

# SAFETY #2

# FIRST+

REPORTS AND STORIES OF EMERGENCY SERVICES.

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# SAFETY FIRST+



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## EDITORIAL

From protecting emergency personnel in England, through training drivers in Egypt and providing emergency care in the Netherlands – safety and security are a global topic with countless different aspects. There are many stories that would never be told if the people involved didn't benefit from that safety and security. Safety and security also mean having the ability to rely on something – from your own abilities, other people, or the equipment that is used in action on a daily basis. In the case of Alice Berrill, whose Wish Foundation charity allows terminally ill patients to take one last trip, all these factors come together, while Klaus Bruns, Head of Service at WAS, creates a safe, secure environment for others thanks to his flair for planning and his trustworthy team. We, meanwhile, feel it's safe to say that you'll enjoy reading the articles that follow.

*A. Ploeger*  
Andreas Ploeger

# FINAL WISHES...

ALICE BERRILL REPORTS ON  
A HEART-WARMING INITIATIVE.



## ALICE BERRILL

Alice Berrill is a trustee and founder of the “Ambulance Wish Foundation UK,” the British branch of the Dutch “Stichting Ambulance Wens Nederland” charity, which has taken on the task of fulfilling the final wishes of palliative patients. Since the founding of the UK charity, clinically-trained volunteers and drivers have been in action, operating a specially-built and equipped ambulance in support of this good cause.



## THE FIRST OF ITS KIND.

The vehicle in question is funded by donations and is not a dream car but a “wish ambulance” – the first vehicle of its kind in Great Britain, specially tailored to patients’ needs and equipped for extra comfort. In addition to the electromechanical WAS Multi-Load Assist to aid with entry, and air conditioning, up to four people can accompany the patient on board.



## MORE THAN JUST A TRIP.

Alice Berrill became aware of the Dutch approach in 2015 via a BBC report which told the story of how the idea came about\*: Just after putting his terminally ill patient, Mario Stefanutto, onto the stretcher to be loaded into the ambulance to transport him, ambulance driver Kees Veldboer learned that the receiving hospital wasn't ready. So what should they do? The ambulance was ready to go, and the sun was shining, when Kees had his big idea. He asked his patient, Mario, what he wanted to do. As a retired seaman, he didn't need long to think about it: he wanted to see the harbour again! They drove to the harbour where Mario, wrapped up warmly in blankets, was able to enjoy the sunshine and sea

breeze for a while, before being taken to his destination hospital. After spending nearly an hour there, the patient and the ambulance driver had both experienced something truly special. Marios wish was the first of its kind that Kees and his ambulance had fulfilled, and the idea for the “Stichting Ambulance Wens Nederland” was born. Committed people like Alice Berrill ensure that the concept is spreading. In addition to the Netherlands and Great Britain, the foundation now has operations in Belgium, Germany, Sweden, and Israel.

[www.ambulancewishfoundation.org.uk](http://www.ambulancewishfoundation.org.uk)+

\*Source:  
<http://www.bbc.com/news/magazine-34297590>



**THE IDEA FASCINATED ME IMMEDIATELY.**

On the 22<sup>nd</sup> September 2015 my mother sent me an article entitled ‘People who make last wishes come true’ written by Vibeke Venema for BBC World online. Detailed in this article was the fantastic work of a Dutch charity “Stichting Ambulance Wens Nederland”, an ambulance charity based in Rotterdam whose sole purpose was to provide transport and medical support to allow people with terminal illness a chance to undertake a journey of personal significance to make a wish come true.

As a paramedic in the NHS with over 10 years’ experience I often transport terminally ill patients from their homes to their local hospice and understood the significance of such a journey. I often wished that I could take a detour to allow the person to visit somewhere on the way to the hospice, but couldn’t due to the time restraints of working for an over-worked public service such as the NHS.

**WITH A LITTLE HELP FROM MY FRIENDS.**

Once I learnt of the existence of “Stichting Ambulance Wens Nederland” I immediately set about searching for the equivalent service in the UK that I could volunteer for, I quickly discovered that it didn’t exist. In frustration I e-mailed Kees

Veldboer, the charity director of “Stichting Ambulance Wens Nederland”, to find out if he knew of a similar service in the UK. Kees replied within 10 minutes. He was interested in setting up a UK branch of his charity and if I would be interested in doing so. My answer was of course yes and the “Ambulance Wish Foundation UK” was born.

Fundraising for our vehicle started in earnest after I was put into contact with the amazing Freda Kaplan and Judith Tobin. Freda had used the Israeli branch of the charity to allow her gravely ill father to attend the wedding of her son, his grandson. The family were overjoyed that he could enjoy the day of the wedding, and on his passing a few days later were determined to launch the service in the UK.

Having worked for the East of England Service since 2003 and working on frontline emergency vehicles built by WAS there was no other company that I would even consider taking on the job of building the UK’s first purpose built Palliative Care transport vehicle. From the initial meeting with Richard Skingley, Sales & Marketing Manger of WAS UK, in October 2016. I knew that I was in safe hands in the design of such a specialised vehicle. Richard was there to advise and to answer any questions that I had.

In April 2017 WAS very kindly paid for me to fly me out to Wietmarschen to discuss the design with Guido Wietheuper, Project Manager, and Sebastian Hinrichsen, Business Development Manager, to finalise the plans for our vehicle. They had come up with the perfect design incorporating the WAS Multi-Load Assist system. As the charity director I have a responsibility not only to ensure that the people using our service travel in the upmost comfort, but also to the volunteers to ensure that I do everything to reduce the risk of injury.

**FIRST LAST WISHES.**

On the 5<sup>th</sup> September 2017 I flew over to Wietmarschen again to see our vehicle come off the production line and officially be handed over to the charity. The vehicle was more than we could have hoped for. Guido had worked hard to ensure that patient comfort was at the centre of the design and had also worked so hard on the internal configuration so that we could carry not two, but four persons in the vehicle. This meant that we could carry the maximum amount of people with their family member on his final wish.

So far, we have taken a young mother to watch her daughters ice skating at Christmas, a wife to go to the seaside resort where she had spent many happy holidays with her husband and family, a 12-years-old child to drive a car as part of his bucket list and a 14-years-old girl to spend time at home with her family.

It is an honour to help these people and their families and we are honoured to be able to do so in such a fantastic vehicle. +



**THE ASB MAKES FINAL WISHES COME TRUE IN GERMANY.**

The name of this special vehicle – Wunschewagen – has a very apt double meaning in German, with “wagen” meaning both “vehicle” and “to dare.” Making final wishes come true demands that patients, their friends and families, and their carers all dare to dream. With the Wish Ambulance, the ASB, the Workers’ Samaritan Federation, provides the safety net to turn these courageous wishes into reality. Since 2014, the project has been part of the organisation’s voluntary offerings, which are solely funded from donations, with more information being available on [www.wuenschewagen.de](http://www.wuenschewagen.de)



## OPERATING ON BEHALF OF THE PEOPLE IN BRABANT, NETHERLANDS.

**HERMAN SCHLEPERS CARES INTENSELY FOR HIS RAV UNITS IN THE NETHERLANDS' LARGEST TREATMENT REGION, CENTRAL AND WESTERN BRABANT AND BRABANT NORTH. RAV STANDS FOR "REGIONALE AMBULANCEVOORZIENING," WHICH TRANSLATES AS "REGIONAL AMBULANCE SERVICE." THERE ARE 25 OF THESE REGIONAL UNITS IN THE NETHERLANDS, AND HERMAN SCHLEPERS IS ONE OF TWO MANAGERS OF THE RAVS MENTIONED BEFORE WITH A TEAM OF NEARLY 600 WORKERS REPORTING TO HIM. WE MET WITH HIM ON A MARCH AFTERNOON IN S'-HERTOGENBOSCH TO DISCUSS THE CHALLENGES HE FACES, HIS TRAINING REQUIREMENTS, AND HIS PLANS FOR THE FUTURE.**

On the outskirts of the Dutch provincial capital of s'-Hertogenbosch, a city of around 150,000 inhabitants, we are met by Herman Schlepers in a very friendly, modern office building. You quickly get the impression that he is a man who knows what he's talking about. Calmly, confidently, and patiently, he sets out the challenges that his RAVs – two of 25 in the Netherlands – must address in their work. In principle, both healthcare and emergency response are organised by the government. The government sets out the framework conditions under which the various organisations

are required to work. Within this framework, however, the individual RAVs can operate highly autonomously – provided that they remain within cost limits. These costs, in turn, are determined by the health insurance funds. As such, Schlepers is responsible for preparing budgets for the year ahead on an annual basis, as well as ensuring that those budgets are achieved. The health insurance funds also set out service catalogues, which have to be met by 95%. If this is not achieved, budget cuts are threatened. As an example, Schlepers mentions a service level for response



times: in acute cases, an ambulance must be at the patient within fifteen minutes. A limit of thirty minutes applies in less urgent cases. Scheduled patient transports are planned separately, and a time slot is agreed with the patient.

### WORKING AND ORGANISING AROUND A SERVICE LEVEL.

The service level requirements naturally have an effect on the way in which the RAVs are organised. In order to achieve the specified time limits, the RAVs use a system of process flows: as soon as one of the twelve main stations or ten

satellite stations of the Brabant RAVs dispatches a vehicle, surrounding units are asked to send a vehicle to cover that station for the next incident that may occur, and to ensure that the service level is met. In a densely populated country such as the Netherlands, a fifteen-minute response appears tough. However, Herman Schlepers can point to an overall concept that makes it possible to achieve the target as a whole. As soon as the emergency call is taken, all information is recorded in an internationally-proven ProQA (Questions & Answers) software package by dispatch

employees. The call log is received in the operations centre, and the GMS system (an application software for dispatch centres) takes over the data. The navigation system then calculates the route, while all traffic lights along the way are set to green, so that the ambulance can reach the destination without delays. Free passage for ambulances is a standard practice throughout the Netherlands, not just in Brabant Midden-West-Noord. On the way to the incident, the emergency paramedic studies the patient's medical records on an iPad and prepares for possible treatments.



At the scene, these well-trained responders decide how and where further treatment will take place. If a hospital admission is necessary, the paramedic informs the clinic and, at the press of a button, sends the updated medical records to the hospital. In the case of heart patients, the cardiologist who has been contacted will also receive the ECG data collected in the vehicle to plan for further treatment. Naturally, the journey to the hospital also takes place on a wave of green lights to ensure free passage for the ambulance. Herman Schlepers refers to the fact that the fifteen-minute requirement is not just a performance incentive for him and his team: more importantly, it can be a life-saver for patients.

#### TOP TRAINING FOR ALL RESPONDERS.

According to Herman Schlepers, people say that once you start to work at the RAV, you'll never leave. However, before starting work at the RAV, there is a high bar to overcome in terms of qualifications. This is because the demands placed on responders are so high – not

surprisingly, as it is literally a matter of life and death. Qualifying to work as an ambulance first responder requires a four-year bachelor's degree to become a paramedic, followed by two years' on-the-job training at an intensive care unit of a hospital. After a successful application, each new applicant must complete a further year's training, which is funded by the RAV. If all internal reviewers judge the applicant to be suitable, he or she is taken on and can be deployed to work independently. Many emergency paramedics only join the RAV in their late thirties or early forties, partly because they are seeking a change of direction in their careers, and partly because they are attracted by the ability to work independently, the high levels of individual responsibility, and the variety of tasks. Normally in the Netherlands, no doctor travels to deployments with paramedic units. In extreme cases, a helicopter with doctor is requested. Emergency paramedics are both allowed and required to perform medical activities including attaching intravenous drips or performing decompres-

sion of the thorax. "Anyone who works with us must have good people skills – with their colleagues and patients – must be able to communicate, and must love the stress," explains Schlepers with a smile – and those who can do all that often stay until retirement. Another factor that Schlepers cites is the social prestige associated with a career as a paramedic. Drivers also require an excellent standard of training. The formal requirements merely state that drivers must have graduated from high school and hold a driver's licence that allows them to transport passengers. The real training, for the RAV, however, comes on the job, where they undertake specific vocational training to become an ambulance driver. Just driving with blue lights requires a year of training. After that, there is further training to undertake as an emergency assistant, as each ambulance has a maximum crew size of two: the driver and the emergency paramedic. For the RAV, maturity and behaviour in traffic are the most important factors, according to Schlepers, as

a result of which, no drivers under the age of 25 are taken on. After all, it has been scientifically proven that young people below the age of twenty-two take too many risks and rate their own abilities too highly.

#### SHAPING THEIR OWN FUTURE.

Schlepers is also concerned about the future workload for his workforce of over 500 people. The Netherlands is another country where hospitals are reduced in numbers and concentrated. A lack of care homes for the ageing population leads to an increasing number of emergency calls from older people. Internal analysis groups are, therefore, constantly seeking solutions. One promising approach is to begin the recruitment process while nurses are still undergoing their training. Future nurses will be made aware of career opportunities at the RAV, offering them the chance to join the RAV immediately after their training. After two years' further training, the costs of which would be met by the RAV, they join the team as direct entrants. According to Schlepers,

this approach relies on the RAV's good reputation. A further approach would be to offer school graduates (in this case, from academic high schools) the chance to undertake apprenticeships with the RAV. During their nursing training, which they would have to undertake first, they would get the opportunity to undertake an internship with the RAV, with both parties getting to know each other in the process. After three years of training, there is a further year of training, funded by the RAV. For Schlepers, it's important to ensure that the quality of the training is always first rate, and for this reason, internal quality control, undertaken by experienced supervisors, matters greatly. The apprentices would be assessed on a wide range of criteria from many different perspectives, resulting in a joint decision as to whether to take them on. Moreover, it is important to ensure that medical treatment is maintained – not just for the future of the RAV, but for the overall health and wellbeing of the population. For example, it is the case in the Netherlands that fewer and fewer

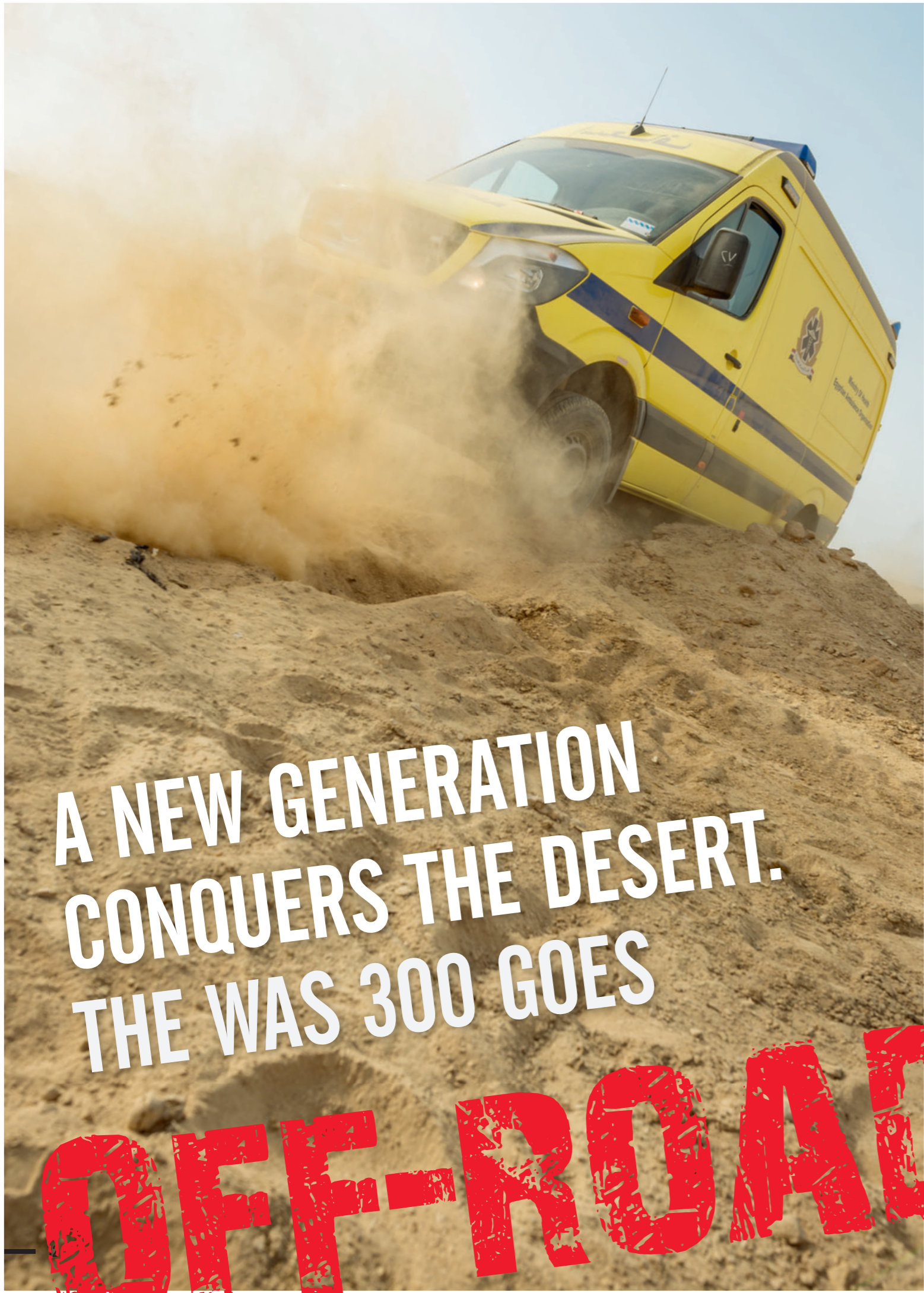
general practitioners are taking on calls during the evenings or at night. For this reason, the RAVs have developed a concept, to be delivered by their own "senior" paramedics staff who want a change of responsibilities. The aim is to offer a nearly-equivalent on-call service to that offered by doctors. These clinicians would be offered additional training, resulting in a master's degree, to be funded by the RAV. This qualification would allow them to undertake first responder duties and, working in conjunction with a doctor based in the control room, to provide or initiate treatment. Schlepers is convinced that offers such as these will make the RAVs more attractive and more versatile: after all, the complete infrastructure and a trained workforce needed to roll out their own healthcare services step-by-step are already available, and the specific, focused approach taken by the RAV Brabant Midden-West-Noord in respect of its future duties shows that, even in the narrow context of service agreements and budgets, it is possible to shape the future creatively. +



#### RAV BRABANT IN FIGURES:

Deployment zone:	
3,654 km <sup>2</sup> in Brabant	
Inhabitants:	1,725,905
Employees:	approx. 600
Vehicles:	80
Main stations:	12
Satellite stations:	10

<https://www.ravbrabantmwn.nl>



**A NEW GENERATION  
CONQUERS THE DESERT.  
THE WAS 300 GOES**

**OFF-ROAD**



**WITH AN ARDENT LOOK OF CONCENTRATION,  
THE DRIVER STEERS OVER GRAVEL, ROCKS AND SAND.**

From the driver's seat, the slope that he needs to drive the ambulance over still looks extremely steep, and the seats become uncomfortable to sit on long before the tipping point is reached. One of the front wheels loses grip, and there is a brief pause before the all-wheel-drive kicks in and the vehicle moves forward with a powerful shove before correcting itself. Mohamed Mahmoud translates the words of the German driver safety trainer for the driver: "Well done! Always keep moving when you're on gravel."

The training, introducing drivers of the Egyptian Ambulance Organisation to the new generation of ambulances, has been organised by WAS. In addition to the usual technical training courses and medical instruction, a decision was taken to include an additional off-road training as part of the vehicle handover, as the new generation of WAS 300 4x4 adds off-road capability to a well-proven vehicle concept.

**A SUCCESSFUL CONCEPT CONQUERS THE DESERT.**

WAS ambulances were first deployed in Egypt in 2007. Naturally, the vehicles' interior was already specifically adapted for hot countries at the time, and the latest version also features particularly heat-resistant materials and a cohesive range of equipment to prevent build-up of dust and sand, as well as built-in, high-performance air conditioning and continuous ventilation. The layout and functionality of the interior equipment have also remained almost unchanged. The decisive difference, however, comes from the all-wheel-drive with differential lock. Thus equipped, emergency services can now reach incidents in desert regions that would otherwise only be reachable with extreme difficulty, enabling them to come to the aid of inhabitants of sparsely populated areas. At the same time, the roads of the densely-populated Sinai region are also in a poor condition. The drivetrain conversion required switching from a 3.5t chassis to a 3.88t chassis, but otherwise, nothing has changed.

**WHY CHANGE SOMETHING THAT WORKED SO WELL?**

Local technicians already know their WAS 300 vehicles inside and out. They have received intensive training since 2007 and can now identify defects more quickly than their colleagues in Wietmarschen in Germany. A total of 4,000 ambulances are deployed nationwide, receiving services and maintenance every three months, and this maintenance regime is undoubtedly one of the reasons why very few of the vehicles delivered over a ten-year period have had to be replaced. Surprisingly, despite the challenging road conditions, most vehicle repairs have not been due to wear and tear: accidents are a larger problem. +

**THE ARABIC REPUBLIC OF EGYPT**

The topography of the Arabian Desert is multi-faceted and ranges from mountainous regions, gentle hills and low peaks through to dry, sprawling valleys filled with debris and fine sand. In a contrast to Egypt's desert landscapes, there are also regions of steppe and savannah, oases and, naturally, the fertile river landscape of the Nile, which is home to a large proportion of Egypt's population, with only a few people living in the oases in the drier regions.

Total land area:	1,001,449 km <sup>2</sup>
Arabian Desert:	220,000 km <sup>2</sup>
Population:	approx. 94,666,000
Population density:	87 inhabitants/km <sup>2</sup>



**MOHAMED KAMEL MOHAMED MAHMOUD HAS BEEN THE EXECUTIVE ASSISTANT MANAGER AT WADI EL NIL SINCE HE GRADUATED FROM HELWAN UNIVERSITY IN MECHANICAL ENGINEERING. HE HOLDS TECHNICAL TRAINING SESSIONS OF THE EGYPTIAN AMBULANCE ORGANISATION, MANAGES WAS'S VEHICLE HANDOVER OPERATIONS, AND SUPPORTS THE WAS TEAM AT EXHIBITIONS AND WITH SERVICING ACTIVITIES.**



**Mr. Mahmoud, you are an important point of contact for WAS in Egypt, acting as a translator, consultant, and local guide. Have you also had the opportunity to visit your colleagues in Germany?**

Yes, on two occasions so far: I visited Wietmarschen in 2012 and 2014 to attend training courses covering electrics, generator technology and medical technology, as well as air conditioning maintenance. When working with the vehicles locally, it is important to have a thorough understanding of both the basic principles and the details. Both visits were excellent and involved some very intensive learning.

**What are the most important challenges that vehicles and rescue services in Egypt have to overcome?**

The poor road conditions are undoubtedly a challenge for drivers and vehicles alike. In addition, the traffic situation in metropolitan areas is extremely stretched, which causes many accidents each year and makes it difficult to reach the scene of the incident on time. The paramedics also

have to overcome the physical challenges of narrow staircases in very tall residential buildings that don't have lifts. That means you have to be in peak physical condition to be able to withstand the strain on your body.

**How do the challenges of driving in the cities compare to rural and desert regions?**

Quite honestly, in many of the narrow city streets, the traffic is a nightmare with no kind of organisation whatsoever. For that reason, drivers love the smaller ambulances such as the old VW T5 or the Mercedes-Benz Vito, which are also built by WAS. The new WAS 300 4x4, which is based on a Mercedes-Benz Sprinter, is also very narrow: a multi-talented vehicle for the country and the city, so to speak. In rural areas, the scene of an incident is often in a remote area, where the roads are either not shown on a map or simply non-existent. This means that a vehicle needs genuine off-road capability: otherwise, the odds are stacked against reaching the patient.

**When introducing drivers to the WAS 300 4x4 for use off-road, there was a driver training course that you attended. How would you describe that?**

There were a total of ten groups, each with fifteen drivers attending for a one-day training session. In the mornings, there was a classroom session with training on vehicle technology, focusing on the all-wheel-drive system (handling with differential lock engaged, etc.) After that, we took the 4x4 ambulances onto the off-road course, where training was given in practical off-road driving that also combined different surfaces.

**Some people drive in off-road rallies for the thrill of it. Were there any sticky situations during the driver training – moments when you needed strong nerves?**

Even when driving on extremely hilly terrain with loose sand or gravel, the all-wheel-drive system helps with maintaining control. We did, however, damage the front drive-shaft of one vehicle on a rock. The vehicle could no longer be manoeuvred over the terrain under its own power, and needed to be towed away. Every cloud has a silver lining, however, as it was a really good learning opportunity. Damage like this can occur on tough terrain from time to time, and it meant that we were able to prepare for this kind of situation under the best possible conditions.

**Germany and Egypt are separated by around 3,000 kilometres, as well as the Mediterranean Sea. Does the long distance influence the collaboration with WAS?**

The collaboration with WAS's different departments, covering service, technical training, sourcing of spare parts and vehicle deliveries, has been established for many years and works flawlessly. When we're not physically in the same place, we just connect electronically, and thanks to the training courses and our many years of experience with the vehicles, we can routinely solve the vast majority

of problems ourselves. I also particularly enjoyed the way that we were treated during our two stays in Germany.

**What is it about the vehicles that you value so highly?**

First and foremost, WAS's flexibility in addressing the specific challenges of using the vehicles in this country and in delivering bespoke vehicle solutions for us. Naturally, the off-road capable vehicles – but also vehicles for transporting infectious patients, large ambulances, as well as smaller vehicles that are tailored for use in urban traffic. WAS covers the complete range of vehicles that we require. Moreover, the high quality and long service lives of the vehicles should be noted: the first VW T5s were delivered in 2007, and are now eleven years old. A large proportion of these vehicles are still in daily use, as are all but a few of the first consignment of Mercedes Sprinters, which were delivered in 2009.

**How do the specifications for ambulances in Egypt (in terms of their equipment, crew, and safety) differ from those in other countries? In fact, are there any differences at all?**

Vehicles here also follow the EN 1789 standard and, as such, don't differ from those in European countries. The crew here consists of a driver, who is not medically trained, as well as a paramedic, with the driver providing whatever support he can.

**LOCAL TECHNICIANS KNOW THEIR WAS 300 VEHICLES INSIDE AND OUT.**







**KLAUS BRUNS, HEAD OF SERVICE AT WAS, DISCUSSES WHAT HIS WORK MEANS TO HIM.**

# SAVING THE DAY FOR THE EMERGENCY SERVICES.

**KLAUS BRUNS HAS KNOWN THE TOPIC FOR A LONG TIME. EVEN WHEN MANAGING THE RESCUE STATION IN HILDESHEIM, HE UNDERSTOOD WHAT IT MEANT WHEN AN AMBULANCE BROKE DOWN. TODAY, AS SERVICE MANAGER FOR WAS, HE FINDS IT JUST AS HARD TO ACCEPT ANY DOWNTIME FOR AN AMBULANCE. THE CONCEPT OF BEING UNABLE TO HELP OR RESCUE PEOPLE IN TIME, SIMPLY BECAUSE A VEHICLE IS LAID UP IN THE WORKSHOP, IS SOMETHING THAT KLAUS BRUNS FINDS UNBEARABLE. THIS SITUATION CREATES STRESS FOR RESCUE PERSONNEL AND PATIENTS ALIKE, WHICH IS WHY HE IS COMMITTED IN HIS CURRENT ROLE TO TAKING PROACTIVE MEASURES TO REDUCE DOWNTIME TO A MINIMUM.**

Due to his many years of experience, Klaus Bruns is acutely aware of how much vehicles costs, and also how high the financial burden can be when vehicles are out of commission. The financial costs of having replacement vehicles or repair must generally be met out of a budget that is determined in advance – and this makes it even clearer that a vehicle, that is out of action for several days, can be extremely costly. The financial burden is one side of the equation: the effects that the organisation has to bear are the other. When a vehicle breaks down, it is essential to ensure that the replacement vehicle is adequately equipped. This means that either the vehicle's equipment needs to be moved from one vehicle to another in full, or replacement vehicles need to undergo a full conversion. In any event, rescue personnel have to improvise extensively and react flexibly, leading to even more stress and a hectic working environment – and there is no shortage of stress even on a normal working day! Klaus Bruns' job is to do everything in his power to minimise these occasions. He works tirelessly with his team at WAS to develop and improve service solutions, or even to create them from scratch. As serious as the challenge that he faces is, he says it's also great fun – because no two days are alike, and each of his tasks is uniquely multi-faceted.

## **THREE DAYS INSTEAD OF FIVE.**

Behind these two figures, there is a success story that Klaus Bruns is particularly proud of. They are the result of a reduction in downtime for repairs and servicing: he and his team successfully reduced downtime by almost half. A total of seventeen WAS service partners are spread across Germany, receiving regular training to ensure that they are capable of resolving nearly all incidents independently of the company's head office. Bruns has assessed the entire value chain and associated stakeholders, and reached agreements with them: from the WAS service partners, medical device manufacturers, and WAS customers. After discussing covering the complete set of requirements, processes were defined with the stakeholders to achieve this result. As such, WAS takes

over the entire process for its customers, coordinating with vehicle manufacturers and arranging for the repair or replacement of medical technology.

In the event of an accident WAS offers an end-to-end service: the accident is recorded and collection of the vehicle is arranged. The programme also includes the delivery of a replacement rented vehicle. The WAS service team takes care of the preparation of an independent damage report, while WAS also handles the subsequent repair of the base vehicle and the ambulance conversion components. "The way that it looks in practice is that the emergency services try to take care of everything themselves, then contact the vehicle manufacturer's service facility (which is often also our service partner), and finally the vehicle conversion manufacturer is approached, i.e. WAS," said Klaus Bruns. For this reason, WAS offers an emergency call number that is reachable 24 hours per day, 365 days per year. This often involves an initial consultation to clarify the most urgent issues. In acute emergency cases, one of the six service vehicles attends the scene if it is clear that the ambulance can be made roadworthy again. "Accidents always happen when no one expects them.

Service **Plus** Wartung



**FACTS ABOUT THE WAS SERVICE TEAM IN GERMANY:**  
Team size: 6 mobile workers/8 in-house  
Resources: 6 service vehicles  
Number of services performed per year: approx. 800  
[www.was-vehicles.com/en/service.html](http://www.was-vehicles.com/en/service.html)



Therefore, we are permanently ready to step in and rescue emergency vehicles when needed. In view of the large increase in mobile service calls over the last ten years, this is an absolutely essential service," explained Bruns.

#### THE JOB: EXTENDING VEHICLES' OPERATING LIVES.

Modern vehicles already notify their drivers when maintenance or repair work requires a visit to the workshop. "These notifications should always be taken seriously – you learn that by experience with your own vehicle. But when it comes to the rescue equipment in an ambulance, which now amounts to a substantial proportion of the cost when buying a new vehicle, you don't get these notifications. The number of components is still too high. That makes it particularly frustrating when, for instance, the stretcher fails and puts the entire vehicle out of action. The costs of downtime are just as great as when there is a serious accident," reports Klaus Bruns. However, the emergency services are learning that service calls often lead to new maintenance contracts. Even during his time with the St. John organisation, maintenance contracts were an important tool for Klaus Bruns to reduce maintenance costs. WAS services cover the vehicle and the ambulance conversion: the original manufacturer is responsible for performing maintenance on medical devices. Services are fully organised, and appointments are made, completely by WAS. Bruns characterises the situation as follows: "We generate customer satisfaction, because we see it as our responsibility to extend the lifecycles of vehicles and devices." More and more customers value this approach, as the number of maintenance contracts is constantly increasing. No wonder, because this approach by WAS's service teams ensures the quality and operational readiness of medical devices and vehicles from day one until the end of their service lives.

#### ALL-ROUNDERS IN DEMAND.

Service employees at WAS must be able to react with a great deal of flexibility. This applies at the workshop, but even more so for mobile workers where all-round talent is essential as it enables them to identify the causes of a defect. In addition, they must be able to develop solutions at the scene of the incident to enable the vehicle to return to duty. Service advisors on the phone must be able to ask the right questions, right away, to ensure that the service technician hits the road with the right equipment on board. According to Klaus Bruns, the job is suited to people who enjoy plenty of varied challenges and also love direct customer contact. In exchange, workers also benefit from direct feedback and thanks for a successfully delivered solution: something that Bruns says is highly motivating. The majority of mobile service technicians are electrical engineers, air conditioning technicians or automotive engineers, or even have completed an apprenticeship in one of these fields in combination with other skills. Indeed, you could refer to them as all-rounders, who are happy to step in and save the day for the emergency services as they travel around the country. +



# “WE ASPIRE TO GET AHEAD OF THE GAME.”

AN INTERVIEW WITH HEINRICH HOFMANN ON MAINTENANCE FOR AMBULANCE VEHICLES.

Heinrich Hofmann is chief executive of ASB DRK JUH Rettungsdienst Bielefeld gGmbH, the only socially beneficial limited company in Germany belonging to all three rescue organisations – the Workers' Samaritan Federation, the German Red Cross, and St. John. With a total of over thirty vehicles, around 120 employees in the Bielefeld area respond to over 26,000 call-outs per year. We wanted to know how the company ensures that its fleet is available for action, and met Mr. Hofmann in Wietmarschen to discuss the question.

#### Can you let us know how many response vehicles you have, and what types?

We operate fourteen patient transport ambulances, seven emergency ambulances, two paramedic cars, one vehicle for the incident manager, two mobile command centres and one emergency medical equipment vehicle. In addition, we organise the services for five Type B patient transport vehicles belonging to the federal and state governments, which are deployed via ASB DRK JUH Bielefeld in the North Rhine-Westphalia operational zone.

#### You have entered into maintenance contracts for your vehicles. What did you take into consideration in reaching the decision?

In the emergency services, we aspire to "get ahead of the game." That means we want to be proactive, not just reactive. That applies to the condition of our emergency response vehicles in particular, to ensure that minor issues are recognised quickly, before they can cause major problems. In addition, it makes very little sense for the base vehicle to receive its mandatory technical annual inspections, while the patient area – with its electricity supply, oxygen tanks, and so on – never gets a service or a check-up. Highly complex medical devices are stored and connected to the power supply in the patient area, and they also get regular maintenance and safety inspections. So why not take the same care with the components that transform an ordinary vehicle into an emergency vehicle? Perhaps it's time for the standardisation committee to step in with EN 1789!

#### What does your maintenance management programme look like in concrete terms?

Our technical team has specified the maintenance schedules for all our vehicles in our management software. Based

on the pre-set maintenance cycles, the software automatically generates warnings when a service is due in the next month. Services for several vehicles are combined into one appointment and are then performed by a WAS service technician at our premises. Naturally this involves discussions between our technical employees and the WAS technician – an outstanding opportunity to get to the bottom of any user issues, minor repairs, or causes of damage.

#### Do you see regular maintenance primarily as a cost driver, or a safety measure?

It's a safety measure in two key respects: most obviously to ensure that the ambulance itself can be operated safely. The maintenance routine, however, has also reduced the number and duration of vehicle failures, improving operational safety for our front-line staff and, above all, for our patients.

#### How would you rate WAS's service?

After a brief dip in 2016, the after-sales business has developed significantly, becoming better and more professional. The processes seem more structured, and spare parts become available more quickly and reliably. The on-site service technicians are highly skilled, and repairs are carried out within 48 hours. Our technicians also work very closely with WAS, for instance by doing as much of the advance preparations for repairs as possible, by sending photos and precise descriptions of damage and defects to WAS.

#### Specifically, how did you decide to hand over full responsibility for repairs to recently-crashed ambulances to WAS?

We had experienced two serious traffic accidents with our ambulances, and had given a vehicle to WAS for repair due to a lack of capacity on our side. What we got back was a vehicle that had been thoroughly repaired and refurbished throughout. All moving parts had been checked, serviced, and cleaned, which meant that the vehicle was quickly back in action once we had fitted it out and disinfected it. We had the same experience again after a minor accident damage in early 2018.

Many thanks for your time spent talking to us!

[www.asb-drk-juh-bielefeld.de](http://www.asb-drk-juh-bielefeld.de)



# DESERT TOURS OF THE SAND DUNES BY NIGHT.

DEPLOYING AMBULANCES FOR LEISURE ACTIVITY.





## “ VEHICLES’ CAPABILITIES OFTEN EXCEED THEIR DRIVERS’ EXPECTATIONS.

### LETTING OUT THE PRESSURE WHILE HAVING FUN IN THE DESERT.

First reduce the pressure of the tyres, then put your foot down and head out into the desert, up and down the dunes at breakneck speed – “dune bashing” is a popular sport for men in Qatar. Qataris charge through the desert, particularly on Fridays (the Islamic Sunday) with quads, buggies, off-roaders and SUVs. The desert terrain near the capital, Doha, or the dunes near the Saudi Arabian border in Chour al-Udaid are particularly popular locations for thrill seekers with a need for speed. No one cares about the high fuel consumption when a litre of petrol only costs 20 cents. Qataris hold two world records: the highest CO<sub>2</sub> emissions per capita, and the highest per capita income.

For watching visitors from Europe, the rush through the desert is both different and spectacular. It is always astonishing to see how steep the slopes are that SUVs like Toyota Land Cruisers, Nissan Pathfinders and Mercedes GLs can conquer, and how hard these luxury vehicles are thrashed by their proud owners. The wheels whip up thick clouds of dust that make it hard to see when driving: no one can really tell, in the midst of all this sand, whether there’s another vehicle rushing across the dune from the other side. The desert camps are brightly lit at night, but just a few hundred metres away, the light is swallowed up by the desert, so the drivers navigate by starlight – making them hard to find when an accident occurs.

### ACCIDENTS ARE PAR FOR THE COURSE.

In a country that largely consists of desert, it’s no surprise that the favourite leisure activity of the (male) population reflects the country’s geography. However, when horseplay and horsepower come together, accidents are par for the course, not to mention the many tourists who have worked out that, once you reach a certain speed, loose sand becomes as hard as concrete. It’s a good thing, therefore, that the Qatari emergency services are prepared for desert operations: a dense network of “hubs and spokes” made up of bases for rescue teams and their emergency vehicles keep the routes to access the popular desert camps as short as possible. Using a system of response vehicles made up from Alpha, Charlie, and Delta units, the HMC (Hamad Medical Corporation) operates a range of vehicles adapted for different landscapes and surfaces on behalf of the State Ambulance Service. Alpha Units are standard on-road ambulances, while Charlie and Delta units are 4x4 first responders with different crews that are comparable to European paramedic units. Charlie units have a critical care practitioner (CCP) and an ambulance practitioner, while “distribution supervisors” travel alone in Delta units to manage the scene of the accident. As well as these vehicles, a helicopter squadron is deployed, as a bird’s eye view means that accident scenes can be identified, and vehicles sent to the incident, particularly quickly.



### A CAREFULLY THOUGHT-OUT, HIGHLY OPTIMISED RESCUE.

To ensure even more effective medical treatment, the ambulance system was expanded in 2017, via a close collaboration between HMC and WAS, with two completely new vehicles. WAS developed a uniquely flexible vehicular transport concept for new PTS (Patient Transport Service) units to transport patients quickly and safely, while the new “Rural Ambulance” offers particularly comfortable, comprehensive treatment for extended journeys to hospital.

This WAS 4 x 2 PTS vehicle, based on a Mercedes-Benz Sprinter long-wheelbase van, allows patients to be transported in a wheelchair, lying on a stretcher, or even as a bariatric. It’s even possible to transport two patients (one lying down and one in a seated position) with their treating medical personnel or one patient with two additional sitting persons. The concept impressed HMC with its high degree of flexibility, and was even presented in Qatar by the Health Minister, HE Dr Hanan Mohamed al-Kuwari. These vehicles are complemented by “rural” ambulances. These fully-equipped box vehicles, based on a Mercedes-Benz Sprinter chassis, do not

travel to the accident scene in the desert: instead, they handle “overland” transportation to the nearest hospital. As they are better equipped than the off-road capable Charlie Units, they pick up the patients as soon as possible. To ensure better visibility for helicopter pilots, they have roof-mounted, flashing LEDs in addition to the usual side-mounted lights. The vehicles’ insulation and air conditioning are also adapted for use in Qatar, where temperatures can exceed 40 °C, while a new layout allows two patients to be transported lying. This combination of different vehicle types, including helicopters, allows accident victims to be rescued from the desert in a rapid, safe, and comfortable manner. As each vehicle is specially adapted to operate on its own terrain, valuable time is saved when handing patients over from transportation to the treatment unit. This dual-phase rescue operation, while not exactly making dune bashing safe, should at least mitigate some of its consequences. As an aside, the rescue service (just like water and electricity) is only free of charge for Qatari citizens – so tourists should drive doubly carefully! +

# YOU'LL NEVER WALK ALONE. THE RISKS FOR AMBULANCE CREWS — AND WHAT IS BEING DONE ABOUT THEM IN ENGLAND.



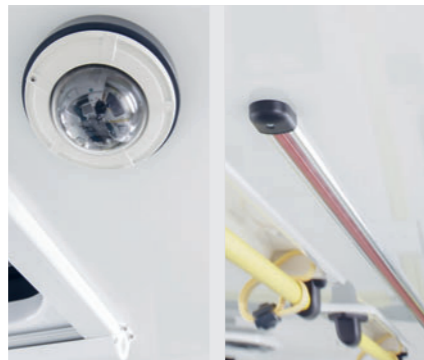
Integrated in a WAS 500 the video surveillance system increases the safety of the paramedics.



The camera system captures all critical points in and around the vehicle. The loading process is also monitored.



The intercom system allows immediate communication with the driver.



With panic strips, the driver can be notified from any position in the treatment area, triggering a video recording at the same time.



In place of the rear-view mirror, the driver sees the camera view in the patient's room.



The use of a video surveillance system is clearly communicated via a sign.



The wheel nut marking shows whether the wheel nuts have been tampered with.



The safety windows resist penetration from the outside. In case of danger, however, they can be easily opened from the inside.

Big football crowds, as well as the carnival season or events such as the New Year celebrations, regularly trigger debate about an important topic that is leading to increasingly stringent calls in the media, both in Germany and elsewhere, to stop violence against the emergency services!

The question is: apart from offering even more training to crews, what can be done to ensure better protection for them? In England, in the United Kingdom, where the phenomenon of attacks against emergency crews was addressed earlier than in other European

countries, the emergency services are already enjoying legislative support in equipping their vehicles.

## SAFETY AND SECURITY FOR CREWS IN ENGLISH EMERGENCY VEHICLES.

It is striking to note that almost all English ambulances have CCTV (Closed Circuit Television) systems installed on a permanent basis in the patient area. The cameras in English ambulances record everything in and around the vehicle in a constant loop, 24 hours a day, and store it on a hard disc that is overwritten after 48 hours. In addition,

panic strips are provided, which paramedics can press in an emergency situation, while there is also a public address system that informs any threatening individuals that everything from now on, and from thirty seconds beforehand, is being recorded and saved separately, so that it can be used in court. The system is, therefore, built around deterrence and protecting crews in advance of any incident. Alongside the interior cameras, many ambulances also feature external cameras on all sides of the vehicles, and the recordings are admissible as

evidence (whether to prove or disprove an allegation) and in the event of an accident.

Telemetry is also very widely used in England and, in some areas, entire fleets are equipped with telemetry systems. As such, the control room can collect all data gathered by the vehicle as well as locating its position at any time, seeing when attacks occur in real time and enabling protective measures to be taken.

## A TRANSFERRABLE MODEL?

Undoubtedly, the pros and cons of video surveillance must be weighed up and

the country-specific legislative landscape taken into account. It is, however, foreseeable that not all measures that have been accepted by permanently-employed English crews, would be as widely welcomed by crews in other countries. The existing readiness to commit acts of violence against emergency service workers, however, has created a factual backdrop and led to situations that could quickly trigger a debate about effective measures. It therefore appears meaningful at this stage to consider suitable measures before everyday events lead to sacrifici-

ces that cannot be undone at a later stage. It is also important to ensure that factors affecting recruitment of the next generation of workers are not overlooked: how convincing can the arguments to attract the next generation be, if we shrug our shoulders when it comes to questions of protecting crews in action? +

# “AN INVITATION TO DE-ESCALATION.”

In Germany, the recent study, “Violence against fire service and ambulance service responders in North Rhine Westphalia” confirms that the number of attacks against emergency service personnel of the fire and ambulance services has only fallen minimally since 2011. Further action is needed, and we discussed the issue with one of the authors of the study, Marvin Weigert.

Mr. Weigert, according to your study, for around 15% of those affected, physical attacks occur once or twice per month. 94.3% of ambulance service workers reported that they were affected. From your perspective, is there an explanation for this?

“Ambulance workers generally work as two-person teams in each vehicle. Fire service responders, however, work in larger teams, which significantly increases the levels of inhibitions to be overcome. In addition, patients and their friends or associates are the main offender group. Mobile medical treatments (i. e., ambulance operations) bring ambulance personnel and patients into particularly close contact, which is often not the case in the response to a fire.

One approach to solve the problem that you put forward is further training to enable a more effective response to critical conflict situations. Is that enough? At the end of the day, e.g., paramedics must also take care of injured people, ill people, and accident victims. Do ambulances also need to be equipped with a “de-escalator” in future?

“Targeted training of emergency responders in de-escalation techniques is at least one measure that, in the view of the respondents, would pay dividends. In particular, this would involve de-escalation with particular groups of people, such as drunk people. In that case, a specific “de-escalator” is not required. In addition, assaults need to be documented comprehensively. On the basis of this data, training can be developed to react to current trends and regional specifics in relation to potential assaults.

In England, the government has taken measures to protect emergency responders. As a result, ambulances are equipped with panic buttons and camera systems, which can be activated in emergencies to record and store evidence, which is valid in court. What is your view of these and similar measures?

“Systems to enable affected response workers to send encrypted emergency calls are already in place in Germany.

## MARVIN WEIGERT ON VIOLENCE AGAINST THE EMERGENCY SERVICES.

Camera systems could be helpful in terms of providing evidence for criminal proceedings, but our study showed that the majority of assaults aren't even reported, so this kind of evidence is never relevant. This is particularly related to the fact that many assaults were seen by the affected parties as trivial. In the first instance, therefore, the focus should be on better documentation and more effective prevention of problems. +

### MARVIN WEIGERT

Marvin Weigert is a lawyer, who has worked in the research team of the Department of Criminology, Criminal Policy and Policing under Prof. Thomas Feltes at the Ruhr University Bochum (RUB) since 2015. Since early 2017, his work has addressed the topic of “violence against the emergency services,” as a result of which he carried out the research project entitled “Violence against fire service and ambulance service responders in North Rhine Westphalia.”

### STUDY DETAILS

Survey size: 4,500 workers in the fire and ambulance services  
 Survey period: 2017  
 Project leader: Professor Thomas Feltes  
 Project delivery: Marvin Weigert JD  
 Publication: Bochum, January 2018  
 Project sponsor: NRW Interior Ministry, NRW Ministry of Labour, Health and Society, NRW Accident Fund, komba Union NRW  
 Project operator: Department of Criminology, Criminal Policy and Policing at the Ruhr University Bochum

Study to download:  
[www.kriminologie.ruhr-uni-bochum.de/images/pdf/Abschlussbericht\\_Gewalt\\_gegen\\_Einsatzkraefte.pdf](http://www.kriminologie.ruhr-uni-bochum.de/images/pdf/Abschlussbericht_Gewalt_gegen_Einsatzkraefte.pdf)



# HELPING NEW IDEAS GET OFF TO AN ELECTRICAL START. THE WAS E-CONCEPT FOR AMBULANCES.

According to the think tanks, electric cars “mark the start of a new approach to energy and mobility.”\* With the E-Ambulance concept vehicle, WAS aims to bring this reality closer. The topic of electric mobility for private cars has long been a perennial favourite in design offices, trend researchers, and the general media. It's high time, therefore, to begin research into the suitability of this technology for use in vehicles for the emergency services and others. After all, back in 2008 the federal government of Germany had announced a goal to put a million electric cars onto Germany's roads by 2020. The development of alternative power concepts for private cars has been subsidised in recent years to the tune of over two billion euro and, while they are taking longer than anticipated, the first results are beginning to make themselves seen on our roads.

However, does any of this mean that electric power has the ability to be a realistic option for emergency service vehicles? On the basis that “practice makes perfect,” WAS is seeking to get to the bottom of this question in a very practical way: with the E-Concept, which has been developed around an ambulance with a gross vehicle weight of five tonnes.

As far as this development approach is concerned, the aim is not yet to complete a final prototype, but to explore ideas and begin to set processes in motion. The common prejudices against e-mobility – insufficient range, long charging times, etc. – should be put to the test. This socially-engaged

approach has already attracted the interest of many visitors to the year's major trade exhibitions, and while it remains to be seen whether the WAS E-Ambulance will generate new ideas and approaches to solving existing problems, it has already succeeded in sparking a discussion. +

\*<https://www.zukunftsinstitut.de/artikel/e-mobility-mischt-den-markt-auf/>



### WAS CONCEPT CAR

Battery Management System with monitor  
 High efficiency synchronous motor: approx. 1150 Nm torque  
 Maximum speed: 120 km/h  
 Nominal voltage: approx. 400V  
 Charging unit: 22 kW  
 Heating: 6 kW  
 Range: 120–200 km  
 Battery capacity: 87 kWh  
 Maximum total weight: 5t



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