

# FIRE AND RESCUE INTERNATIONAL

Integrated fire, rescue, EMS and incident command technology

Volume 2 No 8



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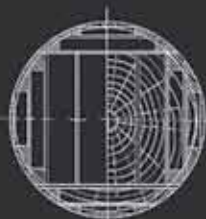


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# Comment



Lee Raath-Brownie

**Fire and Rescue International (FRI)** proudly presents its 20<sup>th</sup> edition. In this issue we feature the usual local and international news update, hands-on technical advice, a fire service and its chief fire officer and the Working on Fire 10th Anniversary celebrations. We also review the past South African winter fire season, as well as the recently-held forest fire workshop and fire management symposium. Our case study examines the use of high-intensity prescribed fires in the Kruger National Park. We trust you will find this edition informative and share it with your colleagues!

**Cover profile**

Our front cover this month features FFA Aviation and its subsidiaries ie FFA AMO (aircraft maintenance organisation, Aviation Training Organisation (ATO), dispatch and FFA air charter. FFA Aviation recently moved to new offices and also acquired a four-star National Occupational Safety Association (NOSA) rating. We look at the synergies between the various subsidiaries.

**FRI Images photographic competition**

Our winning photograph this month features a rescue site in Meyerton, South Africa. See page 3 for details. **CONGRATULATIONS!**

Submit your high-resolution photograph featuring a rescue, emergency, incident or fire scene and win R2 000 cash!

**News section**

We welcome the South African Rescue team back from the Philippines and feature the South African Emergency Care (SAEC) final burnout of 2013. We introduce the ResQmax line-thrower and profile news around the world including the tornadoes in the US, flooding in the Western Cape, South Africa and Italy, massive car pile-up in Belgium, two ships that sank off the coast of China, Polish and US gas-line explosions, building collapse in Latvia, volcanic eruptions in Indonesia, train derailment in New York and the wildfires in California. We also look into the training in suicide watch received by fire fighters in the US, the newly-elected Australian Prime Minister's view point on climate change and its impact on bushfires and how goats can assist in the reduction of fuel loads while providing an entrepreneurial opportunity.

**Working on Fire 10<sup>th</sup> Anniversary celebrations**

FRI congratulates Working on Fire on 10 years of integrated fire management services provided throughout the country and review its celebrations held at Thaba Nchu in the Free State, South Africa.

**Wildfire investigation**

In the second part of Rob Erasmus of Enviro Wildfire Services' series of articles on wildfire investigation, he explains the short, medium and long-term benefits of fire investigations.

**Fires in large commercial properties**

Colin Deiner details the different tactics needed for attacking fires in large commercial properties and discusses the importance of an incident command system that adjusts accordingly. He debates the operational resources, setting up of the groups and divisions, the effective use of communications, the roles of the various teams and the intricacies of the fire fighting tactics. Deiner reiterates the importance of careful deliberation of your strategies and tactics and the development of standard operating procedures (SOPs) for such incidences.

**Fire service**

We profile Msunduzi Fire and Rescue Service in Pietermaritzburg, South Africa and feature its expansion projects, history, risk profile, staff complement, training centre and operational footprint. Chief fire officer, Billy Paton, shares his journey from fire fighter to chief fire officer; his values and mentors.

**Winter fire season 2013**

We review the South African winter fire season and the provincial statistics.

**Forestry South Africa forest fire workshop**

FRI attended the recently held Forestry South Africa's forest fire workshop and reviews the pertinent issues faced by the southern African forestry industry.

**Fire management symposium**

The Nelson Mandela Metropolitan University (NMMU) together with the Southern African Institute of Forestry hosted the ninth annual fire management seminar in the picturesque Lidgeton in KwaZulu-Natal. We review the discussion topics and new technologies featured.

**Case study**

Our case study written by Navashni Govender of South African National Parks discusses the high-intensity prescribed fire experiment in the Kruger National Park.

We thank our readers, advertisers and contributors for their continued support.

**Fire and Rescue International** is your magazine. Read it, use it and share it!

Lee Raath-Brownie  
Publisher





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

### Congratulations to

**Tertius Engelbrecht for his "We call them heroes" photo taken with his cell phone.**

**Well done!**

#### Photo description:

This photo was taken at an accident where a bus carrying over 70 patients went through a barrier and crashed into a ditch full of water in Meyerton.

**Tertius Engelbrecht wins this month's prize money of R 2 000!**

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

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

#### The rules are simple:

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

#### Entries must include:

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

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

**>>ENTER NOW!**



# FFA Group provides a turnkey aerial fire fighting service

**F**FA Aviation was recently awarded a four-star National Occupational Safety Association (NOSA) rating, a first for the FFA Group.

The organisation has developed a comprehensive aviation enterprise that includes FFA AMO (aircraft maintenance organisation), an aviation training organisation (ATO), dispatch and coordination department and aircraft charters.

## FFA Aviation

The four-star NOSA rating in November last year, was a first for the FFA Group, which has adopted stringent pilot selection programmes and training courses prior to being signed out as competent aerial firefighting pilots.

The range of aircraft used by FFA Aviation are the Cessna C182, C206 and C210 spotter planes, the Piston and Turbine Dromaders, Turbo Thrush 660 and the Air Tractor 802 water bomber aircraft.

One of two new Air Tractor 802s acquired by the FFA Group, arrived in the country in October last year and was placed on standby in Porterville in the Western Cape in early November, reports FFA Aviation national operations manager, Mike Assad.

The AT 802, built in the US and designed specifically for fire fighting, was placed on immediate standby duty in November in the West Coast where it was wheat harvesting time and where wheat fires have devastating impacts in driving winds.

Assad reports that soon after the arrival of the AT 802 in Porterville, the aircraft was tested at a large wheat fire. In the words of a local former in the region the aircraft 'performed unbelievably well, leaving little work for the ground teams', says Assad.

The AT 802 has the capacity to carry 3 000 litres of water mixed with fire suppressants in a special hold between its engine firewall and the cockpit and in a second storage tank on its belly.

Assad says that directors from the Western Cape Provincial Disaster Management Centre (DMC) too were able to view the 802 in operation at a fire near Simonsberg.

"The AT 802 has thus far excelled in the province and proved itself to be a formidable fire fighting asset and was able to drop 56 000 liters of water in two hours and ten minutes," was the official comment from the Western Cape DMC, reports Assad.

## FFA AMO

FFA AMO was started about six years ago, after FFA was displeased with the standard and cost of maintenance it received.

FFA AMO maintenance manager, Rinus van Raaij, started the organisation with an engineer, Dewald van der Merwe, with helicopter engineer, Dean Warren, joining the company a short while later.

"Today we have a total staff complement of 25. These include engineers' office staff and fuel attendants," says Van Raaij.

The AMO consists of six divisions namely; fixed-wing maintenance, helicopter maintenance, sheet metal (structural repairs), avionic installations and maintenance, fuel and lubricant supplies and SEI Agency, which include Bambi bucket sales and spares.

"We did Air Tractor factory maintenance courses in Spain and we are now SACAA approved to do the maintenance," mentions Van Raaij.

He says that the focus of the organisation in 2014 will be to further

expand its scope of work to include component overhauls. "We will also be focusing on expanding our footprint to include a satellite station in the Cape and an AMO venture in Mozambique."

In the past, FFA AMO applied all its focus on its own fleet of aircraft. The AMO will now also provide a third party customer aircraft and helicopter maintenance service.

## FFA Aviation Training Organisation

ATO head of department, Carel van der Merwe, says that the ATO is currently undergoing a process of expansion and development.

"We as the ATO have a few interesting developments this year and will be expanding the ATO with personnel and aircraft," says Van der Merwe.

ATO is currently exploring opportunities in the oil and gas industry. However, this is still only in development stage, explains Van der Merwe. He says, "We have grown so fast this past year and we need to focus on employing new staff just to facilitate with the growth and the new training courses laid out for the year."

Other programmes this year include training fire fighters as aviators, which includes non-piloting roles, such as navigation and flight engineers.

ATO is training its fire fighters to take up roles as helicopter personal assistance aviators. Van der Merwe says that a ground training element for all ground forces to become aviators has been added to the ATOs training programmes. "Pilot training and all its requirements also form part of ATOs training programs this year," adds Van der Merwe.

ATO is also coordinating an international training programme for its fire fighting staff, which is ▶



► an unprecedented move by the organisation and that has been executed with 'enormous success', says Van der Merwe.

"These students are incredibly positive and have a bright future in Aviation. Their skills development in this department has been fantastic," he enthuses.

**Dispatch and coordination**

The dispatch and coordination division provides a benchmark for forest and wildfire dispatch and coordination services in the country and is designed to meet the needs of Government, FPA members, FFA partners, landowners and communities, says dispatch and coordination head of department, Lizette Heine

Since 1986, the dispatch function has been to support the aerial operations of the organisation within the Mpumalanga and Swaziland forestry areas.

Following the formation of the WoF programme in 2003 by FFA, five existing dispatch centres of the FFA expanded to 17 Type 1 dispatch centres and seven provincial T3 dispatch centres.

**Dispatch centre typing:**

- Type 3 (T3) – Basic ground resource dispatch centre, limited communications
- Type 1 (T1) – Aviation and ground resource dispatch centre, extended communications

**Dispatcher typing:**

- Type 3 (T3) – Basic entry level ground resource dispatcher
- Type 2 (T2) – Ground and air resource dispatcher, intermediate level
- Type 1 (T1) – Ground and air resource dispatcher, advanced level

The staff component also grew from five to 61 forest and wildfire dispatchers being supported by nine provincial coordinators and a national coordinator.

Heine attended a dispatcher course at the CALFIRE Fire Training Academy in Lone, California in 2005, where she was exposed to the training methods and curriculum of

the 911 dispatch function. Heine also visited the Wild Fire dispatch and coordination centres in Vancouver Canada among other fire training centres internationally and this exposure and experience has been used to assimilate, develop and adapt systems, protocols and procedures as portrayed in the internal FFA dispatcher and coordinator training curriculum.

All departmental training is done in house by the ATO with assistance from Heine and the national coordinator. Provincial coordinators assist with the training of the local rules of operational engagement.

During the last year the staff of the department activated a total of 16 413 missions with 23 575 related resources dispatched. Of these missions 2 633 were fire suppression movements.

**FFA charter service**

The charter service provides an all-encompassing charter service that includes corporate and leisure operations, as part of its Aviation division.

FFA charter service manager, Lynn van der Merwe, says that a charter flight is ideal for family groups or executives who intend to fly city-to-city or into remote destinations for holidays.

"Aircraft charters are perfect for clients who want to avoid having to fly on airlines and therefore being compelled to travel in major city traffic to large airports and having to check-in hours in advance," says Van der Merwe.

FFA charter is able to operate its aircrafts from smaller, less congested airports nearer to its client's places of residence or business with minimal time wastage.

"The same applies to their destination," adds Van der Merwe. "Charter flights are quick to arrange and flexible with a variety of aircraft at our disposal, ranging from helicopters to small fixed wings to larger executive type aircraft."

The services provided by FFA charter flights include, rotation of staff and crew from isolated locations, disaster



relief to enable flood support and food aid and transporting mechanical, scientific or industrial spares or cargo to various industry, among other aviation and charter requirements.

FFAs charter flights offer a range of advantages that include having no restrictions on destinations, flying direct without interconnecting flights, personal flight scheduling and selecting aircraft and requirements to fit a budget.

The aircraft available for charter services include the Cessna C210 and Cessna 206, the Piper Seneca, the R44 helicopter, B206L helicopter and the BE200 Kingair.▲

# Rescue team provided critical support to Filipino's after Typhoon Haiyan



The South African team of rescue workers in Philippines upon their arrival at the OR Tambo International Airport



Tshwane chief of Emergency Services, Joan de Beer, welcoming a member of the South African rescue team at OR Tambo International Airport



Members of the South African rescue team to Philippines and the SAEC Kempton Park Pipe Band at the SAEC event in Modderfontein

The group of South African rescue workers returned from the Philippines in November last year, after spending a week in the country that was hit by a devastating typhoon that left half-a-million people displaced.

The team included non-governmental disaster response organisation, Rescue SA, as well as urban search and rescue (USAR) teams from the Johannesburg Emergency Services and Tshwane Emergency Services.

An impromptu press briefing was held at the OR Tambo International Airport upon the arrival of the South African team of rescue workers that assisted with disaster relief efforts in Leyte Province, Philippines.

A delegation of government officials including, MMC for Public Safety for the City of Johannesburg, Sello Lemao and Philippine Ambassador to South Africa, Constancio R Vingno Jnr welcomed the rescue team at OR Tambo.

MMC Lemao said that more than 800 patients were treated by the South African rescue workers in Philippines. "Our team did a lot in terms of rescue," he stated.

Lemao said that the team provided maintenance of medical facilities, while also setting up mobile clinics in the regions of Tacloban and Abuyog in Leyte Province, which were worst affected by the typhoon. "Our team also supplied medical equipment to local medical centres that will sustain ►



**Safequip Purple K**, is a potassium bicarbonate base dry-chemical fire suppression agent used in some dry powder fire extinguishers. It is the most effective dry chemical in fighting class B (flammable liquid) fires, and can be used against some energized electrical equipment fires (class C fires). It is at least 5 times more effective against class B fires than carbon dioxide and has about twice the effectiveness of sodium bicarbonate based powders. This is due to the larger size of the potassium ion.



**Safequip Purple K** Dry Chemical Powder (DCP) works by directly inhibiting the chemical chain reaction in the combustion zone of flammable liquid fires which forms one of the four sides of the fire tetrahedron (Heat + Oxygen + Fuel + Chemical Chain Reaction = Fire) This chemical reaction produces 'free radicals' which attach themselves to the surface of the powder particles introduced into the combustion zone. This inhibits the chemical reaction forming the flame and causes the flame to cease existing.

**Safequip Purple K** is packaged in sealed buckets containing 25kg of the dry chemical powder.

*Technical data sheets are available from Safequip (Pty) Ltd*

**Safequip Purple K** (90% Potassium Bicarbonate) is a Class BC powder and is SANS 1522 approved and is available for use in areas such as airfields, chemical plants and refineries where superior fire extinguishing qualities are required. It is manufactured in house by Safequip along with the other Blue Crane range of SABS certified dry-chemical fire suppression agents.

**SABS tested Fire Rating** achieved with 9kg portable stored pressure extinguishers using **Safequip Purple K** DCP is 233B

**Appearance:** A fine violet colour free flowing powder

**Main ingredient:** Potassium Bicarbonate 90%

**Temperature stability range:** Fire extinguishers are capable of operation in temperatures down to  $-15^{\circ}\text{C}$  or up to  $+49^{\circ}\text{C}$ .

*Purple-K should never be mixed with phosphate-based fire suppression agents.*





SAEC held its final burnout of the year 2013 in November

► the recovery and relief programme," he added.

Ambassador Vingno Jnr offered words of gratitude to Rescue SA and the municipalities that provided the various rescue personnel for the Philippines operation. "These individuals sacrificed time away from their families to help those affected by floods in Philippines and we cannot say thank you enough."

Vingno Jnr added, "You provided equipment, knowledge and technical support for relief operations to continue after you left. I would like to thank the Government of South Africa."

Rescue SA CEO, Ian Scher, believed that the mission was successful, reporting that the team was able to rebuild hospitals that was destroyed in the floods, while also treating 800 patients within a short space of time. He said that logistics is always a challenge in international rescue missions of this nature, but added that funding for aircraft used in the mission was provided by the City of Tshwane, City of Johannesburg and Ekurhuleni Metro.

Meanwhile, the South African Emergency Care (SAEC) welcomed the team of rescue personnel who assisted in the Typhoon Haiyan relief

efforts at its fire training centre in Modderfontein on November 29, last year.

Fire and Rescue International attended the event, which included a burnout session, as well as a Scott Safety Fire Fighter Challenge that was held at night – which is a first of its kind, since the fire fighter challenges are typically held during daytime.

The event was attended by fire fighters from various municipalities in Gauteng, with the SAEC Kempton Park Pipe Band performing renditions of traditional and popular music pieces.▲



A night time Scott Safety Fire Fighter Challenge was held at the SAEC training facility



One of a group of four females who took on the gruelling fire fighter challenge



A group of fire fighters and training moderators from SAEC



A spectacular burnout demonstration at the SAEC training facility in Modderfontein



# Line-thrower

## provides an effective solution in varying industries



*A line-thrower can be used in ship-to-ship line deployment*



*ResQmax may be used to establish the first vertical rescue line for rapid ascent rescuers*

**T**echnical rescue equipment supplier, Fremtac, has had a positive response to the ResQmax line-thrower, since it introduced the product last year.

The line-thrower has a range of applications, beyond its use in marine applications, according to Fremtac founder, Jimmy Croucamp.

Developed to assist fire departments and search and rescue teams to meet the requirements of the National Fire Protection Association in the US, the line-thrower is designed to be used in swift water technical rope rescue to deploy a rope or messenger line across a river or stream. It is also designed to deploy an auto-inflating sling and buoyant rescue line to a victim in the water.

Other uses for the ResQmax include applications such as shooting lines across trees in rescue operations and is perfectly suited for the construction of high-angle and low-angle rescue lines.

The rescue applications of the ResQmax include ice rescue, man overboard rescue, high angle rescue, as well as ocean and surf rescue.

In high angle rescue applications, the ResQmax may be used to establish the first vertical line and provide the rapid ascent rescuers need to reach a stranded victim. By throwing a climbing line, rescue team can quickly access location in rough and steep vertical terrain.

Loss of visual contact in overboard situations at sea is almost immediate. The ResQmax can reduce recovery time and the risk of hypothermia in Northern climates, so mitigating the time lost waiting for the deployment of a rescue craft. An auto-inflating sling can be deployed with a rescue retrieval line before visual contact is lost by the crew onboard.

ResQmax can be applied to a range of rescue operations owing to its versatility. The product is manufactured by Rescue Solutions

International and solely distributed by Fremtac. It can also be used in water deployment lines as a life-saving device for people in water distress situations.

The deployment of accurate and long-range towlines in marine applications for vessels in distress can be achieved using the ResQmax line-thrower, which is equipped with a low-recoil projectile and line specific to the application. An additional feature for maritime applications is the luminous projectile covers that add efficiency in night-time operations.

The product also has a mining application, where the product is used to get a pilot line set up in the construction of electric cables. With the logistical challenges in relocating cables and other equipment in open pit mining operations, ResQmax is equipped to support high impact and heavy usage environments. It can throw messenger lines or application-specific lines over difficult-to-traverse terrain.▲



# Late seasonal tornados hits the US' Midwestern region in November

*Emergency services personnel survey the damage caused by a tornado in Illinois, US*

Intense thunderstorms and tornados swept across the Midwest region in the US, which includes the state of Illinois, where a tornado the most notable destruction in Washington On 17 November 2013.

Eight people were killed and scores of homes destroyed after at least 60 tornadoes tore through multiple states in the Midwest. States of emergency were issued for seven regions in Illinois after powerful tornadoes uprooted trees, flung cars on its side and flattened many homes.

"We have reports of homes being flattened, roofs being torn off," said a spokesperson for the health department of Tazewell County, Illinois, Sara Sparkman. "We have actual whole neighbourhoods being demolished by the storm," she told a US media organisation.

Illinois reported only minor injuries in the aftermath of the tornado. Sparkman said the storm had caused damage in Washington and in the city of Pekin in Peoria, Illinois, where rescuers scrambled to uncover survivors in at least 70 homes that were destroyed.

Dozens of people were rushed to a hospital in Peoria for medical treatment. Six people were killed and

hundreds of homes were destroyed in the storms that swept through central Illinois. Tornadoes were also confirmed in eight other states, with the other most severe twister taking place in Michigan, where two people lost their lives.

The Red Cross was one of the first groups to arrive and provide aid to victims in Illinois, activating its Safe and Well webpage to help find missing family members following the devastating tornado in Washington, Illinois.

The Salvation Army mobilised teams to areas that looked like they would need emergency food and shelter. These teams are dispersed across the region to offer nourishment, shelter and guidance to those in need.

Oil and gas corporation, Exxon Mobile Corporation donated \$100 000 to the American Red Cross to provide disaster relief to the victims of the tornadoes in Illinois and across the Midwest.

The National Disaster Animal Response and Recovery Teams Volunteer Matters (N.D.A.R.R.T.) took to reuniting pets with their families, setting up a social media page to help people with their efforts in finding their pets in Washington.

Damage was also reported in the adjacent northern Illinois towns of Diamond and Coal City, as well as in the central and southern Illinois. The storm destroyed or seriously damaged as many as 400 homes in Washington alone, said Illinois Governor, Pat Quinn.

The National Weather Service announced a EF-4 tornado damage in Washington, where winds of up to 321 kilometres per hour were recorded on 17 November.

Patti Thompson of the Illinois Department of Emergency Management said it was difficult to get information from the scene as communication was disjointed owing to the destruction caused by the tornado. Many calls made by to the area could not be completed, said Thompson.

At the time of the tornado activity in the Midwest, director of the US National Weather Service's storm prediction centre, Russell Schneider, said that this it was a very dangers situation. "Approximately 53 million people in 10 states are at significant risk for thunderstorms and tornadoes."

Schneider noted that the storms moved at 95 kilometres per hour, which he said does not give people enough ▶



# Call for nominations for 2014 Centrum Guardian

*Centrum Guardians for 2013*

The Centrum Guardian Project winners for 2013 Team Focus were announced recently, but calls for nominations have already begun for the 7<sup>th</sup> annual Centrum Guardian of the Year awards.

Fire fighters, paramedics, volunteer rescue personnel, lifesavers and other emergency rescue services crew are invited to submit nominations for the 2014 Centrum Guardian project, which recognises and rewards the acts of courage and self-sacrifice that the people who work in the emergency and rescue services industry demonstrate on a day-to-day basis.

Nomination forms can be downloaded from the Centrum Guardian website at [www.centrumguardian.com](http://www.centrumguardian.com) and must be submitted by no later than 1 April 2014.

The competition is open to registered personnel and volunteers working in the emergency and rescue services

fields in South Africa. In the past, Centrum Guardians of the Year awards were presented to varying emergency and rescue services personnel in either, sea rescue and lifesavers to fire fighters and emergency medical services crews.

Colleagues or individuals involved in rescue incidents dating back to January 2013 can submit their stories for consideration. Members of the public are welcome to share their own stories where emergency services crew saved their lives.

Centrum brand manager, Natasha Macdonald, says, "Every year we are amazed at the extraordinary stories of courage, passion and determination that we receive. We are proud to represent the remarkable people who work in the emergency services industry and share their heart-stopping incidents with the South African public through this initiative." ▲

- time to seek shelter if they were relying on watching the sky alone.

Matt Friedlein, a weather service meteorologist, said that people can fall into complacency, because they don't see severe weather and tornadoes. He also said that the tornadoes at this time of year happen more often than people might realise, pointing to a twister that hit the Rockford, Illinois, area in November 2010.

The primary time for tornadoes in the US is during spring, which starts in late March and a second period for tornadoes is in the autumn, which starts in September. ▲

**At least 60 tornadoes tore swept through multiple states in the US in November 2013**



Cyclone Cleopatra caused extensive flooding on the Italian island of Sardinia



# State of emergency declared in Italy following heavy flooding



A state of emergency was declared by Italian Government after heavy flooding in the country

Floods in Sardinia, the second largest island in the Mediterranean Sea, resulted in the death of at least 16 people in mid-November last year.

Flood waters in some parts of the island were three metres high. Emergency workers were trying to reach parts of the island that was hit overnight by the downpours and fierce winds of Cyclone Cleopatra.

Italian Prime Minister, Enrico Letta, described the fatalities as a 'national tragedy' and the Government declared a state of emergency on the island after six months' worth of rain fell within 24 hours.

"At this point, the priority is saving lives and helping those who have been evacuated. Unfortunately, we're talking about a lot of people. The deaths have also risen to a terrible number," said Letta, speaking to Italian radio.

A number of people are reported missing after rivers burst their banks. Cars were swept away and bridges collapsed. The storm caused extensive damage to farms in Sardinia and disrupted a number of flights to and from mainland Italy.

The north-east of the island appears was worst affected, with 13 of the deaths occurring in the Olbia-

Tempio province, according to the regional branch of Italy's civil protection agency.

Among the victims was a police officer who died after a bridge collapsed as he tried to escort an ambulance. Hundreds of people across the Mediterranean island were moved from their homes, because of the flash flooding caused by Cyclone Cleopatra.

"This is a natural calamity. In 24 hours, there was the same amount of rain as usually falls in six months," reported Italy's national civil protection chief, Franco Gabrielli.

Around \$27 million was assigned for disaster response measures after the declaration of a state of emergency.

Gabrielli said that the state of emergency enabled relief workers to set more rapid interventions and set aside an initial sum for the very first emergencies that occurred overnight.

The BBC Weather Centre says the flooding was caused by a deep area of low pressure that has been sitting over the Mediterranean, bringing sustained heavy rain.

Italian President, Giorgio Napolitano, expressed 'solidarity with the communities involved' and 'heartfelt sympathy to the families of the many victims'.▲



*Dozens of cars were involved in three pile-ups on a fog-laden highway in western Belgium*

# Fog causes 100-car pile-up in Belgium

**A**round 100 cars and trucks were involved in three pile-ups at a highway in western Belgium in a dense morning fog, leaving at least one dead and 54 injured.

Rescuers worked to free injured passengers from the twisted metal of their vehicles hours after the crash, but fog made emergency rescue by helicopter impossible.

The western Belgium provincial governor, Carl Decaluwe, said one person had died and that among the 54 injured, five were in a life-threatening condition, 11 suffered serious injuries, while 38 walked away with minor injuries.

The highway linking the regional industrial hub of Kortrijk to nearby Leper was strewn with debris in three locations close to one another.

Initial photographs from the scene show several wrecked cars, some overturned and a truck slammed against the side of the road, all shrouded in thick fog. A truck with feed had overturned in a ditch, slumping next to several cars crumpled together like paper balls.

With temperatures hovering close to freezing, thermal blankets were handed out to people who were still caught in their cars.

In 1996, a similar pile-up nearby left 10 people dead. ▲

## Two ships sank over two days in eastern China

Two ships sank in separate incidents off the coast of Shandong Province in eastern China, on 24 and 25 November, 2013.

A total of 26 people were missing on both ships following the incident, reported Chinese maritime officials.

In the first incident on 24 November, strong gales were forecasted off Shandong, when twelve people were confirmed missing after a ship registered in east China's Zhejiang Province, sank off Yantai City, reported the Yantai Maritime Bureau.

The ship started leaning in strong gales winds after the 88-metre long ship lost power.

On 25 November, another cargo ship sank off Weihai City and 14 people were reported as missing in that incident, according to the Shandong Provincial Maritime Rescue Centre.

Rescue teams have been sent to the two sites to search for survivors. A total 10 bodies were recovered in the two incidents. Rescuers on boats and in helicopters continued to search for the remaining missing sailors on board the two ships.

None of the remaining 16 sailors were found following rescue efforts, reported local authorities. ▲



*The Sinabung volcano in Sumatra, Indonesia violently erupts in November 2013*

# Series of volcanic eruptions occur in November

Nearly 18 000 people have had to flee the eruption of the Sinabung volcano on the Indonesian island of Sumatra, as debris rained down on houses in November, 2013.

The Indonesian Centre for Volcanology and Geological Hazard Mitigation warned people not to approach within three kilometres of Mount Sinabung as plumes of ash rose two kilometres into the sky and hot rocks plummeted to the ground, peppering holes in the roofs of local homes.

Sinabung, in north Sumatra, erupted multiple times in November. More than 5 000 families were evacuated to community centres outside the danger zone by local authorities in Sumatra.

The evacuation and devastating ash fall have affected crop harvests. Some villagers in Sumatra risked their lives by staying in the evacuation area to tend to livestock and guard their homes.

Those that were evacuated from the region included 2 500 children under five years of age and more than 1 700 elderly residents, reported

Indonesia's National Disaster Mitigation Centre (NDMC).

"The number of displaced increased a lot because we lifted the alert level," said a spokesperson for the NDMC.

The Sinabung volcano blasted out one-to-two ash explosions every day in late November, with lava flowing for more than 1 000 metres from the top of the volcano.

Mount Merapi in central Java, the country's most active volcano that killed more than 350 people in a series of violent eruptions in 2010, also showed signs of low activity in November.

Another volcano in Indonesia on the island of Palue, spewed hot ash into the sky and unleashed torrents of molten lava that killed six people sleeping on a beach, reported local officials.

Mount Rokatenda erupted in August 2013, sending huge clouds of red-hot ash and rocks two kilometres into the air in August.

Three adults and three children were killed in the incident. Some 2 000 people had previously been

evacuated from the island, due to the volcanic activity. Rescuers were in the land to transport those willing to leave the inhabited region in close proximity to the Mount Rokatenda.

Indonesia has dozens of active volcanoes and straddles major tectonic fault lines known as the Ring of Fire between the Pacific and Indian oceans.

The country's most active volcano, Mount Merapi in central Java, killed more than 350 people in a series of violent eruptions in 2010.

In Italy, Mount Etna, which is Europe's tallest volcano, erupted on 24 November showering the island of Sicily with sharp volcanic rocks and heavy ash.

The force of the eruption was strong enough to push the material hundreds of kilometres across the Strait of Messina towards the Italian mainland.

Despite the surreal visuals, the eruption on the 24th caused no evacuations and no serious damage was reported. Etna's eruptions have, however, occasionally been known to be more serious. The lava flows of the 1992 eruption led to evacuations.▲



# Somerset West contractor secures enterprise development deal

Fire fighting in the plantations of the Western Cape will benefit from a new deal signed between forestry companies and Carel Davids, a company based in Franschhoek in the Western Cape, South Africa.

The agreement has enabled Somerset West contractor Carel Davids to be selected by Cape Pine Forests, Timber Products and Vos-Will Contractors, which is a member of the FFA Group of Companies, to be included in their community upliftment and enterprise development plans for the Western Cape.

Established in 2004, Vos-Will joined the FFA Group of Companies in 2012. The company specialises in carrying out forestry silvicultural activities, as well as all aspects of integrated fire Management (IFM).

The company has grown from being able to provide three strike units in the 2011/2012 fire season to the provision of seven units for the 2012/2013 fire season.

In addition, they have been able to assist the Cape Winelands District Municipality with a hand crew to support fighting local unwanted fire.

"We elected Davids as a result of his track record of delivery and positive approach to hard work," managing



Vos-Will Contractors and Boland Fire Management MD, Jannie de Vos; Cape Pine area manager, Dirk Kotze; Cape Pine GM business development, Irvine Kanyemba and Boland Fire Management director and operations manager, Carel Davids

director of Vos-Will Contractors, Jannie de Vos.

The contractor has been working in this industry for a long time and showed the potential to develop even further, added De Vos.

As a result of the new deal, Davids will be a 50 percent shareholder in Boland Fire Management (Pty) Ltd.

Vos-Will is an established service provider in the Western Cape and

with the support of the FFA Group now has the potential to expand the delivery of services in the Southern and Western Cape.

Boland Fire has already begun to deliver services to Cape Pine.

De Vos believes the empowerment model pioneered with Carel Davids could serve as an example for the development of a similar service to plantation companies in the Southern Cape. ▲

## Massive explosion at gas pipe in Poland

A gas pipe explosion in Poland in eastern Europe, resulted in the death of three people and eleven other injuries on 14 November this year.

According to fire fighters, the blast occurred on a high-pressure gas pipe in the village of Jankow Przygodzki, Poland, at a section of a pipeline that was being modernised.

There were children among those injured in the explosion, according to reports in Poland, with some of the injured said to be in a critical condition.

Several houses caught fire in the explosion, including a forest in the area. The explosion destroyed dozens

of homes in close proximity to the blast, reported officials. A rescue operation was carried out and involved 12 fire crews, who combined efforts to douse the fire.

The accident was caused by a gas leak after a pipe cracked, according to a fire department spokesperson, Krzysztof Biernacki, from nearby Ostrow Wielkopolski.

Biernacki said that the pipe was 'probably damaged during local construction work'. Fire fighters were able to contain the fire two hours after the blast occurred, reported local officials. ▲



Flash floods created widespread chaos in the Western Cape in November this year

# Flash floods create havoc in Western Cape in November

The Western Cape experienced extensive flooding across the province, with the Somerset West and the seaside resort town of Strand, being worst affected by flash flooding on 15 November this year.

The Lourens River in Cape Town had burst its banks and flood water had risen to almost a metre on some roads in the eastern suburbs of the town and Main Road in Somerset West experiencing its worst flooding in the area in years.

At Vergelegen MediClinic in Somerset West, a few of the wards had to be evacuated as the water rose and civil protection agencies blocked off roads across the suburbs as water levels rose to threatening levels.

The Mediclinic had to evacuate 129 patients as the water levels rose in the area. Medical patients had to be moved to neighbouring hospitals, while some cars were swept away as rivers burst their banks.



Severe floods affected 18 000 Western Cape residents in Somerset West and Strand

The City of Cape Town deployed response teams and engineering crews to assess water levels, according to Western Cape Disaster Management spokesperson, Wilfred Solomons-Johannes. The National Sea Rescue Institute (NSRI) assisted in the flood relief operations of the Western Cape's emergency services.

The City of Cape Town spent about R3 million on providing social relief to 18 000 residents affected by the severe floods experienced at the weekend.

The city was assessing the extent of the damage to municipal infrastructure to establish the financial effect, said City of Cape Town, Patricia de Lille.

The flooding caused numerous rockfalls, mudslides and landslides along mountainous areas. Other affected areas included Delft, Faure, Fish Hoek, Gugulethu, Hout Bay, Khayelitsha, Kraaifontein, Kuils River, Sir Lowry's Pass and Valhalla Park.

"I would like to extend my deepest condolences to those who lost their loved ones as a result of the flooding experienced throughout the city this weekend. I would also like to extend my sympathies to those who lost their belongings over the last few days," Ms de Lille said.

She said the City of Cape Town was using all the resources at its disposal to provide relief to residents who had been affected by the floods. "The city's proactive planning in anticipation of the unprecedented rain experienced over the weekend has helped to mitigate the damage caused by the floods," Lille said.

She said that ahead of the time, the city's disaster risk management centre deployed its resources close to areas they identified as likely to be the worst affected by the rains last Friday. This enabled them to respond promptly to requests for assistance.▲





# Supermarket roof collapse tragedy in Latvia

*Fifty-four people died when the roof of a supermarket collapsed in Latvia*

**A**t least 54 people died and a further 36 injured after the roof of a supermarket in Latvia in northern Europe suddenly collapsed on 21 November 2013.

The roof collapsed on an evening when many people were shopping on their way home from work in the Latvia capital city of Riga.

Three of those that died in the incident were fire fighters who responded to the initial collapse of the roof. They were killed when another part of the roof fell as they were searching for survivors. A day after the incident, police dogs joined the search for people trapped under the rubble.

Latvian prime minister, Valdis Dombrovskis, stated that a criminal process would ensue to investigate the possible construction violations that may have caused the roof of the supermarket to collapse.

Early reports suggest the roof caved in due to either faulty construction or building work on its grass- and gravel-covered surface, where workers were installing a garden area and children's playground for an adjacent high-rise residential building.

Latvia President, Andris Berzins, spoke bluntly about the disaster at the Maxima supermarket in Riga. "This is a case where we need to say clearly it is the murder of an enormous number of defenceless people and that's how we should proceed," said Berzins in an interview with Latvian television.

The 54 deaths were confirmed from the structural failure two days after the incident. However, there were reports of 10 missing people and it was not clear if the new death toll included any of them. It was the worst accident in the Baltic country since it regained independence in 1991.

The Government declared three days of mourning starting 23 November. Local residents streamed to the site

in a densely populated neighbourhood to lay flowers and light candles.

Pictures show that a large amount of building materials, including bags of soil for the garden, were left in areas of the roof that Riga city officials say could have been vulnerable to heavy loads.

Police have launched an investigation, which could take several weeks to complete. ▲



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# Major ambulance service shuts down without notice in six US states

A private ambulance service that transported more than a half-million patients a year in six US states, abruptly shut down without explanation, leaving dozens of cities and towns scrambling for medical transportation options in December last year.

First Med EMS, based in North Carolina, US, served hospitals and other medical facilities in more than 70 municipalities in Kentucky, North Carolina, Ohio, South Carolina, Virginia and West Virginia.

First Med's operated under the names TransMed, Life Ambulance and MedCorp. The company's website was inaccessible and calls to corporate offices either reached disconnected lines or weren't answered.

The corporation had declared bankruptcy according to employees who posted reports on social media. However, no bankruptcy documents

were yet on file in US Bankruptcy Court for the Eastern District of North Carolina.

First Med was the largest EMS service in Ohio, where at least 1 500 paramedics and other medical workers were left jobless in Cleveland, Columbus, Dayton, Toledo, Cincinnati, Youngstown and numerous smaller towns.

First Med also provided services in Richmond, Norfolk and Newport News in Virginia, as well as Wilmington, North Carolina.

Much of First Med's business was 'non-emergent' transportation, such as taking dialysis patients to their weekly treatments and shuttling nursing home patients to doctors' appointments.

Officials in some cities said there should be little impact on patient treatment. "The unfortunate thing

was lack of notice," said Camden Clark Medical Centre ambulance service director, Larry Stephens.

Many of the company's approximately 2 300 employees learned about the shutdown from colleagues. When they tried to show up for work Saturday, they found locked doors.

Dispatch services in several cities reported that First Med called them Friday night and Saturday to stop all requests for emergency runs. Workers who were in the middle of their shifts were told to turn around and go home.

Medical facilities said the shutdown took them by surprise too with at least one county in North Carolina declared a state of emergency at noon Monday. The county board of commissioners said in a statement that it would pursue legal claims against First Med.▲

# Gas pipeline explodes in rural US

A 76-centimetre gas pipeline in a rural area of western Missouri in the US, ruptured and exploded on 29 November, sending a 100-metre high fireball into the air, reported US media.

The glow from the burning Panhandle Eastern Pipeline could be seen for miles, however, there were no injuries or fatalities.

Three homes within an 800-metre area of the blast were evacuated. The blaze took more than two hours to extinguish. Residents were allowed back in to the area of the blast a few hours after the blast occurred. The flames also destroyed seven buildings

on a nearby pig farm. According to media reports, local residents said the fireball lit up the area like it was daytime and other residents said that their homes were shaking.

This is not the first time an explosion has occurred on this pipeline. According to the Pipeline and Hazardous Materials Safety Administration in US, the same line ruptured on 25 August, 2008, causing an explosion and a two-metre deep crater, about 15 metres wide. The accident caused about \$1 million in damage.

The cause of the rupture in November this year and the subsequent explosion was not immediately

known, but Panhandle Eastern Pipe Line Co, which owns the pipeline and federal and state regulatory agencies were to conduct an investigation.

Though the 76-centimetre diameter pipeline may not sound very big, it is actually comparatively large for pipelines. It's important to note that sizable explosions can come from seemingly small pipelines as well.

In November this year, a 25-metre Chevron natural gas pipeline exploded near a drilling rig in Milford, Texas, leading the company to ask law enforcement to evacuate the entire town.▲





# Training in 'suicide watch' required of fire fighters in US town

*The Springfield Fire Department in US requires fire fighter to take training to recognise signs of suicide*

**T**he Springfield Fire Department in Massachusetts, US, recently instituted suicide-prevention workshops for all of its uniformed personnel, which officials said may be the first of its kind for any fire department in the state.

Springfield fire commissioner, Joseph Conant, said the training, which he made mandatory for all uniformed personnel, was not the result of any specific incident within the department involving a suicide or attempted suicide. The training was, instead, a reflection of a changing attitude within the department, he said.

The department has always been aware of the physical health and well-being of its fire fighters, said Conant. The training demonstrates the department is concerned with their emotion and mental health as well, he added.

"I thought it was a good idea," he said. "The training provides fire fighters the tools to recognise the signs in other people and yourself."

The suicide-prevention training came about after Conant had a

chance to talk with Riverside Trauma Centre suicide prevention specialist, Sarah Gaer. The trauma centre is part of the Riverside Community Network, which is based in Needham, Massachusetts.

He said Springfield is the only department in the state to offer such a program for its fire fighters, but he suspects it will not be the only one for long. He said when mentioning it with other chiefs, they all seem interested in starting their own programs.

The department previously has made counselling for fire fighters after various traumatic events over the years, such as the downtown gas explosion that occurred in in Springfield in 2012, he said. Within a few days after the explosion, which injured 13 fire fighters, trauma counselling was available for anyone who wanted it, he said.

Fire fighters are exposed to a lot of kinds of stress that just comes with the job. They continually put their lives in danger at fires and respond to scenes where people are badly injured. Continued exposure to that can wear on a person and it doesn't help that the 'macho' fire fighting

tradition over the years, conditions fire fighters to not let on when they're hurting. That doesn't really work anymore, he said. A big part of the training is to get fire fighters 'to open up and to not keep things bottled in'.

Gaer said she had been warned by colleagues that fire fighters as a group, can be extremely reluctant to talk to outsiders. "I had been warned up and down," she said.

However, Gaer said that she founded the fire fighters to be 'extremely respectful, willing to talk and surprisingly empathetic'. "I was surprised how open they were," she added.

The sessions covered myths and stigmas associated with suicide before segueing into a method of prevention training known as QPR, which stands for question, persuade and refer, she said.

Since working with Springfield, Gaer said she has been contacted about providing the same training to fire fighters in one other city and three towns in Western Massachusetts. ▲

# Train derailment in New York claims four lives

*A train derailment in New York occurred after it travelled at three times the speed limit on a bend*

A commuter train in New York, US, derailed killing four people and critically injuring 11 others on 1 December. The seven-car train was traveling at 132 km per hour, nearly three times the speed limit for the curved section of track where it crashed.

The seven-car Metro-North train's brakes were working properly but were applied just seconds before it derailed, according to the National Transportation Safety Board (NTSB).

Some 150 passengers were aboard the train and a total of 67 people were transported to local hospitals.

One of the train's cars nearly flung out into the river and a second car twisted onto one side, ejecting several passengers through the windows. A third car had people trapped inside.

However, a fourth car was the most challenging to the fire fighters, because it was sitting at a tilt and swayed as they worked to extricate the injured.

"The car was teetering back and forth, so the removal of those people was getting a little tricky," said Fire Department City of New York (FDNY) captain, James Ellson.

In all the cars, there were more injured people than the fire fighters and New York police officers could immediately assist in those early minutes.

The rescuers had to make a difficult request to the passengers who were less badly injured than others. Fire fighters were forced to call on the assistance of those less injured in the extrication of the wounded.

"It's very hard to ask a civilian who was just involved in an accident to help us," Ellson recalled. "They had just been involved in a very bad train accident, and now I'm saying, 'I need your help, I need you to help people who are in worse shape'."

"You'd think people would want to just get out and run as far as they could, but people were very good," said Ellson. "It is amazing. One moment they're riding the train, they're coming or going to work and it's Sunday morning and the next moment their whole lives are tossed up in the air and they're not just a survivor, you're asking them to help."

The better-off passengers applied gauze to the wounds of others and offered whatever aid and comfort they could as the fire fighters attended to those who were most seriously injured.

There were many injured passengers trapped in the cars and gaining entry was difficult. In many cases fire fighters had to clamber up and lower themselves through windows and then decide on who was most in need of assistance.

The fire fighters and the responding police officers worked as quickly as they could, while still taking care not to cause further injury.

Once the injured were removed, they were taken to a casualty collection point. The fire fighters did not want the ambulatory passengers to chance onto an electrified rail or encounter some other hazard. More fire fighters continued to arrive, along with more officers from the New York Police Department (NYPD) and the Metro-North Police.

Officials noted that if the accident occurred on a quiet day of commuting as opposed to a weekday, when 1 000 or more people would have filled the seven passenger cars of the train.

The driver of the passenger train, William Rockefeller, 46, applied the brakes five seconds before the train derailed, telling federal investigators that he 'zoned out' shortly before the crash, according to Association of Commuter Rail Employees general chairman of the driver's labour union, Anthony Bottalico.

"By the time he realized (what was happening) it was almost into the curve," Bottalico said. "He put the train into neutral and put the brakes on immediately. That's what he acknowledged he did." ►



# Four-legged creatures employed as fire fighters in US

A group of US residents in the state of Colorado are taking wildfire prevention into their own hands.

More than 380 goats recently grazed in a community in Douglas County, Colorado, clearing out underbrush that can fuel wildfires in the region.

"Goats will eat pretty much anything, including thistles, poison ivy, cactus, yucca, rose bushes, Russian olive trees and oat brush," according to the Colorado the Roxborough Fire Mitigation Committee, which helped organise the goats' work.

The Roxborough committee believes that the goats' voracious appetite will do the same job as more invasive fire mitigation tactics and will be more pleasant to look at. If all goes well, the goats, which will be herded by border collies into the areas that most need grazing, will eat about a ton of food.

"I think it's a great idea," said Roxborough Fire Mitigation Committee representative, Rick Hart. "It's very satisfactory for the residents. They like it better than the machines, they like it better than chemicals, and they're doing the same job."

They'll also be cheaper. The goats' two-week run will cost around \$15 000, much less than using chainsaws and human labour, says Hart.

It makes sense for Colorado's citizens to be concerned about wildfire prevention. This summer, the state experienced its most

destructive fire history, with about 5 600 hectares burned and at least 509 homes destroyed.

Wildfires in the West are becoming more intense and as temperatures rise and incidence of drought increases, the risk of wildfires in Colorado will only go up.

Colorado isn't the first state to use goats for fire mitigation, as the US state of California has similarly employed goats in the past. In Southern California, one man who used goats to graze around his house said the tactic saved his house and ranch from the Witch Creek Fire of 2007.

Hire-A-Goat, an organisation that rents out goats to residents who want similar protection from fires or weed control, was subsequently started after 2007.

Bay Area agencies and residents have used goats to keep the last of their forest cover, much of which has been decimated by drought and bark beetles, from catching fire. In June this year, the San Francisco airport followed suit and hired a herd of goats for fire prevention.

"The goat clearance scheme is one of the key reasons the Bay Area hasn't had a recurrence of a catastrophic fire in decades," said Tom Klatt, former manager of the Office of Emergency Preparedness at University of California Berkeley.

Goats' appetites make them useful for more than just fire prevention. They're also widely used to clear out invasive plants like privet and English ivy, especially in hilly, rocky areas where machinery can't reach.

The Bath County Hydro Pumped Storage Facility in Virginia State uses goats to graze the steep hillside of its 170-metre tall dam and multiple airports in the US have also used this tactic.



Anything goes in a goat's diet, including wildfire causing underbrush

► The seven-car Metro-North train's brakes were working properly, but were applied just seconds before it derailed, according to the National Transportation Safety Board (NTSB).

The train might have benefited from a Positive Train Control (PTC) system to stop or slow a speeding train, said NTSB member, Earl Weener.

"For more than 20 years, the NTSB has recommended implementation" of PTC, said Weener. "Since this is a derailment, it's possible that PTC could have prevented it."

Railroad experts have been advocating for PTC systems for years, but they are expensive and complicated and often incompatible for all trains within a single transit system.

The Metropolitan Transportation Authority, which runs Metro-North, said it began work to install Positive Train Control in 2009 with a goal of implementing it by 2015.

The authority said it has budgeted nearly \$600 million, with at least another \$300 million needed, and even then was unlikely to meet the 2015 deadline. ▲

# Multiagency emergency response to vehicle accident in Tokai



*A multiagency emergency response operation ensued in Tokai following a heavy-delivery vehicle accident*

**O**n 13 November 2013, paramedics from Emergency Medical Treatment (EMT) were dispatched to a motor vehicle accident involving a heavy motor vehicle at the foot of Ou Kaapse Weg, Tokai in the Western Cape Province, South Africa.

On arrival, the EMT paramedics found a heavy delivery vehicle had collided into the wall at the entrance of an office park after appearing to lose its brakes and failing to make the stop at the foot of Ou Kaapse Weg.

Five patients were treated on scene for multiple injuries ranging in severity. The driver and one passenger were trapped in the wreckage and required the assistance of the Western Cape Department of Health (WCDOH) rescue technicians to extricate them using 'jaws of life' rescue equipment.

The Western Cape Department of Health's heavy rescue crane, Rescue 6, was used to manoeuvre the truck to allow rescue teams access to the patients.

Paramedics from various private and public emergency medical services organisations, such as ER24, Netcare 911 and the WCDOH EMS, worked together to stabilise the patients and prepare them for transportation to various hospitals in the area.

"The driver of the vehicle was airlifted in a critical but stable condition to Groote Schuur Hospital by the WCDOH's AMS helicopter for further treatment," said the Incident Medical Commander from EMT, Robert de Wet.

The South Africa Police Services (SAPS) and City of Cape Town Traffic Services assisted in the incident, by keeping the traffic flowing and the scene safe for all medical teams at the site.

The City of Cape Town Fire and Rescue Services also attended the incident, stabilising the vehicle prior to the arrival of the health department rescue technicians and assisting with the prolonged extrication of the entrapped victims.▲

## Fire at Detroit chemical company causes hazmat scare

A fire at a chemical company in Detroit, US, resulted in the evacuation of a residential area and a nearby school in November this year.

Chemical Technologies, which makes adhesives, paint, primers and sealants, was heavily damaged in the fire, which started at its warehouses in city of Detroit, sending huge plumes of smoke in the air.

The Detroit Fire Department had to notify the state governor in case help was needed. The Environmental Protection Association (EPA) sent out crews to test air quality, however, the air was found to be safe.

Fire officials labelled it a hazardous materials situation as homes and other businesses close to the company were evacuated. Some streets in the area were shut down to traffic.

Fire fighters said they were initially unsure what materials were burning. The exact cause of the blaze was under investigation, according to fire officials.

Owner of Chemical Technology, Gerhard Weber, told a local Detroit news agency that a spark was caused by employees moving chemicals. The spark created the flames, which quickly spread through the building. Weber said that factory workers were mixing chemicals used

to make adhesives when chemicals were dropped and sparked a fire.

None of the eight or nine workers inside were hurt in the blaze. Fire officials were conducting environmental tests after they had the fire under control.

Flames were again spotted on the same day a few hours later on the upper level of the building complex that Chemical Technology occupies. Detroit fire fighters returned to the location and attacked the rekindled flames from above.

The 10 000m<sup>2</sup> manufacturing complex was gutted in the earlier blaze.▲



# Wildfire flared up in California in late November



*A late season wildfire in California was whipped up by strong, dry winds*

**A** late season wildfire was whipped up by strong, dry winds in the Sonoma County in California, US, on 22 November 2013.

Dubbed the McCabe fire, the wildfire burnt 1 100 hectares and damaged a geothermal power plant, prompting energy workers to evacuate the area in the face of the advancing flames.

About 340 fire fighters from more than a dozen local departments and the state were battling the blaze in The Geysers, a large geothermal energy plant along the Sonoma-Lake county border. Many homes were forced to be evacuated in The Geysers, although no injuries were reported.

The flames destroyed a cooling tower at the power plant that is in an area with low humidity and steep terrain, as well as an abundance of brush and dry grass and timber, making fire

fighting efforts difficult, according to California Department of Forestry and Fire Protection (CalFire) captain, Scott McClean.

A spokesperson from CalFire said that other than power-plant facilities, there were no other structures threatened in the blaze. Sheriff's deputies were checking cabins and other properties in the area, but they were found to be unoccupied and no evacuation order was given. There were also no injuries reported.

A number of smaller blazes kept fire fighters busy across the region in late November, as steady reports of toppled trees and downed power lines strained the reach of utility crews.

The McCabe fire was one of two large wildland blazes in Wine Country that took off amid gusts and ripped through tinder-dry brush and forest.

The other was a 121 hectare fire that forced the evacuation of about 50 homes in the hills northeast of Napa, California.

The McCabe fire was burning in the same range of hills where flames spread over 5 000 hectares in 2004, consuming six cabins. Yet that fire was in September, often the peak of California's fire season, while the current blaze comes at the start of the wet season and on the heels of a light rainstorm.

Fire fighting veterans in the US said the McCabe fire illustrated how a combination of a prolonged drought and historically dry fuels plus erratic winds could spark extreme fire behaviour, even in November.

The McCabe fire described flames as 'crowning', racing to the tops of brush and trees as if it were August, states US reports.▲



**Newly-elected Australian PM, Tony Abbott, dismissed climate change and bushfires link**

# Australian Prime Minister

## rubbished claims that climate change caused bushfires

**N**ew Australian Prime Minister, Tony Abbott, dismissed claims that climate change was the cause of wildfires that have ravaged the eastern parts of the country this year, arguing that Australia has experienced worse fires before.

Bushfires put a strain on Australia's fire fighting resources in October this year, causing destroying more than 200 homes in New South Wales.

The bushfires caused upwards of \$100 million in damages after burning for a little more than a week in late October.

However, the Aussie Government staunchly rejected arguments that climate change caused the wildfires that ravaged parts of the country, following a record hot start to the spring season.

Prime Minister Tony Abbott described the climate change link as 'complete hogwash' in an interview with Australian media.

Australia's environment minister, Greg Hunt, backed the newly elected Australian PM, saying no individual event can be linked to climate change.

Despite the stance taken by the Australian Government, climate science organisation, Climate Commission, abolished by Abbott's Government released a report in late October this year, declaring a clear link between climate change and the wildfires.

The severity and scale of the fires was unprecedented for this time of year, stated the report.

New South Wales recorded its hottest temperatures for the month of September this year and the 12 months preceding it had been the hottest year on record across Australia.

The Government abolished the State-funded Climate Commission after being elected in September. Abbott argues that Australia has experienced wildfires for more than 200 years of European settlement and had suffered worse fires in the past.

The Australian government's dismissal of climate change aroused the anger of former US presidential candidate and climate change activist, Al Gore, who criticised Abbott.

"For 40 years the tobacco companies were able to persuade pliant politicians within their grip to tell the public what they wanted them to tell them, and for 40 years the tragedy continued," stated Gore on a US television news network in October.

Gore said that bushfires can occur naturally and they do. He said, however, "The science shows clearly that when the temperature goes up and when the vegetation and soils dry out, then wildfires become more pervasive and more dangerous."

Abbott's conservative Government plans to repeal laws that force Australia's worst greenhouse gas polluters to pay a tax for every tonne of carbon dioxide that they emit. The tax was introduced last year to reduce Australia's abundant greenhouse gas emissions.

Australia is one of the world's worst greenhouse gas emitters on a per capita basis, because of its heavy reliance on cheap coal for power generation. As the world's driest continent after Antarctica, scientists warn that Australia is also particularly vulnerable to climate extremes that come with climate change.

A UN-created climate change panel issued a major report in Stockholm, Sweden, in September this year that said it was 'extremely likely,' or 95 percent likely, that global warming was man-made.▲



# Working on Fire lauded in 10<sup>th</sup> year celebration



*The group of speakers at the colloquium, together with WoF administration personnel*

**T**he Working on Fire (WoF) integrated fire management (IFM) programme, launched in September 2003, celebrated its 10<sup>th</sup> year anniversary at the Black Mountain Resort in Thaba Nchu, Bloemfontein, South Africa and Fire and Rescue International attended the celebrations that included a colloquium held on 9 November.

The colloquium reviewed the progress and achievements of the Government-funded expanded public works programme (EPWP), of which there have been many.

The EPWP programme has grown from humble beginnings in 2003 when it had 25 teams or 850 beneficiaries to its current makeup of over 5 000 fire fighting and management personnel spread across all nine provinces of South Africa. It has grown from a R25-million a year project, to an annual R500-million programme.

The seminar or colloquium featured talks and discussions from a host of prominent fire industry experts, who recognise the value and contribution that WoF has made in integrated fire

management in the country over the past 10 years.

### **EPWP programme**

FFA Group's managing director for WoF, Trevor Abrahams, shared the vision of the WoF programme in his colloquium address, while also reflecting on the past successes of the organisation.

Abrahams explained that WoF is a strategic Government funded EPWP programme implemented via tender with the FFA Group. "We support land management agencies and landowners and implement IFM with our partners," he said.

These partners include Government and fire protection associations nationally, to whom more than 5 000 WoF fire fighting teams provide additional support in fire prevention and suppression activities.

"The key objectives of the WoF programme are poverty relief, skills development and increasing IFM capacity," noted Abrahams. "We have equipped ourselves excellently in these areas."

Abrahams identified the WoF fire fighting training academy, based in Nelspruit in Mpumalanga Province, South Africa, as the 'bedrock' for all that the programme has achieved over the past decade.

Management development and crew leader management was highlighted as the significant and incremental changes in the WoF organisation, stated Abrahams.

It is perceived that the WoF contract will be extended for the next seven years, stated Abrahams. "WoF is a worthy programme and it is worthy of funding," he said.

### **Skills sharing partnership**

Training coordinator in complex incident management for the US Forest Service, Bill Miller, who joined WoF in a South Africa USA (SAUSA) skills sharing initiative, was highly complementary of the WoF programme in his presentation at the colloquium.

Miller outlined the focus of the SAUSA partnership, which had three key areas of focus namely; fire an hazard preparedness and incident ▶



*The WoF fire fighters are the key beneficiaries of the programme*

► command system (ICS) capacity building, poverty relief and public works, as well as fostering an official exchange agreement between the US and South Africa.

In terms of implementing ICS in South Africa, Miller stated that WoF has made exemplary progress. "WoF has been here ten years and has made amazing steps. Through 88 courses and 3 000 students, every year training has increased." He added, "In 10 years there are more than 200 crews and your fire prevention is top notch."

Miller said that the idea of sharing information was important and that cross continental communication has been made possible with new technologies. "We can now share information real time across cities around the globe," stated Miller.

The goals of the SAUSA partnership is to institutionalise ICS in South Africa, as well as to achieve full accreditation of ICS, explore all ICS hazards and facilitate active ICS exchange agreements, Miller explained.

"We exchange resources in time of need. You don't want to learn each other's systems when an incident occurs," said Miller. "We have had 30 exchanges between crews in USA and SA going back and forth

and sharing lessons learned. The WoF programme is taking the lead in so many ways. The professionalism and competence in the programme is astounding."

Skills provision and creating jobs in the poorest communities in South Africa through the WoF programme has changed people lives, stated Miller. "Whether these people stay in fire or go into other careers is not important. They are advocates of our programme," he concluded.

### **National Fire Forum**

Mpumalanga UFFPA manager, Trevor Wilson, discussed the formation of the National Veld and Forest Fire Protection Forum that has been formed and made up of umbrella fire protection associations (UFFPAs) nationally.

In his presentation titled 'UFFPAs working together for the national good' highlighted the need for a national UFFPA to support and facilitate the coordination of fire prevention, control and suppression measures and related risks within the respected provinces.

"While we mature into a full National Fire Protection Association, we will learn from lessons as a forum," said Wilson. We should be learning from each other's lessons. No one has the time to relearn all that has happened already."

Wilson question whether the funds from the National Veld and Forest Fire Act 101 allocation is being used effectively and whether it is being 'pumped into the correct sites'.

He said that the national advisory forum was formed to address these issues.

Wilson mentioned that there were 257 fire protection associations (FPAs) and five recognised provincial UFFPAs in the country.

### **Fire ecology**

Council for Scientific and Industrial Research (CSIR) fire ecologist, Dr Brian van Wilgen, discussed the biodiversity priorities for veld and forest fire management in South Africa.

He focused on the fire prone biomes in South Africa, which are grassland, savannas and fynbos.

Dr van Wilgen described fynbos as being fire prone, fire adapted and fire dependent. He referred to the inadequate reporting of fires in the mainstream media, suggesting that fynbos fires are destructive to the environment. "They do not destroy vegetation," opposed Dr van Wilgen. "When fynbos burns it is not an ecological disaster. Millions of seeds germinate after a fire," he said. ►



► Like fynbos, savannah biomes are fire prone and fire adaptive, although savannas are known to go through 'erratic wet and dry periods'. In low rainfall, a high area burn of savannas occurs and in high rainfall there is a low area burn.

"Savanna fire management is all about influencing the balance between trees and grasses," explained Dr van Wilgen. He said, however, that the invasion of alien plants caused complications in savannah fire management.

Dr van Wilgen then explained that incorrect carbon dioxide in the atmosphere is a driving factor in bush encroachment of both indigenous and alien trees. He said that the effectively reversing bush encroachment will require application of high intensity fires.

The application of high intensity burns has its effects and challenges and these include the difficulty in getting permission to burn. "Given the high intensity burn requirement it is difficult to do at the scale required," said Dr van Wilgen. He added, however, that high intensity burning is an effective tool to combat bush encroachment and alien invasion.

### Fireprone landscapes

Former forest ecologist, Professor Coert Geldenhuys and discussed the range of factors affecting forestry plantations, arguing whether fire damage in plantations was not the only causal factor.

He questioned whether climate change had a role to play in this processes adding that devastating fires have occurred over many decades owing to extreme berg wind conditions.

More effective fire planning and the understanding of fire dynamics at a landscape level is an area that needs to be explored, according to Professor Geldenhuys.

"Forests are naturally surrounded by fire-adapted fynbos and plantation and agriculture is developed in fynbos and not in cleared forests," said Professor Geldenhuys.

He noted that forests persist even in extreme fires and that

plantations are established in fire pathways. "Natural forest locations and patterns are keys to effective plantation fire management," explained Professor Geldenhuys.

### Integrated fire management

Nelson Mandela Metropolitan University (NMMU), Saasveld School of Natural Resource Management lecturer, Tiaan Pool, spoke about the need to provide adequate training to integrated veld and forest fire managers.

Pool provided a definition of IFM, which he said is a series of strategic, tactical and operational action that includes fire awareness, prescribed burning, fire detection and protection at local, provincial and national levels to sustain environment.

The challenge facing IFM in South Africa is the development of competent leaders. Pool quoted US political activist and author, Ralph Nader, with the following phrase; 'The function of leadership is to produce more leaders and not followers'.

"We must ask questions when talking about management. Are we talking about leaders?" questioned Pool. "Are we achieving goals and do we reach bottom lines and outcomes?"

Pool then explored the reasons for accidental fires in forestry. He cited poor management, lack of experience, poor discipline, poor planning or no planning and lack of knowledge as the key factors in the occurrence of accidental fires in the industry.

Through the implementation of IFM, new ways of thinking can be developed, stated Pool. "Fire management is a science. It is no longer a skill and competency."

Pool continued, "IFM requires strategic thinking, tactical management and the combination of these skills is what we are looking for."

NMMU Saasveld introduced the Higher Certification in Veldfire Management beginning in 2014. It is currently structured as a one-year full-time course, with a part-time option over two years as well. However, the

institution hopes to develop into a three-year national diploma within five years.

"The aim of the programme is to empower a new generation of fire managers equipped to manage the African fire environment," stated Pool. "A new breed of fire managers in veld and forest fires is needed," he concluded.

### Demand for IFM

Management consultant and former Western Cape Nature Conservation Board CEO, David Daitz, delivered a presentation on the demand for integrated veld and forest fire management in South Africa.

Daitz stated that Government amended the Veld and Forest Fire Act so that hot prescribed burns can be done. He noted the fynbos and savannah biomes as the two most fire prone vegetation in South Africa.

A lot of the country is exposed to fire risk, according Daitz. "There are too few people, unfortunately, who conduct prescribed burning for fear of litigation," he said.

South Africa has an area spanning more than 121 million hectares of varying biomes and ecology sustainability requirements. In this area of cover are 14 million hectares that require prescribed burning in order to satisfy ecological requirements of biomes every year, stated Daitz. "The area burnt on average over the period from 2003 to 2009 is three million hectares a year," he said.

The total burnable area in the country currently is 68 million hectares, owing to a buildup of fuel loads over time. "The Advanced Fire Information System (AFIS) records three million burns annually. Do we have a problem?" reiterated Daitz.

He said that there was a need to burn and manage environment so that natural resources are optimum as a strategic management objective for South Africa's natural vegetation.

Daitz alerted to the possibility of another 'firestorm' in South Africa. "There is a buildup of bush encroachment and we're only ►



# Fire fighters from WoF programme treated to Azishe Games and awards

**W**orking on Fire (WoF) celebrated its 10<sup>th</sup> year anniversary with a series of events in the month of November, which included a passing out parade and live aerial fire fighting demonstration.

As part of the 10<sup>th</sup> year celebrations WoF helicopters, bombers and spotter planes were assembled at the Black Mountain Leisure and Conference Hotel in Thaba Nchu in Free State Province, South Africa, where 500 fire fighters from all nine provinces in the country gathered to participate in the organisations' National Azishe Games.

The fire fighters participated in the Azishe Games as part of WoFs 10<sup>th</sup> year celebrations on 14 November 2013 in the Free State, where they

took part in a range of activities including soccer, archery, golf and running.

WoF has made many notable strides in its 10 years of existence, becoming Governments' most successful Expanded Public Works Programme, which provided jobs and career opportunities for disenfranchised communities across the country.

WoF has grown from its humble origins involving 25 teams with 850 beneficiaries in September 2003, to its current force of over 5 000 personnel spread across 200 bases in all the provinces of South Africa.

The WoF programme employs 31 percent females in its ranks of fire fighters, the highest level of female participation in any similar fire fighting

service in the world, reports WoF national communications manager, Linton Rensburg.

He says that the life skills component of the basic training provides beneficiaries with a platform for personal growth and progress up the ranks of the WoF programme.

"Moreover, the contribution of the WoF programme to the overall Integrated fire management capacity in South Africa has been widely acknowledge by fire management professionals and the general public at large," states Rensburg.

WoF reports that it has successfully put out 2 100 fires and its aerial fire fighting aircraft flew a total of 1 855 hours during the 2013 winter season from May to October. ▲

► burning three million hectares a year," he cautioned.

"We need to introduce prescribed burning not only in mild conditions, but in all conditions on a grand scale, in order to manage fuel in the country," concluded Daitz.

## Act 101

FPA unit manager at the Department of Forests and Fisheries, Luke Radebe, was congratulatory of the WoF programme in his colloquium address. He spoke about the National Veld and Forest Fire Act 101, which acts as a shield for fire managers and all FPAs in the country.

Radebe said that the WoF programme has been a pillar of IFM, adding that the programme continues to play a vital role as fire prevention and

suppression support base to FPAs and other landowners.

"We are indeed proud to have this programme in this country and we must all move forward together in unity to fight wildfires. To that extend we are grateful to our colleagues at the Department of Environmental Affairs (DEA) for being so supportive by making this programme available to all of us," stated Radebe.

## Risk assessment

Department of Forestry and Fisheries deputy director for the Free State, Malcolm Procter, said that there needs to be a balance struck between wildfire and preventative burns as part of his presentation, which focused on 'Veld and forest fire risk assessment in South Africa'.

Procter said that the Free State had three million hectares of fire risk terrain and without any fire brigades for this vast area of land.

He explained that the Disaster Management Act had one essential requirement and this involves the development of disaster management plans that includes conducting of risk assessments and mapping of vulnerable areas.

The Act also requires the development of early warning mechanisms by organs of state within their functional sphere, stated Procter.

Malcom quantified risk as being the calculation of all prevailing hazards, the existing fire danger index (FDI) and vulnerability, with the capacity of societal system being ►





An aerial fire fighting demonstration in Thaba Nchu formed part of the WoF 10<sup>th</sup> year celebrations



A series of live aerial fire fighting demonstrations were conducted by WoF



WoF fire fighters disembark a Huey helicopter in Thaba Nchu, Free State



A fire suppression demonstration by WoF fire fighters

► the common denominator in all risk assessments.

**Fire economics**

DEA Natural Resource Management director for Working for Water, Dr Christo Marais, presented a talk on the 'Economic consequences of sustainable fire management regimes'.

Dr Marais explored the economic fire management from a WoF perspective, as well as the direct economic impact of wildfires and the long-term economic consequences of fire regimes.

Dr Marais discussed the long-term economic consequences of IFM, which he says is a widely recognised use of fire for economic viability.

**Economic cost of wildfires in harvested land:**

- Livestock and grazing (R155 million a year)
- Fynbos (R5 million a year)
- Grassland ( R69 million a year)
- Disruption to power supply (R69 million a year)

Dr Marais said that both modern 'commercial' and indigenous communities widely recognise the use of fire in the management of vegetation for domestic livestock and indigenous species.

"Generally the reasons for prescribed burning in Africa are similar for both modern and indigenous communities, namely, to remove moribund or unacceptable plant material and to control the encroachment of

undesirable plants negatively affecting domestic livestock and wildlife," he explained.

Fire management cannot be perceived differently from other land management practices, said Marais.

"Fires have the potential to cause major damage. On average there is an estimated R750 million losses as a result of fire damage each year. Fire can have direct impact on long term land vegetation and ecosystems," stated Marais.

He continued to highlight the need for a national IFM programme, adding that it was a means to create jobs for people and had several economic benefits for land users.▲

# WoF celebrates ten-year milestone



Trevor Abrahams



The four founders of the award-winning WoF programme

Key role players in the establishment of the Working on Fire (WoF) were recognised at a special gala event as part of WoFs 10<sup>th</sup> Anniversary celebration in Thaba Nchu, Free State in November last year.

The gala dinner was held for WoF partners in recognition of the key role players and the contribution made to the development of the Government-funded expanded public works programme (EPWP), which included fire fighters, Government, implementing agent and the partners.

The event was convened by the WoF managing director, Trevor Abrahams, who presented numerous awards to the respective founders and role players of the WoF initiative.

FFA non-profit company managing director, Val Charlton, who is one of the pioneers behind the WoF programme was presented with an award for her contribution to the programme over the past 10 years.

Other members of management to be recognised were FFA Training managing director, Fred Favard and Department of Environmental Affairs (DEA) Natural Resource Management director for Working for Water, Dr Christo Marais.

Abrahams also singled out those fire fighters who excelled in the field, including FFA Aviation aerial fire fighters or flyboys, Steven Austin, Roger Jackson and Johannes Botha, who were commended for their work in the field. Special awards for bravery were presented to WoF fire fighter, Johannes Morebe.

Abrahams acknowledged the founders of the programme namely, FFA Group co-managing director, Johan Heine and FFA Group co-managing director, Chris de Bruno Austin, who shared their experiences in implementing the integrated fire management programme across the country, in tandem with the partners and Government.

"The highlight of the programme over the last 10 years is dealing with the ground operation fire fighters and the different it has made in the lives of beneficiaries," stated Johan Heine.

He said that the programme has change the lives of 5 000 to 6 000 lives directly and has impacted on 50 000 other lives indirectly.

Chris de Bruno Austin recalled the initial stages of developing the programme, which included a visit to the US to 'view what they were doing' in order to implement an Africa-US model.

Abrahams said that WoF was implemented within a small period of time compared to the US Forest Service, which took more than 100 years to produce its model. He added that the programme was made possible by partners, such as the US Forest Service, as well as Government and other organisations.

"Four individuals made a serendipitous trip to USA, not knowing what the outcome of the trip was going to be. It gave a lot of inspiration to what would be a Government-funded programme," indicated Abrahams.

Another notable contributor to the WoF programme, as indicated by Abrahams, was Department of Environmental Affairs (DEA) deputy director general, Guy Preston.

"He was a dedicated and strong-willed individual and an important part of the team," said Abrahams.

He concluded saying that the challenge will be to maintain focus towards fire fighters, which is the most important part of the programme.

"As the programme grows, the beneficiary focus we have is at threat of shifting to bureaucratic focus. The organisation is growing. We face the threat of any organisation and that is the shift to bureaucracy," stated Abrahams.▲





FFA Group non-executive chairman,  
Louis Buys



Johan Heine



Chris de Bruno Austin



Christo Marais



WoF founders enjoying the 10<sup>th</sup> Anniversary Celebration cake



Popular jazz musician, Ernie Smith



The WoF 10<sup>th</sup> Anniversary gala held at the Black Mountain Leisure Resort in Thaba Nchu, Free State





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# The short, medium and long-term benefits of fire investigations

By Rob Erasmus, Enviro Wildfire Services



The image from the last article to see if you could locate the ignition source



The cause of the fire was a 'book-matches and cigarette' timing device

**A valuable database consists of two key elements, namely quality and quantity data. The former is obtained by ensuring accurate data is properly and consistently collected, while the latter is reliant on time.**

In the last edition, Part 1 of this five-part series explored the question as to whether wildfire investigations are really necessary to assist in reducing future fires. The concept was that unless the true cause of wildfires (as opposed to guessing) are known, steps to prevent future fires could be completely misguided and result in a waste of manpower, resources and funds.

In this article we will look at short, medium and long-term benefits of undertaking wildfires investigations.

### Short term benefits (one to two years)

Taking the first step is often the most difficult and when one considers the requirements for initiating a wildfire origin and cause investigation, there is a tendency to have the attitude of 'As I am too busy with this one, I will start when we have the next fire'.

The suggestion is that one sits down with senior management and presents them with the proposal that wildfires in your area start to be investigated. We will be discussing this in more detail in part four of this

series: How to go about arranging fire investigations for your area.

It is also proposed that every wildfire is properly investigated. Bear in mind that if investigated while the fire is still burning downwind, it should not take more than an hour to comprehensively document the origin and cause. With this approach, the database will consist of good accurate data that will be of value in the short-term. After a single season of data, trends will already be evident and motivations to implement proactive steps could be strongly supported by solid data as to the actual causes of the fires.

### Such proactive measures could include:

**Target hardening:** Area's that have frequent fires that allow easy access or concealment can be modified to make it more difficult for malicious or negligent fires to be started. Examples include removal of alien vegetation on urban fringes that are used for drug dealing, drug use, burning of tyres and youth smoking, providing staff to do patrolling during high-ignition

times (after school from 14h00 to 18h00 on week days) and the removal of illegally dumped rubbish close to urban settlements.

### Awareness campaigns for children:

These can include 'formal' sessions during school times with a captive audience and during school holidays when it is a more easy-going programme.

### Training and provision of basic PPE and handtools:

Communities that are located in more remote areas could have the opportunity to prevent the spreading of regular wildfires that originate in their locale and that cause extensive damage in their area if they had the means to do so.

**Reward system:** Rewards could be offered for information that leads to the successful conviction of wildfires setters.

**Fire monitors:** Implementing fire monitors serves two purposes, namely they provide an early warning system to the fire authorities, but they also act as a deterrent to ▶





Short-term benefits indicated that fires could be reduced by providing training, PPE and basic hand tools to local community members

- ▶ fire setters knowing that the area is being watched.

**Media options:** Informing the general public that fires are now being investigated and that those found to have started the fires will be prosecuted could make the causal fire setters think twice before setting their next fire. It would also make the general public more careful when they are using fire for recreational purposes or when undertaking tasks that could start a wildfire ie cutting and grinding, welding, use of chainsaws and brushcutters.

### **Medium-term benefits (two to five years)**

This in-between phase has the advantage in that the benefits of the short-term would be present, while a preview to the long-term benefits would start to be appearing. It would also allow for any data capture and/or analysing programmes to be modified, adapted and fine-

tuned to meet the demands of the area. Provisional data could also be tested in models and the results compared to actual future cases. At this early stage of the project suitable sample data could also be provided to other specialists to allow them to comment on your analysing programme and provide guidelines in possible improvements.

### **Long-term benefits (five years plus)**

The long-term benefits of undertaking wildfire investigations are that the database will provide valuable information allowing case comparisons to be made relating to hours of the day, days of the week, months of the year, seasons, areas, other activities ie housing developments, strike actions, etc, weather conditions, vegetation types, proximity to houses/roads/informal settlements/refuse dumps, etc.

Such information would allow for models to be developed that would

assist in determining patrol routes, placement of resources for certain times of the day, days of the week, etc and implementation of numerous proactive options.

Of perhaps the most important aspect of the long-term benefits is that the database will allow for case-comparison (case linkage) to be undertaken. This would be of critical importance the day a suspect is apprehended. Being able to link him/her to numerous cases as opposed to a single one would drastically strengthen your case.

In part three of this five-part series we will look at what to do at the fire scene if you suspect that wildfires have been set illegally.

For more information about wildfires investigations or having fire investigations done in your area, please contact Rob Erasmus at [enviro@absamail.co.za](mailto:enviro@absamail.co.za) ▲



# Different tactics for a different risk

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

Commercial structure fire in Grand Rapids, Michigan, US

A good incident command system will assume that many aspects of a fire fighting operation will be the same at every incident. Our standard operating procedures (SOPs) assume this. We use this as a basis for our training – and there is nothing wrong with it. We must, however, appreciate that no two fires will be exactly the same and specifically – don't expect to attack a commercial structure fire the same way you would a residential fire. At a commercial fire you will need more resources, larger diameter hose lines, a more advanced command system and people generally don't sleep in commercial structures.

## First arriving units

Responding to a fire in a commercial occupancy will present a number of major challenges to a fire department. It will also provide a number of advantages over a residential occupancy fire. As mentioned above, people don't sleep in a commercial complex, unless of course it is an abandoned structure that has been taken over as an informal dwelling by homeless people. This will take away the

concerns of small children present in the structure, people rushing back in to the building to retrieve valuable personal property and people generally not totally sure where to evacuate to.

A manufacturing or storage occupancy must have a fire plan that will include an evacuation plan and an accountability system for employees. By making early contact with the organisation's safety representative, the incident commander should be able to ascertain if all occupants have been accounted for. Do never, however, take it for granted that all persons have been accounted for and always appreciate that a search and rescue effort might have to be ordered.

If all signs indicate that there are no entrapments, the fire fighting operation must commence and could probably be a defensive approach. Crews should, however, at all times consider the possibility of an unaccounted for, trapped victim and try as much as possible to create a safe and clear environment inside the structure. If it is determined that

one or more people may still be in the structure, the mode should be more offensive and the priority will be to find and rescue the victims. Incident command should ensure that safety officers and entry crews do not get tunnel vision and ignore the 'big picture'. Any number of risks could be developing around such entry teams. These could be loss of structural integrity (leading to collapse), rapid and uncontrolled fire and smoke propagation, debris falling and cutting of the attack crew's escape route and the crew moving too far down a certain route thereby stressing the capacity of the breathing air in their self-contained breathing apparatus' (SCBAs).

The use of a thermal camera is highly recommended in a large volume structural fire as it will be able to indicate the position of any entrapped persons and provide vital information on prevailing risks that could make an unwelcome appearance when you least expect it.

Thermal cameras should be one of the primary tools of the first persons ►





*Keeping track of each person on the scene will not be an easy task*



*Responding to a major commercial fire will have many challenges*

► who should enter the structure: the reconnaissance team. The recon team should consist of a minimum of two fire fighters who must be able to travel light and move quickly. They should also be well trained, fit and experienced fire fighters; generally your more experienced sub-officer types. This experience will enable them to gather critical information regarding the best means of entry, tools of choice and length of stretch for the attack line. The recon team must be a previously identified crew and must know specifically what their task will be. Sure you can nominate two or four fire fighters to act as impromptu recon crews upon arrival and most probably achieve your objectives. Having a designated recon crew will, however, give you a critical edge during those fires where the correct placement of water streams and timing and placement of ventilation is critical.

In addition to their personal protective equipment (PPE) and SCBA, the recon team should be equipped with thermal cameras, portable radios, hand lights, wrecking irons (halligan and axe), a water extinguisher, a rope bag (can be used for raising lines up to the fire floor) and a long handled tool (pike pole/ceiling hook) for removing debris and reaching switches on safety lights, air conditioners etc.

With missing occupants out of your mind, the next priority would be to locate the fire. Locating the fire starts even before any fire department member has put his/her foot out of the vehicle. The first in unit should try as

best as possible to do a drive around of the structure and try to ascertain the position of the main body of the fire. This will give you a good idea of the outside of the structure and upon meeting with the building occupants; you could be told exactly where the fire is located and what the best route is to get there. This will give you a good picture of a number of things including the behaviour of the structure exposed and additional risks it could present.

Deployment of the afore-mentioned recon team should happen at this time. The recon crew must be able to move through the structure without a hose line and must use all their experience to read the fire and predict its path and effect. They should examine each floor, room and door for fire. In a commercial structure there are a myriad of spaces through which the fire can spread. Depending on the structure you could find elevator shafts, stair cases, lofts, air conditioning flues and laundry chutes that can move hot smoke and other products of combustion at a rapid rate. Use the pike poles, wrecking irons and thermal cameras to make 100 percent sure that you are not being outflanked and where you need to place your hose lines.

The recon crew should also be in a good position to determine the amount of hose line needed to reach the seat of the fire. They might also identify alternative entry points for the attack crews. Good communication back to incident command is crucial in determining the success of the recon team and its activities.

Finally, remember that your recon team is there for exactly that purpose, reconnaissance. Don't get distracted by involving yourselves in the actual fire fighting activities. The whole operation might be waiting for your feedback and it will be criminal if you delay the start of the attack due to your own bit of freelancing. If, however, you do find a trapped victim in serious trouble, you might have to delay other recon activities to remove the victim. Communicate this quickly and call for whatever support you need. During your movement through the building it would be wise to close any doors or windows you encounter that could prevent the spread of the fire.

### **Setting up command**

A fire in a large commercial structure will obviously be a multiple alarm incident. You will have different resources arriving at different times. The important point here is that a strong incident command system be implemented very early. The only way to achieve this is to ensure that the predetermined unit's attendance to this fire is clearly thought through by the operational planning people and is adequate from the get go. Your standard response in this day and age for a single room and contents fire will probably be one engine staffed by four fire fighters. Ideally, the response to any larger structure fire will be two engines and one ladder truck (as mentioned in numerous previous articles). The first point of contact between the fire department and the person reporting the fire will be the call centre operator. At this point already, the despatch should be ►

## Fires in large commercial occupancies

► correct. If you need three ladder trucks to employ elevated master streams, they need to be responded early. Your water supply for such an incident should be carefully planned and also implemented here.

We get so used to the specific roles we have to play at a routine residential structural fire that we believe that by doing the same (or just a bit bigger) at a commercial fire, we will do ok. We can't have this mind set. The risks are different, the fire will be larger and the forces needed to control it will be more.

Setting up your groups and divisions should be paramount. We must accept that the initial recon and rescue operations will be done at task level. This will be done in a high-risk and dynamic environment. The first incoming officer will normally take on the role of the initial incident commander. This person cannot manage multiple units and should not be interfered with by a next arriving officer needing an update. It is for this reason that a tactical level group or division officer should form part of the first response. This officer will be better positioned to observe the prevailing conditions, building integrity and determine the best position and tasks of fire suppression teams.

This command level must also be the link between the task level and incident commander. Findings of the recon team must be channelled through this officer and strategic direction must also flow the other way.

Your first arriving officer will have a number of immediate tasks that will demand attention. The ideal group/division commander should be the second arriving unit. The first two engines will involve themselves with recon, search and rescue and initial fire attack activities. The third and fourth arriving units will be involved in support operations, such as water supply, controlling hose lines outside the building, ventilation and the removal of security systems. The officer on one of these units should be perfectly placed to assume the initial tactical incident command role.

Incident command (IC) does not only start once all units have arrived on scene and the structure is finalised by

a principle officer. Many of the sectors and divisions will automatically form upon the arrival of responding units. Once the ultimate incident commander arrives on scene, he/she will already find most of the IC structures in place. It will be tricky at first, but this person's experience and knowledge of the incident command system will help him/her to effectively organise this process into a workable organisation able to meet its objectives. Remember your incident command system must be understood by all members of your service, even the most junior. If they are not on board they will not understand their role in the system and it will fall flat.

Responding to a major commercial fire will have many challenges. The escalation of command and arrival of further units will mean that an incident commander will be working with a large group of fire fighters who have arrived from different stations and in a mutual aid alarm scenario from different services. Keeping track of each person on the scene will not be an easy task. A later arriving incident commander may miss the fact that crews are working in a particular area and this could back to bite if the crew finds themselves in difficulty at some point. Accountability must start with the arrival of the first crew and must be kept up to date continuously. The appointment of a safety sector with sufficient safety officers must never be overlooked. It is the responsibility of each sector officer to report in to the incident command post and report his/her staff compliment. Decisions regarding replacement and rotation of staff needs to be coordinated and communicated clearly.

Successful incident command is reliant on effective communication. The first arriving units will probably be limited to the department's tactical channel. As the incident escalates and more units arrive you will have to upgrade your communications system to allow for this increase.

You're most critical time will be when the main incident command is established and all units on scene need to be brought online. Units already working the fire might want to contact command on the tactical channel to communicate their needs, progress etc.

Your preplanning for such a situation must include the establishment of a command channel for incident command to coordinate all the command staff and the various sector commanders. This will leave the tactical channels open for units doing the fire attack. Each tactical sector should be on its own channel and when geographic divisions are assigned, make sure to have it simple enough for everyone to understand. If you have a crew doing ventilation and they are on the roof, they must be designated the 'roof sector'. Remember: it takes complicated people to make complicated mistakes.

This kind of communication set-up requires careful planning and training. Your radio-technical guys need to have a clear understanding of fire ground operations and the communications needs of all levels working on the fire. The radio system then needs to be fashioned around these needs. Radio communications could become a very effective force multiplier if used properly. It has also been known to kill fire fighters if not done correctly.

### Fire fighting operations

Once all information is received from the initial IC size-up, recon team and site safety people, the decision as to the nature of the fire attack should be made. Obviously the decision to go offensive or defensive will be the first one that will need to be made. I have mentioned the need for rescue being the priority earlier and that will always be uppermost in your mind.

The recon crew is the most likely to find victims first. Their initial objectives should not be compromised by having to remove these victims or manage an evacuation. Always have a standby crew ready to respond to any position where victims or evacuees might be found to take over this job from the recon team and allow them to continue.

Depending on the time of day when the fire occurs, the search commander will have a good idea of the victim locations. Dining areas, high volume work spaces and office areas might be the most obvious. The search and rescue might be more demanding if the fire is in an advanced stage. It might then be ►





*A large, high building will require the utilisation of aerial apparatus*

- ▶ necessary to commit more resources to this aspect of the operation, which could include ventilation, interior attack and forcible entry assets.

While recognising the priority that saving lives has over saving the building, we must make an accurate assessment of the risk before committing assets into a particular area. Don't commit crews into the structure unless you have a clear picture of the fire location and column size, structural integrity and entry and exit routes.

Well established truck company operations will be of huge value in such a situation, as it might be necessary to breach the side wall of a structure to enter if all normal routes are compromised.

They will also be required to set up the ventilation. The decision as to the location and type of ventilation will be dependent on factors, such as the type of structure, location of the fire and tactics to be implemented. I have already discussed this in quite a lot of detail in a previous article. If your decision is to use positive pressure ventilation, make sure that you have the necessary blowers capable of

ventilating a large space. Using two blowers and placing one behind the other is a useful option to have. Place the first blower right in the opening and use it just to blow air into the structure. The second blower is then placed behind it covering the entrance and creating the 'cone', which will seal of the ventilation opening.

A large, high building will require the utilisation of aerial apparatus. Correct early placement of these units will negate the need for removing them later or, even worse, repairing them! The front of the building is always the domain of the ladder truck as this allows for rapid entry, search and evacuation and elevated master stream deployment. Keep in mind, however, the possible spread of fire over the next hour and the potential collapse zones.

When it comes to hose line selection: GO BIG. Most structural fire trucks are loaded with 45mm attack lines which provides a solid water supply and easier manoeuvrability. When dealing with a large commercial fire, 65mm is the way to go. The deployment of 65mm hose lines might take longer than 45mm, but you are able to achieve more penetration and

maximise the distance from which your crews are able to work; placing them further away from the fire and subsequent potential collapse zone. I have previously (and controversially) mentioned the use of smooth bore nozzles. In this scenario, these nozzles will provide you with a greater reach and penetration and less nozzle reaction. The lower nozzle pressures will allow for greater manoeuvrability without compromising on litres per minute (lpm).

### **In closing**

This article has merely scratched the surface of how to approach operations in large commercial fires. At best it will hopefully provide you with some points to ponder on this complex challenge. I haven't touched on dealing with the contents and processes that are housed within the occupancy mainly because of the diverse types of businesses that use them. The message I want to leave with you is that you consider your strategies and tactics for these types of fires carefully. Develop SOPs that address these unique challenges, configure your vehicles and equipment accordingly and train your fire fighters on how to survive this beast. I hope 2014 is a good one. ▲



# A century of fire service in Pietermaritzburg, KZN and counting

*The Msunduzi fire service headquarters based in the Pietermaritzburg CBD*

In a recent trip to the KwaZulu-Natal (KZN) Province, South Africa, Fire and Rescue International paid a visit to Pietermaritzburg, the capital and second largest city in KZN Province, to profile the Msunduzi Municipality Fire and Rescue Service headquarters in Pietermaritzburg.

The fire service, located in the central business district (CBD), has served the region for the past 114 years and currently covers an area spanning 591 square kilometres with a population density of 619 000 people.

After a fire destroyed the newly built City Hall in the last year of the 19<sup>th</sup> Century in 1899, the build of a fire station took precedence, says Msunduzi Municipality Fire and Rescue Service chief fire officer, Billy Paton. He says the fire station was first situated at the site of the public house building next to the City Hall. It was later moved to its present site in Pietermaritz Street.

Paton says, "It then became known as the Pietermaritzburg Fire Brigade Central Fire Station and also housed the administrative headquarters of the service."

## Expansion projects

The Msunduzi Municipality has undertaken various substation expansion projects that includes a new substation in Oribi, located to the southeast of the city and built in 1981.

In 1993, another substation was set up at an old clinic to the west of the city. The site was created to service the needs of the soon to be incorporated townships of Pietermaritzburg city in Edendale.

"The increased activity at the Pietermaritzburg Airport laid the foundations for the development of a new fire station from about 1986, with the new Pietermaritzburg Airport Fire Station opening in 2003. The airport classification grew from a Category 4 to a Category 6 Airport, with the requisite fire and rescue services," explains Paton.

A further two fire stations were been approved by the Msunduzi Municipality and is expected to be erected within the next five years. The new stations will service the far reaching areas of Pietermaritzburg city.

The Msunduzi Municipality disaster management centre is based at the Central Fire Station, forming an integral working relationship with the fire service. Paton says that the fire service acts as a first responder for most disaster management incidents.

He says that there is no formal working relationship forged with a local fire protection association (FPA) in Pietermaritzburg.

## Hierarchical structure

A transformation of the ranking structure at the fire service has been approved by the Msunduzi Municipality. Fire chief Paton and deputy fire chief, Juggie Padayachee, sits atop the hierarchical structure, which will have a subordinate group consisting of four assistant chiefs for fire prevention, training, operations and specialist projects, respectively.

The fire prevention unit is headed by senior divisional officer, Lloyd Singh. The fire department's fire prevention unit consists of a fire fighter, four station officers and ▶



► the senior division officer for fire safety and legislative enforcement and compliance.

The senior division officer of operations, Essack Khan, says that the new ranking structure will be formalised once all senior officers have been graded.

The ranking restructure forms part of the Municipal Systems Act and will implement the tuned assessment of skills and knowledge (TASK) grading system, which is a point system taking into account a number of factors including skills, knowledge, pressure and influence, for sub grading.

Khan says that the full implementation of the new management structure will probably take place by the end of 2014.

**Risk profile**

The fire department headquarters covers a combination of high risk areas and infrastructure in the Pietermaritzburg CBD and surrounds, which includes an industrial area and a shopping hub, which includes the china mall and large shopping centre.

Khan says that the fire alarms of local businesses are linked to the fire station to mitigate the fire risks in the city.

Other fire risks in the area include the Jika Joe informal settlement in close proximity to the city centre, which has experienced a series of destructive fires, including one on 21 September this year, when more than 100 shacks were destroyed.

Khan describes an accident on the N4 highway in Pietermaritzburg as one of the major incidents that the fire department has experienced in recent years. A major accident involving a bus that drove into a freeway pillar saw 15 people lose their lives with 40 more injured in the incident.

In June 2009, one of the city's most iconic structures and under renovation at the time, the landmark historical Colonial Building in Church Street, was engulfed in flames. It was later discovered that most of the damage was done to the renovated sections of the building.

**Operations: emergency response**

The Pietermaritzburg fire brigade provides the basic standard services related to fire namely, structural, industrial, petrochemical and wildfires, as well as rescue services that includes motor vehicle accident, water related, confined spaces and other related services, such as hazmat, explains Paton.

"We also provide an airport fire fighting and rescue (ARFF) service for the Pietermaritzburg Airport classified as a Category 6 airport," says Paton.

The Msunduzi Municipality Fire and Rescue Service has 12 emergency communications centre operators, 120 fire fighters, 16 station officers and four divisional officers deployed over four twelve-hour shifts.

Paton says that staff is deployed to the four fire stations within the city. "Included within this compliment is at least



Chief fire officer, Billy Paton

12 female fire fighters and six female emergency control room operators," he says.

The fire service uses the Sysman Technology Solutions communications system in its control room, which has incorporated traffic and security for a centralised emergency services call and dispatch centre.

The Pietermaritzburg fire station no longer provides specialty emergency services, such as aquatic personnel, owing to financial constraints, says Khan. ►



Senior divisional officer for operations, Essack Khan



Deputy fire chief, Juggie Padayachee



Fire prevention senior divisional officer, Lloyd Singh



Msunduzi Municipality Fire Service acting senior controller, Vasu Naidoo

► "We used to do diving or aquatic rescue. We don't anymore. We did hazmat as a fire response function and had specialist technicians, but we can't do that anymore, because of budget constraints."

The fire personnel are keen on providing these specialist services, as the fire department is a fire, rescue and specialists services organisation.

Khan says that swift water is not a legislative function of fire brigades, as it is an SAPS mandate. However, he suggests the South Africa Police Services (SAPS) coordinate the training and assist fire fighters with swift water training.

Fire and rescue incidents within the Natal Midlands are largely seasonal in nature. Paton says that during the cold and dry winter months from May through August, numerous grass, bush and plantation fire incidents are responded to, with the occasional snow related rescue incidents.

During the hot, rainy and wet summer season that runs from October to February, rescue incidents are linked to motor vehicle accidents and flash flood areas in Pietermaritzburg.

Holiday traffic volumes are steadily increasing to its peak during Christmas, with the added risks of the N3 freeway running through the centre of the city and the notorious Hilton pass, says Paton.

"Heavy duty loads are also at their peak as truckers are rushing from the interior of the country to the Durban harbour in time for the ships to their overseas destinations," he explains.

### Training centre

An International Fire Service Accreditation Congress (IFSAC) accredited training centre is based at the fire service headquarters in the city.

The Pietermaritzburg Training Academy is headed by senior divisional officer, Siphon Ngcobo and also holds an accreditation with the South Africa Qualifications Authority (SAQA) and the South African Emergency Services Institute (SAESI).

Paton says that fire service in Pietermaritzburg does all its own accredited fire fighter training, ensuring fire fighter

competency, with basic fire and public education programs also done in house. The training academy has two fire fighters presenting public education and two training station officers.

Khan says that the fire department has a memorandum of understanding (MOU) with other industries to supplement training for airport training.

Additional training at the municipality's airport fire service is done by Indiza Fire and Training Services, which is a subsidiary of Indiza Airport Management, specialising in the training and provision of airport rescue and fire fighting services.

Indiza Airport Management Services, which is also based in Richards Bay, KZN, runs the administration of the Pietermaritzburg Airport in Oribi, states Khan.

The fire service also has MOUs with large corporations and parastatals in the area, including Eskom, Hulleths Aluminium and Illovo, for whom they provide fire fighter training programmes.

The fire department's training personnel also conduct fire awareness programmes at local schools in Pietermaritzburg. "We are involved a lot in the community. We showcase ourselves, we host fire talks and attend community events, but we need to do more," states Khan.

He mentions that the 911 Fund, a US organisation that is active worldwide to enhance public safety, has expressed interest in partnering with the fire department's training operations for training activities within the Province, through the offices of the COGTA. "As a result, we may be better able to offer training to other areas within the Province," he says.

### Equipment

The Msunduzi Municipality's Fire Service has a fleet consisting of four major pumper fire engines and three medium pumpers, two grass fire vehicles, a bulk water foam carrier and two aerial fire fighting appliances as its frontline fire fighting vehicles.

Khan says that the service has two airport rescue fire fighting (ARFF) units dedicated to the Airport Fire Station. ►





*Training officer,  
Pro Maharaj*



*The fire and rescue services dispatch  
and control room*



*Msunduzi Municipality Fire Service  
workshop assistants, Nana Reddy and  
Simon Mdluli*

► The service also recently acquired two Pierce Quantum major pumpers and a Pierce Arrow turntable ladder platform pumper, as part of its fleet at a cost of R20 million.

“Our fire service was fortunate in that a new fleet of four, fully-equipped frontline fire fighting pumpers and a turntable ladder was procured at least four-to-five years ago for the city,” says Paton.

Whilst this has provided much operational relief, there is still a need for the purchase of critical small fire fighting and rescue plant and tools and fire fighting vehicles, with 4x4 capability and large water carrying capacity.

Centralised fleet management had been an area of bother for the service. “We had experienced problems with centralised fleet management, so council management approved a structure that allows the fire service to manage its own fleet.” says Khan.

To this end, a mechanical workshop has been established at the fire service headquarters in the city to assist with the management off the fire department’s vehicle fleet.

Paton mentions that the mechanical workshop is headed by mechanic foreman, Linda Sidoyi, who looks after the mechanical wellbeing of all vehicles, small plant and equipment of the Fire Service.

The workshop is based at the central fire station and is staffed with a mechanic, Nana Reddy and two assistants, namely Enos Mwelil and Simon Mdluli.

**Challenges**

There are many challenges facing the Msunduzi Municipality’s Fire Service, with the ongoing issue of budget for capital and operating expenditure being the most notable.

Paton explains, “Whilst operating budget is limited to priority needs, in order to keep the reactive wheels turning, not much fat is dedicated to preventative programs. Similar constraints are experienced in the replacement of critical old and obsolete fire and rescue equipment resources, says Paton.

He adds that the processes for the filling of vacant posts



*Oribi Airport fire engine*



*One of four fully equipped fire engines recently acquired  
by the Msunduzi Municipality*

can also be onerous and lead to operational staffing challenges. In many cases, this is addressed by the employment of overtime where budget is available.

“Whilst basic fire safety public awareness and education programs are an expectation especially in informal settlements, funding is not easily available for the requisite promotional programs and materials,” he explains. ►

## Fire services

Name	Type of vehicle	Model	NPC	Year	Age Yrs
Pump 1	Pumping appliances - major	Pierce Quantum	5047	2010	3
Pump 2	Pumping appliances - major	Pierce Quantum	5049	2010	3
Pump 3	Pumping appliances - major	INTERNATIONAL	5043	2007	6
Pump4	Pumping appliances - major	Scania	5046	2009	4
Pump 5	Pumping appliances - medium	Tatra 6x6	5024	1995	18
Pump 6	Pumping appliances - major	FORD F8000 FIRE ENGINE	5023	1986	27
Pump 7	Pumping appliances - medium	Tatra 4x4	5026	1999	14
Ped Veh	Pumping appliances - major	FORD F8000 FIRE ENGINE	5020	1986	27
H.P.P	Special appliances - aerial	FORD F8000 FIRE ENGINE	5030	1983	30
TTL1	Special appliances - aerial	Pierce Arrow	5048	2010	3
ARFF F1	Airport fire rescue vehicle	Titan	5044	2007	6
ARFF F2	Airport fire rescue vehicle	Titan	5045	1998	15
WFC 2	Special appliances – bulk carrier	Samil 6x6	5028	1999	14
Foam Tanker	Special appliances – bulk carrier	Leyland	5029	1981	32
L.P.1	Off road bush fire appliances	M/BENZ UNIMOG 4X4	5013	1992	21
RRV	Light vehicles	Nissan 4x4 D/C	5041	2004	9
CV	Light vehicles	Nissan 4x4 D/C	5042	2005	8
S.V.1	Light vehicles (temp used at airport)	FORD V6 LWB LDV	5003	1994	19
S.V. 2	Light vehicles – Bakkie-Sakkie	TOYOTA LANDCRUISER 4.5 4X4	5010	1997	20
S.V.3	Light vehicles (WS)	MAZDA 1.6 LDV	5040	1993	20
S.V.5	Light vehicles (WS)	NISSAN 1400 LDV	5005	1994	19
S.V.6	Light vehicles (FP)	NISSAN 1400 LDV	5006	1997	16
S.V.7	Light vehicles	NISSAN NP200 2.0 LDV	5018	2012	1
F4	Light vehicles – Airport DCP	NISSAN HARDBODY 2.4 LDV	5007	1997	16
F3	Light vehicles – Training	TOYOTA 2.2 D/CAB LDV	5008	1993	20
FSU	Light vehicles – Foam Support Unit	MAZDA 2X4 B.2.2 LDV LWB	5004	1994	19
CAR 1	Light vehicles	FORD 2L TELSTAR SEDAN	5000	1997	20
CAR 2	Light vehicles	MAZDA 323 200E SEDAN	5001	1997	20
CAR 3	Light vehicles	MAZDA 323 200E SEDAN	5002	1997	20



Oribi Airport fire fighting crew

► Paton says that basic fire safety programs is an area that can be improved upon and as such, was identified as a primary fire services project for the 2013/2014 financial year. "Another area would be the specialised skills related to the training and equipping of fire fighters for high-angle rescue, swift water rescue and the like," he adds.

The congested nature of Pietermaritzburg city poses its own set of challenges, according to Khan. He says that it is a challenge fighting fires in town with the taxi ranks and informal settlements, where it is tough to get to fires.

"To get from one place to another in town is not always easy. Town is congested all the time. The closer a fire service is to the risk areas, the better," states Khan.

He says that the fire service is also finding it difficult to fill vacant posts. "In operations we have six posts that we advertised in March this year. We managed to fill two, but there are four that still need to be filled, with another three being vacated in the interim."

Despite the challenges facing the Msunduzi Municipality Fire and Rescue Service, Khan believes that the city should elevate its status and function as a Metropolitan Municipality.

"We are big enough to be a Metro. We are aspiring to be a Metro. It makes sense," states Khan. ▲



# Fire chief recollects three decades in the fire service



*Msunduzi Municipality chief fire officer, Billy Paton*

**M**sunduzi Municipality Fire and Rescue Service chief fire officer (CFO), Billy Paton, was advised to apply to the fire service after initially pursuing a draughtsman learnership at the local municipality in Pietermaritzburg in the early eighties.

"I was just out of school and unemployed and responded to a newspaper advert for a learner draughtsman within the municipality. Whilst collecting the forms for the learnership, the lady at the human resources counter advised me that they are now taking non-whites as fire fighters," recalls Paton.

He was not even aware of the existence of a fire service at the time, but decided to give it a go after being told he had little to no chance of being accepted into a draughtsman learnership.

"I applied for the fire fighter post, was accepted and the rest is history," proclaims Paton.

He began his career as a fire fighter in March 1983 and thirty years later, Paton finds himself at the apex of the fire service in Pietermaritzburg, being its fire chief.

## Setting a precedent

Paton recalls jesting to his wife that one day he would be the first non-white fire chief in Pietermaritzburg, after being promoted to station officer in 1988.

"In those days it appeared as though it would be unachievable. However, as a result of the untimely retirement due to ill-health of my fire chief in 2001, I was thrown into the deep

end and appointed to act as CFO," states Paton.

He shared this role in rotation with a colleague, Juggie Padayachee, who is the current deputy fire chief in Pietermaritzburg. "This situation prevailed until my appointment in April of 2005," recounts Paton.

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**"I applied  
for the fire  
fighter post,  
was accepted  
and the rest  
is history,"**

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## Career timeline

- Recruit fire fighter: appointed 31 March 1983
- Station officer for operations: appointed July 1988
- Assistant divisional officer for communications: appointed April 1994
- Senior divisional officer for communications: appointed January 1999
- Chief fire officer: appointed April 2005

Paton acknowledges the impact that the previous CFO had in his journey to

taking up this role, but first credits the achievements in his life and career to 'the grace of God'.

He adds, "In terms of my fire service career, a major mentor was my previous CFO, Tony Lightbody, who mentored me as a manager and prepared me for my role as a fire chief."

Paton is sometimes perceived as being too strict, although he believes that he is approachable and that the nature of the service requires stern protocols to be observed.

"Managing a military type discipline in a democratic environment is a challenge," he says. "Whilst I am a disciplinarian, I also recognise the need to treat issues according to merits of case. As a result I recognise the necessity to adapt work instructions accordingly, without losing sight of fire service culture," adds Paton.

It is a balancing act to be both approachable and a disciplinarian. However, Paton is methodical in his approach. "I tend to take a consultative approach to issues, but also recognise the need to be autocratic at times, due to the nature of the service," he says.

He notes the impact of transformation within municipalities and the fire service, saying that this has created challenges on the management of this 'noble service'.

Paton's values and those which he hopes to instil in his fire fighter complement, are being humble at all levels, to listen carefully and apply your mind after obtaining all the facts.▲

# Contrasting fire season experienced across the country in 2013



*Working on Fire teams supports fire protection associations with fire suppression activities across the country*

**F**ire and Rescue International reviews the South African winter fire season for 2013, which typically runs from May to October/November each year.

In this review of the winter wildfire season, we have sourced fire statistics and reports from various fire managers and fire protection officers (FPOs) from the umbrella fire protection associations (UFPAs) across South Africa.

## **Free State**

The 2013 winter fire season in the Free State was marked by cold fronts and an extended fire season. Fire suppression was difficult in the months of September and October, owing to late rains and representing the biggest challenge in the region, as frequent reignitions occurred.

A total 340 000 hectares burnt in the Free State this season by mid-November and there were still fires being experienced in the region, reports Procter.

Fifty-five percent of all the area burnt in the Free State occurred in Thabo Mofutsanyana District Municipality,

located in the eastern region of the province.

"The most significant fire event was the cold front on the 19 September when we burnt 133 000 ha in one day, in 15 fires," mentions Procter.

Another fire that started near Van Stadensrus in the Motheo District Municipality, which was caused by a landowner burning stubble on an irrigated land, burnt approximately 50 000 hectares in one day.

In the Mohakare Municipality there were 14 fires, that resulted in a total area burn of 80 000 hectares, indicating a need for a thorough investigation in the area, says Procter.

The largest fire in the province occurred in the Naledi Local Municipality and was caused by farmer burning stubble prior or during an approaching cold front, on an irrigated land in preparation for the new planting season.

The Free State conducted fire breaks totalling 575 kilometres across

the province this season. By mid-November, the Free State UFPA recorded a total of 549 fires for the winter fire season for 2013.

"FPAs have carried the cost of these fires. Despite the promises of district municipalities of financial assistance, none has been forthcoming as yet. The burden of fire fighting is being placed on Private landowners with little assistance from the State," says Procter.

Procter cited a range of factors that contributed to the fires experienced in the Free State, mentioning that 15 percent were caused by landowners that had not monitored weather conditions and were burning lands. "One of these resulted in more than 40 000 hectares being burnt," says Procter.

Fires from natural causes, such as lightning accounted for five percent of fires and further 10 percent of fires resulted from the use of heavy equipment infield, explained Procter.

He says that three-to-four people die in wildfire annually in the province and 2013 was no different. ▶





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## Winter fire season 2013

►“In 2013, a farmer and a colleague were burnt to death when the vehicle they were travelling in was overtaken by a fire in the Wepenaar area. A third person travelling in the same vehicle was also badly burnt, but survived,” reports Procter.

The Free State recorded more damage and more fires, when compared to last season. However, there has been better preparation for the winter fire season in the province in 2013, says Procter.

### KwaZulu-Natal

A seasonal fire report compiled by KwaZulu-Natal Umbrella FPA fire protection officer (FPO), Simon Thomas, shows that the KZN Province experienced a total of 429 fires in the 2013 fire season up to 19 November.

In the same period, the FPA calculated that 1 800 hectares burnt in the province this season, although Thomas expected this figure to climb up following the fire reports for late November and December.

Fire behaviour was extreme and that is due to a very wet summer in 2012. The province also experienced late rainfall, resulting in high fuel content across many parts of the province.

Thomas indicates that the major cause of fire in the region is attributed to suspected arson, of which 287 cases were recorded, accounting for 74 percent of all fire causes in the Province.

The costs of the regions fire suppression activities are divided into three resources namely, manpower, aerial and vehicles.

Manpower costs for the region in 2013 totalled R1 405 896, while aircraft and vehicle costs totalled, R6 199 087 and R399 555, respectively.

Total timber losses in the Province amounted to R8 109 939 with average losses per fire amounting to R18 904.

The UFFPA manages 14 fixed wing bombers and seven spotter aircraft throughout the province and a further two helicopter are made available to the province.

Thomas says that the aircraft is used for fire suppression. Initial attack is applied by the UFFPA, which means that aircraft is deployed as soon as a fire is detected electronically.

In this way fires are prevented from getting out of control, resulting in reduced costs of utilising aircraft.

### Limpopo

Chairperson of the Limpopo UFFPA, Trevor Philips, says that the region had a very quiet season in 2013.

The season was marked by low fire activity, no major winds and interspersed with cloudy and misty days, reports Philips.

He says that the winter fire season ran into mid-November with the amount of fires recorded in the season being negligible. Less than 100 hectare plantation area burned in the region with a vegetation burn of around 200 hectares.

The majority of the fires in the province are attributed to fires sparked by electric power lines, says Philips. The regions fire mitigation strategies revolve around training fire

managers on various aspects of fire management, which is done a week before the start of the fire season.

Philips reports that the UFFPA is working on a web-based membership and contact database, capturing all landholding, contact details and fire equipment, among other information.

“We have found that contacting fire fighters is becoming difficult especially non-members and absent landlords. Global positioning systems (GPS) and video recording of aerial operations helps in recovering funds and in legal cases,” states Philips.

Limpopo Province makes use of one chopper and one spotter in its aerial fire fighting operations, while two WoF teams are utilised for ground operations.

In 2013, the total costs of fire prevention and suppression activities amounted to around R2,5 million, which excludes landowners' costs.

### North-West

The North West Province UFFPA fire season started on 1 June, much the same like previous seasons. However, the usual cut-off date for the fire season was extended from 31 October to 30 November in 2013, reports Potchefstroom FPA chairman, Dr Kobus Roux.

Dr Roux says that landowners in the province are beginning to value aerial operations and its impacts on fire suppression in the region.

“For the last two years we used the FFA aircraft with huge success,” he says.►



South Africa veld and forest fire risk map





The North-West extended its fire season from 31 October to 30 November in 2013



The Southern Cape lost a total of 600 hectares of pine plantations in 2013

► Owing to the favourable reports of conducting aerial operations, the UFPA is looking at a second chopper and spotter in the province in an agricultural region in Christiana for the 2014 season, reports Dr Roux.

"It can help in the Northern Cape, Northern Free State, as well the southern side of the North West Province. The FPAs also made use of the common 'bakkie sakkie' units, WoF teams and farm labour," mentions Roux.

A total of 521 fires were recorded in the province this season. Around 20 000 hectares burnt across the region, with the majority of this being grassland. The North West fire season was marked by very low fuel load and lower than average wind speed in August and September.

The province had four fires that exceeded a 1 000 hectares. The main cause of fires has been arson, as well as negligence of certain landowners.

Roux says that strategic fire breaks had a significant impact on the prevalence of wildfires in the province this season. "It stopped quite a number of fires that had the potential of becoming a disaster. The communication between the different FPAs, owing to a very effective umbrella organisation, has also been a contributing factor to the small amount of fire," commends Roux.

District umbrella FPAs were created by the North West Province in 2103. Roux says that this move has made communication much easier

and helped to centralise specific problems more efficiently.

He adds that the disaster managers in each province came on board in negotiations with the different district umbrella FPAs to assist with operations including funding of equipment and training.

The cross-border relationship and working together of different FPAs was one distinguishing factor in the regions operations for 2013, which differed from previous seasons.

#### Southern Cape

Chairperson of the Southern Cape FPA, Paul Gerber, provided a report of the region's fire season that runs all year, saying that there have been 852 fires recorded for the period, January through October.

A total of 30 000 hectares burnt in the Southern Cape, which experienced greater cases of Berg wind conditions, when compared to 2012. However, the Southern Cape acquired additional resources last year to mitigate the impacts of fires and hazards in the province.

Gerber says that the main cause of fires is attributed to negligence and arson. He says that many houses were threatened, but there were no houses or building destroyed in the fire incidences in the province. However, the region did lose about 600 hectares of pine plantations in 2013.

The cost of all fire fighting operations in the province in 2013 was about R2 million, which included aerial operations, mentions Gerber.

The most devastating fire in the province occurred in July 2013 at the Lottering plantation in Tsitsikamma, where about 450 hectares of pine trees burned.

Gerber says the fire started early in the morning and swept through the plantation in a couple of hours. Two Huey choppers were utilised as air resources and Cape Pine supplied the ground forces to suppress the fire. "Due to excellent work done by Cape Pine Forestry, the fire was contained," says Gerber.

During the winter months, the FPA successfully implemented the Advanced Fire Information System (AFIS) to detect fires in the province.

"Since then, the SCFPA received an AFIS field terminal, a satellite dish to identify fires almost immediately, as well as other functions like burn-scar mapping. We hope for the system to be functional in the next year (2014)," states Gerber.

He says that various ground and aerial resources were utilised over the season, namely seven WoF teams, as well as two choppers and one spotter.

"Currently, we are busy launching an awareness campaign in conjunction with Eden District Municipality. We applied for additional WoF teams and aerial resources for the following year and a discussion was held with Provincial Disaster Management Centre to co-fund additional resources during the winter months," reports Gerber.►



# National forestry industry converge in KZN for workshop

Fire industry specialists attend a Forest Fire Working Group in KZN



Ian Henderson

South Africa's largest forestry organisation, Forestry South Africa (FSA), representing growers of timber in South Africa, hosted a national fire awareness workshop in KwaZulu-Natal, South Africa, on 4 November 2013, in order to establish a need to mandate and form an industry fire working group (FWG).

The workshop acted as an open forum for discussion and outlined objectives of the FWG and featured a range of stakeholders in the industry including Forestry South Africa operations director, Roger Godsmark, FFA Group CEO, Johan Heine, Department of Forestry and Fisheries (DAFF) deputy director: sector foresight, Dr Ronald Heath, among other forest and fire industry experts.

The FSA workshop outlined the objectives of the FWG and endeavoured to avoid duplication with other groups within the forestry and fire industry landscape in South Africa.

Various aspects and challenges in the forest industry were confronted, including national issues of concern, such as synergy in the industry and interagency relationships, as well as opportunities for coordinated research on wildfires.

Former forest manager with Masonite and current general manager for Working on Fire (WoF) Eastern Cape, Ian Henderson, acted as the workshop moderator. He outlined the objectives of the workshop in ▶

## ▶ Mpumalanga

The Mpumalanga Province had two operational areas with different winter fire season periods, one running from 15 May to 15 November 2013 and the other from June to end October, reports Mpumalanga UFPA manager, Trevor Wilson.

He says that the province effectively dealt with small fires before it became uncontrollable, adding that there were only a couple of large fires, in excess of 100 hectares, that struck the region in 2013.

A little less than 11 000 fires were recorded by MUFPA on FPA members land. "This is a jump from last year, but it is purely a reporting increase, due to very focused data collection,"

explains Wilson. "In my opinion we are at about 30 percent recorded of what's actually happening in the province," he says.

MUFPA utilised nine spotters, seven choppers and 17 bombers during the 2013 winter fire season. Twenty-one WoF teams assisted with fire fighting and suppression activities in the province.

Education of landowners has been key to MUFPA's fire mitigation and prevention strategies. Wilson says that efforts have been made to get landowners to join FPAs in the region and this includes State land.

Multiple structures were burned during the fire season in 2013 with

three lives of civilians lost in the province. The majority of these fires has been attributed to human causes, either vindictive or by accident, reports Wilson.

He says that the fixed and variable costs of the regions fire fighting budget in 2013 amount to more than R290 million.

There were no stark contrasts in 2013 winter fire season when compared to 2012, however, Wilson says that MUFPA will be more proactive in its operations this year.

"In 2014, we should have more 802's in operation and we are hoping for better initial attack activation systems," he concludes. ▲



► his opening remarks, saying that 'the most important aspects in the fire industry need to be addressed'.

Henderson said that subcommittees will be formed going forward, in support of the proposed FWG that FSA seeks to be mandated. "We want to talk about synergies in the fire industry, including fire equipment operations."

The agenda for the workshop included discussion on the formation and representation of the forestry industry in a national umbrella fire protection association (UFPA) which has been established by the National Veld and Forest Fire Advisory Forum.

Other topics explored included the impact of climate change impact on the forestry industry and administrative concerns, such as funding and national wildfire risk assessments.

### Climate change

FSA operations director, Roger Godsmark, stated that the forestry industry has to acknowledge the impacts of climate change, as it is becoming 'a gradual challenge'.

Godsmark stated that carbon dioxide and temperature increases over time and that this was the general consensus across industry. "Incidents of severe weather will increase. This increases risk. It will be drier and hotter, which means risk of fires is greater. We should look at mitigating the risks that climate change will have on the industry," advised Godsmark.

### National forest protection strategy

DAFF deputy director for sector foresight, Dr Ronald Heath, said that a new National Forest Protection Strategy document has been completed and that the paper would be published in two months.

Dr Heath said that the document covers coordination, operational systems and framework of the forestry industry and was formulated by a Forest Protection Strategy steering committee led by DAFF.

Dr Heath explained that the first-year objectives of DAFF are to secure first and second phase of funding to implement the newly proposed protection strategy. "We will look at ways of implementing the strategy once funding comes through," he said.

"Implementation is important. As the forest steering committee and national forest advisory committee, we need to get representatives to get involved in drawing up terms of reference," proposed Dr Heath.

He suggested that a fire task team be formed to get involved in the process.

### Fire specialists

There is a need in the forest industry for training and mentorship of a new generation of fire specialists in South Africa, stated forestry lecturer at the Nelson Mandela Metropolitan University at Saasveld campus, Tiaan Pool.

He said that fire specialists deal with significant pressure to perform well, owing to the potentially devastating impacts of wildfire incidents in the forestry industry.

Pool confronted the issue of accidental fires and provided a range of factors that are the probable causes of wildfires. These factors include human negligence, poor discipline, poor management, poor planning and lack of knowledge.

Pool said that there is a lack of research in fire knowledge in South Africa, when compared to the US, Europe, Australia and South America. "In our experience, we have found many cases where there has been no education and also education without any experience in the industry," he said.

"We are starting a fire management course at Saasveld in 2014. Maybe this is a start. WoF successfully began a learnership programme, but we need education of fire specialists," stated Pool.

"In closing, we have to go back to a system where we have good mentors to train people."

### Aerial fire fighting

FFA Group CEO, Johan Heine, discussed aerial fire fighting availability in South Africa. He noted the four disciplines of the aerial fire fighting industry that impact on aircraft availability and management namely; ownership, private individuals, companies and operators.

Heine mentioned that there were 27 aerial operation bases across the country and he highlighted the importance of the response time of initial attack of aerial fighting.

The use of aircraft for fire fighting required clearly outlined standard operating procedures, with regard to response times. In the initial attack phase of an incident, the consensus, based on a field study in Mpumalanga, was that a maximum reaction time to a fire is 10 minutes from the time of detection to the first drop, explained Heine.

A further 12 minutes should be the maximum period between the first drop and the delivery ►



Roger Godsmark



Tiaan Pool



Johan Heine



Ben Potgieter

## Forestry South Africa forest fire workshop



Dennis Lawrie

► of a second load and that a minimum of 4 000 litres is required thereafter.

The type of aircraft used in aerial fire fighting in South Africa included the Cessna, used as a spotter, as well as for command and control functions; the Airtractor bomber, which is used in initial attack and the Bell Huey helicopter, used as a crew transporter and to provide support and extended attack in a remote location and also drops with a Bambi bucket.

Heine said that the use of aircraft is not a silver bullet or solution to a problem, apart from providing support to ground crews and doing reconnaissance of an incident.

"In conclusion, we are using resources effectively. However, there is a lot of work to be done," said Heine.

### Incident command system

We need an incident command system (ICS) to manage incidents, but are we prepared as FPAs to deal with ICS?" questioned fire consultant, Ben Potgieter.

He continued, "Have we explored roles? We need to put role players in one room and go through the drills."

Eastern Cape UFFPA fire protection officer, Thinus Botha, said that the Eastern Cape requires logistics and planning officers to assist FPAs with ICS in the region. "A lot of FPAs and fire fighters ask for assistance. Many FPAs are no functional. They operate on different levels," stated Botha

The Eastern Cape has a total of 63 FPAs, however, only ten of these are active, revealed Botha.

"When fires get big and become multiagency incidents, the incident commander becomes responsible. What indemnity does the incident commander have if someone does backburn and kills someone," enquired fire consultant, Dennis Lawrie. "In different areas we should identify individuals who carry out roles in ICS system," he recommended.

According to FPA unit manager at the DAFF, Luke Radebe, the department is developing a national ICS strategy. "We are bringing together the white paper for discussion and bringing concepts together," he said.

### Fire detection

Fire consultant, Dennis Lawrie, discussed the process of detecting and spotting fires in South Africa, specifically, the Mpumalanga Province.

In terms of fire detection, fire is either spotted by motorists or the local community and at times there are cases of simultaneous spotting, was the introductory remark from Lawrie.

He provided an insight into the sophisticated fire surveillance systems and personnel in Nelspruit, which has a total of 70 cameras and an average of 120 alarms every day. "It means guys a pretty busy," quipped Lawrie.

The fire detection personnel then report fires to the field. Lawrie said that fire percentage breakdown for the region is 70 percent scheduled burns and roughly 30 percent unpermitted burns.

He said that quick fire detection equates to rapid initial attack. "Operations should spend time on camera, not on radio. We need a one-stop shop. Operation to pass onto field staff and direct the necessary resources to fire," stated Lawrie.

He noted that incident command is an absolute must in the event of high risk.

### Legislative and regulation

Fire consultant and formerly a general manager for WoF integrated veld and forest fire management resources in KZN, Bobby Hoole, stated that a national funding proposal for UFPAs has been proposed to DAFF, saying that in terms of legislation, 'the Minister must administer funding'.

Hoole said that in light of the promulgation of Chapter 3 of the Veld and Forest Fire Act, there is a need to make certain that landowners are protected at all times. "We as FPAs are finding it difficult to do conservation management because of legislation," he said.

Hoole said that FSA should participate in the forums with FPAs and Government departments.

### Fire protection associations

The Eastern Cape is facing a number of issues in cross boundary fire fighting when a fire occurs, stated Henderson, who is based in the Eastern Cape.

He said that Northern Cape FPAs should cross boundaries to assist or provide support to those FPAs in the Garden Route area in the Eastern Cape, where South African National Parks (SANParks) and wood company, Cape Pine are operational, which is not taking place at this time.

"What we need to do in the area is to get municipalities involved and attract ►



Malcolm Procter



Trevor Wilson



Rob McKeller



► FPAs to get involved. The National Advisory Forum is important here," stated Henderson.

He said that district municipalities need to join FPAs, as there has been an unwillingness to do so. "A lot of FPAs don't have DAFF as member. As long as Government do not become members of FPAs, it will be a problem. In the Eastern Cape, we are meeting with DAFF to form FPAs in the region," stated Henderson.

Ben Potgieter discussed the best operating practices (BoPs) and the standard operating procedures (SOPs), in his discussion on fire fighter guidelines for FPAs. He said that it is important to customise at set of SoPs for each FPA in the country.

Potgieter suggested that 'simulation sessions' should be conducted by the national advisory forum. "If we don't work together and practice together it will be problematic."

"The sustainability of FPAs is driven by the fire protection officer (FPO)," opined Bobby Hoole.

He added that FPA delegates need to deal with different Governmental departments at a national level. "They need to participate at all levels at all times. We hope national will be driver."

Hoole listed SANParks, Department of Rural Development and State-parastatals Eskom and Transnet as key Government enterprises that need to work in tandem with national FPA structures. "One buy-in we have is the Department of Public Works," mentioned Hoole.

"UFPAs need to decide on a target and cooperate. The fragmented approach is a problem," stated Letaba Fire Protection chairperson, Trevor Phillips.

### Operational equipment

Ben Potgieter conducted an open discussion on operational fire equipment in the forestry industry. Topics of discussion included the compatibility of hose systems and couplings in the fire industry.

"There are two different types of couplings. We need standardisation," stated Potgieter. He said that the quality of couplings used in the

industry 'is an issue' and that 'we need to get a specific decision on a specification'.

Ian Henderson said that there is a need to 'investigate feasibility to identify a preferred supplier. "I think UFPAs need to find the information and specification and provide this to the industry."

Lowveld and escarpment fire protection association (LEFPA) chairman, Duncan Ballantyne, added, "You need an agency that tests these products. It is one thing to have specifications and another thing to have a supplier."

"What we have learned is that service providers do not teach crews correctly. We need to make sure that service providers provide correct techniques on the use of nozzles and hose laces," concluded Potgieter.

### Land reform

FSA conducted a survey a couple of years ago of land reform in the forestry industry, said Richard Godsmark.

"One thing about forestry land claims as opposed to agriculture, unless they are small claims, Government will not buy the trees. Only the land," explained Godsmark.

He said that this means that ex-owners will be forced into partnership with a new landowner or Government. A significant fire risk from ex-plantations is created.

A high-risk rating from fire insurance establishments like Safire, ensues creating greater challenges for the industry.

Safire's general manager of crop and agriculture division, Ruth Bezuidenhout, was in attendance at the workshop. Bezuidenhout responded to Godsmark's presentation, saying, "Every risk is individually assessed. In new landownership the mentorship programme is not maintained. So, we have to charge more."

"New landowners are buying into idea of benefits of becoming a member of FPAs," commented DAFFs Luke Radebe. "Gradually we are getting to situation where more and more are becoming part of FPAs and being part of fire management issues."

DAFF deputy director for the Free State, Malcolm Procter, added, "KwaZulu-Natal Province is getting Government departments to sign up in terms of membership. We are assisting departments on fire prevention methods."

Godsmark stated that the forestry industry is advanced on a huge range of issues including fire management and equipment.

He cited arson as an area of concern in the forestry industry. "There are growing incidents of arson. The justice system is failing to deal with arson and as a result the commercial forestry may not be sustainable in the future," cautioned Godsmark.

"Arson is a symptom, conflict is the cause," he said.

### Conflict in the forestry industry:

- Conflict can be managed
- An exposure to theory and practices of conflict management, concepts and practice
- Sound knowledge of the past
- Knowledge of social dynamics
- Relationship with key people
- Ability to develop strategy
- Appropriate plans, people and positions to deal with society
- Corporate culture and management that understands the change and will give required support

### Change in dispensation.

The commercial forestry may not have understood magnitude of the change in the political climate since the since 1994, but the world has changed, said Godsmark.

"Rule of law is no longer pre-eminent power. Power and influence are today's tools of trade. Many are clinging to title deeds, but meaning of ownership has changed. One will be as sustainable as community relations allow you to be," contended Godsmark.

He questioned whether foresters are equipped to manage fire risk and plantations in this new dispensation.

"The forestry industry needs to equip foresters with knowledge, skills and support and foresters need to equip new foresters," concluded Godsmark. ▲



The illustrious line-up of speakers at the symposium

## Incident command takes centre stage at fire management symposium

The ninth Fire Management Symposium was held in KwaZulu-Natal, South Africa, on 5 November this year and hosted by Nelson Mandela Metropolitan University (NMMU) along with the Southern African Institute of Forestry (SAIF).

Fire and Rescue International attended the symposium, held at the picturesque Lythwood Lodge in Lidgeton, where forest and fire industry stakeholders and Government officials converged, with the aim of transferring strategic and technical knowledge to fire managers, among other objectives.

This year, the focus of the symposium, which is held annually as a platform for forestry fire experts in different disciplines to network and exchange ideas, was on incident command systems (ICS).

The event featured an illustrious group of speakers, covering varying aspects of ICS for the fire industry, including the use of new technologies, such as long-term fire retardants.

The Fire Management Symposium welcome was done by the chief director for forestry development



Sebueng Chipete

and regulations at the Department of Forestry and Fisheries (DAFF), Sebueng Chipete.

Corporate Governance and Traditional Affairs (COGTA) manager for fires services coordination, Jurgens Dyssel, discussed the legal and constitutional framework of ICS in South Africa, while Overberg District Fire and Rescue Services chief fire officer, Reinard Geldenhuys, provided an overview of ICS.

Mpumalanga Umbrella Fire Protection Association (MUPFA) manager, Trevor Wilson, provided insight into



Tiaan Pool

the formation of the National Veld Fire Management Advisory Forum, while Free State Province UFPA technical director, Malcolm Procter, discussed hazard and risk mapping in South Africa.

Other speakers included fire lecturer at NMMU Saasveld, Tiaan Pool, who confronted the alarming rate of accidental fire occurrences and a delegation of members of the National Disaster Management Centre (NDMC) in Mmaphaka Tau and Moses Khangale, who discussed the integrated capacity building for disaster management and the



► revision of the fire brigade services act, respectively.

### Incident command

Overberg District Fire and Rescue Services chief fire officer, Reinard Geldenhuys, noted that ICS is a model tool for command, control and coordination of a response and management of an incident.

He listed the problems that arise when emergency management agencies operate without using ICS, saying that control over resources; logistics and inadequate communication of plans are the results of not implementing ICS.

"With ICS the focus is on effective communication. ICS ensures effective management and safety of fire crews," said Geldenhuys.

ICS is used as a standardised management tool for meeting demands of small or large emergency or nonemergency situations. "It represents best practices and may

under the Fire Brigade Services Act," noted Geldenhuys.

ICS was used effectively during large fires in Overberg in the Western Cape in 2012, mentioned Geldenhuys. He said that incidents are classified according to five levels of complexity with a Type 1 incident being the most complex incident requiring national resources to safely manage and operate, while a Type 5 incident would be handled with one or two single resources with up to six personnel.

"Incident types should be defined in order to make decisions about resource requirements," said Geldenhuys.

The introduction of an incident management system in South Africa is not a new concept in the western world, said fire services manager at the National Disaster Management Centre (NDMC), Jurgens Dyssel. "It has been introduced in many countries around the world since its inception in Southern California in the 1970s," states Dyssel.

### The six levels of command in South Africa:

- Agency command
- Second command response
- Communication and coordination
- Disaster management - municipal, provincial and national coordination and liaising with neighbouring countries

As an incident become more complex there is a progression towards disaster management, explained Dyssel. He discussed the functions of the National Joint Operational Centre (NatJoc), which implements the joint operations system of Government for various operations.

The system has grown in scope of application and has been used with great success during national operations, stated Dyssel.

### National Veld Fire Management Advisory Forum

Mpumalanga Umbrella Fire Protection Association (MUPFA) manager, Trevor Wilson, discussed



Reinard Geldenhuys



Jurgens Dyssel



Trevor Wilson

be used for planned events, natural disaster and acts of terrorism. It is a key feature of the National Incident Management System (NIMS)," added Geldenhuys.

The responsibilities of an incident commander (IC) include managing operations, logistics, resources, planning, aviation and finances in the event of a major incident.

"The first arriving responder is the IC if the lead service or agency. A higher ranking person may assume command upon arrival at the scene. IC's are protected from liability

He said that ICS revolutionised the way in which governing and emergency management agencies operate and cooperate. Dyssel addressed certain concerns with implementing ICS. He said the primary problem is the apprehension that ICS allow command over another agency or will impinge on their authority.

A secondary problem is a lack of consensus in overall management, stated Dyssel. "If you don't prepare properly you will not act properly. The scope of practice and execution of duties should fall with the various response agencies."

various considerations for fire protection association (FPAs), saying that an national umbrella FPA (UFPA) is needed to facilitate and coordinate fire prevention, suppression and control measures and related risks within the respective provinces.

Wilson said that the national advisory forum made up of two representatives of each UFPA, a national representative of the Working on Fire (WoF) programme and a DAFF representative is tasked with achieving national consensus and processes for FPAs. ►

► He said that guiding principles have been set by the National Veld Fire Management Advisory Forum. The typical agenda of the forum include enlisting Government departments and parastatals as FPA members.

Wilson noted that the total spend of FPAs in accordance with the implementation and requirements of the Veld and Forest Fire Act 101 amounted to R1,2 billion in 2013, which included ground and aerial operations.

The Department of Forestry and Fisheries (DAFF) is tasked with driving and administering the Veld and Forest Fire Act, said Wilson. "There is no shortage of passion and experience, but we need to work on our communication," he said.

### Disaster management

There are three major hazards that impact on the livelihood of people and the environment in South Africa, as well as the Southern African Development Community (SADC), which are; drought, floods and fires, according to National Disaster Management Centre (NDMC) senior manager for capacity building and development, Mmaphaka Tau.

"The way we have managed fires should be part of the developmental approach. Our contribution to environment sustainability should be part of our fire planning," proposed Tau.

He encouraged synergies to take place across fire industries to achieve uniformity in the industry.



Mmaphaka Tau

"Integrated fire management (IFM) has moved to a vulnerability focus and towards building resilience. Disaster management should focus on resilience building and we must involve all stakeholders," stated Tau.

### IFM capacity building:

- Involves lobbying and advocacy
- Training and education
- Research
- Marketing and awareness

"Fire managers should question all the areas of fire management with a focus on what will ensure resilience," stated Tau. "As the disaster management fraternity, our function is strategic. We need to engage in processes of development and education programmes at various learning institutions, with a focus on fire programmes."

To this end, the Department of Corporate Governance and Traditional Affairs (COGTA) is currently collaborating with the University of Venda (UNIVEN) in Limpopo Province, South Africa towards the introduction of a Bachelor of Disaster Risk Science degree.

COGTA will investigate funding for the programmes that will be targeting councillors, traditional leaders and disaster risk management practitioners. "We need to work together in developing programmes that will promote synergies in all these fire managers," concluded Tau.

### Attitudes in fire industry

Forestry lecturer at NMMU Saasveld, Tiaan Pool, tackled the accidental wildfire issue that is prevalent in the forestry industry. "Why are there so many accidents that cause damage to our livelihood? There must be an attitude problem," stated Pool.

He sought the advice and opinion of 'the most experienced fire managers amongst us' in reaching this conclusion.

Pool noted that accidental fires accounted for an average of 24 percent in damage to plantations by fire for the period 2002 to 2011.

### Damage to plantations by fire: Fire reports from 2002-2011

- Arson – 22%
- Accidental – 24%

- Natural – 7%
- Unknown – 47%

The reason for accidental fires can be attributed to a combination of factors that include lack of experience, poor discipline, lack of knowledge, poor management and poor planning, stated Pool.

In conducting prescribed burning, Pool formulated a list of advisory guidelines for forest fire managers to consider in deciding to either continue or to stop burning. Burning should stop when humidity drops below 20 percent, fire behaviour becomes erratic, when the fire danger index (FDI) increases to over 50 and when there is any unexpected change in wind and weather conditions, stated Pool.

### Prescribed burning plans

It should indicate;

- Subdivisions of the area with roads and cut of breaks,
- Areas subject to degradation
- Burning techniques and sequences under the expected weather conditions
- Resources needed and available
- Predicted fire behaviour
- Expected fire danger index and wind direction
- Potential hazards in the area to be burned

"In conclusion; skills can be practiced and honed, knowledge can be taught and learned through experience. Attitude is a choice that can be sparked by good mentoring," said Pool.

### Fire retardants

Head of wildfire and passive fire protection advocacy for Budenheim Iberica, a manufacturer of halogen-free flame retardant additives, Vicente Mans, said that there are limitations in using water alone during fire suppression activities.

"Water alone presents many inconveniences, mainly the fact that its extinguishing capacity is limited to the evaporation heat of the fire," said Mans.

Long-term fire retardants (LTRs) have numerous benefits as a fire fighting tool, stated Mans. He said that it improves water performance, charring of fuel occurs instead ►





Vicente Mans



Duran de Villiers

► of flammable gas emissions and chemicals act as a fertiliser.

**LTR in ground applications**

- It is a very accurate way to create chemical barriers on the ground
- Applications of LTRs on the ground typically used in prescribed burning
- Using LTR you can have burning programme without using too much machinery
- A small ground tanker can protect three kilometres an hour with retardant

Mans noted that LTRs can be applied to single engine air tankers of 3 000-litre capacity to very large air tankers of up to 40 000 litres. "Effective chemical barriers can be built at a distance ahead of the fire," he added.

In conclusion, Mans stated that the use of LTRs in ground application is still in a 'growing stage'. However, he said that it is an effective prevention tool in high risk places and in prescribed burnings and is used as a barrier protecting houses, infrastructure, defence lines and protect fire crews.

**Technology**

Founder of SteadiDrone, Duran De Villiers, was invited to discuss the application of drones in the forest and fire industry.

SteadyDrone manufactures advances small unmanned aerial multi-rotor systems for a wide range of applications and industries. De Villiers stated that drones could be an effective fire management tool, owing to its rugged and mobile surveillance capabilities.

**Burning permits**

A new electronic permit issuing system has been implemented by the Lowveld and Escarpment Fire Protection Association (LEFPA) and its chairman, Duncan Ballantyne, along with technology systems manufacturer, EnviroVision Solutions (EVS) engineer, Robin Piek.



Robin Piek



Duncan Ballantyne

Ballantyne stated that this new manner in which burning permits are issued is being used in many parts of the world.

The advent of the electronic permit issuing system that was implemented by LEFPA was driven by camera detection and came at the behest of LEFPA members, who requested a practical system for controlled planned burns.

LEFPAs area of jurisdiction spans 1,8-million hectares, which is a vast area of land, hence the requirement for more sophisticated land and fire management systems.

"LEFPA implemented the electronic permit system programmed by EVS in May 2012 and 4 618 burning permits have been issued over the past 12 months," reported Ballantyne.

In March 2013, guidelines for high intensity burns for conservation areas in Nelspruit were investigated by a task team, which set out to reengineer the permit issuing protocols and devise a new matrix.

The logical step-by-step process was designed and a matrix was handed to, Robin Piek at EVS to overhaul and programme the existing permit issuing system.

A final matrix was developed and now involves a nine-step electronic controlled burning application process, explained Ballantyne. He said that the new matrix requires applicants to provide detailed fire hazard information, such as the forecast average wind speed, the types of fuel present and where the burn is set to take place. ►

► If all the answers are answered satisfactorily then the permit can be issued, stated Ballantyne.

### Fire tender selection criteria

Fire management consultant, Ben Potgieter, examined whether fire managers and officers have the right tools to fight forest fires in their respective environments.

Potgieter said that fire behaviour is influenced by weather, topography and fuel and that there are additional considerations in each of these three factors that can adversely affect fire fighting operations.



Ben Potgieter

Weather can affect spotting safety and rate of spread, fuel affects the intensity of a fire, as well as residual heat and spotting and topography has an effect on the rate of spread, fire access, behaviour and safety.

"Do you have the right tools to deal with a wind driven fire, slope driven fire and fuel driven fires?" questioned Potgieter.

A dilemma facing forest fire managers is the application of fire tenders, which is 'the common denominator limiting capability and water availability' in the field, said Potgieter. He said that the situation dictates the fire tender configuration.

### Factors influencing fire fleet configuration

- Size of property
- Potential loss
- Risk analysis
- Fire frequency and history
- Fuel types fire tender type

"The pump/hose configuration is essential in dealing with different terrain and fire incidents," explained Potgieter. "Fire is then about fuel, weather and slope class," he added.

In his closing remarks, Potgieter posed the question; "Do we have correct fire tenders and apply correct tactics for fire behaviour conditions?"

### Hazard and risk mapping

Free State Province UPPA technical director, Malcolm Procter, quoted NDMC head, Ken Terry, in his presentation on hazards and risk mapping in South Africa.



Malcolm Procter

The quote from Terry reads: "One essential requirement of the disaster management act is for the development of disaster management plans this includes conducting of risk assessments, mapping of vulnerable areas, measures to adapt to climate change and the development of early warning mechanisms by organs of state within their functional sphere."

Procter said that there are three steps in hazard analysis namely, hazard identification, vulnerability analysis and risk analysis.

He made reference to the hectares burned in the Free State, where the most significant case was the 800 000 hectares that burned in the Mokhare Municipality in the south-eastern Free State in 2013.

"Identifying fire hazards and vulnerability is essential to fire

management," said Procter. He added that a programme of prescribed burning reduces the prevalence and impacts of wildfires.

He defined risk as a calculation of the prevailing hazards, FDI and vulnerability, with the capacity of societal systems being the common denominator.

"In conclusion, any method to analyse fire threat needs to address many issues relating to fire risk into account," stated Procter. "This includes inherent mobility of wildfires, probability, scale and the quantification of fire severity."

### White paper on fire services

NDMC senior manager for fire services coordination, Moses Khangale, provided an overview on the review of the Fire Brigade Services Act (FBSA) and outlined the key thematic areas that will be addressed in the revised legislation.

He reflected on the history of fire incidents that have had an impact on the fire services, recalling destructive London fires of 1666. This incident highlighted the vulnerability of communities to fires, owing to inadequate infrastructure layout and combustible construction materials.

"Similar to London incident, the risk of fires in South Africa is influenced by a number of socio-economic factors," said Khangale. "In South Africa, because of historical reasons we still have informal settlements and shacks built with combustible materials, which does not comply with building regulations. So, there is a real fire risk in our communities." ►



Moses Khangale





Meteorological equipment supplier CW Price's stand



Vanguard Fire and Security stand at the symposium



The Andreas Stihl South Africa stand



Forestry Solution's Ben Potgieter



Fire Fighting Equipment (FFE) stand



Luke Radebe

► **Main problems with FBSA**

- Does not put explicit focus on fire safety and prevention
- Dysfunctional fire brigade board, which is tasked with oversight function
- The FBSA was promulgated in 1987 and the advent of the new democratic dispensation in 1994 resulted in a myriad of legislation that significantly impact on local government functions and institutional arrangements
- This necessitates the review of the FBSA to harmonise it with other key legislation that impacts on the provision of fire services

"We found a need to design policy framework to deal with these challenges," stated Khangale.

He mentioned the inaccessibility of fire engines in informal settlements, highlighting the surge in the number of shacks serviced by the City of Cape Town, South Africa, which tripled from 28 000 to 100 000 for the period 1992 to 2008.

This creates a significant risk, which requires clear legislation in order to react to the problems in the country, stated Khangale. "We felt, as a department, a need to review legislation to address the challenges we face and review the law. If we have robust legislation we will be able to achieve objectives."

**Key principles in policy review**

- Fire service must inculcate a culture of fire prevention
- Fire service must ensure community involvement
- Fire service must be driven at all spheres of government
- Fire service must be risk based
- It must ensure that the delivery of fire services are based on measurable standards
- Fire service must be based on partnerships

"Reviewing legislation is not an easy task, but a necessary process if the fire service is to rise to the challenges it faces, as well as make a meaningful contribution in the socio-economic development agenda of South Africa," concluded Khangale.

KwaZulu-Natal UFPA manager, Simon Thomas, provided the closing remarks at the symposium, commending the speakers for the insightful presentations at this year's event and NMMU and SAIF for staging the event.▲



Simon Thomas

*High intensity fire trails in Kruger National Park during September 2013*

# High intensity experiment at Afsaal, Kruger National Park

*By Navashni Govender, programme manager: fire ecology and biogeochemistry, scientific services, Kruger National Park, South African National Parks*

Fire is an important and crucial driver within savannah ecosystems and is necessary in maintaining ecosystem functioning. However, to use fire as a management tool, clear objectives have to be agreed on and the consequences must be clearly understood and effects thereafter need to be monitored and learnt from. Globally and in South Africa, climate change has had very tangible effects on ecosystems. Changes in rainfall patterns, increases in air temperature with knock on effects and a decrease in relative humidity continue to steadily increase fire risk of our landscapes.

We have also over time seen a steady decrease in large trees (>10 metres) in most landscapes in the Kruger National Park (KNP) with a concurrent densification of the shrub layer in the high rainfall western granitic areas. It is understood that elephants and fire are playing contributing roles in these processes. The woody shrubs, especially *Combretum* and *Terminalia*, are increasing in density and height in what used to be much more open areas. This process has been noticed for decades in the Pretoriuskop area and has also been described over large areas all along the eastern parts of South Africa. Scientists, such as Prof W Bond are

attributing this to an increase in atmospheric carbon dioxide (CO<sub>2</sub>) levels. Such a change in woody vegetation structure on a large scale can impact negatively on species that prefer more open areas or tall trees and also on the game viewing visitor's experience.

Woody plant cover is currently favoured as never before in the whole history of savannahs, mainly due to the fact that current CO<sub>2</sub> levels is the highest it has been in the last one million years. Higher CO<sub>2</sub> makes woody plants grow faster, sprout better after fire and build defences (spines, tannins) more easily. Due to this competitive advantage of woody vegetation over savannah grasses, which have evolved under lower CO<sub>2</sub> conditions, the encroachment of woody vegetation into our grasslands has increased significantly over the past few decades. This translates into a potential loss of a crucial biome, the savannahs, which makes up approximately 11 percent of the global and a large percentage of Africa's land cover and sustains millions of people and their livelihoods.

It is not feasible to use mechanical or chemical clearing as a possible tool to remove the woody vegetation at the scale of the Kruger National

Park and therefore other methods of addressing this issue needs to be looked at. We believe that it is feasible to experiment with implementing 'high intensity fires' in the KNP to address specific concerns relating to shrub densification.

## **Regular management fires**

Usually fires do not penetrate the forest and thickets stands but fires burned under specific weather conditions ie air temperature greater than 30 degrees Celsius, relative humidity less than 30 percent and wind speed greater than 30km/hour, would be able to move through the stand of thickets and forests and cause severe top-kill or kill many of the encroaching woody tree species. Such a fire would be deemed a 'fire storm or high intensity fire'. Preliminary data from a project in Hluhluwe suggests that burning the veld under weather conditions conducive to 'high intensity fires', provides an opportunity to managers to reclaim invaded grasslands by reintroducing frequent late season grass fires.

In the KNP, a project titled 'Experimenting with very high intensity fires to combat bush thickening in the Kruger National Park' was registered at Scientific Services in January 2010. The aim of this project is to determine the desirability and feasibility of ►





KNP staff discussing the project



Chris de Bruno Austin was the incident commander during the exercise

► experimenting with very hot fires (fire storms) to address bush thickening in selected areas in KNP.

**The key question**

What is the effect of high intensity fires on the vegetation within the high rainfall southern granites of KNP, with respect to different height classes, varying degrees of simulated elephant impact, the post fire effects, regrowth responses and density of vegetation (visibility)?

**The objectives**

- To determine the effect of high intensity fire on the density (visibility) of woody vegetation (especially shrubs)
- To determine the effect of high intensity fires on the woody vegetation structure with and without elephant impact (ranging from 0 impact to 100 percent bark stripping)

The burn took place in two fire blocks in the Malelane section near the Afsaal picnic site. Blocks S086 and S063. See map.

The first application took place in September 2010 and the second application was undertaken on the 2 and 3 September 2013. The fire was at the same site, as we needed to repeat the treatment to look at the effects on the vegetation. We knew from the start of the project that a single application of the high intensity fire was not going to achieve our objectives for the project ie having an effect on the woody vegetation. The fire was therefore repeated in 2013 in the same area.

There were a few changes made to the second application of the high intensity fire treatment. These were as follows:

- 1) We did set the two blocks on fire in a single fire front as we did in 2010. We only ignited the northern block in a perimeter fire.
- 2) The method of ignition for the second block was changed. In 2010 we only used a perimeter. This time we also targeted cooler or lower FDI days and allowed the ignition pattern ie a spiral, to create the hot fire. This is a much safer and more practical option to create a hot fire.

**Dynamics of the high intensity fire**

Savannah vegetation has developed with fire for millions of years. It is an extremely fire-adapted biome and therefore it is very difficult to kill an intact savannah tree. With this in mind and the increase in the bush

in the landscape (high rainfall and increased CO<sub>2</sub>), we are losing our grasslands and the area is becoming thickets. This has severe biodiversity, tourist and ecological consequences. Now we would like to use fire as an option to remove some of the woody vegetation, as chemical and mechanical options at the landscape scale of the KNP is not viable.

But as I said, savannah vegetation is fire tolerant and therefore we need very high intensity fires to have an effect on the trees. Therefore these high intensity fire events should not only be seen for their negative effects on the ecosystem but can possibly be used to tackle the increasing problem of densification of indigenous woody vegetation into our grassland systems. This is what this research project is trying to understand. We will publish a follow up article once all research findings have been studied.▲



Burning tree in KNP during the September 2013 trials

# 2014

## February

### 3 – 4 February 2014

#### Basic Life Support Instructor Course (BLS I)

All instructors must have a valid BLS Instructor Certificate and have a firm, working knowledge of the training materials, including textbooks and certificates to be issued for each specific Course. All examination material must be kept under strict lock and key at all times

**Venue:** Action Training Academy, Fourways, South Africa

**Contact:** Gugulethu More, Tel: 011 450 4981  
Email: gugulethu.more@ata-international.com

### 3 – 7 February 2014

#### Fire Prevention and Strategies

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

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

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

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

### 3 – 7 February 2014

#### CFPA Europe Certificate in Principles of Fire Safety Engineering

Application of fire safety engineering principles to the design of buildings and includes input drawn from associated published documents (PDs) that deal with issues which are primarily associated with life safety

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

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

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

### 4 – 8 February 2014

#### The JEMS Conference and Exposition

EMS Today is the event that provides manufacturers and suppliers of emergency medical products and services the opportunity to meet and conduct business with a diverse audience of EMS professionals

**Venue:** Walter E Washington Convention Centre, Washington DC, USA

For more information visit:  
[www.emstoday.com/index.html](http://www.emstoday.com/index.html)

### 7 – 8 February 2014

#### Company Officers Leadership Training (COLT)

**Venue:** Albany, New York, USA  
For more details visit: [www.nysfirechiefs.com](http://www.nysfirechiefs.com)

### 10 – 13 February 2014

#### Workplace Fire fighting I

A programme covering practical fire fighting for incipient stage/small fires including the use of extinguishers, foam equipment, large diameter hose and BA if required

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

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

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

### 15 – 20 February 2014

#### Southwest Fire Rescue in cooperation with the Texas Association of Fire Educators

More than 100 companies exhibit each year at the conference. They represent a wide array of fire service products and services. The Southwest Fire Rescue exhibit hall is a one-stop shop for fire officials

**Venue:** Embassy Suites Hotel in San Marcos, Texas, USA

For more information visit:  
<http://info.southwestfirerescue.org/>

### 17 – 21 February 2014

#### Fundamentals of fire investigation

The programme will promote a clear understanding of fire investigation and the rendering of opinion regarding origin and cause. Includes practical investigation exercises. Now aligned with NFPA 921

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

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

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

### 19 February 2014

#### Basic Life Support for Healthcare Providers (BLS)

Participants will be able to perform the initial steps of cardiopulmonary resuscitation in victims of all ages, basic airway manoeuvres and rescue breathing with and without adjuncts

**Venue:** Action Training Academy, Fourways, South Africa

**Contact:** Gugulethu More Tel: 011 450 4981  
Email: gugulethu.more@ata-international.com

### 19 February 2014

#### Fire fighting and evacuation model

The course covers 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

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

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

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

### 20 February 2014

#### Advanced Cardiovascular Life Support (ACLS)

Candidates will be competent to recognise and initiate the management of cardiac arrest and peri-arrest conditions

**Venue:** Action Training Academy, Fourways, South Africa

**Contact:** Gugulethu More, Tel: 011 450 4981  
Email: gugulethu.more@ata-international.com

### 24 – 28 February 2014

#### SICUR 2014, International Security Safety and Fire Exhibition

SICUR brings together the entire safety and security industry, making up a comprehensive showcase of new developments relating to protection and prevention in the widest sense of these terms.

**Venue:** Madrid Exhibition Centre, Madrid, Spain

For more information visit:  
[http://www.ifema.es/ferias/sicur/default\\_i.html](http://www.ifema.es/ferias/sicur/default_i.html)

## March

### 3 March 2014

#### Basic Life Support for Healthcare Providers (BLS)

Participants will be able to perform the initial steps of cardiopulmonary resuscitation in victims

of all ages, basic airway manoeuvres and rescue breathing with and without adjuncts  
**Venue:** Action Training Academy, Fourways, South Africa  
**Contact:** Gugulethu More, Tel: 011 450 4981  
Email: gugulethu.more@ata-international.com

### 3 – 7 March 2014

#### Fire appliance reconditioning

A course designed to provide learners with a working knowledge of the correct measures to be taken to restore an extinguisher or hose-reel to full operational readiness

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

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

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

### 4 – 5 March 2014

#### Advanced Cardiovascular Life Support (ACLS)

Candidates will be competent to recognise and initiate the management of cardiac arrest and peri-arrest conditions

**Venue:** Action Training Academy, Fourways, South Africa

**Contact:** Gugulethu More, Tel: 011 450 4981  
Email: gugulethu.more@ata-international.com

### 4 – 6 March 2014

#### KIPS – Kiev International Protection, Security

KIPS brings together the leading companies in the sectors of security, fire and technological safety, individual and public security, construction, and protection of public and private infrastructure.

KIPS will be held alongside KyivBuild the leading exhibition in building for more than 17 years, showcasing all the developments and achievements in the industry.

**Venue:** International Exhibition Centre, Kyiv, Ukraine

**Contact:** Agnius Kazlauskas,  
Tel: 00 044 (0) 207 596 5079,  
Email: agnius.kazlauskas@ite-exhibitions.com

For more information visit:  
[www.securityshows.com/pages/KIPS-FSS-FPS.html](http://www.securityshows.com/pages/KIPS-FSS-FPS.html)

### 10 March 2014

#### South African Qualification and Certification Committee assessment session

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

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

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

### 12 March 2014

#### SAESI Workshop

Regulation and regulatory framework in the built environment as it relates to fire safety.

Architects, engineers, fire risk managers, designers, smoke control officers and contractors, this workshop is a must for anyone who is involved in fire design and installation

**Venue:** CTICC, Cape Town, South Africa

**Contact:** Mari  
Tel: 011 579 4940 • fax: 011 450 1920  
email: mari@interactmedia.co.za

### 12 – 14 March 2014

#### 4<sup>th</sup> Alamy International Protection, Security, Rescue and Fire Safety Exhibition (AIPS)

AIPS is a leading security and protection event in Kazakhstan for international companies seeking to expand their business into the Kazakhstan security market. The event covers a wide range of sectors

**Venue:** Atakent International Exhibition Centre, Almaty, Kazakhstan



**Contact:** Agnius Kazlauskas,  
Tel: 00 044 (0) 207 596 5079,  
Email: agnius.kazlauskas@ite-exhibitions.com  
For more information visit: www.aips.kz

### 13 – 14 March 2014

#### International Trauma Life Support (ITLS)

ITLS courses are designed for providers who are first to evaluate and stabilise the trauma patient. The courses provide complete training in the skills needed for rapid assessment, resuscitation, stabilisation and transportation of trauma patients

**Venue:** Action Training Academy, Fourways, South Africa

**Contact:** Gugulethu More Tel: 011 450 4981  
Email: gugulethu.more@ata-international.com

### 13 – 14 March 2014

#### Advanced fire protection

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

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

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

### 17 March 2014

#### FFA Training Basic Air Operations Course

The course is designed to cover the basic understanding of the different functions of air operations

**Venue:** Working on Fire Training Academy, Nelspruit, South Africa

**Contact:** Michelle Kleinhans, Tel: 078 272 9098  
Email: michelle.kleinhans@wofire.co.za

### 17 – 19 March 2014

#### FFA Training Liaison Officer Course

This course is designed to empower candidates to fill the position of Liaison Officer within an incident management team (IMT)

**Venue:** Working on Fire Training Academy, Nelspruit, South Africa

**Contact:** Michelle Kleinhans, Tel: 078 272 9098  
Email: michelle.kleinhans@wofire.co.za

### 17 – 19 March 2014

#### Wildland Urban Interface (WUI) Conference

Held in the spring, WUI brings together leaders from the local, state and federal levels to collaborate against the fastest growing fire threat in the world, the wildland/urban interface. From education and mitigation, suppression strategies, high-hazard operations to policy, WUI addresses the toughest challenges facing the wildland fire fighting community

**Venue:** Peppermill Resort, Reno, Nevada, USA  
For more information visit: www.iafc.org/wui

### 17 – 21 March 2014

#### FFA Training Safety Officer Course

The course illustrates the role and responsibility of an incident safety officer within an incident management team (IMT) during an incident. Candidates will attain competence in assessing safety in an incident and in maintaining and communicating safety during an incident

**Venue:** Working on Fire Training Academy, Nelspruit, South Africa

**Contact:** Michelle Kleinhans, Tel: 078 272 9098  
Email: michelle.kleinhans@wofire.co.za

### 18 - 21 March 2014

#### FFA Training Single Engine Air Tanker Manager Course

This course will present the support role functions of Single Engine Air Tanker Manager functions within the aviation organisation, occasionally within an incident management team (IMT) framework at an air tanker base

**Venue:** Working on Fire Training Academy, Nelspruit, South Africa

**Contact:** Michelle Kleinhans, Tel: 078 272 9098  
Email: michelle.kleinhans@wofire.co.za

### 18 – 21 March 2014

#### FFA Training Helicopter Management Course

This course provides background to competently and safely manage helicopters during incidents and project operations

**Venue:** Working on Fire Training Academy, Nelspruit, South Africa

**Contact:** Michelle Kleinhans Tel: 078 272 9098  
Email: michelle.kleinhans@wofire.co.za

### 24 March 2014

#### Basic fire fighting module

The basic theory of fire, methods of extinguishment, components, operations and practical use of fire extinguishers and hose reels

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

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

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

### 24 – 25 March 2014

#### Basic Life Support Instructor Course (BLS I)

All instructors must have a valid BLS Instructor Certificate and have a firm, working knowledge of the training materials, including textbooks and certificates to be issued for each specific course. All examination material must be kept under strict lock and key at all times

**Venue:** Action Training Academy, Fourways, South Africa

**Contact:** Gugulethu More, Tel: 011 450 4981  
Email: gugulethu.more@ata-international.com

### 24 - 28 March 2014

#### FFA Training Aerial Supervision Course

This course is designed to demonstrate the role and responsibilities of an air tactical group supervisor (ATGS), helicopter coordinator (HCLC), lead plan pilot and air tanker coordinator (ATCO)

**Venue:** Working on Fire Training Academy, Nelspruit, South Africa

**Contact:** Michelle Kleinhans, Tel: 078 272 9098  
Email: michelle.kleinhans@wofire.co.za

### 24 – 28 March 2014

#### Intermediate and Advance ICS (All Hazard)

This course provides description and detail of the Incident Command System (ICS) organisation and operational supervisory roles on single or multiple agency/jurisdictional incidents

**Venue:** North West University, Potchefstroom, South Africa

**Contact:** Michelle Kleinhans Tel: 078 272 9098  
Email: michelle.kleinhans@wofire.co.za

### 26 March 2014

#### Fire fighting and evacuation model

The course covers 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.

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

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

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

## April

### 2 April 2014

#### Fire Industry Manufacturers (FIM) Expo

Organised by the Fire Industry Association (FIA), FIM Expo features many of the UK's leading fire detection and alarm manufacturers and focuses on showcasing the latest products and developments in this sector of the industry.

**Venue:** Warwick Racecourse, Warwick, UK  
For more information visit: <http://www.fia.uk.com/en/Events/Details/index.cfm/FIM%20Expo%20Warwick>

### 7 – 12 April 2014

#### Fire Department Infrastructure Conference

FDIC has proven year after year that it is the premier conference and exhibition for the fire industry. With the largest gathering of decision-makers, trainers and experts – as well as manufacturers and suppliers, FDIC serves as a spearhead for networking, relationship development and future revenue growth.

**Venue:** Indiana Convention Centre and Lucas Oil Stadium, Indianapolis, USA

For more information visit:  
<http://www.fdic.com/index.html>

### 9 – 10 April 2014

#### International Trauma Life Support (ITLS)

ITLS courses are designed for providers who are first to evaluate and stabilise the trauma patient. The courses provide complete training in the skills needed for rapid assessment, resuscitation, stabilisation and transportation of trauma patients

**Venue:** Action Training Academy, Fourways, South Africa

**Contact:** Gugulethu More, Tel: 011 450 4981  
Email: gugulethu.more@ata-international.com

### 13 April 2014

#### Basic Life Support for Healthcare Providers (BLS)

Participants will be able to perform the initial steps of cardiopulmonary resuscitation in victims of all ages, basic airway manoeuvres and rescue breathing with and without adjuncts

**Venue:** Action Training Academy, Fourways, South Africa

**Contact:** Gugulethu More, Tel: 011 450 4981  
Email: gugulethu.more@ata-international.com

### 14 – 15 April 2014

#### Advanced Cardiovascular Life Support (ACLS)

Candidates will be competent to recognise and initiate the management of cardiac arrest and peri-arrest conditions

**Venue:** Action Training Academy, Fourways, South Africa

**Contact:** Gugulethu More, Tel: 011 450 4981  
Email: gugulethu.more@ata-international.com

### 14 – 17 April 2014

#### MIPS – 20<sup>th</sup> Moscow International Protection, Security and Fire Safety Exhibition

Over the past 19 years, MIPS have become the largest and most recognised security and protection exhibition in Eastern Europe and Central Asia. It has become the traditional meeting place for local and international sellers, solution providers, installers and buyers to converge and discuss the latest developments in security solutions.

**Venue:** VVC Exhibition Centre, Moscow, Russia  
**Contact:** Ilya Sobolev,

Tel: 00 044 (0) 207 596 5170,  
Email: [ilya.sobolev@ite-exhibitions.com](mailto:ilya.sobolev@ite-exhibitions.com)  
For more information visit: [www.mips.ru](http://www.mips.ru)

## *Can we make it on time*

The pagers go off, calling us out.  
The dispatcher gives the address, with a loud shout.  
I jump out of bed as fast as I can.  
Grab my shoes and my keys as they page us again.  
I go out to my truck, plug in the dash light.  
Cause somewhere in town is a fire I must fight.  
Wiping the sleep from my eyes, I see a bright glow in the distance.  
A policeman yells over the radio "Code 3, I need assistance"  
He said there is screaming, coming from inside.  
I think to myself, someone is trapped, but alive.  
The pain they must feel, I can't imagine the scare.  
I see the station up the road, the chief's already there.  
I pray to God "Please let us get there in time,  
To save an unknown life, Lord if you must, instead take mine."  
I speed up a little faster, but still driving safe.  
Still praying to God that I won't be too late.  
I finally get to the station, put on my turn out gear.  
The chief starts the fire engine and yells "We're outta here!"  
The sirens sound off, the red strobe are so bright,  
I pray once again, "Lord watch over us tonight."  
I suit up for action putting on the SCBA.  
The chief makes the comment "Boys the Devil wants to play!"  
We arrive on scene, not ever thinking one time,  
"Why am I doing this?" or "Why do I put my life on the line?"  
As we observe the silence and think "this person is dead."  
All of a sudden I see the shadow of a small head.  
Looking real hard, trying to figure out what it is.  
Oh dear Lord, it can't be. It's just a small kid.  
Then all of sudden the head moved, "this kid's still alive!"  
So I try to reassure her by yelling "Everything's gonna be alright!"  
I always said "I'd die if it would save another life."  
But never once did i think that it could happen tonight.  
I run to the front door, Kick it open and run in.  
Praying once more, "God, we can't let the Devil win."  
Crawling on the floor, moving slowly toward the crying.  
I noticed a strong smell and loud hissing. Oh No! It's a gas line!  
I knew I had to hurry so I got up and ran towards the cry  
I found that little girl, she could barely open her eyes.  
The smoke was thick and very hot and getting ready to flash.  
I took off my jacket, wrapped her in it and gave her my air mask.  
I heard a fire fighter outside say, "The roof's coming down,  
if they are getting out alive, they better get out right now."  
I grabbed the young girl as if she were a football,  
tucked her in close and ran to the window.  
The chief ran up and took her from my arm  
My other one's broken, but at least she is out of the way of harm.  
Then I remembered the gas line. So I too climbed out the window.  
And sure enough, that gas line did blow.  
The explosion knocked me down, but I got right back up on my feet.  
Took no more than three steps, then I hit my knees.  
Through my blurred vision, I watched that little girl,  
with her mom and dad all crying, having a face with a smile.  
She then walked over to me and grabbed me by the hand.  
She said in a soft sweet voice "Thank you Mr Fireman."  
We put out the fire, got ready to go home one more time.  
I helped roll the hoses, thanking God that nobody died.  
And thank you Dear Lord for letting us be on time.

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