flee the region on 22 June. The fires more than doubled in size in one weekend from 21 June, growing to an estimated 183 square kilometres, according to local authorities.

Rio Grande has 400 permanent residents, but there were between 1 000 and 1 500 people in town when the evacuation was ordered. In the Rio Grande forest, fire fighters were hoping for a break in the high winds, as well as the anticipated July monsoons, to help them fight back the flames.

Elsewhere in Colorado, about a dozen fires continued to burn in the week starting Monday 24 June.▲

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2012 TFA challenge

Toughest Fire Fighter Alive 2013 South Africa

The City of Cape Town's Fire and Rescue Service proudly presents 'The Toughest Fire Fighter Alive' (TFA) 2013 South Africa open championship, which will be held on 31 August 2013 in Cape Town, South Africa, at the Good Hope Centre, at the foot of Table Mountain.

The TFA competition is rated as the hardest and most challenging of all fire fighter competitions around the world. It is the supreme test of endurance, strength, flexibility and speed made more difficult due to wearing of personal protective equipment.

The organiser's mission includes providing a platform for competitors to challenge themselves against the circuit and the best fire fighters internationally; promote fire fighting in general through the media exposure.

Eligibility

The event is open exclusively to fire fighters:

- Professional, seasonal, volunteer, rural and part-time.
- Municipal fire departments, urban and rural
- Aviation

- Military
- Ports Authority
- Petro-chemical refinery fire fighting team
- Freight rail fire services
- Professional and volunteer services from abroad

Individual age categories

(as on day of competition)

- Men's Individual Open (18 to 29 years)
- Men's Individual Senior (A) (30 to 34 years)
- Men's Individual Senior (B) (35 to 39 years)
- Men's Individual Master (A) (40 to 44 years)
- Men's Individual Master (B) (45 to 49 years)
- Men's Individual Grand Master (A) (50 to 54 years)
- Men's Individual Grand Master (B) (55 to 59 years)
- Men's Individual Grand Master (C) (60 years over)
- Women Individual Open (18 to 29 years)
- Women Individual Senior (A) (30 to 34 years)
- Women Individual Senior (C) (35 to 39 years)
- Women Individual Master (40 years and over)

Relay teams categories

- Male: under 40 years and over 40 years old
- Female: open

The overall male, female and relay team winners will be the participants with the shortest time of all contestants.

The overall male and female winners will be declared South African National Champions

Prizes

- Medals to the first three finishers in each age category
- Trophies will be awarded to the overall winners
- Relay team

Registration details and entry fee

- Registration for the competition opens on the 11 March 2013 and closes on the 2 August 2013
- Competitors and teams are encouraged to register as early possible as this will give the organisers an estimate of the amount of contestants that can be expected
- In case of a large number of competitors willing to partake in the competition, every attempt ▶

Two fuel barges caught fire resulting in multiple explosions

Fires on barges

prompt evacuations in southern US town

Multiple explosions aboard two fuel barges in the local Mobile River in Alabama, US, caused injuries to at least three people on 24 April this year, reported the Mobile Fire Department.

The fire department stated that the three victims were taken to a hospital, while the US Coast Guard reported that the casualties of the barge fires had been burned and that their conditions were unknown.

Mobile officials later stated that the three workers were preparing the barges for reloading on Wednesday, 24 April when the barges exploded, causing them to sustain severe burns. However, none of the workers were killed in the incident.

According to the Coast Guard, at least seven explosions rocked the barges. A manager for a nearby hotel, Al Waugh, likened the explosions to 'planes above you dropping bombs', as told to a local media agency. At least 500 employees were on the ship at the time of the explosions, but they were evacuated to safety.

The fire department said the first explosion was reported about 21h00 on Wednesday, 24 April. The incident occurred in the vicinity of the Carnival Triumph; the cruise ship that lost power in the Gulf of Mexico and later broke loose of its moorings at a Mobile shipyard.

The fire department stated that a shipmaker on the east bank, Austal, had been partially evacuated as a fire burned nearby, with some other areas along Mobile River also forced to evacuate.

"Planning to let it burn," the fire department stated on social media website, Twitter. "Still too unstable," tweeted officials at the fire department.

In a statement, the US Coast Guard said a one-nautical-mile safety zone had been established around the barge. "The barge was an empty compressed natural gas barge that was at the dock for cleaning," the Coast Guard stated. The agency was investigating the incident.

- ▶ will be made to accommodate all entrants. However, if this is not possible and there are many participants from one service, the organiser reserves the right to limit the competitors from that unit (with that unit's approval).
- After the registration is completed, a full list of registered competitors and teams with starting times, will be published and the teams will be required to pay the registration fees.

The registration fee

R80 per fire fighter (individual)

R100 per relay team

Spectators and children are welcome to attend at no charge.

Registration

- In order to enter the competition a registration form from the website

needs to be completed

- Registration forms can be found and completed on the website www.capetown.gov.za/fireandrescue or alternatively www.capetown.gov.za/en/FireAndRescue/Pages/AbouttheTFA.aspx
- The payment of the registration fee is considered as confirmation of participation in the competition
- The organiser reserves a right to change the rules eg changes in order to simplify registration, adjust to the participants' or units' organisational capabilities, etc
- In justified cases it will be possible to change a participant after the date mentioned.

Competition rules

The competition rules and standards are based on the international stipulations.

Banners

All participating fire fighters are encouraged to display their city's banner.

Travelling assistance

For teams travelling from other provinces: if you need to be met at the airport, bus or railway station, please inform the organisers of your arrival time and we will arrange to meet you.

Please note that the competition could begin on 30 August 2013 if a high number of entrants are received.

Contact

Mark Smith (after hours) on

Mark.Smith@capetown.gov.za or

Tel 021 550 1355; Cell 071 676 4272 or

Ricardo Fourie during office hours on

Ricardo.Fourie@capetown.gov.za or

Tel 021 590 1742; Cell 072 467 1368. ▲

SCANIA Emergency vehicles, celebrating 100 years.

With more than 100 years of experience building chassis for fire fighting vehicles. From the ground breaking DLa Special in 1912 to the popular P-series used today, Scania has a long history of supplying dependable trucks to fire and rescue crews.



1912

The year was 1912 a time when most fire crews were using horse-drawn pumps to put out blazes, it was during this phase when Scania - Vabis, a recently formed company, produced a truck known as the DLa Special. The DLa Special was the company's first fire fighting truck, which was purchased by the Norrköping Fire Brigade in regional Sweden. It proved such a hit with fire-fighters that they ordered another, with a 24-metre detachable ladder, three years later.



1919

In 1919 Scania-Vabis produced the innovative T-1, believed to be one of the world's first four-wheel-drive fire trucks.

A T-1 was the first truck purchased by the fire brigade in Sodertälje, outside Stockholm.

The vehicle remained in active service for 25 years.



1939

By 1939 Scania-Vabis was producing the 33516.

When the City of Eskilstuna Fire Brigade wanted to upgrade to a fleet of vehicles with turntable ladders, it chose this truck.

One truck with a 30-metre ladder produced by Magirus in Ulm, Germany, was still in use in 1959.

Scania is successful in markets worldwide. The broad range of components in the Scania modular system enables operators and body builders to create a vehicle specification that precisely meets customer needs.

To highlight Scania's long association with fire fighting vehicles, a selection of vintage, veteran and modern fire trucks will be displayed in the Scania Museum, a part of Scania Visitor Centre located close to the company's head office in Sodertalje, Sweden. The exhibition runs from 10 June until 30 August.

Further to the museum exhibit, there will be additional events and exhibits displayed through out the year, beginning in China (May 2013) then following through to Europe. Each event will be arranged by the respective regional distributors.

The planned events will showcase a variety of vehicles, many of them equipped with Scania Crew Cab, an impact-tested safety cab with four entry doors and room for six to eight people.

FAST FACTS - CREWCABS IN NUMBERS

About 5,000 Scania CrewCabs have been delivered since Scania began to build them on the normal assembly line in the mid-1990s.

In 2012, a total of 422 Scania CrewCabs were delivered. In addition, 300 other rescue vehicles were delivered (for example, airport rescue vehicles and hydraulic platforms).

Scania has a market share of between 40 and 90 percent in the following markets:

- Sweden
- Norway
- Finland
- Poland
- Great Britain
- Switzerland
- Hong Kong
- Malaysia
- Singapore
- Australia



1951

Another Scania-Vabis stand-out vehicle was the L64 produced in 1951.

A fast truck fitted with a petrol engine, one of these was delivered to the Sandviken Iron Works and the City of Sandviken, which had a joint fire service.

The model became popular and was delivered to several other Swedish fire brigades.



1980

In 1980 Scania produced the LB81.

This low-built fire truck featured an automatic gearbox and a Metz turntable ladder and is still in active service in Sweden.



2013

Today, Scania is successful in markets worldwide.



SCANIA
Scania Southern Africa

Botswana, Malawi, Mozambique, Namibia, South Africa, Tanzania, Zambia, Zimbabwe

Series of tornadoes in May torments US town of Moore



Two dozen children were trapped beneath rubble after the fiery tornado struck Moore, Oklahoma



NASA captured an image of the storm system that generated the F-4 tornado in Oklahoma

A three-kilometre wide tornado tore through the Oklahoma City suburb of Moore in the US on 20 May, resulting in the death of 51 residents.

In one of the deadliest tornadoes to hit the United States in two years, entire tracts of homes and up to 80 blocks were either damaged or destroyed in Oklahoma City.

The fierce tornado piled cars atop one another and trapped two dozen school children beneath rubble. Oklahoma medical officials stated that twenty of the 51 confirmed deaths were children. At least 45 of the 230 people injured in the Moore tornado were children, according to hospitals in the area. Oklahoma lieutenant governor, Todd

Lamb, said that emergency crews searched the rubble of Plaza Towers Elementary School for the two dozen missing children.

The Plaza Towers Elementary School took a direct hit from the tornado, while another elementary school and a hospital were among the buildings levelled by the tornado.

The US Federal Aviation Administration (FAA) imposed a temporary flight restriction that allowed only relief aircraft in the area, which was requested by local police in order to search for buried survivors.

Fire fighters from more than a dozen fire departments, as well as rescue teams from other states were involved in the search-and-rescue

effort in Moore, a town of 55 000 people. Disaster modelling company, AIR Worldwide, offered a rough figure of the replacement value of the properties damaged on either side of the tornado, which was estimated to be around \$6 billion.

US President, Barack Obama, declared the Moore a major disaster area, ordering federal aid to supplement state and local efforts. The dangerous storm system threatened several other southern US states as rescuers in Oklahoma raced to the aid of survivors against the setting sun on the day the tornado struck Moore on 20 May.

Debris was scattered throughout the town of Moore in the aftermath of the devastating tornado, as streets signs disappeared and houses completely destroyed. The US National Weather Service assigned a ranking of EF-5 for the Oklahoma tornado, the highest ranking given for tornado damage.

The ranking is based on the Enhanced Fujita scale (EF-scale) that rates the strength of tornado in the US in relation to the damage caused. The tornado is the worst to hit the region since the 1999 event, when a giant twister tore through the area, killing more than 40 people and destroying thousands of homes. The 1999 tornado caused more than one billion dollars in ►





Fire ravaged building collapses, causing fire fighter deaths

Four fire fighters were killed while attempting to rescue people trapped at Southwest Inn

► damage and regarded as the third-costliest tornadoes in US history.

Meanwhile, a second spate of tornadoes tore through Oklahoma after the devastating three-kilometre wide twister hit the region only 11 days prior.

On 31 May, a total of five tornadoes sprung up across the state, claiming the lives of 18 people. One of the tornadoes followed the same route of the Moore twister that devastated the region, however, the tornado paled in comparison to the three-kilometre twister of days earlier.

The tornadoes on Friday, 31 May, left motorists stuck in traffic on roadways around Oklahoma and its surrounding suburbs. The storms also sparked flash flooding through the Oklahoma City area, prompting the Oklahoma County Sheriff's Department to conduct several water rescue operations.

Of the 18 confirmed fatalities, nine were in Oklahoma City, while six were in its western suburbs. Five of the deceased were killed while in their cars on a major highway, after they were thrown from their vehicles, according to media reports.

Every year an average of 1 200 tornadoes go through the Midwest US region known as Tornado Alley, most of them are relatively small. ▲

Four fire fighters were killed after battling a blaze at a hotel and restaurant in Houston, Texas in the US on 31 May this year.

The massive blaze caused the collapse of a building, which ultimately trapped the four fire fighters who attempted to rescue occupants of the motel that was engulfed in flames. Houston officials confirmed that the collapse occurred and resulted in the deaths of the four fire fighters, which included 24 year old probationary fire fighter, Anne Sullivan, described as a lionhearted woman.

A memorial service was held for the four fire fighters killed in the fire at the Reliant Stadium that saw thousands of people attending.

Captain Matthew Renaud, engine operator, Robert Bebee and fire fighter, Robert Garner, were also killed in the blaze that purportedly started at the Bhojan Indian restaurant and spread to the Southwest Inn motel. The Mayor of Southwest told a local television news agency that investigators would recreate the scene to determine the cause of the fire, which is a process that could months. In mid-June, Houston fire chief, Terry Garrison, said that a full review of the deadly blaze was still ongoing.

The fire was under investigation by the Houston Fire Department, with assistance from the Bureau of Alcohol, Tobacco, Firearms and Explosives. A total of 50 investigators from city, state and federal agencies were investigating the incident.

Local witnesses stated that the fire started in the restaurant and spread to the motel. Flames spread to the entire motel, blanketing the area in thick smoke. The flames quickly spread out of control. Fire fighters got the flames under control about two hours later.

The fire fighters were from the Houston Fire Department's two bases namely Station 51 and Station 68. ▲



State and federal officials were investigating the causes of the deadly Southwest Inn fire in July



MAN and Rosenbauer vehicles were added to the Central Durban's fire truck fleet

eThekwini proud owners of eight Rosenbauer fire engines

eThekwini Fire Services recently acquired eight new fire engines supplied by fire equipment engineering company Rosenbauer South Africa and truck manufacturer MAN South Africa.

The eThekwini Fire and Emergency Services Unit required improvements to the overall capacity of each fire tender, including greater crew-carrying capacity, greater chassis rigidity for harsh off-road conditions and prolonged pump capacity, reports eThekwini Municipality Fire and Emergency Services Chief Fire Officer, Mark Te Water.

The municipality had specific requirements in acquiring the new fire engines that was added to the units emergency services fleet. The acquisition of the new vehicles marks the first entry of the MAN vehicles into the municipalities' emergency service fleet, says Te Water.

The features of the MAN and Rosenbauer units include a crew cab that carries six personnel, while the pump can easily run for extended periods at high pressure. The air tanks that power the truck's brakes are positioned unobtrusively, allowing the vehicle to carry 3 000 litres of water, which is significantly more than has been specified on previous standard pumping units and

without any reduction in the carried equipment inventory.

Fire truck specifications

Rosenbauer South Africa sales manager, Michael von der Heyde, says that the new vehicles supplied to the fire department were all major rescue pumpers. He says that the eight new fire engines supplied to eThekwini Fire Services were manufactured to the same specifications, upon request by the municipality. Von der Heyde explains, "The main reason for keeping the specification of all vehicles the same was to have a standardisation that will assist the fire station with training done on the product."

eThekwini Fire Services preferred the offer made using the MAN chassis resulting in Rosenbauer South Africa being the successful bidder in the tender process, mentions Von der Heyde. He says, "eThekwini wanted an economical, yet proven chassis so we worked closely with MAN South Africa to get exact chassis and best conditions for the tender."

eThekwini Fire and Emergency Response Services senior manager of support services, Lance Ravidutt, says that the new all-steel crew-cab comfortably accommodates fire fighters positioned at the rear of the truck and a driver and officer

at the front. He adds, "The factory manufactured cab is constructed as a seamless unit, which is distinctly different from previous conversions of single cabs into crew-cab units and presents none of the problems, such as water leaks and metal corrosion, posed by converted units of the past."

Local skills development

South African truck bodybuilder, Unipower, was awarded the tender to build and construct three of the fire truck cabs by the eThekwini Municipality.

Von der Heyde says that Rosenbauer South Africa instructed Unipower on the build of three of the MAN vehicles, as part of the municipalities' strategy to develop the local fire industry. "Rosenbauer provided assistance, where necessary, to Unipower to ensure that the vehicles were built to exacting international standards. It is a policy at Rosenbauer to have local industry benefit from the vast technical know-how of this international company."

Unipower director of administration, product sales and fire equipment enquiries, Barry Ward, confirmed that this project was the "next step up" for his company which has successfully built fire tenders for twenty-five years. "We are very proud that eThekwini Municipality has shown the faith ▶

Russian psychiatric hospital gutted in fire

A fire at a psychiatric hospital outside Moscow, Russia killed at least 38 people in April this year. Russian officials said that the fire quickly swept through the facility overnight causing multiples deaths before rescue workers arrived at the facility.

Two doctors and 36 patients were killed in the fire, while only one nurse and two patients managed to escape. Health officials said that the one-story hospital housed patients with severe mental disorders. Russian emergency situations ministry official, Vadim Belovoshin, told the local Itar-TASS news agency that the windows in the hospital were barred, but said there were two fire escapes.

Belovoshin said that it took fire fighters an hour to get to the hospital, because a ferry across the canal was closed and emergency teams had to make a detour. "All the people died before rescuers arrived and there were no people able to go inside except fire fighters, because of the smoke," he said.



A fire at a psychiatric hospital in Russia killed 38 people

Officials from the Russian Investigative Committee said they were looking at poor fire regulations and short circuit as possible causes for the hospital fire. Authorities noted a faulty electric wiring and a short circuit as possible cause for the fire, however, investigators were looking into all

possible causes including 'careless use of fire', said Russia's Investigative Committee representative, Irina Gumennaya.

Deadly fires are purportedly common in Russia, because of widespread violations of fire safety rules.▲

►and confidence in us as a local manufacturer who is capable of meeting world class benchmarks" he said. He thanked Rosenbauer for their support and confirmed that they would remain the pump of choice in future offerings.

Te Water says that eThekweni Municipality is glad to share their experience with Unipower at the behest of any other fire services organisations in South Africa. "Through our experience with this product we hope other people would consider this option when purchasing fire trucks," he says.

Efficiency by design

Te Water says that the unit's design makes it suitable for long duration service and pumping, frequently needed when dealing with protracted incidents. "We had a previous reliability issues with the pump applications."

The Rosenbauer appliances are fitted with a mechanical device that assists in the release of the heavy extension ladder used for rescues and gaining

access during fire fighting operations. Ravidutt explains, "In the interests of making fire vehicles gender friendly, a fully automated ladder gantry system has been introduced. A minimal amount of physical exertion is now required to ship the 14 metre ladder when required at emergency incidents.

The Rosenbauer units are equipped with ABS braking system and MAN's TipMatic gearbox, making for smoother acceleration and braking, reports Man Truck and Bus South Africa. The MAN TGM 18.280 also features a 4x2 chassis, a six cylinder Euro 3 engine and the engine produces 206 kilowatts and 2 400 revolutions per minute. The Rosenbauer superstructure model supplied to the municipality is known as the Rosenbauer ES concept, says Von der Heyde.

Ravidutt says, "The gross vehicle mass of the unit of 18 tons provides an opportunity to increase the carrying capacity of fire fighting equipment and water supplies. The size of the first aid tank has been increased

from 2 400 litres to 3 000 litres thus improving the operational fire fighters ability to adequately cope with the extinguishment off fire when turned out."

The first four vehicles, which cost about R2,5-million per unit, were received in June 2011 and commissioned into service in October 2011, reports Ravidutt.

Te Water is pleased with the performance of new MAN and Rosenbauer pumpers. "We have a range of vehicles that have been built by different assemblers over the years, but if the current experience with Rosenbauer is to be judged, we are most satisfied with the performance of the MAN chassis," he enthuses.

The Central Durban fire department has a total of 32 units in its vehicle fleet, which along with other assets or emergency services and medical equipment bring the total value of assets to be in the order of R100 million-plus, states Te Water.▲



2012 Guardian of the Year – Torsten Henschel

A total of eight emergency services workers and volunteers have been chosen for this year's Centrum Guardian of the Year award.

The Centrum Guardian Project, which recognises and showcases stories about the most inspiring and laudable South African emergency services personnel including fire fighters, rescue technicians, paramedics, lifeguards, off-road and sea rescue volunteers, seeks to find a successor to last year's winner and lifeguard, Torsten Henschel.

Henschel was nominated and awarded as the 2012 winner of the Centrum Guardian of the Year for his focus and stamina in a rip current rescue incident, which saw him saving a 15-year old boy from drowning after a rip current pulled the teenager out into treacherous sea waters.

The eight finalists will be narrowed down to four in the semi-finals in July, when the final four nominees will vie for the coveted 2013 Centrum Guardian of the Year award.

An in-depth documentary series on South African television entitled, Centrum Guardian 2013, hosted by popular television personality, Ruda Landman will profile the eight finalists selected for the 2013 award. Each episode in the documentary drama series will detail the stories of courageous men and women, who respond to emergencies in the country. The television programme provides viewers with a glimpse of the vital efforts made by emergency and rescue professionals in the country. The show will feature dramatic recreations of the stories for which the finalists were nominated, beginning on 4 August this year.

Centrum Guardian reports that 70 nominations were received for consideration this year, whereupon eight finalists were selected by a judging panel made up of representatives from various emergency services disciplines. This included senior representatives from the South African Private Ambulance and Emergency Services Association, Southern African Emergency Services Institute (SAESI), Fire Protection Association of Southern Africa (FPASA) and the National Sea Rescue Institute (NSRI), among other emergency services organisations.

Voting for the finalists was set to start on 1 July 2012 and will close on ►

Fire destroys two popular Broadacres eateries

A fire raged out of control at the Broadacres Shopping Centre in Fourways, north of Johannesburg in South Africa in mid-May this year.

It was unclear what sparked the blaze that destroyed the Spur, Nandos and Banjaara restaurants, among other onsite business offices. However, no one was injured in the blaze that occurred after hours on Friday, 17 May. The fire was first noticed at about 19h00 by patrons at the Spur restaurant in the shopping centre, who were quickly evacuated. Only two people were however treated at the scene for smoke inhalation.

Fire fighters were able to douse the fire before it created more damage to other shopping and recreational facilities at the Broadacres centre, such as the banking section and the Virgin Active gym complex.

Lonehill Fire Station officers were the first responders to the blaze, but they were soon joined by fire fighters from the Sandton Fire Station. An apparent problem with access to water initially hampered the fire fighting efforts to extinguish the blaze. According to media reports, emergency services officers ran out of water to extinguish the blaze and had to leave the

site for about 30 minutes to find a fire hydrant.

City of Johannesburg Emergency Management Services (EMS) said that all customers at the shopping complex were safely evacuated. "Two people were treated for smoke inhalation and taken to a nearby hospital," said City of Johannesburg EMS spokesperson, Robert Mulaudzi.

Conflicting reports allege that the fire started at the Spur restaurant, however, fire fighters suspect that the fire was caused by an electrical fault or heater that was left on in the offices of a marketing solutions firm at the shopping centre.

Mulaudzi said that the fire would be investigated by the city's EMS. "The cause is not known yet. Our fire investigation team will investigate the cause of the fire." ▲

► 11 September this year. The winner will be announced in a finale event on 12 September. A public voting process will be conducted by short messaging service (SMS) to decide the winner; the proceeds of which will be donated to the base station of the Centrum Guardian of the Year winner. The winner will be determined by a 50/50 split between the public voting process and an independent voting panel.

The Centrum Guardian Project is a corporate social investment project implemented by multivitamin supplements company, Centrum. Centrum brand manager, Natasha Macdonald, says, "We are astounded by the calibre of nominations we receive each year. Every single story has an element of bravery, passion and determination to name just a few of the attributes that the remarkable men and women in emergency management services (EMS) possess. We are proud to showcase the emergency services industry and share the work they do with the South African public through the Centrum Guardian series." ▲

Used fire trucks wanted in Africa and South America

Fire Trucks 4 Africa has identified a need in the fire services industry for cost effective fire apparatus by selling used fire trucks.

The South African company supply used fire trucks to many countries in Africa and has also been able to achieve steady sales of fire equipment in Argentina.

Fire Trucks 4 Africa also supplies new left and right-hand-drive fire trucks. The company is shortlisted to supply 14 new MAN fire trucks to Nairobi and surrounding towns in Kenya. The right-hand-drive fire trucks are converted to left-hand-drive in Poland before being exported to Argentina and African countries that have left-hand-drive vehicle requirements.

Fire Truck 4 Africa reports that former East London chief fire officer, Robert

Pegg, imported two used fire trucks from the UK in 1995 and many fire departments in South Africa did the same. Local manufacturers and importers of new fire trucks complained to the Department of Industry that this was affecting their business. From that time no import permits for used fire trucks have been allowed. An exemption will be considered for used specialised vehicles such as aerial fire trucks that are not manufactured in South Africa.

The company also supplies new ambulances built in Cape Town under the name of Ambulances 4 Export. A modular ambulance unit has been developed that can be fitted to most left and right-hand-drive bakkies. Recent sales include the African countries; Mozambique, Madagascar and Morocco. ▲



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Pump offers complete solution in wildland urban interface

South African fire fighting equipment manufacturer and engineering company, Fire Fighting Equipment Africa (FFEA) has introduced a new pump application, which offers a combination of pressure and flow rates needed for combating fires in the wildland urban interface, states FFEA MD, Marius Koekemoer.

"Most of our country falls into this category, so the focus will be on rural municipalities," states Koekemoer. The Darley UHP-HV ultra high-pressure and high-volume pump, is manufactured in the US by fire fighting pump, equipment and apparatus manufacturer WS Darley and Co.

WS Darley combined the direct-drive 2BE pump end and the CAT and 7CP high-pressure piston pump with the aim of providing a single compact package for fire fighting applications. "There are combinations of this unit available as separate units, this product is unique in the sense that it is a complete and compact unit in one," corroborates Koekemoer.

FFEA's express focus is to provide solutions and products to rural municipalities. Koekemoer says that the Darley UHP-HV pump is 'perfect for this market'. "It addresses all the

needs that they may have for their risks," he says.

The main pump can be used for water transfer, or for 38 millimetre lay flat hose to combat structural fires, while the belt driven CAT can produce low-flow high pressure flows in excess of 1 300psi with optional foam dispense through the 13-millimetre high-pressure hose.

Other features of the pump application include a single-stage centrifugal main pump and a three-piston high-pressure pump. The engine is a 23-horse power Vanguard engine. The unit is fitted with a Darley Fast Foam injection system and is fitted with a dual strike gun with holster for effective discharge of up to 15 metres.

"The one pump offers high-pressure 90-bar at 30 litres a minute, which is perfect for grass, bush and car fires." Koekemoer adds, "The second pump offers a high flow and low pressure of 416 litres per minute at 9-bar, which is perfect for structural fires."

FFEA has made the first unit available in the country this year and is conducting demonstrations on the products applications.▲



The Darley UHP-HV is used in structural attacks and wildland urban interface

Darley UHP-HV pump

Simultaneous flows:

UHP
30 litres per minute @
1 200psi (82,7 bar)

30 litres per minute @
1 300psi (89,6 bar) = standard
performance

2BE23V
416 litres per minute @
125psi (8,61 bar) 2 660 rpm

567 litres per minute @
100psi (6,89 bar) 3 420 rpm

908 litres per minute @
50psi (3,44 bar) 2 970 rpm

President urges prevention against secondary disasters after quake

President of the People's Republic of China, Xi Jinping, has urged authorities to make a concerted effort to prevent new casualties caused by secondary disasters like landslides after the major quake that hit southwest China's Sichuan Province in April this year.

Jinping said that local authorities should immediately assess the possible damage from 'secondary geological hazards', especially taking full consideration of the

possibility that strong aftershocks and rainfalls could aggravate secondary disasters, which includes geological hazards such as landslides, cave-ins and mudslides.

The 7,0-magnitude earthquake that hit Sichuan's Lushan Province left close to 200 people dead and 21 missing.

Xi said special efforts should be organised to carefully identify risks in key areas and formulate plans for early warning, evacuation and

emergency rescue, in order to prevent the loss of lives and property caused by secondary hazards.

At a meeting held by the Standing Committee of the Political Bureau of the Communist Party of China (CPC) Central Committee on 23 April, Jinping again urged all-out efforts to prevent secondary geological disasters. "I'm especially worried about geological hazards, such as cave-ins and landslides, as the region could suffer from frequent aftershocks and wet weather after the strong quake," stated Xi.

He added that local authorities should strengthen monitoring and prevention and guide people to avoid dangers.▲

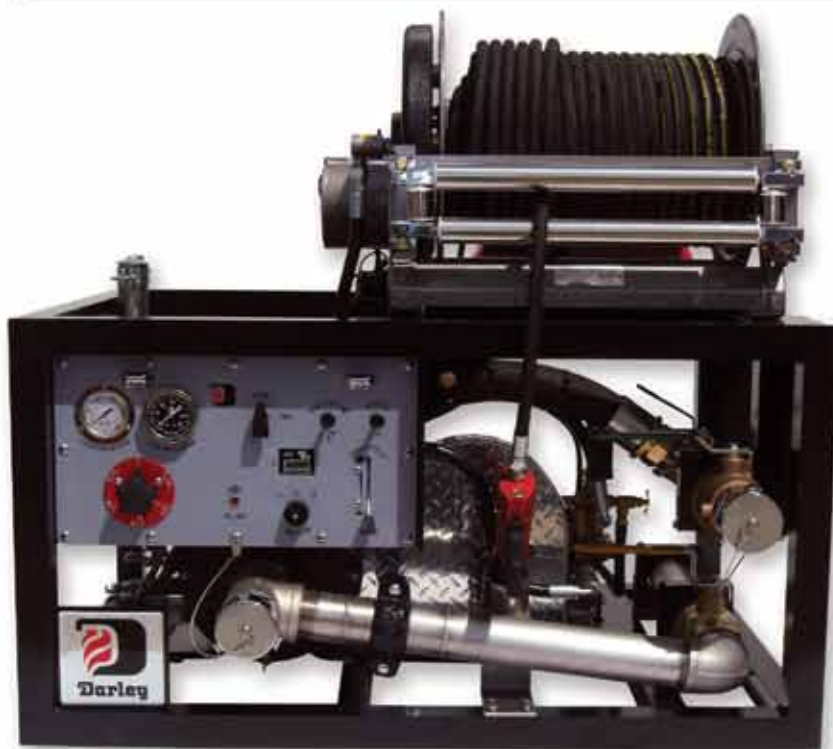
Darley UHP-HV

Ultra high-pressure – high volume pump

The Darley UHP-HV (ultra high-pressure - high volume) module offers the best of both worlds for the wildland-urban interface. Darley has combined the versatile direct-drive 2BE pump end and the CAT and 7CP high-pressure piston pump to meet all your fire fighting needs in one compact package. Main pump can be used for water transfer or for 27,94 centimetres hose for structural attacks while the belt driven CAT can produce low flow high pressure flows in excess of 1 300psi with optional foam through the 27,94 centimetres HP hose.

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NEW



Features

- Single stage, centrifugal main pump
- Single stage, piston, high-pressure pump
- Engine: 2BE direct drive pump with 23hp Vanguard engine
- CAT 7CP high-pressure piston pump with foam injection
- High pressure pump belt drive system
- Electric rewind Hannay reel with 60,96 feet of 1,27 centimetre hose, full capture leads
- Dual strike gun with holster (six-metre effective discharge)

Simultaneous flows

UHP

30 litres per minute @ 1 200psi (82,7 bar)

30 litres per minute @ 1 300psi (89,6 bar) = standard performance

2BE23V

416 litres per minute @ 125psi (8,61 bar) 2 660 rpm

567 litres per minute @ 100psi (6,89 bar) 3 420 rpm

908 litres per minute @ 50psi (3,44 bar) 2 970 rpm

Wildland fire fighting • Water transfer • Structural attack



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ER24 'Branch of the year' award goes to Kimberley

Emergency medical care and response group, ER24, that has operations across South Africa, recently awarded its Kimberley base with its annual 'Branch of the year' award for 2013. Kimberley ER24 area manager, Albert Hensberg, says that the award is a positive affirmation of the dedication shown by the ER24 emergency medical services (EMS) personnel at the Kimberley base.

"This is positive thing. We are not one of the bigger bases in ER24, but we have a big area to cover. All the staff at the base is very happy about receiving the award. It keeps them positive," says Hensberg. He adds, "It shows that we are getting recognition for the hard work we put into the organisation."

The award was presented to the Kimberley base by the ER24 CEO,



Andrew Boden, on 17 May this year. "We were told beforehand that we had won the award by our regional manager and the ER24 CEO, who visited Kimberley to present us with the award," recalls Hensberg. He says that sound financial management is among the operational areas on which ER24 Kimberley was adjudged, earning them the coveted 'Branch of the year' award. "Obviously financials play a big role – making sure that we stay within budget. Also, our vehicle fleet management played a role – making sure that it is top shape all the time."

Hensberg mentions that the Kimberley has a strong focus on teamwork, which makes it possible to achieve an effective and efficient EMS operational base. "Teamwork is very important. Everyone understands what we have to do and we have a goal that we work towards," he explains.

The Kimberley base forms part of ER24's Northern Cape operational area that includes a base in the towns of Kuruman and Upington – the latter being ER24 most recently established base in the region. "I am the area



Andrew Boden

manager for the region. We also have a regional manager who is responsible for Northern Cape and Free State," mentions Hensberg.

A total of 23 staff serves the Northern Cape's three branches. Eleven EMS and managerial personnel are based at the Kimberley base, which is located in the town of Belgravia opposite the local Mediclinic. The base has four vehicles in its fleet, consisting of two ambulances, one rescue vehicle and one response. ▲

South African surfer found alive 24 hours after floating in Indonesia seas



South African surfer, Brett Archibald, is rescued after 27 hours' of treading water in Indonesia seas

A South African surfer was found alive after being stranded in Indonesian sea waters for more than 24 hours in April this year.

The 50-year old holidaymaker and surfer, Brett Archibald, was one of ten passengers on an overnight tour boat that was travelling to a prime surfing area in the Indonesian Mentawai Islands. He was reported missing after failing to show up for breakfast, prompting a search and rescue operation by local search teams and private boats.

South Africa travel service provider All Aboard Travel, with whom Archibald was holidaying, reported that Archibald was found alive, sunburnt and dehydrated, after being lost at sea for 27 hours.

Archibald had been suffering from severe seasickness during a storm. He threw up overboard and passed out, only to wake up with water splashing in his face. Archibald realised he was in the whitewash of the boat and watched as it sailed away, leaving him stranded in the ocean by himself.

He survived by treading water and floating on his back. Archibald was stung by jellyfish and seagulls tried to pluck out his eyes, during his ordeal. He said he almost drowned eight times during the 27 hours.

Archibald was eventually spotted by an Australian group of surfers on board an Indonesian boat, who launched a search operation after one of their Indonesian crew heard from the harbourmaster that a man had been lost at sea.

The group did not find Archibald upon their initial search on the day he was reported missing. However, the group launched a second rescue attempt at about 04h00 the next day, 24 hours after Archibald had gone overboard. The men took turns using binoculars when at about 07h15 a member of the Indonesian crew spotted Archibald's body bobbing in the water. They pulled a visibly weak Archibald, who was suffering from a bloody nose and shrivelled fingers.

A map indicating Brett Archibald's 27-hour journey in Indonesia sea

An Australian media agency reported that Archibald, who was clearly overwhelmed upon being rescued by the Australian group, quipped, "I love you Aussies, I'm never going to bag you guys ever again."

After being rescued, Archibald told his wife that he would complete his surfing trip before returning home since 'he didn't fly all that way to tread water for 27 hours'. ▲



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An aerial view of the flooding that took place in Passau, Germany

Heavy floods overwhelm parts of eastern Europe

Heavy rainfall persisted for more than a week across eastern Europe in June this year, causing extensive flooding across five countries in eastern Europe.

The floods in Germany, Austria, Slovakia, Hungary and the Czech Republic resulted in the death of at least 16 people, with eight people losing their lives in the Czech Republic, five in Germany, two in Austria and one in Slovakia.

Tens of thousands of people were left displaced in Germany as rising waters overwhelmed towns and cities across the country, while the Czech Republic declared a state of emergency across much of the country on 3 June.

Heavy rainfall also caused flooding in low-lying regions of Austria and there were reports of landslides on mountains in the country. Near the Austrian capital of Vienna, volunteers and the fire brigade tried to contain the overflowing Danube River, which stretches across four countries in eastern Europe, from Germany into Austria, Hungary and Romania. There were 18 900 volunteer fire-men and

-women working in the flood-affected zone, along with 1 000 soldiers from the Austrian army, according to Austrian officials. Volunteers loaded sand bags into boats and transported them to weak points in the Danube River's flood barriers or defences.

A state of emergency was declared in eight cities in Germany, as thousands of volunteers joined an estimated 40 000 fire fighters and 5 000 soldiers, including hundreds of troops from France and Holland, in efforts to fill sandbags, reinforce levees and build elevated walkways to flooded homes. More than 50 000 people were evacuated from their homes in Germany alone.

In Saxony, German authorities used loudspeakers to urge the areas 30 000 residents in the city of Halle to leave their homes as the city found itself under more than a meter of water. In Dresden, the capital city of Saxony on the eastern rim of Germany, prisoners were roped in to assist with sewing and filling sandbags, while local do-it-yourself (DIY) stores were offering free shovels to rescue workers. Five hundred ships moored along Germany's waterways were unable to continue their journey as the floods

persisted for two weeks in the first week of June, this year, according to local media reports.

German Chancellor Angela Merkel promised about \$130,7 million in aid to the flood hit areas in the country namely Saxony, Thuringia and Bavaria, where the Danube River in the city of Passau rose to highest levels in 500 years.

Merkel pledged fast aid to the affected regions, as she was given a helicopter tour over the flooded areas in and around Passau. Merkel praised the emergency services and armed forces for their efforts, after being surprised by the extent of the floods, "Even if the water level is slowly retreating the effects will be felt for a long time," Merkel told media on the ground in city of Passau. "Therefore 100 million euros of emergency aid is available from the state of Bavaria and the federal government. We are splitting it fifty-fifty."

The European Commission noted that help would be available to the victims of the current flooding through the European Solidarity Fund, which it set up after the last major floods to hit the region in 2002. ▲

Fatal helicopter crash in Kentucky, US

A medical helicopter crashed in the southern US state of Kentucky, killing all three crew members on board the aircraft after it plummeted into an elementary school parking lot in Manchester, Kentucky.

Local witnesses said that the helicopter came down in dense fog that covered the Manchester skyline on Thursday 6 June this year. The crew members were identified by Air Evac Lifeteam, which manages the medical helicopter fleet, as pilot Eddie Sizemore, flight paramedic Herman Dobbs and flight nurse, Jesse Jones.

The US' National Transportation Safety Board (NTSB) stated that determining a probable cause of the crash could take 12 to 18 months. According to flight-tracking software provided by the helicopter operator, the helicopter was approaching its destination when the crash occurred. Air Evac Lifeteam released a statement saying that the medical helicopter did not have any patients on board.



Air Evac EMS lost three crew members in a fatal crash in Kentucky, US

The crew members of the ill-fated helicopter were travelling back to their base in Manchester, Kentucky after transporting a patient to a hospital in a nearby town. Air Evac Lifeteam president and CEO, Seth Myers, said that the company was devastated by the loss of the crew.

Air Evac EMS has had 16 accidents since 1998, according to NTSB's

searchable databases. Those killed in the Manchester crash were the company's fourth team of three crew members to die since 2007.

The Federal Aviation Administration (FAA), an operating mode of the US Department of Transportation, told US media that it had increased surveillance of Air Evac EMS. The FAA did not elaborate. ▲

Sea tragedy at Fish River Mouth in Eastern Cape

South Africa's National Sea Rescue Institute (NSRI) activated its volunteer sea rescue duty crew in Port Alfred, Eastern Cape following reports of three people that had gone missing on the Fish River.

NSRI Port Alfred station commander, Juan Pretorius, said that a boat carrying the four men had capsized at the Fish River Mouth approximately 50 kilometres north of Port Alfred. The NSRI rescue crew responded to the incident that took place at 20h30 on 8 June after one of the men in distress raised the alarm after reporting to be a survivor, stated Pretorius.

"He reported that he and three other men, his father, an uncle and a friend of his father, who were all from East London, had gone to a rocky outcrop at the Fish River Mouth aboard a small dinghy where they had fished from the rocks," said Pretorius.

The survivor stated that at high tide at approximately 17h00 on Saturday 8 June, the group had gotten back into the dinghy to go back to the shore when waves caused their boat to capsize, at which point the three men disappeared. Pretorius said that the survivor had managed to hang onto the upturned hull of the dinghy, finally managing to get back to the shore alone.

After failing to find any sign of the three men, the survivor hiked approximately three kilometres to a nearby phone to raise the alarm. "Sea conditions were a two-to three-meter swells and a light South Westerly wind," reported Pretorius. He added that the NSRI Port Alfred and a police disaster management team responded to the remote location at Fish River.

NSRI Port Alfred rescuers tended to the traumatised survivor upon arrival at

the scene. Pretorius said, "He was in a state of shock, but he was not injured."

Soon after the NSRI rescue crew began conducting its search and rescue exercise for the remaining three missing men at low tide, the body of one of the missing men was and recovered from a shallow surf area in the vicinity of the incident.

Local media in Port Alfred stated that police divers, K9 police dogs and police officers searched for the remaining man on foot. A helicopter assisted in the search, which included the local 43 Air School that diverted the pilot's training runs to assist in the search.

Police assisted with family members who had arrived on the scene during the night and counselling was arranged for these individuals, reported the NSRI. ▲

To blow, or not to blow?

By Hayden Hutton, managing director, Andreas Stihl South Africa



Stihl BR 600 backpack blower



Hayden Hutton

The fire season is upon us and we have to assess our equipment needs for the season ahead.

One 'new' concept in fire fighting is the leaf blower for use in controlling fires and for use in maintaining firebreaks. In fact, the idea is not actually that new with evidence suggesting that blowers were being used by the US Forest Service as far back as the late 1960s.

The blower, definitely not a 'one solution for all', has its benefits and its limitations and a good understanding of these is needed before making a decision to include it in your arsenal of fire fighting weapons.

Firstly, let's look at the benefits of the blower:

1. Speed: a blower can quickly clean areas that would otherwise take quite a lot longer to clear with rakes or hoes
2. Portability: blowers can be moved around as quickly and as easily as knapsack sprayers
3. Rough terrain: blowers can clean more quickly and easily between rocks and roots than hand tools
4. Ease of use: the work is less physically demanding compared with using hand held equipment and there is little training required in the operation of the blower itself
5. Water: with blowers it is possible in some areas to reduce overall water consumption when burning firebreaks

So, what are the limitations?

1. Movement: with the blower tube attached, climbing through barbed wire fences or through brush can be challenging
2. Fuel load: heavy layers of matted leaf litter or matted grass may be challenging for the blower to move
3. Wind: wind may blow cleared

material back into the firebreak, or worse, if attacking a fire head-on, small embers blown into the air by the blower may be carried by the wind to the un-burnt side of the firebreak starting a new fire

Many commentators have suggested that blowers should not be used at all in the direct control of fires and suggest that their use be limited to the construction and maintenance of dry earth mineral firebreaks.

Others have found that, provided blowers are being used on slow burning, cool fires with flames of eight centimetres or less, with the wind against the fire and no foreseeable changes in the fire's behaviour, direct blowing-out of flames may become more feasible, but is still relatively risky.

So what conclusions can we draw from all this?

- Blowers have proven their ability to quickly and cost effectively clear dry earth mineral firebreaks
- Using blowers to directly fight fires is dangerous and all the risks should be carefully assessed before you decide to take such a risk. At any stage, when working with a blower near a fire, the operator should be fully equipped with all the necessary safety equipment, which should include at least a fire retardant suit, fire retardant gloves, Nomex hood and a face shield

In summary then: blowers have proven their ability to quickly and cost-effectively clear dry earth mineral firebreaks; for this reason alone it is worthwhile including a blower in your arsenal, but there are risks. More research is probably needed to ascertain the best practices in South African conditions and certainly more training for operators will be required if the intention is ever to attack a fire directly.

A weight off your shoulders

Hopefully, you've made up your mind that a blower can add some value to your fire fighting arsenal, now you need to choose a model to suit your needs.

The Stihl BR 600 has one of the lowest fuel consumptions of all blowers in its class, and is also one of the lightest in its class.

Why should this be important? Generally, burning or maintaining firebreaks will involve walking long distances around the boundary of your property, with very few access points for refuelling. So, the further you can walk without refuelling and the lighter the unit, the better.

The Stihl BR 600 features a four-mix engine, which ensures optimal fuel consumption. Comparisons in a fuel consumption test conducted by an independent third-party, the Porsche Engineering Group, the BR 600 proved to be as much as 28% more fuel efficient than leading competitors. Translating this into running time and dependent obviously on each competitor's tank size, means that it is possible that the BR 600 could run for up to 28% longer before needing to refuel.

In terms of weight, the Stihl BR 600, weighing in at only 9,8kg, is lighter by 10% or more than the average competitor in this class, which is very significant when walking long distances over a number of hours.

So take a weight off your shoulders and add the Stihl BR 600 to your arsenal this fire season.

References:

- Using Backpack Leaf Blowers on Grass Fires- KB Hallmark (18 September 2011)*
- Use of Backpack Blowers for Wildfire Suppression- Horace Sexton and Mike Brotzge (Rev 2000) ▲*



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Five pierce pumpers and two aerial ladders were delivered to the Prince George's County Fire and EMS Department in Maryland, US



Seven custom fire apparatus delivered to US fire department

US fire apparatus manufacturer, Pierce Manufacturing, recently delivered five Pierce pumpers and two 32-metre aerial ladders to the Prince George County Fire and emergency medical services (EMS) Department in Largo, Maryland in the US.

Pierce Manufacturing, which is part of the Oshkosh Corporation – a New York Stock Exchange (NYSE) listed company, is celebrating its 100th year in business this year. Oshkosh Corporation executive vice president for fire and emergency, Jim Johnson, said that the company was proud to be selected by the 'largest and one of the busiest' combination fire departments in the US, receiving more than 120 000 calls per year.

Johnson said, "These vehicles are engineered to meet the diverse needs of Prince George's County. In particular, the Arrow XT custom chassis is an excellent choice for this vital urban corridor."

Prince George County Fire and EMS Department battalion chief, Eric Reith,

said that the department worked in tandem with Pierce Manufacturing to design its new vehicles. Reith said that the vehicles would assist in providing quick response to medical emergencies. A paramedic engine concept has been used by the fire and EMS department for the past five years. "This is our first Pierce purchase and we expect these new vehicles to improve the reliability of our fleet and to enhance the services we provide to our community," stated Reith.

The new vehicles were outfitted with special custom cabinets to allow fire fighters to reach critically important equipment from inside the climate-controlled cab, without having to step up or down, reported Pierce Manufacturing. The vehicles also feature a 335-kilowatt Detroit diesel 13 (DD13) engine, 2 839-litre water tank, as well as seating for six fire fighters and low hosebed heights. The heavy-duty aerial ladders each have special compartments on top of the vehicles to allow fire fighters easy access to saws and other rescue equipment.

The Prince George fire department also added an additional 18 metres of ground ladder storage on the body. Reith said that only one of the two aerial platforms features a pump. "We are going to evaluate each of these aerials to determine, moving forward, whether we want to include pumps on these apparatus in the future," said Reith.

Prince George's County Fire and EMS apportions its resources through seven community response areas, serving a 1 292 square kilometre district that wraps around the northeast side of the District of Columbia.

The Prince George combination department has a total volunteer fire fighter and EMS complement of nearly 1 100 and, 720 uniformed career personnel based at the 45 fire stations that it operates. In addition to fire fighting response, the department delivers technical rescue, full service EMS, and advanced life-support and community education programs. ▲



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As far as possible, attack teams should attempt to advance the line in an uncharged state

Advancing handlines in structural fire fighting

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

One of the most common incidents our fire services respond to is family dwelling fires. In most cases the fire department will arrive at such a fire to find that the occupants have already evacuated the structure. The need for an aggressive interior fire attack may not always be necessary and could be hampered by a number of conditions such as security, roof construction and ventilation considerations. When it is, however, required to enter the structure rapidly in order to reach trapped occupants and save lives, an aggressive interior attack will be your most potent strategy.

The focus of this article will be to provide some advice on how to do it effectively and hopefully save a few lives along the way.

The one single thing that has saved more lives in structural fires than anything else has been the rapid and effective deployment of the first handline. This must be the primary consideration of every first responding unit to a fire with a potential life risk and all initial activities

must be focussed on achieving this objective.

The next important consideration should be where to deploy the first line. Assuming your service is focussed on an aggressive interior attack doctrine and will always consider this as the first option, it would be advisable to deploy the first handline through the front entrance of the house. It is usually the most accessible and easiest to reach and provides a means of access to the rest of the structure ie main passage and stairs. It will also generally be the obvious route of escape for the occupants.

Thirdly, the amount of hose to be deployed needs to be considered. The attack line must have sufficient length to reach the fire and provide for enough manoeuvrability to allow the hose team the freedom of movement to any position they need to take inside the structure. Sometimes hose teams tend to deploy too much hose fearing that they might not have enough to reach the seat of the fire. This will cause excessive kinking of the line and in a confined passageway, will limit movement of, not only the

initial attack team, but any other teams conducting rescue, ventilation and forcible entry activities.

Determining the amount of hose required cannot be the result of educated guess work and should be the result of some thorough preplanning where buildings within a particular station area have been visited and a general understanding of the types of structures have been achieved. It is obvious that not all homes are the same and that we won't get it 100% correct every time. It is, however, a fact that most dwellings in a specific residential area are of similar design and should roughly be the same in terms of construction. Take a trip through your station area, have a look at the dwellings and offices situated there. Ask to visit places where you might anticipate a problem. In the end this might just be the difference between success and failure.

Before starting an interior attack, fire fighters must determine the exact location of the fire. A fire might not necessarily be in the same location as where it was first reported. If it was ►

- ▶ reported on one floor and it turns out that it is in fact several floors higher, it could cause significant delays in getting the attack started.

Estimating the amount of hose required will entail determining the length of hose line needed inside the structure, as well as the amount needed from the fire pumper to the point of entry. This will be determined largely by how far the building is located from the street and the position of the engine in relation to the building entrance. The landscape ie lawn features, fences etc will also impact on this.

A single vehicle response to a structural fire is at best not ideal. Staffing on these vehicles generally totals four fire fighters; six at most and then you are very lucky. Each of these four will assume the following roles:

1. 1 x officer (incident commander)
2. 1 x pump operator
3. 2 x fire fighters

This will limit your attack to one handline deployment with no back-up, which will mean that your hose team will enter the structure without any ventilation, forcible entry or rescue support. The result....loss of life, more smoke damage and the possible entrapment of fire fighters. You are also reliant on one fire pump that, if it fails, could compromise your entire fire attack. Single engine responses are for dumpster and car fires....end of argument.

A standard operating procedure for structural fires should include two engines and one ladder truck or ladder tender. Your first engine should do a drive by of the building and get at least three views. This will assist the incident commander in his/her rapid size-up. It should then position in the most optimal position for the deployment of the initial attack line and access to the primary water supply. The second engine should be placed in such a position that it can secure a secondary water source and provide water to the first engine (tandem pumping). The front of the structure should be the domain of the aerial appliance.

Your hose deployment should take these operating procedures into account. Preincident exercises should always include the stretching of dry lines. This will eliminate problems



When next you need to write the specs for a new attack pumper, consider the fact that you need to deploy your handlines quickly and effectively

when responding to an actual fire. If a specific building requires a longer hose load and will save the lives of the people living there, it must be available when a fire occurs there.

Multi-storey structures

The most important consideration for calculating the amount of hose needed are based on the building's size and its stair configuration.

During any interior fire attack of a large structure, a fairly senior person should be designated the 'control fire fighter'. This is a practice that has

been in use by the City of New York Fire Department for many years. This fire fighter is responsible for calculating the amount of hose required needed to reach the fire and ensuring that it is properly deployed.

In two storey family dwellings, three lengths should be sufficient, although it is important to stretch enough hose to cover the entire building as it may be necessary to cover escape routes. In multiple family dwellings (flats), a simple method would be to use the floor number of the fire floor to determine the number of ▶

- ▶ hose lengths required plus one (four floors = five lengths). This would account for one length of hose between each floor and an additional hose for the fire floor. It would be a good idea to have an extra length available on the fire floor to cover any unforeseen eventualities.

For larger multiple dwellings it would be good to start with the floor number of the seat of the fire and immediately add one length. The distance between the entrance door and the stairs could require an additional length. In a five-storey structure, for example, you will have the six lengths needed for each floor (and to reach the fire on the fire floor), as well as the length required between the entrance and the stairs. Also consider an extra length for the fire floor in case of a large fire. When you are dealing with large rooms, long hallways and large lobbies, your calculations may need to be more generous than those mentioned above.

A second handline can be deployed at a multi-storey structure with the main purpose of covering areas above the main body of the fire and for this reason it is advisable to add an additional length to the second line. This second line could be used to protect search and rescue teams or to control fire spread. Second lines can also be used in single storey structures to prevent fire spread in adjoining rooms.

When a third line is needed, it would be advisable to stretch this line outside the building, if possible. This is to prevent the difficulties that will be created by having three hoselines lying together on the same flight of stairs and having to be moved without the risk of getting entangled. If this flight of stairs is also the egress route for internal fire fighting crews, the movement of people can also become a hazardous undertaking.

The external hose can be raised up and stabilised by means of a rope deployed from a stairway or room window, a fire escape balcony or the roof of the building. Ropes to be used for this purpose should be kept in a space close to the hose deck and should be fitted with snap hook attachments to make them easy to deploy.

Aerial ladders

Aerial ladders are used by fire services for the following four reasons:

1. To rescue fire fighters trapped on the upper floors;
2. To rescue civilians trapped on the upper floors;
3. To provide access to the fire building for topside ventilation and search;
4. For elevated master streams.

When it becomes necessary to use an aerial apparatus to deploy a handline, there are two things that should never be done:

- Do not allow the handline to lie on the ladder. Rather have the line run vertically up the side of the building and secure it with a hose strap. This will lead to less hose being needed and free up the ladder for other tasks.
- If your ladder platform or hydraulic platform has a hydrant outlet in the cage, it should not be used as a handline for extended attack. This will tie up one of your most critical resources and you will not be able to move it to perform any emergency tasks such as rescue elsewhere. The best thing to do is to remove this outlet altogether or put in place some really strict rules as to when it can be used.

Preconnected lines

Virtually all modern day structural fire apparatus are fitted with preconnected hose lines. The length of these lines are reliant either on a well researched calculation of the average lengths needed in the specific operational area, the maximum amount of hose that can be carried or simply no change from what was placed there by the supplier (no science, no brains).

In many cases, pumpers are fitted with 'cross-lay' hose beds, which run across the width of the truck and are normally located midship and close to the pump.

The problem that can be faced here is that the preconnected lines might not be sufficient to reach the seat of fire. There are a number of ways to address this challenge. The most common would be to have an additional length of hose placed close to the preconnect line, which can be carried by the nozzle operator and simply added to the

line if necessary. Some services have invested in, or developed, a type of strapping to ensure easier carrying of the additional hose. These 'hose packs' can be taken to the entrance of a structure, dropped somewhere convenient and then reached and added when a need to stretch the line becomes necessary.

Connecting additional hose to the pump outlet becomes a problem when a preconnect line is attached to a swivel type discharge, commonly found on a cross-lay configuration. The solution here would be to ensure that the initial hose length is only around two to three metres long, which allows breaking into the line so much easier. This method can also be used on older pumpers where the discharge is located at the rear of the truck just below the hose bed.

In structures where more than one line may be required, it is advisable to consider the placement of a hose load consisting of a manifold (gated wye) running out of a 65mm line. From the manifold, a predetermined number of 45mm lines can be preconnected and bundled together with strapping; inner tubes, old seatbelts or a premanufactured belt configuration could be used for this purpose. Many services will also preconnect nozzles to the end of the attack lines.

This hose load can be deployed to the most advantageous position on the fire ground. In multi-storey buildings it could be placed in the lobby or floor below the fire, while in single dwelling structures it could be brought to a point just before the entrance and be prepared for action. The first line can then be uncoiled, charged and advanced towards the fire. Any additional lines can then be attached to the manifold and deployed where necessary. A word of caution: always ensure that you have more than one water supply to your interior hose teams. Losing your only water supply is dangerous, unprofessional and just stupid.

Advancing the handline

Moving the hose to the point of attack must be able to be done easily by one fire fighter and must be sufficient to cover the entire fire area. Trying to drag a charged line becomes difficult due to its mass. It will also probably get ▶

Many services will also preconnect nozzles to the end of the attack lines



► snagged on fences, doors, corners, vehicles etc. The traditional 'running out' of hoses stored on a vehicle in a coiled circle can cause any number of problems. The sudden charging of a 'run-out' hose could cause kinking and present many problems that need to be sorted out before it can be advanced. It is also very difficult to determine the length of the line being deployed and you normally end up with a fair amount of hose at the entrance to the fire building. This can get in the way of your positive pressure ventilation teams trying to set a blower up at the optimum position in front of the door.

As far as possible, attack teams should attempt to advance the line in an uncharged state. It is much easier and more efficient than trying to advance a charged or 'wet' line.

The question of when to charge the line varies according to the size and type of structure involved. In single family structures, hoses are usually deployed in an evenly spaced s-shaped configuration close to

the entrance. Care must be taken here to prevent any kinking of the hose. In more confined spaces it may be necessary to deploy the line further back.

In a multi-occupancy structure, the hose will normally be deployed in the public hallway and charged at the entrance to the fire-involved room. It is, however, important to maintain the integrity of the door and to make sure that you have a control fire fighter at that door. Other than facilitating entry for the attack team, the door will also serve as an escape route and can also be used for positive pressure ventilation. Entering through a closed door with a fire on the other side can sometimes have some nasty surprises. Make sure that you are not entering a room where the fire is close to a closed door on the other side. If you see any blistering or melting of the paint, or the door is hot to the touch, you must anticipate the possibility of a backdraft when you open the door.

Doors that have been left open by occupants fleeing the fire have

often caused a fire to spread into the hallway, making it impossible to set up in this position. It will then, most likely, become necessary to set up on the floor below the fire and advance the attack line up the stairs. This is a difficult job, but may be the only safe course of action.

If the hallway on the fire floor is free of smoke and heat and doesn't present any other obstructions, the attack line can then be deployed here. Be careful, however, not to overcrowd the floor, especially as this might be the only walkway for all the people working the fire.

The pump discharge

In previous articles, I have often advocated the use of dedicated engine and truck companies for response to structural fires. I do, however, realise that many South African services are not able to respond to structural fires with more than one vehicle and therefore attempt to load every piece of equipment they think they will need, onto a fire truck. When designing a ►



► truck, many services also specify large compartment spaces and bigger booster tanks, which usually results in hose decks being located higher and higher, making it more difficult to reach. Not only does this cause a safety risk but could also lead to hose loads being pulled off decks in an uncontrolled way, causing severe kinking and wasting time.

When next you need to write the specs for a new attack pumper, consider the fact that you need to deploy your handlines quickly and effectively and ensure that the vehicle is so constructed as to overcome the limitations posed by modern fire truck requirements.

Fire services must continuously evaluate the types of fires they are called to respond to and ensure that whatever hose loads they are using, will provide the maximum

efficiency in dealing with these fires. If you are responding to many single structure 'room and contents' fires on cold winter mornings that have been caused by heaters being left on and you have designed a hose load to reach these rooms, make sure your attack teams practice using them often and are completely comfortable with the way they will deploy and different circumstances.

Ensure also that your pump operators are proficient in providing adequate discharge pressures, especially when pumping to manifolds. The pump operator must continuously be kept up to date as to what is been added or removed from the line; especially if you are working a multi-storey fire where he/she is not able to have eyes on the actual fire attack.

As lines get longer, it would also be good to increase the diameter of

the attack line to negate the friction loss that may occur. I have always preferred a 45mm-diameter line as the ideal interior attack line. It allows for easier handling and manoeuvring without compromising the capacity too much.

Finally, in a large structural fire where many discharge lines are in operation and hoses are deployed in different places, it can become awfully confusing when you don't know which discharge is connected to which line. Make sure that this is done correctly from the start. You don't want a pump operator closing down a line for replacement of a hose when that line is the only thing that separates an interior attack team from a raging fire. You laugh, it happens!

Finally

Deploying handlines are only the start of the operation. The real work begins when you start advancing the line into the structure. I will deal with this part next time in 'Stretching handlines'.

As a rookie, I was always surprised at how our training officers used to chase the hell out of us when teaching us how to run out hose. I don't think any older fire fighter will ever forget the words "one line consisting of three lengths"; I'm sure some of us wake up in a cold sweat some nights with those words still ringing in our heads. Of course we were so knackered by the time we reached the fire, that I don't know how we were still expected to fight the fire for another couple of hours.

The point is that a fire ground was not made for running. Trip hazards abound and when last I checked, Nike was not in the fire boot manufacturing business. Fire fighters should know how to pace themselves both physically and mentally. The amount of time you save running on a fire ground can be lost if you fall and injure yourself or drop a hose load that has to be reset before it can be advanced.

Advancing a handline requires discipline and concentration and requires a fire fighter to conserve energy, prevent injuries and maintain focus on the task at hand without losing sight of the overall objective.▲



Amalgamation of resources galvanises City of Johannesburg EMS

A step change in the management of the City Of Johannesburg Emergency Management Services has enabled the organisation to achieve greater assimilation and transferral of skills between the region's fire brigades.

The City of Johannesburg amalgamated its emergency medical services (EMS) and fire services around 1998, enabling cross-district skills sharing and training initiatives for fire personnel in the City of Johannesburg, resulting in a bigger pool of specialised skills and services within Johannesburg's EMS.

The City of Johannesburg EMS is divided into six districts, which compliments 28 fire stations and is structured in such a way that makes it easier to address the needs of specific regions, including the timeous provision of equipment and interoperability of all regional fire brigades.

"We have grown since with regards to specialised fire stations in the Northern and Southern Region of Johannesburg which compliments the city well by ensuring the risk assessment and needs are well catered for," explains Lonehill Fire, station commander, Paul Chetty.

He says that these specialities include hazmat, urban search and rescue (USAR) and water rescue. "The key and most important aspect of what drives City of Johannesburg EMS to be so recognised for its specialities is the sheer determination of fire-fighters, the level of training, their ambition to excel to be the very best, resources and importantly the support, encouragement and motivation ▶



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► from top management, which is key to ensuring the core function, mission and vision of the organization is met," states Chetty.

The City of Johannesburg EMS provides medical and fire rescue services to an ever growing population within the city and outside as well. "There are no boundaries in providing emergency service when it comes to saving people's lives, protecting property and conserving the environment the services we provide," says Chetty. He adds that the City of Johannesburg EMS is leading the charge nationally to be a leading world-class fire department, in adopting best practice and implementing systems that enhance the efficiency of the municipality. "If there is something new in the industry, I think we are one step ahead and eager to implement it in our organisation in order to render service more professionally and efficiently to the community out there."

Lonehill Fire Station 16 is one of Johannesburg EMS' specialised stations that has 40 full time fire fighting personnel and 10 reservists, who are encouraged to attend various fire, medical, hazmat and specialized EMS training courses internally and externally through subsidised education.

The fire station specialises in swift water rescue with resources and equipment that are manned for an aquatic unit and boats based at the station. "We have equipment, trained swift water personnel and skippers to perform swift water rescue at any given time," says Chetty.

He says that Lonehill's specialised swift water rescue unit, resources and equipment supports the City of Johannesburg EMS in the Northern region and also provides back up to the Southern region and wherever else they may be needed.

Training

While the station specialises in swift water rescue, Chetty is a qualified paramedic, hazmat technician, USAR technician and also has numerous fire qualifications that compliments any discipline on a fire ground.

"I am big on training," states Chetty. "My staff is encouraged and motivated to attend training on all levels and categories to improve their work skills and remain current with all new guidelines or techniques pertaining to their job function. It's also imperative and rewarding to have staff to be skilled and trained in all disciplines, so they are confident and eager to handle any incident they may face," says Chetty.

The City of Johannesburg EMS has its own training academy's that provides numerous courses with intense training for fire fighters. The Fire, Hazmat and Rescue Academy is based at Rietfontein, Lenasia and the Medical Training Academy is based in Florida Park in the south of Johannesburg.

Lonehill Fire Station has six USAR technicians who are based at Station 16 in Lonehill. "The shifts at the station are evenly manned, there is a USAR technician, hazmat technician, a skipper for the boat and a swift water technician for each shift," explains Chetty. He says in total, there are six USAR technicians, five hazmat technicians and 10 swift water technicians, six of whom are skippers for the boats at Lonehill Fire Station.

Female fire fighters account for almost a third of the total fire fighting complement at the station, two of whom count among Lonehill's six USAR and swift water technicians. Chetty says that the fire service welcomes and most definitely encourages the inclusion of females in fire services, as long as they are able to perform the duties of the role. ►

The extrication Triple H

By Mark Walklett, fire fighter, City of Cape Town Fire and Rescue Service

Motor vehicle extrications and other calls involving the use of hydraulic powered cutting and spreading tools, are emotionally charged and physically demanding.

Decision making can be influenced by the sudden rush of adrenaline and the need to assert a quick and effective incident command structure. This is especially true at a multiple agency response.

To simplify the job of teams responding to medical and trauma patients, a Triple H system is used.

Medical and trauma Triple H system

H - Hazards

H - Hello

H - Help

This Triple H system can also be utilised as a protocol for teams responding to extrication call outs that involve the use of hydraulic cutting and spreading tools.

Extrication Triple H system: first arriving team

H - Have you set up incident command?

H - Have you designated your extrication team?

H - Have you planned your cut and are you cutting to your plan?

Extrication Triple H system: second arriving team

H - Have you liaised with 1st team incident commander?

H - Have you asked if assistance is required and do you know the cutting plan?

H - Have you effectively merged your team and the working team?

Multiple agency response at incidents can lead to aggression and intimidation. Working teams might be harassed by second or third arriving teams, who enter the action circle and attempt to take over the extrication, having no knowledge of the working teams action plan; who have planned their cut and are cutting their plan.

Food for thought

Consider using this extrication Triple H as either the first or second arriving teams and as always, diplomacy and professionalism at multi-agency incident response is paramount.

► Equipment

Lonehill Fire Station's fleet comprises of two aerial articulated vehicles, a ladder company, a telesquirt, an ambulance, skid unit, aquatic unit and a boat along with additional EMS vehicles provided by the Gauteng Provincial Government (GPG).

The station is fully equipped in terms of its water rescue requirements, fire and rescue requirements, search and rescue and hazmat response, says Chetty. "With the staff compliment and the risks and needs of the area, I have all the necessary equipment and sufficient resources to run the fire station efficiently and provide the necessary emergency service to the community out there."

Challenges

The fire station looks after an abundance of building developments and infrastructure in the region and this includes 10 to 12 shopping malls and various conference centres. "Our biggest challenge is townhouses and simplexes, as crime is a problem, so people add security features to their homes that make it difficult to access in the event of a fire, construction design and infrastructure," states Chetty.

He says also that the access and entry points to the townhouse complexes are too small and most of the time requires investigation and intervention from the City of Johannesburg's Fire Safety division.

Community activities

The fire station is open 24/7, hosting schools daily during the week and visits from nearby community forums from informal settlements. "We provide public education and fire-life safety education with the help of our public information education and relations (PIER) educators and PIER officers," mentions Chetty.

The fire station conducts site inspections on a daily basis to assess whether buildings and businesses in the area comply with building codes. Chetty says, "I'll send my crew to do site inspections, which is part of their daily duties to ensure compliance is met and risks are monitored, documented and addressed to alleviate disasters in the area. Conducting building inspections and compliance, checking emergency plans, hydrant inspections, logistical support and involving the community in preplanning is key for us."

New role

The City of Johannesburg's fire services is progressing and addressing the risks and needs of the local community. "In terms of experience and resources we have really come a long way in Johannesburg," states Chetty.

The PIER and the disaster management section play an integral role undertaken by the City of Johannesburg to address risks and needs, which involves the fire stations spread out across Johannesburg. The PIER Programme is designed to assist the EMS service manage its image, while educating the public about fire risk and the EMS as a whole.

Chetty believes that these programmes undertaken by the City of Johannesburg's Emergency Services were introduced to engage and educate communities on fire safety and prevention and is an indication that fire services in Johannesburg is keeping abreast of the times and moving in the right direction. "My passion and love for the industry has surely kept going and will surely continue to, no matter what. I think that we are doing good work and that we are going somewhere," he concludes. ▲

University fulfils critical role in emergency care education and research



Benjamin van Nugteren: UJ graduates will ultimately be leaders in EMS care and education

The emergency medical care (EMC) bachelor's degree offered by the University of Johannesburg (UJ), in South Africa fulfils a critical role in the industry, states Faculty of Health Sciences lecturer in EMC, Benjamin van Nugteren.

UJ's EMC degree programme provides a National Qualifications Framework (NQF) Level 8 qualification offering students an intensive four-year curriculum in out-of-hospital emergency care with the aim of developing competent emergency care professionals in South Africa, reports van Nugteren. "At present it is recognised as the highest registerable level qualification in emergency care in South Africa. The course is academic as well as physical in nature."

Van Nugteren believes that UJ's graduates in EMC will ultimately be leaders in emergency care research and education. "What we need in the country is professional emergency medical care management, research and education," he says.

The purpose of the degree is to ensure that graduates possess the right attitude, insight and skills required to perform the duties of an expert out-of-hospital emergency care practitioner. The institution offers a number of specialised modules in EMC, such as emergency medical care diagnostics, specialised methods of transport (rotor and fixed-wing aircraft), intensive care unit transport, paediatrics and neonatal emergency care.

Van Nugteren says that the emergency medical services (EMS) industry in South Africa has, historically, originated from an in-service training background, adding that in the late 80's higher education qualifications in emergency care were introduced.

EMS industry revamp

The current bachelor's degree offered at the UJ has replaced the National Diploma, which was a three-year qualification, followed by an additional two-year Bachelor of Technology (B-Tech) course. These have fallen away and has been replaced with a four-year full-

time bachelor's degree, explains van Nugteren.

In the future, emergency care qualifications in the higher education band will include a two-tiered approach. This will involve a two-year, mid-level emergency care technician (ECT) qualification and the four-year, professional bachelor's degree in emergency medical care leading to registration as an emergency care practitioner.

Van Nugteren says that, historically, emergency care education entailed an initial basic ambulance assistant (BAA) qualification, followed by an ambulance emergency assistant (AEA) or intermediate life support qualification, and finally the critical care assistant (CCA) or advanced life support qualification. "This has been the traditional method for becoming a fully qualified paramedic," states van Nugteren.

"Currently, there are very few emergency care practitioners in the country," mentions van Nugteren. "All students graduating from the UJ can fulfil a management role within the emergency care profession," he adds.

Practical schooling

Van Nugteren was in his high-angle rescue garb ready to take students on a mountain high-angle rescue exercise in Roodepoort, south of Johannesburg when we visited the UJ campus in Doornfontein, Johannesburg.

UJ instructs its students in all twelve disciplines in emergency medical rescue and this includes high-angle rope rescue, fire search and rescue, aquatic rescue, hazardous material rescue, swift water rescue and aviation rescue, among other disciplines.

This practical approach taken by UJ ensures that graduates leaving the programme are provided with qualities that make them 'extremely marketable' in the EMC industry, ►



SAESI 2013

conference, exhibition and training event



The Expo Centre Johannesburg was the summit for key stakeholders in the emergency services industry attending the Southern Africa Emergency Services Institute's (SAESI) International Conference Exhibition and Training Event 2013, held from 15 to 17 May this year.

SAESI 2013 was the meeting ground for an array of role players in the fire, rescue, disaster management and emergency management services (EMS) industry, who

either took part in the conference, exhibition or fire fighter challenges and learning symposium.

The conference also marked the occasion for the induction of the new SAESI president and recently appointed director of Ekurhuleni Emergency Services (EES), Ofentse Masibi.

Masibi, welcomed all delegates to the 29th Annual SAESI conference saying that it would be an awesome ▶

▶ states van Nugteren. "The majority of our current fourth-year students already have placements in the field prior to graduation," he says.

UJ has achieved very successful employment placement rates among its emergency medical care graduates since inception of the institutions EMC programme. Van Nugteren counts this as a notable achievement for the EMC department at UJ, adding that the number of EMC graduating students at the school is increasing.

Van Nugteren says that the presence of UJ staff and alumni on the Professional Board for Emergency Care, as well as various task teams for the National Department of Health counts among the milestones in UJ's tenure as an EMC institution over the past decade. He adds, "We are involved in a number of agreements with major fire and rescue services around the country."

Technology

One of UJ's mandates in its EMC bachelor degree offering is to follow up-to-date and relevant quality standards, reports Van Nugteren. He

says that the institution strives to expose students to the latest technology and technical methodology, as well as a wide range of clinical environments.

"We are currently coordinating and advising the construction of a clinical simulation laboratory, where students will be exposed to high-fidelity manikin based learning," mentions van Nugteren. "It is a multi-disciplinary approach involving a simulated pre-hospital environment and a simulated hospital environment."

UJ's rescue programme is supported by an extensive range of technical rescue equipment, enabling lecturers the convenience and ability to host all course modules 'in-house'. Van Nugteren states that members of UJ's lecturing staff have been involved in many disaster response scenarios internationally, including Japan and Haiti, where earthquakes caused major destruction in recent years.

Recruitment

Currently, there are 130 students enrolled in UJ's four-year EMC degree, reports van Nugteren. The University states that opportunities for students in industry vary from provincial and

local authority emergency services to private emergency services and hospital groups, as well as in the South African National Defence Force (SANDF), civil defence agencies and remote site services such as offshore oil rigs and the mining industry. There are also opportunities for qualified EMC practitioners in the international industry, reports UJ.

Van Nugteren says that the principle area of recruitment for EMC graduates is in the clinical domain or the pre-hospital industry with either state-owned or private EMS organisations. He says, "A number of students are also absorbed into the SANDF and some in the education environment and others take up positions in EMS administration."

UJ students now play a significant role in research in the hospital environment, while also promoting quality control in the EMS industry, states van Nugteren. "I believe we contribute a level of maturity to EMS where we can debate relevant matters scientifically in the EMS environment. I think we are definitely one of the leaders in pre-hospital education in South Africa," he concludes. ▲



Ofentse Sam Masibi

event, which included an exhibitor segment, as well as a learning symposium and fire fighter competitions. Masibi says that the event featured numerous 'firsts' and was a resounding success. "For the first time we had a senior magistrate attending the opening of the conference and make officials and SAESI council members take oaths of office." Another first was the unprecedented representation of the various religious denominations, says Masibi. "It was the first time we had the various denominational religious leaders attending the conference. We had representatives of the Islam, Christian and Jewish faiths."



Dino Padayachee

SAESI 2013 programme director and SAESI vice president, Dino Padayachee, stated that the institute was 'extremely pleased with the response this year' in his introduction and welcome of all delegates, guests and other members of the fire and disaster management services industry. Padayachee also led the necrology to observe and honour emergency services members that passed away since the last SAESI meeting. ▶

▶ responsibility to serve as president for the next two years. He welcomed a total of fifteen local and international experts who presented a wide range of topics on the emergency services industry. He mentioned the proposed amendment of the current Fire Brigade Act 99 of 1987, which he said 'was very old and which we call one of the dinosaurs' in the legislation.

He said that the aim of this year's event was to ensure that the 'needs of the fire, rescue and disaster management are addressed in the 21st Century', as well as 'highlighting the need to ensure a green future for our world'. "Together we'll face mutual challenges for combating emergencies and disasters. If you can't measure it, you can't manage it," stated Masibi.

Masibi was inaugurated as the new SAESI president for 2013, which is two-year tenure to be taken up by the newly elected SAESI vice president, Dino Padayachee, who is set to take up the role of SAESI president once Masibi vacates the post. Msunduzi Fire and Rescue operations manager, JG Padayachee, was appointed SAESI vice president elect.



JG Padayachee

As the newly elected SAESI president, Masibi was responsible for organising all aspects of the SAESI 2013



Observing the necrology

StabiLift

The StabiLift is a rescue tool which has been developed in conjunction with The Swedish Rescue Services Agency Training School. SRSA required a tool which could be used to prop up cars that had been involved in road accidents whilst emergency personnel were working to free the car's occupants. The StabiLift is more than just a support prop, it can also be used as a lifting device.

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The StabiLift has a number of advantages e.g.

- ››› a removable crank handle (makes it possible to do halfrounds)
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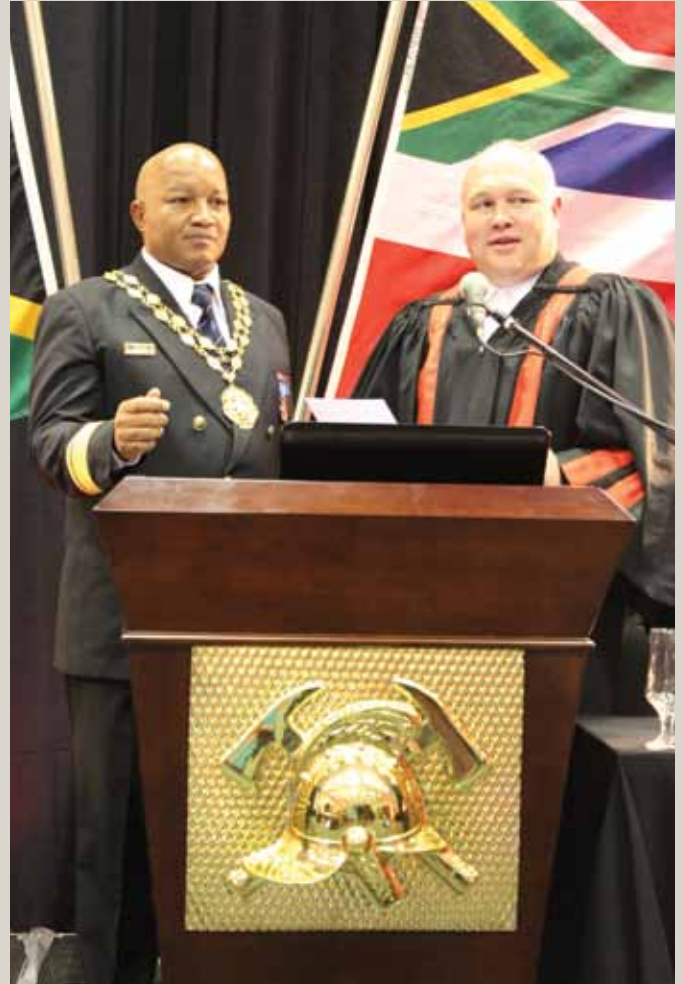
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SAESI Council members taking oaths of office

services industry need to learn from each other and share best practice in order to achieve a standard of professionalism in the industry. "In the 21st Century, we must align with the global community," she commented. "I would like to thank SAESI for organising the interaction and skills sharing for delegates," concluded Mekgwe.

Oath of office



Senior magistrate in the Department of Justice, Pieter du Plessis, administered the oath of office of the new SAESI president. Du Plessis also praised the camaraderie of all delegates at the conference, commenting on how 'finely uniformed' the fire chiefs and their assistants were. "I am proud of our country's emergency services industry," acclaimed Du Plessis.

► **Keynote address**

Department of Local Government and Housing (DLGH) member of executive committee (MEC), Lentheng Mekgwe, expressed her passion for the EMS industry, saying "This is a profession that touches anyone that has been in an emergency situation." Mekgwe stated that the emergency services industry is depended upon by those in distress and emergency personnel are often placed in different situations that pose a threat to their own safety. "We need to congratulate you for the great work that you continue to do," she said.



Lentheng Mekgwe

Mekgwe stated that 'Government is working hard to eliminate threats posed to informal settlements' in the form of shack fires. "Shacks are built in such a manner that is not accessible to vehicles," she explains.

Mekgwe said that communities should hold Government accountable in dealing with matters relating to emergency housing. She added that the leaders in the emergency



Mthuthuzeli Sibozza

Member of mayoral committee (MMC) of community safety, Mthuthuzeli Sibozza, who appeared in the absence of the executive mayor of the City of Ekurhuleni, Cllr Mondli Gungubele, said that the institute has grown from strength to strength since its establishment in 1959.

Sibozza commended the role SAESI plays in promoting excellence in EMS from Government and in the words ►



▶ of former South African President and global icon, Nelson Mandela, he quoted 'To this day we continue to lose some of the best among ourselves, because the lights in the developed world shine brighter', referring to the skills shortage and the need for education in the country. SAESI is a prime example of 'educating youth and youth development is critical in developing a democratic South Africa', stated Sibozza. He highlighted the need to evaluate the role and contribution of all stakeholders in EMS industry, saying, "Assessing humble contribution as part of the team is critical in carrying out duties as EMS."

Outgoing SAESI president, Moshema Mosia, who was the first president to serve the institute for two consecutive terms, from 2009 through 2012, expressed the pride he felt in presiding over such a reputable establishment that was created to promote training and education. "We now have SAESI in Southern African Development Community (SADC) countries where we have been growing from strength to strength," noted Mosia.

SAESI held an executive conference at the Nelson Mandela Bay Municipality in 2009, in order to take an introspective study into the relevance of SAESI since its inception, stated Mosia.

He said that the outcome of the conference revealed that SAESI was relevant now more than ever before and that a post-conference report highlighted challenges and viability, as well as the weakness of SAESI. The weakness included the SAESI constitution, its technical system and poor communications, as well as the inappropriate location of the institute's head office. Mosia said, however, that processes to improve operations were well underway in order to ensure that the institute remains an effective presence in the industry. "Change is inevitable to remain relevant," commented Mosia.

SAESI 2013 conference and discussions



Chris Gilbert

Chris Gilbert, managing director of Rural Metro Emergency Management Services discussed the importance of creating partnerships for effective fire service delivery. Gilbert reviewed his travels throughout Africa and discussed his experiences highlighting the myriad of challenges faced by fire services in Africa and its consequences. Gilbert furthermore detailed the various partnership opportunities that included the

community, local and national government, international associations and organisations and private enterprises. He concluded saying, "the fire service exists for the benefit of the community".

Dr Jim Ziegler, chairman of ASTM Chemical Clothing Committee discussed the design, development and manufacturing demands of protective clothing in the 21st century. Dr Ziegler further said that when faced with a hazard, the preferred order of solutions is: firstly



Dr Jim Ziegler

substitution/elimination/avoidance; then engineering controls (guards); thirdly work practices (techniques); then administrative controls (procedures) and lastly personal protective equipment (PPE), which should be the last line of defence.

Managing labour relations within the emergency services was the focus of Roland Hendricks, acting director, Disaster Management and Fire and Rescue Services: Gauteng's presentation. Hendricks said that the challenges discussed by Chris Gilbert are "our fault, us as heads". He outlined the current issues within the emergency services labour force and detailed the traditional duties in order to have a disciplined environment. Hendricks reiterated the importance of first line management skills and training and discussed the intricacies of managing labour relations today.



Roland Hendricks

Emergency services technology solutions provider Sysman Group CEO, Ed Jowitt, discussed the 'Role of mobile technology in fire safety'. Jowitt said that mobile technology, typically tablets and smart phones, are increasingly being used in emergency services. Jowitt says that there is a definitive role for mobile devices in fire safety practices. He said that the Sysman Group aims to improve the productivity of fire safety department through the use of fire safety software solutions using cloud-based fire safety systems, as well as laptop and tablet applications for fire inspectors.

Jowitt explained that Sysman has two approaches in providing technology solutions to increase productivity at fire departments; firstly to provide intelligent software solution through an application designed to incorporate fire safety knowledge and secondly; a further solution where others, apart from fire departments, could contribute risk assessment data. This data is important not only in reducing risk, but would further be of use when turning out to an emergency, stated Jowitt.

New legislation

Department of Cooperative Governance and Traditional Affairs (CoGTA), senior manager of fire services coordination at the National Disaster Management Centre (NDMC), Moses Khangale, reported on the Fire Brigade Services Act 99 (FBSA) of 1987 that is currently under review by CoGTA, in tandem with fire officers and managers in the country.

Khangale highlighted the challenges that weakened fire service delivery in local communities, which he said ▶



Moses Khangale

needed to be addressed by Government and all stakeholders. Among these challenges are clustered housing in informal settlements and accessibility of vehicles to fire and combustible materials. Khangale said that fire fighters need to be compensated adequately, adding that in certain areas in the country there is not any fire fighting service. Urbanisation is another challenge faced by fire services, as people continue to settle in areas that

is not designed for habitation, which is not unique to South Africa, stated Khangale.

In discussions with SAESI and fire service industry stakeholders, it was decided by CoGTA that a review of the fire services industry legislation was required. Khangale said that if fire services legislation is not robust and competent, it would be difficult to address economic and challenges in the industry.

Khangale mentioned that a working group was established to facilitate the amendment of the Fire Brigade Services Act 99 of 1987. This working group was scheduled to meet on 29 May this year to look into the draft white paper for the review of legislation around fire services. He added that the white paper is expected to be on the table of the Minister by 31 March 2014. In closing Khangale stated that 'Fire services should be included in the national broader agenda of the country'.

Technology



Bill Ballantyne

Breakthrough fire technology for the 21st Century was one of the topics of the SAESI 2013 conference, presented by Bill Ballantyne, president and COO of fire suppression equipment manufacturer, Pyrolance. Ballantyne also stated that the economic needs and challenges of the fire industry has increased over time, noting that fire protection expenditures has increased by 172% between 1980 and 2009.

He said that technology and specifically, electronics, has improved reliability and efficiency and enabled equipment monitoring, as well as real time personnel monitoring. Pyrolance recently launched its ultra-high pressure (UHP) fire suppression system that delivers water pressure of 103,35 bar, which is more than 10 times the pressure of traditional lines. UHP, however, does not replace normal pressure, foam or compressed air foam systems. High pressure fire fighting is the 'new normal', stated Ballantyne.

Johannesburg Emergency Management Services (EMS) executive director, Tshepo Makola, discussed a need for 'Financial management in ensuring effective and efficient



Tshepo Makola

fire and emergency services delivery in modern society'. "Financial management is a topic that is taboo in the industry and has been for many years," stated Makola.

An investigation into the financial model that is used to fund fire bodies, nationally, needs to be conducted, owing to questions around the allocation of budgets to municipalities. Makola said, "Decision on budget and equipment allocation by city

municipal managers is not guided by specific process." He questioned whether the funding model used is adequate to meet the risks identified and whether departments are compliant with national fire services standards. He said that final budget approval by the executive mayor in the MMC team is largely based on the pressure points of municipality at that point in time. A debate should be initiated on the allocation of funding in the fire services, which is not regulated by any standardised guidelines or regulation. Makola recommended that changes be made to the legislation that governs the financing of the fire and rescue services industry in order to assist political and administrative leadership in making financial decisions.



Nomsa Modise

In line with the SAESI 2013 theme, 'Working together to ensure our future', the South African National Roads Agency discussed its role in the disaster management with a presentation at the conference entitled 'Working together to ensure the implementation of an effective and efficient incident management system (IMS) on national and provincial roads'. Nomsa Modise, project manager, incident management system,

SANRAL, said that according to a decision that was taken at the United Nations (UN) by all nations, the fatality rate has to be reduced by 50% worldwide by 2015. She commented that, although there was a slight reduction, drastic interventions have to take place to reach the target by due date in South Africa. The Decade of Action addresses the following pillars: road safety management; safe roads and mobility; safer vehicles; safe road users and post-crash response. She stated that the Department of Transport in conjunction with SANRAL was tasked with the relevant stakeholders to review and develop a national framework and guideline for incident management system (IMS) in the country. Modise also outlined the approved road incident management system (RIMS) and concluded in saying "no IMS can be successful without all involved".

Moshema Mosia, head of department, Disaster and Emergency Management Services, Ekurhuleni discussed the 'international standardisation in ►



Moshema Mosia

disaster and emergency management'. Mosia spoke in his capacity as convener of developing countries for the International Organisation for Standardisation (ISO) and appealed to the experts in the conference hall to "bring their expertise to ISO/TC 223". He defined a 'standard' and elaborated on the basis, benefits and role of standards. He also provided background information on ISO and outlined ISO/TC 223.



Paul Motsepe

'Working together to ensure our future' was Paul Motsepe of West Rand District Municipality's topic that included a live play explaining the public information and relations (PIER) project. Motsepe furthermore explained how the PIER project is used in risk reduction and said "if we can receive a commitment from all the provinces, then our task will be so easy. This is what we need in our municipality", he concluded.



Jurgens Dyssel

Jurgens Dyssel, manager: fire services coordination, National Disaster Management Department of Cooperative Governance, discussed 'the need for an overview of the National Fire Services framework, ensuring our future'. Dyssel detailed the National Fire Services Framework and explained the role of national, provincial and local government as well as the four key performance areas (KPAs) and the four enablers. He also emphasised the importance of performance reporting, "How many fires did I prevent", and not just focus on response-based reports. Dyssel also said that "there is a very diverse range of subjects in our jobs in the fire service" and reiterated that a clear strategy was of the utmost importance.



Ntombenhle Nkosi

The role of the Local Government Sector Education and Training Authority (LGSETA) in ensuring skills development in the fire and emergency services in South Africa was detailed by Ntombenhle Nkosi, CEO, LGSETA. Nkosi said that the country was faced with a growing number of disasters

and incidents and that, although preventative measures are taken, it still happens. "It makes the very poor, poorer", she stated. Nkosi also said that "we need to look at our memorandum of understanding (MOU) with SAESI, in order to see that our people are well-trained. Our partnership will grow and we are very committed to skills training. We are proud of our relationship with SAESI", she concluded.



Rodney Eksteen

Rodney Eksteen, assistant director, Fire Brigade Services, Western Cape, discussed the 'Fire and life safety education: learn not to burn' preschool programme. Eksteen explained the importance of implementing a community risk reduction and integrated prevention model. He also described the fire and injury prevention strategy and said that "it takes a lot of time and skill to develop such a strategy". Eksteen also detailed

the fire and burn prevention curriculum for preschools and said that research showed that "no single intervention works, but rather that an assortment of interventions are best". He also discussed the development of the message and detailed the key messages and principles.



Andrè Tomlinson

Petrochemical, oil and gas (POG) emergencies and the urban/industrial interface was the topic of Andrè Tomlinson's presentation. In true Tomlinson style, he captivated the audience at a late hour in the conference and presented a pictorial of 'when things go wrong'. He also featured pipeline incidents and reviewed recent headlines of incidents in the press. Tomlinson described various fire scenarios including spill fires, pressure-fed fires and pipe line fires. "A 12 inch hose

gets very light when you have to fight a fire that needs such a hose", he explained. He also showed an array of photos detailing the use of boosting stations, system elements, hose choices, relay pumping, monitor/manifold combinations and described the intricacies of fighting POG fires. Tomlinson concluded with a review of the Pretoria West petrol inferno in which three fire fighters were killed.

In closing

SAESI 2013 also created a platform where industry stakeholders could network and socialise at a gala dinner, as well as a cocktail evening with the newly inaugurated president, Ofentse Masibi, at the Germiston Banquet Hall on the opening day of the conference on Wednesday, 15 May.

A closing assembly of all delegates, exhibitors and VIP's was held on 17 May, where the winning participants in the SAESI fire fighter and EMS challenges received certificates in a special award ceremony.▲



Extended service medals awarded to SAESI members at 2013 conference

The Southern African Emergency Services Institute (SAESI) presented members of the institute with service medals for periods ranging from 10 to 40-year, as well as other special service acknowledgements at the SAESI 2013 conference, held in May this year.

SAESI acting chairperson for administration committee, Riaan van Vuuren, noted that there were seven recipients of the 30-year service medals in 2013. A further 16 SAESI members were honoured with medals

for more than 40 years of service in the emergency services industry.

"The EMS industry in the country is solid," lauded Van Vuuren. "We make a career of it – there is a difference," he asserted.

The NGC Swanepoel medal is the highest honour that institute can extend to members and only four members were awarded the medal at SAESI 2013. "These are men and women who serve regardless of the time, effort and costs," said

van Vuuren. This special award was handed to four individuals that have served in the emergency services industry for many years and have reached the apex of their careers within the municipality environment.

The NGC Swanepoel Award: The NGC Swanepoel award, named after one of the founding members of SAESI, was awarded to Sol Plaatjie chief of emergency services, MW Pretorius; Ekurheleni Metropolitan Municipality senior district manager of fire safety, PCJ Brits; Ekurheleni Metropolitan



SAESI acting chairperson for administration committee, Riaan van Vuuren, Fellow Membership recipient



Recipients of the coveted NGC Swanepoel medal



Thirty-year service medal recipients



SAESI vice president, Dino Padayachee, Corporate Membership recipient (left) with SAESI president, Ofentse Sam Masibi (right)



EMS and fire and rescue workers show their mettle in SAESI challenges

A special training and emergency medical services (EMS) challenge component of SAESI 2013 was held over three days from 15 to 17 May, as various fire and rescue and EMS teams from several municipalities across the country.

Different specialised teams of fire fighters were assembled to take part in vehicle extrication challenges, high-angle challenges, EMS challenges, Drager Challenge and SA Emergency Care fire and rescue challenge.

The winners of the respective challenges were announced at the SAESI closing ceremony, where the industry stakeholders and role players took part in the proceedings.

The competition winners represented an array of emergency personnel from municipalities and training institutions, as well as private EMS organisations including ER24, Durban University of Technology and Western Cape Metro EMS. ▶



LG SETA High Angle Challenge



A fire fighter battles through the SAEC fire and rescue challenge

▶ Municipality senior district manager of operations, PFD Rudolf and Mangaung Metropolitan Municipality chief of emergency services, JM van der Westhuizen.

Thirty-year service medal: Among the recipients of the 30-year service medals were, JG Padayachee, and Sandra Prinsloo. Padayachee is the operations manager at

Msunduzi Fire and Rescue in KwaZulu-Natal and Prinsloo is the manager of the Platorand Area Fire Protection Association (FPA) in Mpumalanga.



Forty-year service medal recipients

Forty-year service medal: There were 16 recipients of the 40-year service medals and these included Sasol Technology fire and emergency specialist, Gert Lubbe and Steve Tshwete Municipality chief fire officer, Gert Scholtz.

Fellow Membership: SAESI acting chairperson for administration committee, Riaan van Vuuren, was a recipient of the fellow membership honour this year.

Corporate Membership: Langamed Emergency Management chief executive officer, Dino Padayachee, received a corporate membership medal. Padayachee is also the newly appointed SAESI vice president. ▲



Holmatro Vehicle Extrication Challenge



SAEC Fire and Rescue Challenge



EMS Challenge



A mock presentation of an EMS procedure

► Competition winners:

Holmatro Extrication Challenge:

Overall 1st	Johannesburg TNT
Overall 2nd	Johannesburg Holmatro
Overall 3rd	EMRS Western Cape Metro EMS
Best Medic	Johannesburg Holmatro
Best Incident Commander	Johannesburg TNT
Best Technical Team	Johannesburg TNT

STAT EMS Challenge:

ALS level	
Overall 1st	Red Devils – ER 24
Overall 2nd	Perigrene Falcons – Cape Town
Overall 3rd	Grim Reapers – Ekurhuleni
Best Incident Commander	Phillip Prak – Cape Town

ILS level:

Overall 1st	Thule Msingo - Ekurhuleni
Overall 2nd	Camo Devils - SANDF
Overall 3rd	Pumelela – Cape Town
Best Incident Commander	Sharlene Dixon – ER 24
Book prize	Thabiso Serobe – Ekurhuleni

LG SETA High Angle Challenge:

Overall 1st	Durban University of Technology
Overall 2nd	West Rand
Overall 3rd	Knights of Camelot – Cape Town
Best Medic	Ekurhuleni Ghabibis
Best Incident commander	Knights of Camelot – Cape Town
Best Team Spirit	Airforce

SAEC Fire and Rescue Challenge:

Team Challenge:

Overall 1st	Cape Town ACE
Overall 2nd	Midvaal 2
Overall 3rd	Midvaal 1

Individual Challenge:

Overall 1st	Ryan Abrahams – Cape Town
Overall 2nd	Morné Moolman – Cape Town
Overall 3rd	Jurgens Williams – Stellenbosch



New fire technology on display at SAESI exhibition

SAESI 2013 featured various key stakeholders and manufacturers in the fire services industry, who were given the opportunity to showcase their respective fire equipment and products at the Nasrec exhibition hall.

The equipment suppliers covered the fire, disaster management, urban search and rescue (USAR), as well as emergency medical services industry, displaying a range of products and equipment including fire apparatus, such as newly launched fire cabs and chassis, pumpers and water tankers, visual-based fire detection (VBFD) systems, self-contained breathing apparatus, personal protective

equipment (PPE), as well as various medical equipment and technology.

The SAESI 2013 exhibition featured manufacturers from the People's Republic of China, which was a first at this year's event.

Prizes were awarded for the best exhibitions stands with the overall winner for best stand going to fire truck supplier, Fire Raiders. The Best vehicle stand was handed to fire apparatus manufacturer, Rosenbauer, winner of the best walk-on-stand went to emergency services products supplier Sysman Group.▲



Fire trucks supplier, Fire Raiders, exhibited amongst others, its Scania Destroyer



Marce's carbon fibre firefighter was a hit with visitors to their exhibition stand



Representatives from ChemSystems displayed the company's fire products and services



Herman Human of Fire Fighting Logistics (left) and Jimmy Croucamp of Fremtac Fire and Rescue (right)



Phoko Jane and Tenyane Butiki representing the City of Johannesburg EMS



MSA's sales representative, Titch Mavusvu



COGTA's Moses Khangale



Uniontech Emergency and 5.11 sales manager Erno Brummer



Marius Koekemoer and Kevin Naidoo from Fire Fighting Equipment Africa (FFEA)



Jacques Fourie from Arrabon Trading



Kevin Bradford and Shaun Cloete, area managers for Angus Fire



Toil Safe's commercial manager, Michelle Alho



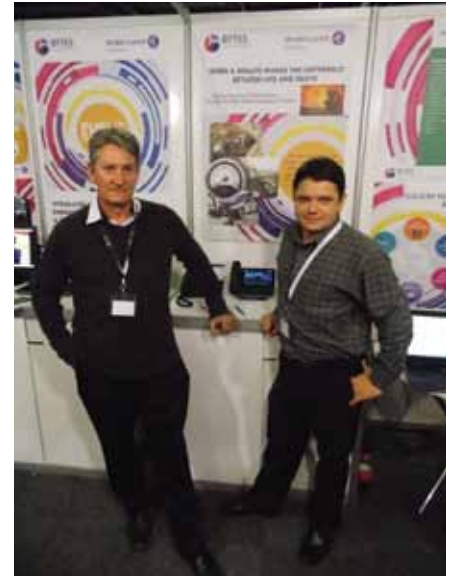
SANRAL's communication and PR person, Manjula Reddy



Supply Cor sales representatives Wayne Parsons and Lucky Mavuso



SafeQuip sales team: David Nash and Annemarie Pienaar



Bytes Technology business consultants John Swanepoel and Rudi Weiss



Fire Break's Blane de Meillon and Jim Zeigler



C3SS business development director, Brendon Cowley



Hamilton Hydraulic Services' head, Jim Hamilton



Adri Spies, Steven Kirk and Aaron Mafunda promote the City of Johannesburg's PIER programme



The Magic Fire Blanket and retardant crew Trevor Schmitt, Rivaz Sing, Gary Heath, Charl Dacray, Gareth Moore and Matthew Mohr



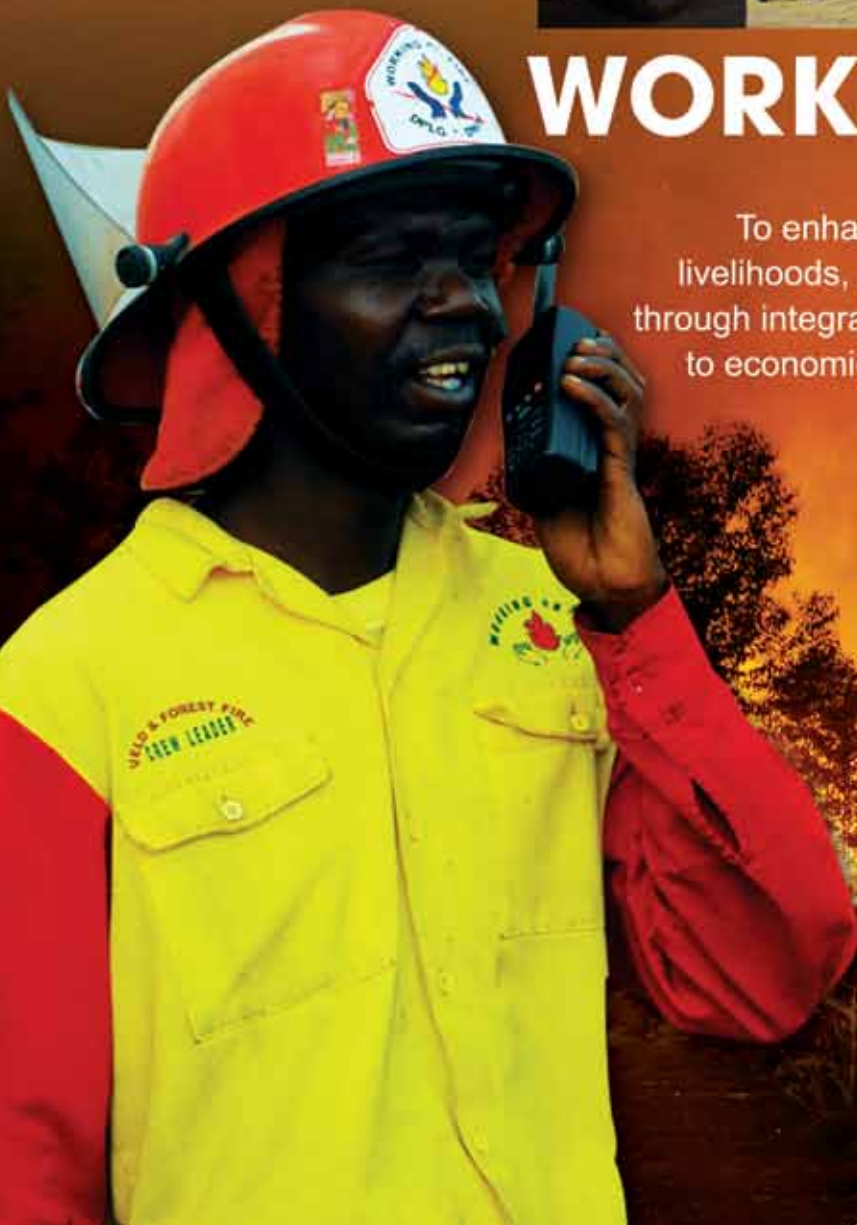
Fireforce's mother and son team, Shirley and Moses Mavasa



WORKING ON FIRE

SCHOLARSHIP FUND

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



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

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

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

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

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

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

For further information, please contact:

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

Also see the WOF website at www.workingonfire.org

Or deposit your donation in the following Bank Account:

Account Name: FFA Section 21
Account Nr: 405 953 7280
Branch code: 632005
Bank: ABSA Nelspruit
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FIREWISE



Reducing the incidents of wildfires through hazard and risk mapping

By MN Procter

Wildfires in the Free State Province of South Africa are a frequent occurrence and cause considerable disturbance to ecosystems and property. A reliable risk-based management strategy to manage wildfire may enhance protection of life, property and the environment. This study utilised the risk formula where:

$$\text{Risk} = \frac{\text{Hazard} \times (\text{FDI}) \times \text{Vulnerability}}{\text{Manageability} / \text{Capacity}}$$

The study represents a first step in an intricate problem. Five years of fire data were obtained from the Meraka Institute at the CSIR. These data were used to calculate probability distribution functions which were used to randomly simulate a series of fire probabilities using an existing empirical and deterministic model. The contribution of fire danger index (FDI), fuel load content and fire intensity was examined. The study included measures taken to increase resilience; thereby reducing vulnerability.

Current approaches to the problem, however, mainly focus on the probability of fire occurrence

respectively, the expected frequency of wildfires for a time period. Usually, these results are calculated for relatively large regions. Only recently attempts are being made to tackle fire occurrence at a local scale. To get insight in wildfire risk as it is understood here, these methods must be combined with approaches to estimate the impact of wildfires and measures that have been taken to increase resilience. For this reason, the presented framework for wildfire risk assessment integrates fire occurrence modelling with methods for the assessment of fire effects, and elements of resilience, linking the three by tables of consequence for each. Hence, it brings together three major topics of wildfire research that are normally considered more or less isolated.

Knowledge of where the risk from wildfires is the greatest allows one to implement measures to mitigate the problem. Risk management may improve the existing hazard management approach to wildfire management by shifting the focus of management to the asset to be protected. This allows for the consideration of alternative

mitigation strategies not considered using pure hazard management. The end result is a spatial map based on a 25 kilometre squared grid that indicates graded areas of risk from wildfires within each local municipality in the Free State.

Introduction

South Africa has elected to drive development through local government. This means that sustainable economic, social and natural resources development must be integrated locally and so that it complies with national policies and frameworks.

The Department of Agriculture Forestry and Fisheries (DAFF) is administering the National Veld and Forest Fire Act, 1998 (Act No 101 of 1998) (NVFFA) as amended. The NVFFA is currently the primary legislation governing integrated wildfire management in South Africa. It provides for compliance with environmental requirements. It is not an emergency services law, but links natural resource management by property owners collectively or individually to the integrated wildfire management system. ▶



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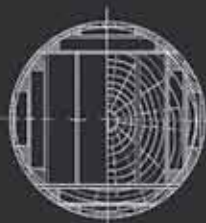
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Risk mapping

► The NVFFA makes provision for the establishment of fire protection associations (FPAs). In terms of this legislation, landowners are supposed to carry the “duty of care” responsibility for ignition potential for their lands. For example, it provides for the formation of local, community-based, fire protection associations for collective management of wildfires in respect of areas which have regular wildfires; or a relatively uniform risk of wildfires; or relatively uniform climatic conditions; or relatively uniform types of vegetation. It also sets a duty that, “A fire protection association must at least develop and apply a wildfire management strategy for its area”. Further, the Act requires land owners to meet several requirements.

As in most countries with wildfires, the risk can be managed to acceptable levels at acceptable cost, provided a comprehensive approach, based on integrated natural resource management within a proper development planning and management framework, is adopted and applied consistently. This study sets out the methodology used to analyse the locality of the areas most at risk within the Free State Province of South Africa.

Background

The Free State Province covers an area of 129 480 kilometre squared. Agriculture accounts for 90% of land use. About 57% of the land is used for stock farming, including beef and dairy cattle and sheep and 33% is for crop production, including maize, sorghum, wheat, groundnuts and sunflowers. Approximately 7% of the province is used for settlements and only 1,6% is set aside for formal conservation. Of the remaining area, mining activity occupies about 0,4% of the province. The roads density for the province is approximately one kilometre of road per 47 234 hectare.

The Free State has a wide-ranging topography ranging from escarpment to plains and pans. To the west the land is characterised by flat plains, pans and slightly undulating land. The south is primarily lowlands with hills. To the east the escarpment extends from Lesotho, into low mountains and irregular undulating lowlands with hills. The northern and central portions are marked with undulating land and hills.

The savannahs and grasslands of South Africa are amongst the most fire prone regions; grasslands biome burns more than any other biome in South Africa and lie in the area that is regarded as high risk areas. The type of burn produced by grassland fires is different to the burning of woodland and forests north of South Africa.

Fire history

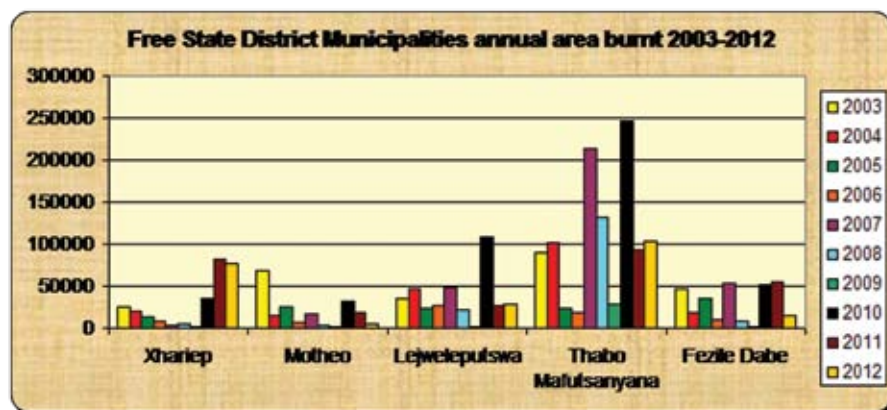
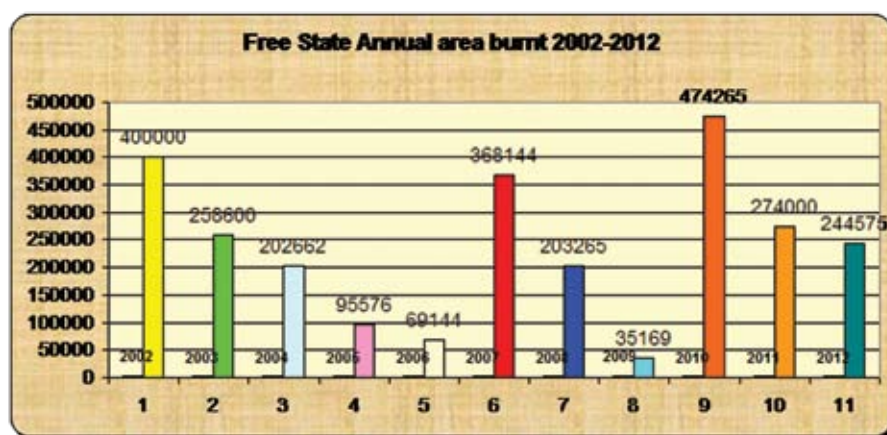
On average 237 000 hectare burn annually in the Free State.

Environmental implications

The seventh millennium development goal (MDG) is to ensure environmental sustainability.

The adverse impacts will compromise the country's ability to meet the MDGs, in particular poverty alleviation, the pursuit of which will be hampered by the loss of livelihoods from fire. The impact of wildfires on the extremely poor cannot be overstated. These people live at the margins of daily survival and are always the most vulnerable, rural settlements (and also some urban ones) in the interface between densely settled land and land carrying high fuel loads – and eking out marginal livelihoods are also among the most vulnerable.

Achieving the millennium development goals and building ►



Graphs indicating average area burnt in the Free State per local municipality

► a safer world in the 21st century is only possible when the world more effectively reduces damage from disasters triggered by natural events.

Why risk management

The basic question is; if there are only limited resources available for doing mitigation work, where would resources best be utilised? Treating high hazard areas, first does not guarantee that a major fire will not occur, but it provides the best opportunity for reducing the risks associated with wildfires.

Identifying and quantifying risk is the first and most important step in the risk management process. Without a comprehensive risk analysis, fire management activities will be unstructured, irrespective of available resources. Unidentified risk often goes untreated and can translate into retained losses that have the potential to cripple a community.

A more complete understanding of the full economic, financial and social impacts of disasters in a region also helps to demonstrate the importance of including risk reduction measures in development plans. Implementation of successful risk management will reduce the probability of damaging or undesirable incidents and minimise damage if they do occur.

Using satellites

The use of both historic fire record and line fault data on the geographic information system (GIS) has proven to be a useful tool in the planning of the annual fire prevention activities.

The science of remote sensing, or observing the Earth from space, started just over 50 years ago with the launching of Sputnik 1 by the former Soviet Union on 4 October 1957. This was the World's first earth orbiting artificial satellite. The first satellite images of the earth came from the American weather satellite TIROS1 on 1 April 1960. Seventeen years later, the first real-time satellite images was received on Earth from the American KH-11 satellite system. Today, satellites are used for a variety of purposes.

The launching of the Aqua and Terra satellites with the Moderate Resolution Imaging Spectroradiometer (MODIS) by NASA in 1999 and 2002 provided the world with a tool to be used inter

alia in fire tracking. The University of Maryland demonstrated the successful use of this data in the mapping of fires across the globe. When the South African Department of Agriculture purchased the satellite data and a MODIS antenna at Hartbeeshoek in 2003, this fast access to the satellite became a reality.

In addition to the real-time functionality of the system, the history of fires that is accumulated on the system proves to be most valuable. The system permits queries on fires observed for any stated period and these data are used in the planning of vegetation management, as well as investigations of line faults or even insurance claims.

Whilst the system proved to be valuable in the fight against fire, it also had some shortcomings. Not all fires could be detected. The weather during the winter months in the interior of South Africa is normally cloudless, but when clouds are present, the fires beneath them are not detected. Some of the smaller, less intense fires are also not detected, especially by the MSG satellite, with its coarser spatial resolution. Where a fire is started and extinguished between two overpasses (in the case of MODIS with its lower temporal resolution), it is also not recorded.

Methodology

Understanding fire regimes in Africa

is as important as understanding weather patterns and climate, but our knowledge lags far behind. Fire is an integral part of the African terrestrial ecosystems and most land use systems of Africa have evolved with fire.

In order to formulate an idea of how the risks varied across the province, we used the formula:

$$\text{Risk} = \frac{\text{Hazard} \times (\text{FDI}) \times \text{Vulnerability}}{\text{Manageability} / \text{Capacity}}$$

Where:

Risk = Is the expected losses to a community when a hazard event occurs, including lives lost, persons injured, property damaged and economic activities or livelihoods disrupted.

Hazard is the most of either (1) **fuel load** or (2) **incidents of fire** (3) **"hotspots"**.

FDI = unknown elements such as weather (fire danger index)

For purposes of this risk mapping exercise, we set out to produce a static and not a dynamic map and did not factor weather conditions in but merely looked at a worst case scenario.

Vulnerability = social, economic and environmental vulnerabilities.

We used the tables of qualitative measures of consequence (adapted from standards Australia 199)

Table 1 Qualitative measures of consequence (adapted from Standards Australia, 1999) ►

Level	Social	Economic	Environmental
Catastrophic	Death	Negative impact for large part of the community or region. Long-term outside resources needed for recovery.	Permanent loss of species or habitats.
Major	Extensive injury and evacuation.	Serious financial loss. Outside assistance needed.	Temporary loss of species and habitat destruction needed several years to recover.
Moderate	Medical treatment needed.	Localised damage to property. Short-term external assistance needed.	Serious impacts needing a few years to recover.
Minor	First aid at scene.	Slight damage to assets. No external help needed.	Environmental assets recover rapidly.
Insignificant	No injuries.	No damage to property.	Minor temporary impact



► Tables of consequence on **manageability** and **capacity** were also developed where each of these sub categories was rated using a simplified table of consequence using values of one to five.

Where:

Manageability = the extent to which institutional arrangements, mitigation measures have been deployed/utilised to reduce the extent of damage (firebreaks, buffer zones, rock outcrops, cultivated lands, roads).

Capacity = ability to respond to the event, including, the extent to which terrain influences the time taken to extinguish a fire, availability of resources and response times (availability of aircraft).

In addition to historical data and Geographic Information System (GIS) analysis, this assessment relied heavily on input provided by fire protection association members, as well as local fire brigade professionals. FPA members are familiar with the threats within their areas. Mapping and documenting the areas at risk identified and combining this information with data gathered through GIS analysis, created a more accurate understanding of wildfires risk and provided a rough method of truth-checking GIS outputs.

In order to quantify the relative significance of each of the inputs, weighting values could be assigned that were based on data from theme values in the tables of consequence. We felt that as this assessment was a rapid but subjective process, that weighting separate values would not have a major influence on the calculation. It would have

complicated the assessment and our target audience would have understood it less. It was simpler but a less scientific to say "Under the worst case conditions, how long will it take to extinguish a fire in this cell". Such a statement implied that response times, resources, terrain, accessibility, experience would need to be considered.

Quantifying the incidents of fire

Each year fires as captured by MODIS were represented with differing colours; different symbols were used to denote the fires in and out of the fire season.

In order to give values to the incidents of fire the following guidelines were used to guide the risk assessments.

Repeat incidences of fire:

- Hotspots known areas of repetitive fires not always detected by satellites
- Repeat incidences of fires as detected by satellites

Tables of consequence simply described the severity of each hazard component in a given area and were rated with values ranging from one to five.

Fuel loads were assessed using a table rated from one to five where 500 kg hectare represented one and 3 000 kg plus hectare represented five. These values differed in other provinces, but were based on perceived risk within each province. The hazard value was regarded as the greater value of either "hotspots", repeat incidences of fire as detected by satellites or fuel load. In terms of fuel load "residual fuel load" and not "inherent fuel" load was taken, cultivated lands were regarded

as buffer zones. A 70/30 ratio was applied whereby if more than 30% of an area fell in to a higher risk, the higher risk was taken to represent the entire grid block.

Who was involved?

When a broad range of appropriate stakeholders are involved in the planning process, the exercise is more likely to address all of the relevant issues and gain greater acceptance from the community. Representatives of local government were invited. Community leaders and individuals with specialised knowledge of the surrounding area attended the sessions to provide information and opinions on the level of fire risk within each local municipality. Fire protection association (FPA) members, who were familiar with the threats within their areas, were able to mark "hotspots" where smaller fires not detected by the satellites had occurred. Approximately 65% of fires are detected.

Information gathered through these sessions was used to map and grade the areas at risk identified. Combining this information with data gathered through GIS analysis, created a more accurate understanding of wildfire risk and provided a method of truth-checking GIS outputs where the repetitive incidents of wildfires posed a threat and the risks posed were the greatest.

Calculating the risk value

Each of the assigned values was recorded on the A3 size maps and thereafter captured in an Excel spread sheet.

The values as calculated were then rated and assigned colour coding was used to denote the areas at risk. These values in the Excel spread sheet were then converted to the attributes table in GIS.

A raster grid of five-by-five square kilometres was overlaid over maps of each local municipality and for purposes of identification, each cell within the grid was given a unique cell number. Six maps were supplied in A0 size and ten working maps were supplied in A3 size, delegates were requested to colour code each block in terms of hazard, vulnerability, manageability and capacity on the A3 maps. ►

► **Map 3: Dihlabeng Local Municipality overlaid with a five-by-five square kilometre raster grid**



the assessment area, displaying each level of hazard on clear overlays, rather than on a single map allowing one to study various combinations of data.

- A grid index system references specific points of interest on a map. The coordinates of the grid define the hazard rating of a specific area.
- A matrix

local government, developers and land owners. With such a high wildfire incident rate resulting from the actions of people, community education in South Africa is particularly important. Education takes on a number of forms and is generally designed to provide people with a better understanding of the risks they face from wildfires and the measures the community can take to minimise these risks.

Mapping information can also be used by insurance companies to establish accurate risk ratings for properties. Risk ratings can also be used to establish a guide to establish the required density of firebreak requirements in terms of a cost benefit analysis and can also be used in measuring the performance of FPAs as this methodology allows for measurement of improvements within specific areas.

Conclusions

Disasters are inevitable, although we do not always know when and where they will happen. But their worst effects can be partially or completely prevented by preparation, early warning and swift, decisive responses.

It is possible to reduce both the risk of wildfires and the cost of these disasters when they do occur, through better application of information technology to wildfire management. Wildfire risk analysis should be the very basis of fire management strategies, plans and actions.

Risk analysis can focus fire management interventions more efficiently and effectively, it will facilitate response from disaster management and in the event of aerial support being called grid references are pre-identified.

Risk analysis facilitates integrated fire management. GIS based decision-support databases highlight risk levels better than spread sheets and/or narratives the levels of vulnerability can be monitored. Risk analysis allows for simplified assessment of FPAs.

Acknowledgements

Andries Jordaan, University of the Free State: who stimulated my interest in disaster management and encouraged me throughout my studies. ▲

By combining the probability of any area burning with the expected fire effects, a level of risk can be defined, which informs where the likelihood of fires is the greatest, as well as where it will be difficult to suppress. Mapping the location of the most fire prone areas is an important step in the right direction, because it will alert land-owners, insurance companies and fire protection associations where the dangers lie and ultimately take steps to remedy the situation.

system describes the severity of each risk for each five-by-five square kilometre area within the assessment area and by using custom analysis tools FPAs can better evaluate options for mitigation efforts.

It is important to have a process that is flexible and consistent over time and space because wildfire risk analysis is a spatio-temporal phenomenon. Also, it is critical to use a proven analytical process, based on accepted science, to adequately integrate the inputs to

Table 1 An example from the Setsoto Local Municipality

		Haz	Soc	Eco	Env		Man.	Cap		Risk
3995	No	4	3	2	2	9.333333333	3	3	3	3.1111111
3996	No	4	3	2	2	9.333333333	2	2	2	4.6666667
3997	No	4	4	2	2	10.66666667	2	2	2	5.3333333
3998	No	4	4	2	2	10.66666667	3	3	3	3.5555556
3999	No	4	4	2	2	10.66666667	3	3	3	3.5555556

The number allocated on the left refers to the unique grid no on the maps and refers to locality on the map. The risk value on the right of the table gives an indication of priorities.

The "risk levels" were then categorised to determine whether they fell in to the ultra, extreme, and medium, low or marginal risk categories so that planning could be categorised.

The encapsulation of these results in to an Arc-GIS application provides a technical platform for applying the results in planning and operational decision making.

- A GIS can define the hazards and risk component on a map of

the intermediate and fine measures of potential affects.

These results can be used in a variety of ways, including the analysis and planning of mitigation projects, such as planning for firebreak density in terms of risk, improving on resources and improving on detection ability, response times, education and awareness programmes, monitoring of compliance levels, as well as monitoring improvements in fire reduction in the area.

Not by itself, but risk mapping forms an essential facet of any long term effort to any long term improvements, other educational efforts could involve publicising fire probability maps for

2013

July

1 – 12 July 2013

FPASA Advanced Fire Prevention Course

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

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

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

For more information visit: www.fpsa.co.za

3 July 2013

FPASA fire fighting evacuation training

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

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

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

For more information visit: www.fpsa.co.za

8 - 10 July 2013

Cape Medical Response: First Aid Level 1 Course

This is the "first step" for any student wanting a certificated first aid qualification, or potentially entering the emergency medical field. The Course is designed to equip students with basic theoretical knowledge and practical skills to deal with a variety of emergency medical situations and there will be ample opportunity to learn valuable practical skills

Venue: 106 Kommetjie Road, Fish Hoek, Cape Town, South Africa

Contact: Morgan Tel: 021 782 0606
email: morgan@cmr-med.co.za

8 – 11 July 2013

FFA Initial Attack Incident Commander: Veld/Forest Fire

This course is designed to equip the leader responsible for the initial attack fire suppression duties for his/her role in effective suppression tactics and resource management during a veld/forest fire incident

Venue: Working on Fire Academy, Nelspruit, South Africa

Contact: Stephen Devine Cell: 076 390 5346
email: stephen.devine@wofire.co.za

8 – 12 July 2013

FFA Prescribed Burning for Fire Managers

This course is designed to assist the fire manager in understanding the planning, preparation, coordination and execution processes involved when conducting prescribed fire operations in grasslands and savannah. It is a practical experience that enables the fire

manager to apply the prescribed fire principles in an effective and efficient manner

Venue: Working on Fire Academy, Nelspruit, South Africa

Contact: Stephen Devine Cell: 076 390 5346
email: stephen.devine@wofire.co.za

8 – 12 July 2013

Rural Metro Emergency Management Services Hazmat Awareness Course

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

Venue: Greytown Training Academy, Greytown, KwaZulu-Natal, South Africa

Contact: Germaine Gilbert Tel: 033 345 0080
email: GermaineG@ruralmetrosa.com

For more information visit: www.ruralmetrosa.com

9 – 10 July 2013

Emergency Management Conference 2013: Preparing Victoria

This is the annual conference presented by the Emergency Services Foundation of Australia to provide a forum for the exchange of the valuable information gained by emergency services workers in the line of duty and in research

Venue: Pullman Melbourne Albert Park, Australia

Contact: High Profile Events Tel: 00 03 9596 6662
For more information visit: www.hpe.com.au/emc/

9 – 11 July 2013

3rd International Conference On Disaster Management And Human Health: reducing risk, improving outcomes

The conference will focus on current global health risks and how best to prepare for, respond to and recover from disasters

Venue: Wessex Institute of Technology, The New Forest, United Kingdom

Contact: Irene Moreno Millan
email: imoreno@wessex.ac.uk

For more information visit:
www.wessex.ac.uk/disaster2013

10 – 11 July 2013

Ambulex 2013

Ambulex is the only UK exhibition exclusively targeting ambulances, ambulance support, emergency rescue vehicles and related equipment. One will be able to see everything from frontline ambulances, paramedic vehicles, high performance motorcycles and cars, together with patient care and vehicle support equipment and services

Venue: Ricoh Arena, Coventry, UK

For more information visit:
www.ambulex.com/exhibition/

10 – 12 July 2013

Missouri Valley Fire Chiefs Conference

This conference offers exceptional speakers, training courses and networking opportunities

Venue: Crowne Plaza Hotel, Colorado Springs, Colorado, USA

For more information visit: www.mvdiafc.org

15 – 18 July 2013

FFA Extended Attack Incident Commander Type 4

This course is designed to equip the fire suppression manager for his/her role in the effective and efficient suppression management of resources related to sound objectives, strategies and tactics during an extended attack veld/forest fire incident

Venue: Working on Fire Academy,
Nelspruit, South Africa

Contact: Stephen Devine Cell: 076 390 5346
email: stephen.devine@wofire.co.za

15 – 19 July 2013

48th Annual GSSA Congress: Advancing Rangeland Ecology and Pasture Management in Africa

This congress aims to present a program that is participative, innovative, stimulating, thought-provoking and enriching by offering networking and learning opportunities to new and experienced grassland scientists, extension workers, postgraduate students and some undergraduate students, agri-business professionals, policy makers and leading livestock producers and farmers from all over the world and offers everything from fire management courses to traditional and alternative methods of managing rangelands

Venue: Weesgerus Holiday Resort, Caravan Park and Conference Centre, Modimolle, Limpopo, South Africa

For more information visit:
www.grassland.org.za/events/

15 – 19 July 2013

Rural Metro Emergency Management Services Level III First Aid Course

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

Venue: Greytown Training Academy,
Greytown, KwaZulu-Natal

Contact: Germaine Gilbert Tel: 033 345 0080
email: GermaineG@ruralmetrosa.com

For more information visit: www.ruralmetrosa.com

15 July – 9 August 2013

Rural Metro Emergency Management Services Fire Fighter II Course

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

Venue: Greytown Training Academy,
Greytown, KwaZulu-Natal

Contact: Germaine Gilbert Tel: 033 345 0080 email:
GermaineG@ruralmetrosa.com

For more information visit: www.ruralmetrosa.com

17 – 18 July 2013

HELP Training Academy: Paediatric Advanced Life Support Course

The knowledge and skills obtained on the Paediatric Advanced Life Support (PALS) Course include an overview of PALS science and paediatric CPR and automated external defibrillator (AED) competency all the way through to management of cardiogenic

shock and includes multiple role-play scenarios and case discussions

Venue: 16 Terrace Road, Eastleigh Ridge,
Edenvale, Johannesburg, South Africa

Contact: Shannon Carroll Tel: 011 609 0131
email: training@helpemt.co.za

For further information visit: www.helpemt.co.za

22 July 2013

FPASA basic fire fighting module

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

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

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

For more information visit: www.fpasa.co.za

22 – 26 July 2013

Cape Medical Response: First Aid Level 3 Course

This is a five-day course designed for anyone who is responsible to apply first Aid in a work place; a sporting club; any relatively hazardous or remote environment; or for any student who wishes to further study emergency medicine. Students will receive a recognised certification, which remains valid for three years.

Venue: 106 Kommetjie Road, Fish Hoek,
Cape Town, South Africa

Contact: Morgan Tel: 021 782 0606
email: morgan@cmr-med.co.za

22 – 26 July 2013

FFA Advanced Investigation

This course is aimed at veld and forest fire investigators who have previously completed the cause and origin course determination training and who seek to enhance their proficiency as an investigator

Venue: Working on Fire Academy,
Nelspruit, South Africa

Contact: Mandla Ndlovu Cell: 073 234 7143
email: mandla.ndlovu@wofire.co.za

22 – 26 July 2013

FPASA fundamentals of fire investigation

Most advanced programme of its type. This course promotes a clear understanding of fire investigation and the rendering of opinion regarding origin and cause. This includes practical investigation exercises and is now aligned with NFPA 921

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

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

For more information visit: www.fpasa.co.za

Man in the mirror

There comes a time in every fire fighter's career when he sees himself in the mirror.

Not a conventional mirror with a picture reflection, but a true representation of who he is.

The reflection, although it be made of heat, light and smoke, will tell him more about himself than any other life experience.

The mirror of fate finds us all in life, but it finds the fire fighter many times in the course of a career.

For me, these moments alter who I am.

They shape who I will become, and they root out my darkest fears.

Whether facing the mirror for the first time or the last time in a career, I know one thing to be true for me; the person looking back at me represents a noble calling, a trusted life and a true state of being.

Next time you find yourself here, in the room alone with your mirror, enjoy it just for moment, for this is where your life is most true.

Marty Mayes
TFA Boss



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TOUGHEST



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Date: 30th - 31st August 2013

Entrance: Free

Contact

Liezl Moodie or Sharon Bosch (working hours)

Liezl.Moodie@capetown.gov.za

Sharon.Bosch@capetown.gov.za

021 4440 287/8

