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"Rega still has some major challenges ahead"





Ulrich Graf

Ernst Kohler

When physician Dr. Rudolf Bucher founded Swiss Air-Rescue Rega in 1952, he was absolutely convinced of the great potential that lay in combining medicine and aviation. More than 60 years later, his vision is more of a reality than ever – in 2014, the services of the Rega crews were in greater demand than at any other time. But even its pioneering founder would probably have had difficulty believing that Rega – which organised 14,435 missions last year – would come to play such a major role in the Swiss rescue chain and the national health system. Swiss Air-Rescue has become an indispensable service provider and is a key component of primary care provision today.

Unlike in the early years, nowadays Rega stands on financially solid ground, primarily thanks to its patrons. 2014 saw a renewed rise in their number, which reflects the on-going faith the Swiss population has in our institution. This support puts us in a position to invest in the future: the contract to purchase three new ambulance jets to replace the current fleet has been signed, the helicopter base in Erstfeld has been modernised, and the project to renovate the St. Gallen base is under way. Yet Rega still has some major challenges ahead.

- 1. In spite of the already high performance and quality standards of air rescue services in Switzerland, we must continue to identify potential improvements and come up with new solutions. We want to provide even better assistance to the individual and do more to secure the provision of care to the Swiss population. Overcoming or at least pushing the limits placed on helicopter operations by adverse weather is an area that still harbours enormous potential.
- 2. We must ensure that Rega retains its freedom to act amid growing regulatory pressure. There are sensible regulations that are imposed in the interests of safety. And not everything that comes out of "Europe" is bad. Overall, however, we are facing a disproportionate increase in regulation. It restricts the freedom to act and weakens individual responsibility. We must make sure that this development does not result in these mountains of regulations being used to hide behind.
- 3. Rega must retain the trust of its patrons, even if identification with traditional values such as the common good and solidarity is diminishing in our society. We achieve this by offering first-class services and by uncompromisingly putting our patients at the centre of our activities. We must clearly communicate the great benefit of Rega to the entire population and the importance of every single patronage contribution.

We are moving in the right direction. There is still much work to be done, but we are looking forward to tackling it in the coming years with our qualified and motivated team of employees.

Ulrich Graf

Chairman of the Foundation Board

Ernst Kohler

CEO/Chairman of the Management Board

Step by step towards the Rega Vision: to fly no matter what the weather

Every year, bad weather currently prevents around 600 people in Switzerland from receiving emergency assistance from the air. Rega wants to change this situation and in future help even more people in distress. It has therefore launched a series of measures that will enable its helicopters to also be able to fly in fog and falling snow.

Continually improving air rescue is one of Rega's most important tasks. Back in the 1950s, its pioneers had to find suitable means of delivering swift medical assistance to casualties by air. Their chief concern was not what was possible at what price, but what was possible at all. Thanks to technical progress and the untiring efforts of countless Rega employees, air rescue in Switzerland has advanced very significantly. There have been huge developments in the equipment: from parachutes and lightweight aircraft to state-of-the-art rescue helicopters and ambulance jets equipped with every conceivable kind of technical support to aid the rescue crews.

But Rega refuses to content itself with what it has achieved so far. In the future, too, it intends to employ cutting-edge technology in order to continue improving the provision of medical assistance to the Swiss population. In collaboration with the Swiss Air Force and the air navigation service, Skyguide, Rega is venturing into uncharted aviation territory by establishing instrument flight rules (IFR) for helicopters in Switzerland. Its aim is to reduce the restrictions imposed by the weather as far as possible and thereby cut the number of cancelled or aborted rescue missions.

The helicopter of the future

Total commitment, pioneering spirit, intensive collaboration with its partners and above all support from the legislators are essential if Rega's IFR vision is to become reality and the operating range of its rescue flights significantly broadened. One day it should be possible for a rescue helicopter to fly in low visibility to

any given site in rough terrain using high-precision instruments. Admittedly, this goal is still a long way off. However, work towards realising Rega's vision has been implemented at various levels for some time in the form of large-scale and smaller projects.

The last of the Da Vinci mountain helicopters was certified for instrument flight at the end of 2014 following various modifications in the cockpit. All 17 of Rega's rescue helicopters are now equipped to fly missions in poor visibility. Besides modernising the present fleet, those responsible at Rega have also been working for some time on the evaluation of the next generation of rescue helicopters.

Clearer vision for pilots

The Icebird project is exploring the possibility of purchasing an all-weather helicopter with an automatic de-icing system. The greatest challenges in this respect are its size and weight. At the present time, only helicopters on the scale of the Super Puma or AgustaWestland 139 are equipped with de-icing systems – but both these types are too large and too heavy for Rega's purposes. Rega is therefore working with manufacturers to look for ways of using state-of-the-art technology and new materials to find suitable solutions.

Despite all the technical improvements, in future the central role will continue to be played by the Rega crews. What use is an ultramodern helicopter to a casualty without a pilot to fly them to safety? Helicopter pilots are required to undergo extensive training before they are authorised to perform instrument flights. And as the paramedics provide radio and navigation support to the pilot, they too receive appropriate IFR training. In addition to comprehensive training for the cockpit crews, technical aids to support the pilots and make the missions even safer are also being explored. In the coming years, futuristic-looking optical display devices in monocular form will enable pilots to make out landforms or obstacles in the flight path even

Continue reading on page 10 ▶



Major General Bernhard Müller, Chief of Air Force Operations and Deputy Commander of the Swiss Air Force

Satellite-assisted approach procedures have become an indispensable part of Swiss Air Force operations since their introduction some five years ago.

The localised standard approach procedures using radar systems that we employ at our military airfields are not only personnel- and cost-intensive; they also do not fulfil their purpose in emergency and disaster scenarios. In such situations, the Swiss Air Force must be able to complete its mission on location by helicopter at any time and in any weather conditions.

GPS-assisted approach procedures make it possible to largely counteract the weather, which is frequently a limiting factor in our operations.

The Swiss Air Force is currently

in the process of equipping areas of terrain that are important to flight operations with these approach procedures. Among other things, we are working with Swiss Air-Rescue Rega – whose vision of such GPS approaches we greatly support – to develop a landing procedure for the airport in Locarno. It is not least thanks to such projects that the Swiss Air Force is an international leader in satellite-assisted navigation in challenging terrain and under difficult weather conditions.

All Rega rescue helicopters are equipped for the future: the last mountain helicopter was certified for IFR flights at the end of 2014.



Innovations for all-weather air rescue services

Rega has already launched or implemented these measures and projects with a view to reducing the restrictions on helicopter flights imposed by the weather and thereby cutting the number of cancelled or aborted rescue missions.



IFR training in the flight simulator

In spring 2013, Rega's new simulator for its AgustaWestland Da Vinci mountain helicopters went into operation, representing a key milestone in Rega's Vision. In order to fly under instrument flight rules (IFR), helicopter pilots must complete between 400 and 500 hours of intensive theoretical training, as well as a minimum of 55 hours of flight training. All its helicopter pilots fly around 50 training hours in the flight simulator and a further 20 training hours in the helicopter. Even after receiving their IFR licence, Rega pilots (and paramedics) are required to complete corresponding exercises in the flight simulator every three months.



REMICO (Rega Mission Control)

With the installation of new operating devices in all of its helicopters, Rega's large-scale REMICO project was finally brought to a close at the end of 2014. The project, which has already proved to be a great success, also has a decisive impact on the Rega Vision; the modernised radio network and the operating devices in the helicopters allow a better transfer of data between the Operations Centre and the cockpit. Now the mission coordinates can be transmitted directly into the cockpit. In future, the setting up of Rega's own weather stations should enable weather data to be transmitted both visually and in code form.



Retrofit programme for the Da Vinci helicopters

While the six Eurocopter EC 145 aircraft deployed by Rega are already equipped with IFR-compatible cockpits, the mountain helicopters needed to be upgraded. At the end of 2014, the last AgustaWestland Da Vinci was fitted with a second navigation computer and a second GPS/SBAS input device and subsequently certified for IFR flights by the Federal Office of Civil Aviation (FOCA).

All-weather helicopters

The purchase of an all-weather helicopter with a de-icing system is currently being examined within the framework of a project entitled Icebird. As such a system weighs around 100 kilograms, the helicopter must still be light enough to land on hospital helipads and at accident sites. Therefore, Rega is looking for solutions to this problem in collaboration with various helicopter manufacturers. In addition, potential successors for the fleet of EC 145 lowland helicopters are being evaluated. Here, too, suitability for all-weather missions and IFR flights are a key consideration.



Weather stations and weather data

In order to be able to operate all-weather flights, up-to-date weather data needs to be available around the clock. Without this information, IFR flights are not permitted. Rega's latest major project, known as "Thor", aims to make more weather data available for helicopter operations. In addition, approximately 60 new weather stations and webcams are to be installed all over Switzerland. However, the project does not just stop at collecting data. Ways need to be found to transmit this information directly into the cockpit – so that our pilots can immediately take advantage of this virtually up-to-the-minute weather data. You can read more about Project Thor on page 11.



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Synthetic vision

Rega's vision envisages being able to fly a helicopter to any accident site in rough terrain, even in the most adverse weather conditions. This requires systems that allow pilots to "see" risks and obstacles even when visibility is poor. These are known as "synthetic vision systems". Rega had the opportunity to test a system produced by the company, Elbit, on its mountain helicopters in autumn 2014. In addition, within the framework of an EU project, two Rega pilots travelled to England to gain initial experience in the simulator with a so-called "head mounted display". These tests allow a comprehensive evaluation to be made for the possible future use of such systems in Rega helicopters.



IFR flight routes for helicopters

Thanks to satellite-based navigation, in future it will be possible to perform flights according to instrument flight rules independently of fixed installations on the ground. A project known as GNSS Low Flight Network (LFN) has been launched to enable such flights to become reality. The Swiss Air Force and Skyguide air navigation service have been working together with Rega for a number of years to develop this network and introduce the corresponding flight approach procedures. The idea is that the helicopter will fly by autopilot along a route stored in the on-board computer, rather like on a motorway. This procedure signifies a considerable increase in safety. These IFR flight routes aim to connect airports, airfields and in particular hospitals with each other.





Prof. Dr. med. Christoph Konrad, Medical Director, Dept. of Anaesthesia at Lucerne Cantonal Hospital

Major advances have been made

in preclinical medicine in recent years. Not least because there has been a realisation on all sides that providing on-the-spot medical care with as little delay as possible followed by swift, gentle transport to a suitable hospital significantly improve our patients' chances of recovery.

An example: a woman has an accident on her way to work. She is given emergency medical care at the scene of the accident and airlifted by helicopter to the nearest hospital. There the severely injured patient is stabilised in the trauma room and is subsequently treated for several weeks in intensive care before being moved to the normal ward for rehabilitation. Today, the patient is back home, lives an active life and is able to work. Such a positive outcome is by no means guaranteed. It heavily depends on optimal preclinical medical intervention, fast and gentle transport to a central hospital, and uninterrupted provision of further care.

But what happens if the weather prevents such casualties from being flown to hospital? Transferring patients to a main hospital is also playing an increasingly important role as medicine becomes more centralised. Availability of rescue helicopters irrespective of the meteorological conditions and establishing IFR flight paths are key elements in providing better care to our patients, as well as preclinical medicine as a whole.

They are a source of added value that contributes to helping as many people as possible back to an active life following a serious injury or illness. in low visibility. These systems are known as "synthetic vision" and can also provide valuable assistance on visual flights – for example in diffuse light during a whiteout on ski slopes.

Flight routes between hospitals

While the primary aim of synthetic vision systems is to raise safety in the final approach before landing, work is also being carried out in another project to establish instrument flight paths in the "Echo" airspace, known as the Low Flight Network (LFN). In the near future, this satellite navigation-based network will connect airfields equipped with fixed IFR infrastructures, as well as hospitals and small airfields with specially designed approaches (point-in-space or PinS approach procedures), with each other.

The first of these flight paths is scheduled to be ready for operational use by Rega as early as the end of 2015. A further stage is planned for 2016. For a hospital to be connected to the LFN, it must be equipped with modern landing sites that meet international standards, and the approach routes must be calculated by Skyguide and approved by the Federal Office of Civil Aviation (FOCA). At present, the Inselspital University Hospital in Berne is the only hospital in Switzerland where satellite-assisted approach procedures are possible. Regrettably, no other approaches have been approved so far.

Current weather direct to the cockpit

Besides modern helicopters, highly-trained and well-equipped pilots and a network of IFR flight paths, meteorological data plays a key role in the realisation of the Rega Vision. Weather data must be available around the clock and constantly updated, for without this information, IFR flights are not permitted. And as there is no provider who supplies current – and above all countrywide – meteorological information around the clock, Rega has decided to fill this gap itself.

A large-scale project has been launched under the name of Thor,

which aims over the next few years to install additional weather stations and webcams and develop new methods of delivering the collected data to the crew in the cockpit. On completion of the project, every Rega pilot should be able to access current weather data during the flight and use it to decide whether a pre-defined flight corridor is flyable or not.

Rega is intent on employing the latest technology to improve the provision of medical care to the Swiss population and at the same time to increase the safety of patients, crews and third parties. There is no guarantee that all these projects will succeed and that the Rega Vision will one day become reality. But to simply stick with the tried-and-tested is to risk standing still – and there has been no place for that kind of thinking at any time in Rega's 60-year history.



Urs Rutzer, Head of IT: "In future, the cockpit crew will continually have access to the latest weather data."

Among the basic requirements for instrument flights and all-weather rescue missions is accurate meteorological data that is continually updated and available around the clock. Urs Rutzer, Head of IT at Rega, explains how in future helicopter pilots will be able to access the latest weather data during the flight thanks to Rega's latest major project, Thor.

Urs Rutzer, what does Project Thor entail?

The aim is to provide Rega helicopters with an as comprehensive a picture of the current weather situation as possible and thus aid the mission planning. Thor is actually divided into four parts. Parts 1 to 3 involve the installation of additional weather stations and webcams in key areas, such as at airfields or on mountain passes. However, it is not enough to simply collect additional data. Therefore, the fourth sub-project will process the data received in a meaningful way and make it accessible to the crews.

What data will be collected and what do you understand by "meaningful"?

Once the project is completed – that is when parts 1 to 3 have been implemented – we will have at our disposal weather data from up to 60 additional measuring stations. This

includes meteorological readings relating to wind speed and direction, air temperature, atmospheric pressure, humidity, rainfall, cloud height and visibility. We deem processing the data in a meaningful way to signify, for example, producing an automatic picture analysis. The webcam images will inform us of the visibility in all directions, as well as the location of the clouds. This data should then allow us to calculate whether it is safe to fly in a predefined air corridor or not.

Do Rega pilots not already have access to this information?

Nowadays, pilots basically rely on standardised abbreviated reports from MeteoSchweiz, airports and webcam images to inform themselves of the weather situation when preparing their flight. However, the data issued by MeteoSchweiz has a major disadvantage: it is not updated around the clock. Let's imagine, for example, that a pilot needs to fly in the middle of the night from Pruntrut to the Inselspital hospital in Berne. The only thing he has to assess the viability of his flight is a few pictures taken by a webcam a couple of hours earlier. If he wants to find out the current weather situation, he has to revert to orthodox methods: he asks "the man on the street" - such as a police officer or the staff in

a local restaurant. That

entails considerable risks and is no longer in keeping with the times. And as nobody can provide us with up-to-date information about the flying weather around the clock, Rega has taken this problem into its own hands – for the safety of both our crews and our patients.

So how will things look in the future?

Let's take our pilot again, who has to fly from Pruntrut to Berne in the dark. In future, he will have continual access to the current weather data directly in the cockpit throughout the flight – some of it even in visualised form, such as the distribution of rainfall on the helicopter's radar display. That is a huge improvement compared to today.

Project Thor: weather stations and webcams

Weather stationsWebcams



11

High-tech medicine in the air

Rega wants the very best for its patients. It invests continuously in extending the medical possibilities on board its rescue aircraft. What is medically feasible on the ground - in a hospital or an ambulance should also be available to patients in the air, with no compromise. Operating at the interface between various partner organisations and subjected to volumes of aviation regulations, Rega does not always have an easy job in meeting these expectations to its own satisfaction. The following three examples illustrate how it nevertheless succeeds in getting medical hightech equipment into the air.

Rega operates on a daily basis at the interface between numerous stakeholders in the Swiss health system (see diagram below). The intense collaboration with rescue services on the ground, hospitals, authorities, specialist clinics and competence centres is something Rega has been highly committed to for many years. Whether sharing resources or expertise, only together can they overcome the challenges faced by emergency medicine and utilise the latest technical and medical advances to provide its patients with the best possible services.

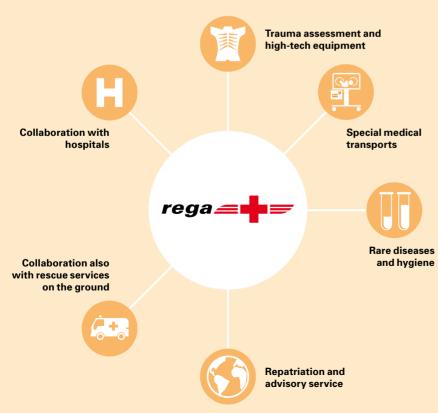
Cutting-edge cardiac machines

Rega transports over 2,000 patients with cardiovascular conditions every year on board its rescue helicopters and ambulance jets. Extending the possibilities of accommodating this cardiovascular equipment for critically ill patients has therefore long been a central issue for the Rega medics responsible. In 2008, Rega invested in an intra-aortic balloon pump (IABP), followed in 2009 by two ECMO machines for extracorporeal membrane oxygenation. The IABP is a device used in emergency medicine to assist patients with cardiac insufficiency

– such as after a heart attack – by improving circulation and oxygen supply to the cardiac muscle. ECMO is an intensive care technology whereby a machine provides partial or full respiratory and/or cardiac support to the patient.

In addition to obtaining certification for such devices to be used on board aircraft, special supports and fixtures also needed to be developed so that the equipment could be fitted safely and compactly in Rega's various aircraft. The limited space inside the Agusta-Westland Da Vinci mountain helicopter was a particularly challenging task.

It is thanks to the innovations of Rega's own development division that the smaller of the two helicopter types, too, has been able to operate ECMO transports since 2013. These intensive-care flights rely not only on equipment, but also on the expertise of the specialists on board. That is why Rega undertakes them in collaboration with partners. On IABP missions, the





Rega crew are accompanied on board the jet or helicopter by a cardiovascular technician. If a patient is being transported with an external heart and lung machine (ECMO), a heart surgeon must also be present in addition to the cardiovascular technician.

Only the best for its youngest passengers

Rega also works closely with specialist partners to transport its youngest patients. Unlike adults and children. who lie on the stretcher installed in the helicopter or jet, premature or newborn babies have to be carried in a transport incubator – a type of artificial womb. The medical care required by a newborn cannot be compared with that of an adult, as the demands on the attending physician and nursing team are quite different. To ensure that Rega meets the special requirements of its tiny patients, a neonatologist and neonatal nurse accompany every flight with the incubator.

The hospitals and Rega do not just work in close collaboration in terms of staff. Because transport incubator capacity is limited across Switzerland, Rega invested in its own unit in 2014. This was a highly complex undertaking, as the new transport incubator must be suitable for use on board both the rescue helicopter and the ambulance jet and satisfy all the applicable safety regulations. In this particular case, modifications needed to be made to the aircraft and subsequently certified before Rega's youngest patients were allowed on board.

Transporting contagious patients

Increasing globalisation and travel present another challenge for Rega. These days, it is easy – almost routine – to travel to exotic destinations. But other countries mean other diseases. As the media headlines reporting Ebola, SARS or the swine flu virus show, disease also travels worldwide. The

outbreak of Ebola in West Africa in 2014 made it very apparent that as good as no safe concepts for transporting highly contagious patients existed to date. This prompted Rega to work with various partners on developing a patient isolation unit (PIU) for airborne transport together with a corresponding transport concept (see page 14).

One thing is certain: Rega will continue to step up to the many challenges it faces and work with its operational partners to ensure that patients have the full benefit of the ongoing technical and medical advances.

Intensive care missions: the ECMO machine can assume the respiratory or cardiac function for the patient.







Dr. med. Roland Albrecht, Rega Medical Director: "The new isolation unit enables us to transport highly contagious patients more easily."

When the Ebola epidemic broke out in several West African countries in 2014, it became very apparent that to date there has been next to no safe and reliable concept for transporting highly contagious patients. In collaboration with Protection & Rescue Zurich and TB-Safety, and led by its Medical Director Dr. med. Roland Albrecht, Rega has therefore developed a patient isolation unit (PIU) for airborne transport together with a corresponding concept. Since February 2015, Rega has thus been able to safely transport patients with potentially highly infectious diseases.

Roland Albrecht, infectious diseases are nothing new. What made Rega decide to take this major undertaking in hand?

Last year's Ebola outbreak in West Africa prompted us to address this challenge more closely and to come up with solutions. For the global community, it was essential to prevent the spread of the disease and contain the epidemic locally. One way of doing this was by sending specialists from Europe to support the local medical staff. We consider it our duty to ensure that aid workers from Switzerland can be repatriated in an emergency for further medical treatment at home —

not only where Ebola is concerned, but also in similar cases in future

Since February 2015, just a few months after the outbreak of the epidemic, Rega has been able to utilise the patient isolation unit on its missions. A short space of time?

Absolutely. Especially if you consider the complexity of this kind of new development. Transporting highly contagious patients is extremely challenging. They have to be kept isolated at all times during transport from hospital bed to hospital bed and not just on the flight. Worldwide there are only a handful of mostly military or state-funded organisations that have the capability to transport infected or possibly infected patients by air. These organisations have far greater funds and resources at their disposal than Rega. We had to find a solution that was viable for us. With the new isolation unit and accompanying transport concept, we can repatriate patients with known or undiagnosed infectious diseases more easily and safely in our own ambulance jets and with minimal personnel requirements. That is major progress. In addition, we explicitly developed the PIU and the concept not only for the Ebola virus, but also for highly infectious diseases in general. Transporting contagious patients is part of Rega's routine operations.

What were the challenges of developing and introducing the patient isolation unit?

The main focus in the development of the isolation unit was on the safety of the patients, crew and third parties. In order to ensure safe and seamless transport from hospital bed to hospital bed, it was important that the PIU could be used on board the Rega jets, as well as in the helicopters and ground ambulances. Consequently, we worked closely with Protection & Rescue Zurich on its development. The isolation unit then had to undergo extremely rigorous and thorough testing. The tests according to aviation safety regulations included examining how the isolation unit behaves in the event of a sudden loss of cabin pressure in the ambulance jet. The crew deployed to accompany these flights also had to be specially trained. Not only the physicians and flight nurses, but also the Rega pilots, received intensive training in handling the PIU and implementing the related procedures.

The tried-and-tested holds its ground as the successor of the Rega jet

The increasing age of Rega's three ambulance jets gives rise to more frequent maintenance and higher operating costs. At the end of 2014, Rega's Management and Foundation Boards decided that the fleet should be replaced with three new jets of the latest generation of Bombardier aircraft, the Challenger 650. In spring 2015, the contract for the purchase of the new jet was signed at the manufacturer's facility. However, it will not be until 2018 that Rega takes delivery of its first Challenger 650.

Rega's three ambulance jets have been in operation for 13 years and their services to Rega and its patients have been impeccable. As the first models of the aircraft type, Bombardier Challenger CL-604, they have reached the mark of 15,000 flight hours and 7,800 landings – and that with an extraordinarily high technical reliability of 99.7 percent. That means that in all those years, technical problems causing the mission to be delayed or cancelled only occurred with three in one thousand take-offs.

But no matter how well they prove their worth in operation, the three Rega jets need to be replaced in the medium term. For as they get older, the inspection and maintenance requirements increase. Moreover, new aviation legislation requires certain modifications to be made, which would have needed substantial sums to be invested in the fleet in 2018.

Downtime due to maintenance work makes operating the jets costly, but also significantly reduces the availability of the aircraft for repatriation flights. This was acutely felt in autumn 2014, when scheduled general maintenance work meant that one after the other the three jets were each grounded for eight weeks. Fortunately, these limitations could be adequately compensated for, thanks to optimal flight planning and increased flexibility on the part of the medical crew and pilots. This should not, however, mask the fact that all three ambulance jets are needed in order to guarantee the extremely high and swift availability of the aircraft and the sustainability of Rega itself in the long-term.

The Rega jet's successor

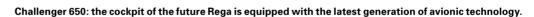
An interdisciplinary team, comprising experts from the fields of aviation, medicine, medical care, technical maintenance, finance and flight coordination, was entrusted with the task of evaluating a suitable replacement for the current CL-604 fleet within the framework of "Project Futura". The task force appraised 64 potential aircraft types in all. Twelve months after the launch of the project - as well as countless in-depth analyses, feasibility studies and evaluations - the final decision was taken as to which aircraft should replace the Rega jet. Rega's Management and Foundation Boards decided to uphold its proven "single

type" strategy and purchase three new Challenger 650 aircraft. Thus the choice fell in favour of the "super to mid-size" category, which fulfils all the requirements laid down in the voluminous requirement specifications – and on doing so remained faithful to a tried-and-tested product. For the Challenger 650, the latest in the Bombardier-Challenger 600 series, is a successor model of Rega's current, highly reliable ambulance jet.

The fleet's longest serving aircraft

The future Rega jet, the Challenger 650, is equally good as the Challenger CL-604 in terms of performance, range, low maintenance costs and medical installations. It has a similar range of just under 7,000 km and essentially differs from the CL-604 due to its modified engines, a 30 percent larger cabin window and a cockpit with the latest aviation technology.

Rega estimates that the purchase of three fully equipped aircraft will run to around CHF 130 million. The Swiss firm, Aerolite – which emerged as the best of the eight suppliers evaluated – has been entrusted with the task of installing the necessary medical equipment. It will not be until 2018 that the three CL-604 aircraft can be taken out of service. By then, they will have clocked up over 16 years of service – the longest term of any jet fleet in Rega's history.





Rega – quite simply complex

At first sight, Rega's task appears to be quite straightforward: to provide swift medical emergency assistance from the air. For that, you would think you just need a few helicopters and jets, a handful of pilots, and medical staff to look after the patients. But a look behind the scenes reveals that this notion falls a long way short of reality: united under Rega's roof is a diversity of activities that is rarely to be found in any other organisation of this size.

With its around 350 employees and an annual operating budget of approximately CHF 140 million, Rega is certainly of a transparent size. At first glance, it seems very similar to a typical Swiss SME in the way it is organised and it works. That is without doubt correct - yet at the same time completely wide of the mark. Anyone who makes the effort to find out more about Rega and its work in more detail will discover a highly complex organisation covering a widely diversified sphere of activities. This complexity and diversity arise from the fact that Rega invests enormous time, effort and money into carrying out its fundamental task - providing swift medical emergency assistance from the air around the clock.

Organising the operations

Of course, one major task is to organise the rescue missions. This is handled by the two divisions, Helicopter Operations and Jet Operations. They assign the stand-by periods, draw up the duty rosters, and make sure that the right personnel is at the right place at the right time. That is by no means an easy task, with 12 helicopter bases and three ambulance jets, whose missions often overlap. These Operations divisions also include the mission coordination, the helicopter and jet operations centres with their dispatch systems, and the communications infrastructure. For instance, Rega operates its own countrywide radio network so that the crews and operations centres can communicate with each other.

However, long before the crews can set out on a mission, other services within Rega are necessary; first the basis for the mission needs to be established.

Ensuring availability of the fleet

Rega relies on safe, technically sound helicopters and jets to be able to perform its missions. Therefore it operates its own maintenance works to ensure that the fleet remains fully operational and that any faults or defects can be repaired quickly, flexibly and without needing outside help. Aircraft – and helicopters in particular - require an enormous amount of maintenance. A rescue helicopter undergoes two to three hours of maintenance work for every hour it spends in the air. Specialised aircraft mechanics and avionics technicians make sure that the prescribed inspections and maintenance work is carried out regularly. A mechanic is also on stand-by day and night to deal with technical emergencies. In addition, a mechanic is stationed at each of the 12 helicopter bases, so that the most important work can be dealt with on the spot.

Nowadays, aircraft mechanics are in great demand. In order to ensure a regular supply of qualified specialists in future, Rega's maintenance works offers a total of six trainees the possibility of gaining this qualification.

Training the crews

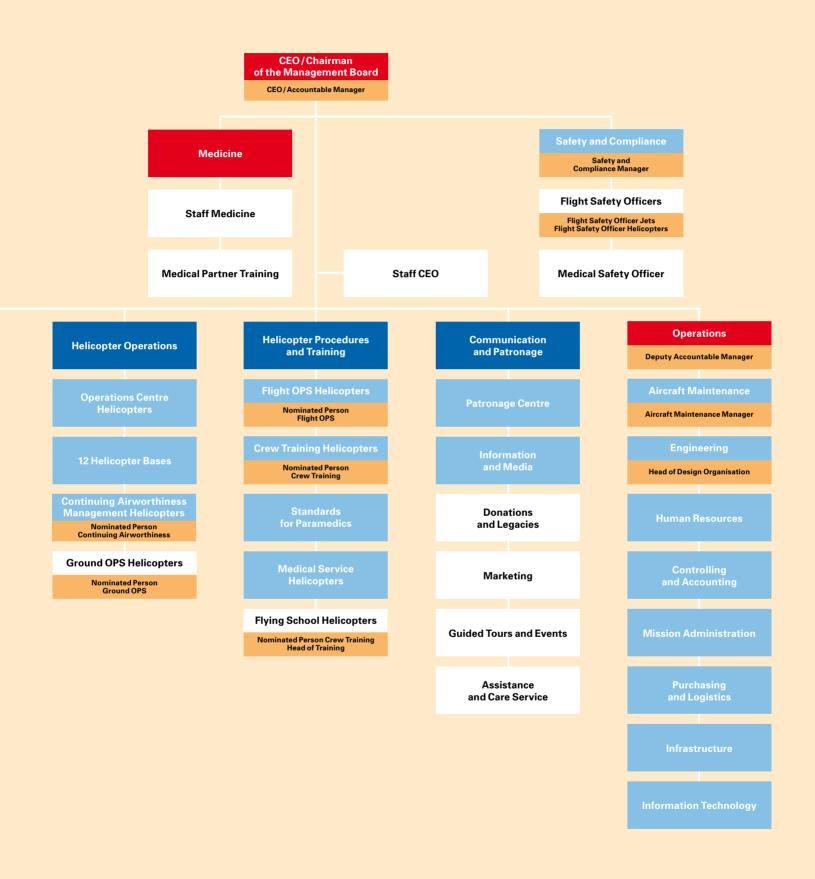
Well trained, experienced crews are essential for successful air rescues. For this reason, Rega runs its own flying schools for its jet and helicopter pilots. Training is carried out both in real life and in the simulator. Every year, Rega's helicopter flying school organises for its crews numerous training exercises and checks – relating to, for example, the use of the rescue winch in rough terrain or practising night or instrument flights.

But before a pilot can undergo training at Rega's flying school, he first needs to prove himself elsewhere. Depending on his professional activities, it can take many years



Rega as an organisation

2015



Management Board

Division (Members of the Extended Management Board)

Department

Team

Responsible for compliance with aviation law, reports directly to the CEO/Accountable Manager (legal obligation)

before a helicopter pilot has gained the necessary flying experience to be able to perform air rescues. Here, too, Rega undertakes a great deal to secure an ongoing supply of pilots. Since 2012, it has been sponsoring and financing several up-and-coming helicopter pilots.

Rega's jet flying school is very active, too. Every year, each jet pilot must pass a series of checks and also undergo various check flights and training sessions in the simulator. In addition, there are specific courses in emergency procedures, such as "ditching" (correct behaviour in the case of an emergency landing on water) or on self-competence or teamwork. The flying school also introduces new pilots to Rega's operations. Before the young people can begin their career with Rega as a co-pilot, they need to prove themselves in the cockpit under the supervision of a flight instructor.

Innovation from the engineering office

In terms of operations, if you want to make the seemingly impossible possible, you first need to create the necessary space to constantly adapt and perfect the existing equipment. This does not just apply to major developments, but also to minor details. Since 2011, Rega has runs its own design and development organisation.

This means that it is able to carry out minor modifications on its aircraft itself and, with the approval of the European Aviation Safety Agency EASA, also certify them in accordance with aviation law. A current example of this is the new transport incubator for newborn babies, which was introduced in 2014. Numerous technical modifications were necessary for this apparatus to be used in Rega helicopters and jets. Thus the efforts of Rega's engineers directly benefit the patients.

Safety and quality management

Safety and quality are not only of utmost importance at Rega, they also form the very foundation of the air rescue organisation. Here the maxim is "mission first, safety always". This guiding principle underlines the fact that safety takes top priority and that for every mission the risks must first be carefully weighed up. In modern-day air rescue, great importance is attached to the protection of patients, crews and uninvolved third parties.

Nevertheless, no system is completely flawless and nobody never makes a mistake. In order to identify technical defects, shortcomings in procedures or training deficits as early as possible and thus further minimise the risks, Rega has a number of error reporting systems in place. For example, the so-called Air Safety

Reports (ASR) inform about occurrences that could have a bearing on safety. A similar system also exists in the sphere of medicine, where the Critical Incident Reporting System (CIRS) provides a continual stream of relevant feedback.

In addition, there are automated technical systems that record deviations from given flight parameters. A sophisticated risk and quality management system analyses the causes of these errors, draws the correct conclusions, and takes the necessary measures to eliminate the risk. This is one of the tasks of the Jet and Helicopter Flight Safety Officers and the Medical Safety Officer

Air rescue as a regulatory challenge

Nowadays, an organisation operating in the sphere of air rescue is confronted with a mountain of aviation regulations, specifications and standards. Only those that comply with these and fulfil all the necessary requirements are licensed by the aviation authorities to transport passengers – or in Rega's case, patients - in the first place (the most important certifications can be found on page 19). Among the official obligations is the appointment of so-called "nominated persons", that is, clearly defined persons who are responsible for equally clearly defined and personally assigned tasks. These persons are legally responsible for ensuring that all the corresponding provisions and guidelines for certification are complied with. The complexity of this can be clearly seen in the way Rega is organised (see diagram on pages 16 & 17).

Thus, for example, in the organisational structure, Rega's CEO does not just hold the position of Chairman of the Management Board. He has also been registered with the appropriate aviation authorities as Head – or to use the specialist term, Accountable Manager – of Flight Operations. Therefore he is responsible for all of Rega's flight operations. The various nominated persons who are accountable for their individual areas

Various specialised organisational units are united within Rega (list incomplete).

Responsible for:	Division within Rega:		
Conducting flight operations for patients	Helicopter Operations (Heli Ops)	Jet Operations (Jet Ops)	
Airworthiness of the aircraft	Aircraft Maintenance Helicopters	Aircraft Maintenance Jets	
Crew training, promoting up-and-coming pilots	Flying School Helicopters (AW Da Vinci, EC 145)	Flying School Jets (Challenger CL-604)	
Medical training and care	Medical Service Helicopters, Paramedics Helicopters	Medical Service Jets, Nursing Service Jets	
Innovation, autonomy	Design Organisation		
Quality, compliance with processes	Quality Management (ISO 9001)		
Safety and compliance	Safety and Compliance, Flight Safety Officers, Medical Safety Officer		



Different functions and regulations, but a common goal: assistance by air

of operation must have unrestricted, direct access to him at all times.

At Rega, the nominated persons are those responsible for flight operations (Flight OPS)*, ground operations (Ground OPS)*, the flying schools (Crew Training) and Continuing Airworthiness Management*. They also include those responsible for the spheres of Aircraft Maintenance* and Design Organisation, as well as the Head of Safety and Compliance, who, together with the Flight Safety Officers* and the Medical Safety Officer are concerned with the compliance of all safety-related ordinances.

Conglomerate with a common goal

The above description of the complexity of Rega is, however, by no means complete. Besides aviation rules and regulations, Rega is subjected to countless legal requirements relating to medicine and finance. As a non-profit foundation, it is also monitored by the Federal Supervisory Board for Foundations in Berne and is required to comply with very stringent accounting standards. As a quality oriented organisation, certification according to the ISO-9001 norm is also indispensable.

The greatest challenge faced by Rega is that, despite all these various functions, tasks and regulations, it does not lose track of the overall picture. It is the task of the Management to keep all these experienced, in part highly specialised employees together and create a smoothly functioning team. But also it is above all a matter of making sure that they never lose sight of Rega's fundamental purpose: to provide swift medical emergency assistance from the air. However simple this task may seem at first glance, in actual fact it is anything but that. Indeed, it is in this that lies the driving force, the common goal: helping people in need.

Certificates

Air Operator Certificate CH.AOC.1015

Certificate issued by the Federal Office of Civil Aviation (FOCA) as a jet operator conducting the commercial air transport of passengers, including emergency medical service.

Operating Licence CH.AOC.BB.1015

Licence issued by FOCA to carry passengers in commercial transportation within the scope of the Air Operator Certificate CH.AOC.1015 and listed aircraft (ambulance iets).

Approval Certificate CH.MG.1015

Certificate issued by FOCA as a continuing airworthiness management organisation (CAMO) to manage the continuing airworthiness of the aircraft in accordance with the manufacturer's maintenance specifications.

Air Operator Certificate CH.AOC.3030

Certificate issued by FOCA as a helicopter operator conducting the commercial air transport of passengers, including emergency medical service.

Operating Licence CH.AOC.BB.3030

Licence issued by FOCA to carry passengers in commercial transportation within the scope of the Air Operator Certificate CH.AOC.3030 and listed helicopters.

Approval Certificate CH.MG.3030

Certificate issued by FOCA as a CAMO to manage the continuing airworthiness of the helicopters in accordance with the manufacturer's maintenance specifications.

Maintenance Organisation Approval Certificate CH.145.0216

Certificate issued by FOCA as a technical maintenance organisation of aircraft and helicopters.

Approved Training Organisation Certificate CH.ATO.0185

Certificate issued by FOCA as a training organisation for helicopter pilots.

Approval Certificate EASA.21J.489

Certificate issued by the European Aviation Safety Agency as a Design Organisation (engineering, including certification).

ISO 9001: 2008 Quality Management

^{*} one nominated person for Jets Ops and one for Helicopter Ops

Medical assistance by air

Swiss Air-Rescue Rega was founded in 1952 for the purpose of providing emergency medical assistance by air.

Thanks to wide-scale support from the Swiss people, it is able to meet the challenges posed by a country with extremely demanding topography. With its highly trained employees and state-of-the-art aircraft, Rega is on call around the clock, finances the building and renovation of its dense network of helicopter bases, and is constantly improving its air rescue services and procedures.

Rega provides assistance wherever a person's life or health can be preserved or protected through its intervention. It comes to the aid of people in distress and in need of help in accordance with the Fundamental Principles of the Red Cross, without discrimination as to person, financial circumstances, social status, nationality, race, religious beliefs or political opinions. It is the patient's medical condition that counts. Ambulance jets and rescue helicopters are swift, comfortable and efficient means of transport. Their targeted use helps reduce the subsequent costs arising from acute illnesses and accidents.

Rega is an autonomous, privately run, non-profit foundation. With over 2.5 million patrons, it is firmly rooted within the Swiss population. It has been a corporate member of the Swiss Red Cross since 1981. Rega operates independently of political interests and is not subsidised by the State. Its activities also contribute towards improving the quality of life, the economy and tourism in Switzerland.

Key figures

	2014	2013	in %
Total number of missions	14,435	13,793	4.7
Helicopter	10,802	10,205	5.9
Fixed-wing aircraft	1,170	1,148	1.9
Other missions ¹	2,463	2,440	0.9
No. of patrons (in millions)	2.542	2.504	1.5
No. of employees ²	347	337	3.0
Operating revenue (CHF million)	144	138	4.6
Operating expenditure (CHF million)	141	135	4.0
Operating result (CHF million)	3.5	2.7	30.5
Balance sheet total (CHF million)	539	527	2.4

¹ Other missions: transports by ambulance, on behalf of the Swiss Alpine Club, Spéléo-Secours, Redog, etc.



² No. of full-time equivalent employees at the end of December





N 46° 14′ 03″, E 06° 05′ 49″



Rega 4, Lausanne

N 46° 32′ 51″, E 06° 37′ 05″



Rega 15, Geneva

No. of helicopters:

Patient capacity: 1 lying, 1 sitting
Rotor diameter: 11.00 m
Length: 13.03 m
Height: 3.95 m

2 engines (Arriel 1E2),

take-off power: $2 \times 720 \text{ HP}$ Maximum cruising speed: 220 km/h

Rescue hoist: 90 m cable length, 270 kg payload

Mountain base fleet



Rega 10, Wilderswil

N 46° 40′ 12″, E 07° 52′ 34″

AgustaWestland Da Vinci

No. of helicopters:

Patient capacity:

Rotor diameter:

Length:

Height:

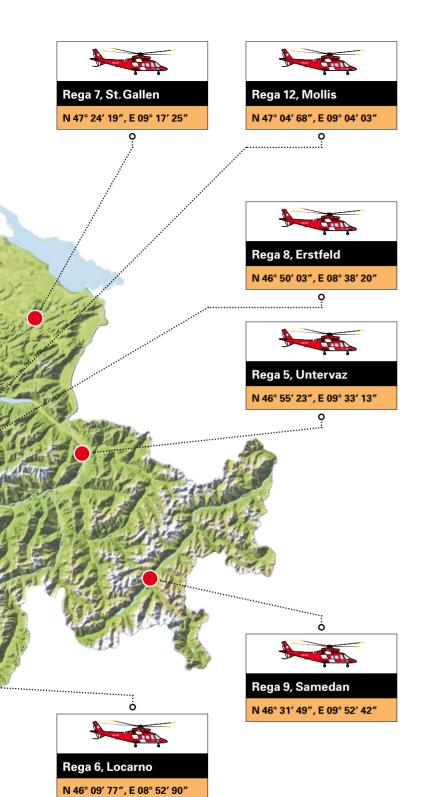
11

1 lying, 1 sitting
10.83 m
12.96 m
3.40 m

2 engines (Pratt & Whitney),

take-off power: $2 \times 778 \text{ HP}$ Maximum cruising speed: 235 km/h

Rescue hoist: 90 m cable length, 270 kg payload



Locations

Rega Centre

Rega's head office, operations centre and maintenance works, as well as the base for its three ambulance jets, are located at Zurich Airport.

Helicopter bases

The 12 helicopter bases, each of which operates one rescue helicopter, are situated in Dübendorf, Basel, Berne, Lausanne, Untervaz, Locarno, St. Gallen, Erstfeld, Samedan, Wilderswil, Mollis and Zweisimmen. There is also a partner helicopter base in Geneva.

Operations Centre

The Operations Centre, located in the Rega Centre building, organises around 14,000 missions each year. It can be contacted around the clock – in Switzerland via emergency number 1414, and from abroad via emergency number +41 333 333 333.

Ambulance jet fleet

Challenger CL-604



No. of aircraft: Patient capacity: Wing span: Length: Height: Maximum take-off weight: 3 4 lying 4 lying 20.86 m 6.40 m 21,863 kg

Maximum cruising speed: 850 km/h Maximum range: 6,200 km

Emergency numbers

In Switzerland

1414

Abroad

+41 333 333 333

Missions

Rega in Switzerland





Rega's rescue helicopters are on call 24 hours a day, 365 days a year, in the service of the Swiss people. The 17 AgustaWestland Da Vinci and Eurocopter EC 145 helicopters transport state-of-the-art medical services directly to the patient – not just in response to serious accidents or injuries, but also in cases of acute illness, such as cardiac problems.

The rescue helicopters are called out not only to deal with incidents in inaccessible mountainous terrain, but also on motorways and in built-up areas. They are used to transport critical patients gently and reliably to the nearest suitable medical centre or to fly newborn babies to a paediatric hospital. A highly versatile and efficient means of rescue, the helicopter plays an indispensable role in the modern-day healthcare system.

Helicopter operations are divided into primary and secondary missions. Primary missions comprise rescue flights that transport medical assistance direct to the scene of the incident. Secondary missions mostly involve inter-hospital transfers – for example, if a patient's condition has worsened and requires specialist attention. Almost one-fifth of all Rega helicopter missions take place at night – a demanding task for the pilot, paramedic and emergency physician making up the crew.

Primary/secondary missions by helicopter in 2014 (8,739 patients in total)

1,352
Winter sports accidents

519 Alpine accidents

990 Occupational accidents

832 Road accidents

1,250
Other accidents

3,796 Illnesses



Rega international



For people who become seriously injured or ill abroad, Rega represents a bridge to their homeland. Its three own Challenger CL-604 ambulance jets are used exclusively for transporting patients. The crew invariably comprises at least two pilots, a flight physician and a flight nurse. Rega is equipped to transport patients who are in a very critical physical condition. However, as each transport involves a certain degree of risk, operations of this kind need to be closely supervised by experienced medical coordinators.

The use of an ambulance jet is not always necessary.

Often patients are repatriated on board a scheduled aircraft – competently and professionally attended to by Rega's medical staff.

If travellers suffer serious medical problems abroad, Rega can also assist by providing them with expert medical advice as part of its emergency medical management. Medical consultants are on duty around the clock and, together with the doctors on location and the patients themselves, seek the best possible solution – such as informing them of the nearest suitable hospital.

Providing that it has capacity available, Rega also puts its knowledge and fleet at the disposal of clients abroad for patient transports. These missions help Rega crews to maintain and improve their operational and medical expertise, and also contribute towards covering costs.

Medical emergencies abroad in 2014 (2,688 patients in total)

1,143

patients repatriated by ambulance jet or scheduled aircraft

1,545
Medical emergency
management



No patrons, no Rega

Thanks to their annual contributions, Rega's patrons enable the continued existence of the air rescue organisation. They keep Rega in the air, as a public service for the Swiss people.

Professional rescue by air around the clock, 365 days a year, with highly qualified staff, state-of-the-art rescue equipment and a dense network of helicopter bases – it would be impossible to provide all this in a cost-effective manner. When, back in the 1960s, the fledgling air rescue organisation ran into serious financial difficulties, instead of asking for State subsidies, it set up a privately operated patronage system. Since then, patrons' annual contributions have succeeded in covering the "deficit", which comprises around 60 percent of the total budget. The remaining costs are covered by cost bearers, such as health, accident and travel insurers, in the form of payments for missions carried out on their behalf.

In the meantime, this system has more than proved its worth. It gives Rega the freedom and independence to perform its duties as it deems best and allows it to fully focus on its patients' welfare. The annual patronage contributions have only ever been increased once, and have remained unchanged for the last 20 years.

As a token of thanks for patrons' support, Rega waives the cost of any of its services performed on their behalf, provided that these are not covered by the individual's insurance.

You can find the Conditions of Patronage on page 42.

Cost coverage in 2014

CHF 86 million (60%)

Patrons' contributions and donations

CHF 58 million (40%)

Cost bearers and other revenue





Milestones

Swiss Air-Rescue Rega was founded in 1952 to provide emergency medical assistance by air. Since then, it has organised over 300,000 missions and rescued countless people in distress. Even back in the pioneering days, Rega's air rescuers succeeded in achieving the impossible. Rega has remained true to this credo to this day.



The organisation is founded

Swiss Air-Rescue is founded as a sub-section of the Swiss rescue association, Schweizerische Lebensrettungsgesellschaft (SLRG), in the Hotel Bären in Twann



Swiss Air-Rescue is ready to start operations On 25 December,

Dr. Rudolf Bucher, the head of Swiss Air-Rescue, announces over Radio Beromünster that the parachutists and helicopters are ready for action.

1953



The first rescue parachutists

In winter 1953, Swiss Air-Rescue parachutists are used on a rescue mission for the first time.



Large-scale live demonstration

During three days in March, over 300,000 spectators watch a live demonstration in the area around Zurich's lower lake basin, held to procure funds for air-rescue services.



Emergency assistance in the USA

After a plane accident, Swiss Air-Rescue pioneers recover the bodies of 128 persons from an inaccessible area in the Grand Canyon region.



The first helicopter of its own

A countrywide collection by the Association of Swiss Consumers' Cooperative Societies (now Coop) produces sufficient funds to purchase a Bell-47 J helicopter.

1960



An autonomous organisation under

Fritz Bühler Swiss Air-Rescue breaks away from its parent organisation, the SLRG. Fritz Bühler is appointed Technical Director.

1960



First repatriation

For its first repatriation mission, the private Piaggio P-166 aircraft owned by Dr. Armin Meyer flies a patient from France back home to Switzerland.

1966



Self-help by means of patronage

No funds from the Swiss government. However, a nationwide appeal for help proves successful. 25,000 patrons save Swiss Air-Rescue from financial

1968



Bell 206A, the first turbine-powered helicopter The Jet Ranger HB-XCU has a turbine, but no rescue hoist.

In mountainous areas where the helicopter is unable to land, rescue is only possible using the fixed rope.



First direct rescue from the Eiger north face What until now had been deemed impossible, suddenly becomes reality: using a rescue hoist, the crew from the Gsteigwiler base lift

two climbers directly off the rock face.



First Alouette III The Alouette III SE 316 HB-XDF is Rega's first helicopter to be financed by patrons' contributions. The picture shows it in operation at the Engadin Ski Marathon in 1972.



Twin-engine helicopter The introduction of the Bölkow BO-105C depicted here on the roof of the University Children's Hospital in Zurich - marks the beginning of the era of twin-engine helicopters at Rega.



Operations abroad with its own aircraft Rega's Learjet 24D HB-VCY is the first civilian ambulance jet in the world. It is fully equipped with medical apparatus and is on stand-by around the clock.



Rescue helicopter can land on roads

After extensive negotiations, the Zurich Government Council approves a trial phase for the use of the rescue helicopter to help deal with road



Rega becomes a non-profit foundation

The Association sets up a Foundation. Fritz Bühler is appointed the first Chairman of the Foundation Board. In 1981, Rega also becomes a Corporate member of the Swiss Red Cross.



Fritz Bühler dies on 23 August: the great organiser and promoter of air rescue passes away totally unexpectedly at the age of 72 during a business event.

1980



The "Hitchcock" rescue A parachutist's canopy becomes entangled in the aircraft's tail wheel. The helicopter flies above the plane so that the rescuer suspended at the end of a rescue hoist can cut the parachutist free.

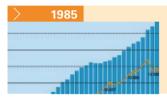


Long-haul ambulance jet

The Challenger CL-600 HB-VFW is equipped to perform long-haul operations with several patients on board. In Geneva, it is christened "Fritz Bühler".



New Operations Centre Rega moves into its new head office in Zurich's Seefeld district. The Operations Centre is housed on the top floor of the building.



The magic number of 1,000,000

patrons Rega's patronage system proves to be an on-going success. On 23 August, Rega issues its one millionth patronage card.



Helicopters with night vision goggles Rega is the first non-military

organisation in the world to equip all of its helicopters with night vision goggles, thus increasing the safety of night missions.



The Hawker 800 jets commence

services Two new ambulance jets replace the pair of Lear-35 aircraft. The larger cabin and longer range improve the services for patients.



The new fleet is made up of Agustas

On 14 August, the Untervaz base in Canton Graubünden puts the first of the 15 new twin-engine Agusta A 109 K2 helicopters into operation.



The first round the world flight

In a mission lasting 43 hours, the Challenger CL-600 transports three patients in consecutive legs, a journey that takes it all the way round the world for the first time.



New Rega Centre at Zurich-Kloten

For the first time, Rega's hangar, Operations Centre, maintenance works, logistics operations, Patronage Centre and Administration Department are all united under one roof.



The new emergency number "1414"

The four-digit emergency number, 1414, is adopted for calling out the airrescue services in Switzerland.



Three new Challenger CL-604 jets

Three identical aircraft from the Canadian manufacturer, Bombardier, replace the 15-year-old air ambulance fleet.



Five Eurocopter EC 145 helicopters

Rega purchases five spacious rescue helicopters from helicopter manufacturer Eurocopter for use at its lowland bases. This is followed by a sixth.



Tsunami in Southeast Asia

Rega is pushed to the limit. Over a period of ten days, 16 medical teams are in operation. Within the space of a week, more than 60 casualties are repatriated to Switzerland.



2,000,000 patrons The Van der Bent family from Veyrier, Canton Geneva, register as the two-millionth patron. They are invited to spend a day at the Rega Centre.



AW Da Vinci, the new mountain

helicopter Rega purchases from the helicopter manufacturer, Agusta-Westland, 11 rescue helicopters for use at its mountain bases.



Mobile heart-lung machine

on board For the first time, critically-ill patients can be hooked up to a heartlung machine in the Rega helicopter.



300,000th mission Newborn twins are flown by Rega helicopter from the Children's Hospital in Lucerne back to their home in Canton Vaud.



Flying "blind" to the Inselspital

27 July: Thanks to satellite-based navigation, Rega flies to the Inselspital University Hospital in Berne despite poor visibility, using the GPS-assisted approach procedure.



State-of-the-art dispatch system

The new interlinked systems allow alarm procedures to be largely digitalised and rescues to be coordinated more efficiently than ever.



The flight simulator for the AW

Da Vinci sets new standards in pilot
training. Instrument flight and emergency

realistically and efficiently – in safety and without harming the environment.



Premiere for Rega's new transport incubator, which can be used in both the jets and the helicopters and

provides premature or newborn babies with the best possible medical care.





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Activities in 2014

Rega once again looks back on an extremely busy year. During 2014, it organised a total of 14,435 missions (+4.7%), during which it transported 9,679 patients (+1.6%). This represents on average 27 patients per day.

Helicopters

Figures for the missions performed by Rega's helicopter fleet were up compared to previous years (10,802, +5.9%). Never before in Rega's history has the Operations Centre coordinated as many missions as it did last year. The rainy summer also meant that Rega was requested to perform an unusually high number of operations on behalf of mountain farmers. or so-called "contadino missions" (1,306, +25.1%). Contadino missions are part of a programme to assist mountain farmers, whereby dead or injured cattle are airlifted out of inaccessible terrain and transported to the nearest site that can be

reached by an overland vehicle. Rega subcontracts these operations to commercial helicopter firms. The cost of these flights is covered by the farmer's Rega patronage if their insurance is insufficient. Generally speaking, the mission numbers reflect the weather conditions, which in turn influence the way the Swiss population spend their leisure time and the conditions in the mountains.

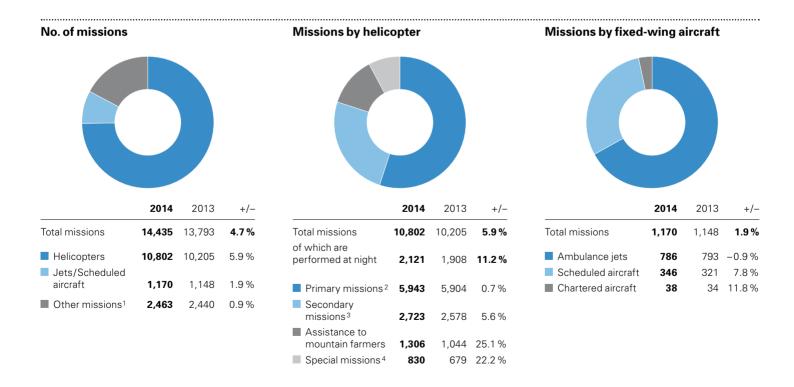
In 2014, Rega's helicopters performed an average of 30 missions per day. Around one-fifth of all missions were flown at night. The activities of the Swiss Touring Club (TCS) in Canton Aargau, where figures remained constant compared to the previous year (99, +4.2%), continue to have very little impact on the number of missions.

For over a year, the air rescue services throughout Canton Berne are called out centrally via emergency number 1414 and coordinated by Rega's Operations Centre.

Fixed-wing aircraft

While in 2014 Rega's three ambulance jets flew slightly fewer missions than in 2013 (786, -0.9%), it actually transported more patients (799, +0.3%). Once again, the jets flew more long-haul missions and consequently clocked up more flight hours (4,016, +3.9%), whereby the 4,000 flight hour threshold was reached for the first time since 2007. It is thanks to prudent planning by the flight coordinators that missions can increasingly be combined and thus carry several patients on board at the same time, which helps minimise costs. In 2014, too, the repatriation operations took the Rega jets all over the world - including on two occasions to French Polynesia in the South Pacific.

The number of patients repatriated by means of scheduled aircraft also rose during the year under review (344, +8.2%). This economically and environmentally sound alternative to the ambulance jet is employed provided



- ¹ Other missions: transports by ambulance, missions on behalf of the Swiss Alpine Club, Spéléo-Secours, Redog, etc.
- ² Primary missions: emergency missions
- ³ Secondary missions: inter-hospital transfers, neonatology/organs
- ⁴ Special missions: non-medical Rega missions (search, route securing and reconnaissance flights on behalf of operation partners) and missions performed by other helicopters

Transported patients - primary/ Transported/accompanied patients -Medical emergencies secondary missions by helicopter abroad missions by fixed-wing aircraft 2014 2013 +/-Total patients 2,688 2,444 10.0% Medical advice 1,545 1,329 16.3 % Repatriation 1.143 1,115 2014 2013 2014 2013 +/-Total patients 8.739 8.587 1.8% Repatriations Total patients 940 936 0.4% ■ Winter sports Limb injuries 157 1.352 1.485 -9.0 % accidents ■ Craniocerebral trauma 76 Occupational 171 Other injuries accidents 990 917 80% 2014 2013 +/-Cardiovascular diseases 95 Road accidents 832 818 1.7 % Strokes 80 Alpine accidents 519 588 -11.7 % Total patients 1,143 1,115 2.5% ■ Gastrointestinal diseases 71 Sports accidents 422 10.8 % Rega ambulance jets 799 797 0.3% ■ Malignant tumours 34 Aviation accidents 106 133 -20.3 % ■ Scheduled airlines Other illnesses 256 Avalanche accidents 16 39 -59.0 % accompanied 141 139 1.4 % Other 706 649 88% Scheduled airlines Illnesses 3.796 3.577 6.1 % unaccompanied 203 179 13.4 %

that the patient's medical condition is sufficiently stable, that this form of transport is not expected to have a negative effect on the patient or other passengers, and that enough seats are available.

On average, Rega organised three repatriations per day using fixed-wing aircraft in the course of 2014.

Major maintenance work

As the first models of the aircraft type Challenger CL-604 worldwide, Rega's ambulance jets have reached the 7,800 landings mark, with the result that a comprehensive inspection and overhaul programme became due. This major, time-consuming task was pending for all three ambulance jets, with the result that from October 2014, only two of the three jets were available at any one time.

Fortunately, these limitations could be adequately compensated for, thanks to optimal flight planning and increased flexibility on the part of the medical crew and pilots. This should not, however, mask the fact that all three ambulance jets are needed in order to guarantee the extremely high and swift availability of the aircraft and the sustainability of Rega itself in the long-term. The maintenance work on the last of the Rega jets is scheduled to be completed by the end of April 2015.

New ambulance jets for Rega

In December, on the recommendation of the Management Board, Rega's Foundation Board decided to replace the three Challenger CL-604 fixed-wing aircraft – which were built in 2002 and 2003 – by 2019. With increasing age, the maintenance and operating costs of the jets grow. Moreover, new aviation legislation requires certain modifications to be made, which would have needed substantial sums to be invested in the existing fleet.

After comprehensive evaluation (Project Futura), the choice fell in

favour of the Challenger 650, the latest generation of Rega's present and extremely reliable ambulance jet. In terms of performance, range and maintenance costs, the successor model Challenger 650 is just as good if not better than the CL-604. It will also be equipped with the latest generation of avionic technology and slightly more powerful engines. Rega estimates that the total project costs for three new, fully equipped aircraft will amount to around CHF 130 million (see report on page 15). This investment is accounted for in Rega's long-term financial planning and can be completely funded with its own capital.

Fluctuations in mission and patient numbers

The number of missions and patients do not always concur, as either several patients are transported on board the same flight or flights are performed without any patients at all, for example, if a search flight proves unsuccessful.

Generally speaking, the mission statistics reflect the meteorological conditions, as well as the leisure activities and travel patterns of both the Swiss population and foreign tourists in Switzerland. As a result, figures relating to Rega's rescue activities both at home and abroad are invariably subject to fluctuation.

The year 2014 was characterised by significant weather extremes in Switzerland. After the southern regions experienced heavy snowfall at the beginning of the year, the rest of the first half-year was very mild countrywide. The summer was rainy, cool and with little sunshine. North of the Alps, record levels of rainfall were registered in July. Correspondingly, more missions were flown in the spring months between April and June (+18.4%) than in the previous year, while in July (-16 %) and August (-2.6%) the helicopters remained on the ground more frequently than usual

Medical assistance and advice by Rega doctors

Prior to each repatriation mission, thorough medical clarifications are carried out by one of Rega's 12 medical consultants. In liaison with the Operations Centre, the physician on duty decides whether repatriation is necessary and sensible, and if so, how and when it should take place. As with the flight coordinators, the medical consultants work shift duty and are available around the clock.

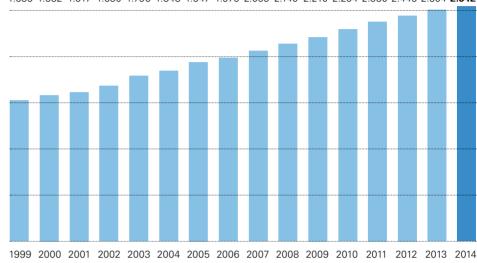
Individual insurance companies ask Rega's physicians to clarify the medical situation of their Swiss policy holders who have become seriously injured or ill abroad, even if they are not Rega patrons. In such cases, Rega makes a recommendation as to whether from a medical point of view the patient needs or is fit enough to be repatriated.

Gratifying increase in the number of patrons

Thanks to Rega's patronage system, Switzerland has an air rescue system that sets standards and is highly regarded all over the world. With their

Development in no. of patrons up to 2014 (in millions)





annual contributions, the patrons cover more than half of the entire costs, thus enabling Rega's helicopters and ambulance jets to be on stand-by around the clock, ready to provide emergency medical assistance swiftly and professionally wherever it is needed. As a token of thanks for their invaluable support, Rega waives the cost of any rescue missions it carries out on patrons' behalf that is not covered by their own insurance.

In 2014, the number of patrons grew by a gratifying 38,000 or 1.5 %, approximately equivalent to the population of the town of Schaffhausen. This means that no fewer than 2,542,000 patrons support Rega's work with their annual patronage contribution (number of patronages, not including children and partners who are part of a Family patronage).

Financial development

Rega continues to enjoy a healthy financial base. The available financial reserves increased slightly by 3 %, with the result that in the mid- to long-term the numerous improvements and developments foreseen can be financed from its own resources. The increasing trend among individual insurance companies in refusing to pay certain

claims made on a supplementary insurance due to the fact that the person concerned is a Rega patron is being followed closely.

Future investments

The forthcoming replacement of the jet fleet will require an investment totalling CHF 130 million. Large sums have also been earmarked in the long-term financial planning for the targeted pursuit of Rega's vision of being able to perform all-weather rescue flights (see report on page 6). In the event that Zurich Airport does go ahead with its plans to eliminate its intersecting runways as announced, the Rega Centre will have to give way to the construction work and be relocated. In this case, we are also reckoning with high investment sums. Already this year, investments have been made in further IT and software projects to update the mission coordination and accounting departments.

Instrument flights for helicopters

Bad weather prevents Rega from providing around 600 people with the necessary medical assistance by air every year. Rega wants to change this situation and in future help even more people in distress.

Rega's vision is that one day it should also be possible for a rescue helicopter to fly in the most adverse of weather conditions to any given site in rough terrain using high-precision instruments. In collaboration with the Swiss Air Force and the Skyguide air navigation service, Rega is already working on developing new GPS-assisted approach procedures and creating air corridors between hospitals that are suitable for instrument flights (see report on page 6).

In order for all-weather flights to become a reality, up-to-date weather data needs to be available around the clock. For without this information, IFR flights are not permitted. Rega's latest major project, known as "Thor", aims to make a greater volume of weather data available for helicopter operations by installing up to 60 new weather stations and webcams (see report on page 11).

Challenges posed by special medical transports

Rega operates on a daily basis at the interface between numerous stakeholders in the Swiss health system. The intense collaboration with rescue services on the ground, hospitals, authorities, specialist clinics and competence centres is something Rega has been highly committed to for many years. Ultimately, this high level of networking within the health care system is to the benefit of the patient.

Just how important such collaboration is can particularly be seen in the case of special medical transports. For instance, on flights using Rega's transport incubator for premature or newborn babies, which was purchased in 2014, the Rega crew is accompanied by specialists from major paediatric clinics. But networking is not only important in terms of staff. The medical equipment it uses must also fulfil the requirements of and be compatible with its various mission partners, such as hospitals and ambulance services.

Close collaboration among members of the healthcare services is also required in terms of establishing processes. The recent Ebola outbreak made it only too apparent that as good as no safe concepts for transporting highly contagious patients existed to date. This prompted Rega to work with various partners on developing a patient isolation unit (PIU) for airborne transport, together with a corresponding transport concept. This should enable Rega in future to safely repatriate patients with potentially highly contagious diseases (see report on page 14).

Investing in the helicopter bases

Rega's 12 helicopter bases require continuous investment if flight operations are to be performed in a way that befits the times. At the end of 2014, the modernisation of the 23-year old helicopter base in Erstfeld was completed. The existing facilities were renovated and extended at a cost of around CHF 2.5 million.

In the coming year, the St. Gallen base dating from 1984 will be completely renovated. In the Engadin, Rega is pursuing its plans to build a new helicopter base on the site of the existing one at Samedan Airport in collaboration with its partners. However, no significant progress could be made in this respect during the year under review.

Suspected disclosure of patient data

In summer 2014, Rega suddenly found itself at the centre of public interest after medical information about the state of health of Michael Schumacher was offered for sale to several members of the media. Rega was in possession of these medical records as it had organised the transfer of the former Formula One racing driver from Grenoble to Lausanne. As soon as this became known, Rega immediately filed a legal complaint. After extensive enquiries by the law enforcement authority responsible, a Rega employee was arrested by the public prosecutor of the Canton of Zurich on suspicion of violating the rules of professional confidentiality. Shortly afterwards, he committed suicide in his cell. The

members of Rega's staff, Management Board and Foundation Board are still deeply saddened by this tragic event. The legal proceedings were dropped. For the deceased employee, the presumption of innocence continues to prevail after death.

Mission Statement



Our purpose

We provide an around-the-clock service offering swift, expert assistance by air. In particular, we transport medical care to the casualty and help in emergency situations.

This assistance also takes the form of medical advice and the use of our infrastructure.

Our operations are characterised by our highly qualified, professional members of staff and the very best equipment available in the fields of rescue, medical and flight technology.



Our fundamental concept

We are a non-profit organisation that is funded by its patrons. Our services are primarily geared towards the needs of the Swiss population.

We are financed by means of private funding. This enables us to operate independently in the service of our patients.

In the interest of the patient, we take an active stand against the commercialisation of air rescue.

Emergency missions and other operations carried out on behalf of the general public are not conditional upon whether or not the ensuing costs are covered.

Our rescue activities are based on the Fundamental Principles of the Red Cross.



Our patrons

Thanks to their annual contributions, our patrons enable us to build up and operate a suitable infrastructure to perform air-rescue operations on behalf of the Swiss population.

The services rendered by Rega to its patrons are not of a contractual nature and are therefore not deemed to be insurance benefits.



Our partners

We are fully aware of the importance of working in close collaboration with our partner organisations, and actively foster a successful working relationship with them.

We act as a fair and reliable partner.

We focus our activities on the fields of air rescue, air-ambulance repatriation services and medical advice.

In order to maintain and further improve the top level of expertise of our medical staff, we also perform medically indicated flights on behalf of international clients.



Our staff

Our members of staff play a decisive role in fulfilling our purpose. The following factors are of particular importance in this respect:

- personal identification with the organisation and its purpose;
- independence and responsibility;
- willingness to perform, flexibility and motivation.

We aim to achieve this by means of:

- on-going training appropriate to the various hierarchical levels;
- progressive working conditions;
- appropriate salaries and attractive social benefits.

We foster a style of behaviour among our staff that is open, cooperative and characterised by mutual respect.



Our values

We strive to provide around-the-clock services of first-class quality and safety, as well as to cultivate a conscious, structured manner of dealing with risks.

Our organisational structures are characterised by a clear-cut delineation of tasks, competences and responsibilities. These are implemented and respected at all hierarchical levels, from ordinary employees right up to the members of the Foundation Board.

We act and communicate in an open and transparent way, both within our organisation and towards the outside.

We are conscious of a potential conflict between performing our work and protecting the environment, and take this into account in everything we do.

Foundation Board

Foundation Board of Swiss Air-Rescue Rega

Ulrich Graf, Bäch, since 2001, Chairman and Member of the Executive Committee

Christian Kern, Prof. Dr. med., Geneva, since 2009, Vice-Chairman and Member of the Executive Committee

Michael Hobmeier, Bäch, since 2007, Member of the Executive Committee

Patrizia Pesenti, Zollikon, since 2009, Member of the Executive Committee

Gabi Huber, Dr. iur., Altdorf, since 2015, Member of the Executive Committee

Adrian Frutiger, PD Dr. med., Trimmis, since 1998

Andreas Berger, Dr. med., Immensee, since 2007

Heidi Hanselmann, Walenstadt, since 2010

Thomas P. Emmerich, Riehen, since 2011

Marco Maggiorini, Prof. Dr. med., Schindellegi, since 2011

Adrian Amstutz, Sigriswil, since 2013

Josef Meier, Wettingen, since 2013

Gerold Biner, Zermatt, since 2015

Thomas Holderegger, Waldstatt, since 2015

Franz Stämpfli, Innertkirchen, since 2015

Markus Mader, Berne (Swiss Red Cross representative), since 2008

Resigned as of 31 December 2014

Franz Steinegger, Flüelen, from 1990 to 2014

Paul Maximilian Müller, Berne, from 1990

Roland Müller, Prof. Dr. iur., Staad, from 2006

Bruno Jelk, Zermatt, from 2007 to 2014

Medical Commission

Christian Kern, Prof. Dr. med., Chairman

Adrian Frutiger, PD Dr. med.

Andreas Berger, Dr. med.

Marco Maggiorini, Prof. Dr. med.

Finance Commission

Michael Hobmeier, Chairman

Ulrich Graf

Josef Meier

Advisory Committee Partner Organisations

Franz Stämpfli, Member of the Rega Foundation Board and Swiss Alpine Rescue representative, Chairman

Thomas Emmerich, Member of the Rega Foundation Board

Philipp Perren, Dr. iur., Canton Valais representative

Patrick Deriaz, Spéléo-Secours representative

Markus Denzler, police commanders representative

Vali Meier, Swiss Cable Cars Association representative

Stefan Eng, Swiss Air Force representative

Peter Salzgeber, Medical Emergency Call Centres 144 representative

Daniel Sulzer, Swiss Helicopter Association representative

Auditors

KPMG AG, Zurich

as of 1 January 2015

Seated, from left: Michael Hobmeier, Gabi Huber, Ulrich Graf, Patrizia Pesenti, Christian Kern Standing, from left: Josef Meier, Franz Stämpfli, Andreas Berger, Thomas Holderegger, Adrian Frutiger, Thomas P. Emmerich, Adrian Amstutz, Gerold Biner, Markus Mader Missing from the picture: Heidi Hanselmann, Marco Maggiorini



Governance and Compliance

The purpose of the Swiss Air-Rescue Rega Foundation is above all to help people in distress and in need of assistance, in accordance with the Fundamental Principles of the Red Cross. As a member of the Swiss Red Cross, it provides its services without discrimination as to person, financial circumstances, social status, nationality, race, religious beliefs or political opinions.

Rega is fully committed to conducting its business according to the principles of good corporate governance. It upholds the five guiding principles of non-profit governance: checks and balances, responsibility and efficiency, transparency, safeguarding the interests of patrons, and safeguarding the interests of donors. Rega's guiding principles relating to corporate governance are embedded in its Foundation Deed and Regulations, its organisation and management regulations, its Mission Statement and its Code of Conduct. The Foundation Board monitors these principles on a regular basis.

Foundation Board

The Foundation Board is Rega's supreme body. It lays down the guiding principles of the organisation in accordance with the Foundation Deed. It draws up the Mission Statement and pertinent regulations, and adopts the strategy and the budget. It approves the Annual Report and the annual financial statements. It defines the supervision and monitoring of the business activities. It also authorises the principles relating to the remuneration of the members of the Foundation Board and the Management Board.

The Foundation Board comprises a maximum of 15 members. The term of office is four years. Members are eligible for re-election up to their 70 birthday. There is no limitation on the length of service of the members of the Foundation Board. The Foundation Board elects from among its members a Chairman, as well as the five members of the Executive Committee, and also defines the Committee's tasks and competences.

Executive Committeeof the Foundation Board

The Executive Committee comprises five members of the Foundation Board: the Chairman, the Vice-Chairman, the Chairman of the Medical Commission, the Chairman of the Finance Commission, and one other member of the Foundation Board.

The Executive Committee of the Foundation Board is responsible for carrying out the tasks delegated to it. It coordinates the permanent commissions of the Foundation Board. Furthermore, on behalf of the Foundation Board, it supervises and monitors the Management Board and issues it with the necessary instructions

The members of the Executive Committee also serve on the Board of Directors of the subsidiaries, Swiss Air Ambulance Ltd. and Airmed AG.

Management Board

The Chairman of the Management Board is charged with managing the operative business, implementing the resolutions adopted by the Foundation Board and the Executive Committee, and delegating the various tasks and competences within the organisation.

Tasks and procedures of the permanent commissions and the Advisory Committee

Each specialist body is governed by a set of regulations specifying its various tasks and competences, and is headed by a chairperson elected by the Foundation Board. The commissions meet on a regular basis to discuss specialist matters, which are specified by the relevant chairperson.

Prior to the meeting, the commission members receive the relevant documents so that they can prepare for the various items on the agenda.

Medical Commission

The Medical Commission comprises the Chairman, Prof. Dr. med. Christian Kern, and three physicians, all of whom are members of the Foundation Board. The meetings are also attended by the Chairman of the Management Board, the Medical Director and, where necessary, other specialists, who are present in an advisory capacity and have the right to propose motions.

The Medical Commission is an advisory body to the Foundation Board and the Medical Director. It deals with and considers specialist matters relating to emergency and rescue medicine that fall within the competence of the Foundation Board, prior to the latter taking any decisions. When drawing up medical guidelines and quality controls, the Commission is assisted by Rega's Medical Service.

Finance Commission

The Finance Commission comprises its Chairman, Michael Hobmeier, and other members of the Foundation Board. The meetings are also attended by the Chairman of the Management Board, the Chief Financial Officer and, where necessary, other specialists, who are present in an advisory capacity and have the right to propose motions.

The Finance Commission is an advisory body to the Foundation Board. It deals with matters relating to financial planning, budgeting, investment policy and the internal control system, and periodically examines the form and scope of financial reporting.

Advisory Committee Partner Organisations

Under the chairmanship of Franz Stämpfli, the Advisory Committee comprises members of Rega's Foundation Board, together with representatives from the partner organisations, namely Swiss Alpine Rescue, the Swiss Helicopter Association, the Canton of Valais Air-Rescue Service, the Swiss Cable Cars Association, police commanders, Spéléo-Secours Switzerland and the Medical Emergency Call Centres 144.

The Advisory Committee is concerned with tasks relating to the collaboration between the partner organisations and promotes the exchange of information between the various network members.

Accounting and auditing

The financial statements of the Swiss Air-Rescue Rega Foundation and its subsidiaries are prepared in accordance with the principles of Swiss GAAP FER accounting and reporting recommendations (in particular, GAAP FER 21), and give a true and fair view of its net assets, financial position and earnings performance.

At Rega, the "four eyes" principle is applied. This means that fundamentally two joint signatures are required at all levels. The Foundation Board has drawn up a set of regulations governing competences and signatory rights. Both internal and external control bodies periodically check that these regulations are being complied with.

Risk Management – Internal Control System, IKS

The highly complex nature of emergency medical rescue, coupled with the strict requirements of aviation law and the demands of the Code of Obligations, make it necessary to take a structured approach to risks. Rega has combined demands from the Internal Control System and Safety and Quality Management to create integrated risk management in order to identify and view risks holistically and make use of available synergies.

As Rega's supreme body, the Foundation Board is responsible for risk management at Rega and all its subsidiaries. The key risks are systematically identified and evaluated every year, and appropriate risk control measures are taken. The identified risks are additionally monitored on an ongoing basis.

Rega's interests

Rega has interests in various companies domiciled in Switzerland. Strategic interests in companies and foundations in which Swiss Air-Rescue Rega directly or indirectly holds over 50 percent of the voting rights or which are controlled by the Foundation Board are consolidated in the annual

financial statements. An overview of these interests is provided in Rega's consolidated annual financial statements.

Rega further holds operative and functional minority interests of up to 17 percent in helicopter companies, airfield associations and assistance companies in Switzerland. This portfolio is maintained in order to fulfill the purpose of the Foundation.

Rega also has interests/investments which are managed by external asset managers under a written asset management agreement.

Foundation Board compensation

Compensation of the Foundation Board is based on the set of regulations approved by the Swiss Federal Supervisory Board for Foundations. Compensation (fixed sums, attendance fees and expenses) covers part of the expenses of Foundation Board members for preparing meetings, reviewing documents and attending meetings of the Foundation Board, Foundation Board Committee, specialist and ad hoc committees, Advisory Committee, partner organisations, pension foundations and other companies in which Rega has an interest. All compensation made to the Foundation Board and its Chairman is reported in detail in Rega's consolidated annual financial statements.

Federal Supervisory Board for Foundations

As a non-profit foundation, Rega and its Foundation bodies are subject to the supervision of the Swiss Federal Supervisory Board for Foundations in Berne, to which it is required to submit a management report each year. The last assessment and review by the Federal Supervisory Board was conducted on 12 January 2015, and no objections of any kind were raised.

Rega in 2014

11 March: After a minibus accident involving a group of Swiss tourists on Gran Canaria, Rega's ambulance jets repatriate 11 seriously injured casualties in the course of six flights. One person is killed in the accident and 17 others injured. For this major operation, that same day, Rega stations a doctor and a flight coordinator on location to provide the casualties with the best possible assistance.

10 May: More than 4,000 Rega fans take advantage of the Open Day at the helicopter base in Zweisimmen to look behind the scenes of the newly built base in the Simmen valley, which had commenced operations in November 2013. Besides Rega's EC 145 and Da Vinci helicopters, a Super Puma and EC 635 are on show.

30 May: Varied, interesting and informative – this is how the new-style Rega Magazine "1414" presents itself to its millions of readers after its relaunch. The most striking changes are the new format and design, the large-size photographs and an enlarged service section. The Rega Shop is also now an integral part of the magazine.

17 June: With the installation of the helicopter operating device, BGH 12, and the first continuous transfer of coordinates directly into the helicopter cockpit, Rega's large-scale REMICO project enters its final stage. The BGH 12 enables Rega's Operations Centre to transmit the coordinates of a mission site digitally to the helicopter's in-flight computer by means of the ELS integrated dispatch system.

18 June: Crown Prince Naruhito honours the Swiss capital of Berne with an official visit to mark the 150th anniversary of diplomatic relations between Japan and Switzerland. At his own request, the Crown Prince also spends an afternoon at the Rega base in Berne, where he is shown around the facility and the EC 145 helicopter and learns about missions using the rescue winch.

29 July: A tour bus carrying 17 Swiss tourists crashes near Trondheim. A number of passengers are injured, three of them fatally. The very same evening, a jet takes off for Norway. On board are two flight physicians, an intensive care nurse and a flight coordinator, whose task it is to look after the patients on location and organise their repatriation.

13 August: Four Rega rescue helicopters are in operation at the same accident site after a train derails near Tiefencastel (GR). Two are immediately dispatched to the accident site to evacuate the patients, some of them seriously injured, from the steep, rough terrain using a rescue winch. The other two pick up the casualties at an intermediary landing site nearby and swiftly fly them to hospital.

22 August: Rega repatriates a premature baby for the first time in its new own transport incubator.

21 September: At the age of 12 years, the first of the three Rega jets reaches the mark of 7,800 landings and 15,000 flight hours – more than any CL-604 before it. However, this record also means that one jet after another is grounded for eight weeks to undergo a general overhaul.

2 November: Rega flies its 1,000th rescue mission in response to the alarm being raised directly via its emergency app. The automatic transmission of coordinates from the Operations Centre to the cockpit enables patients to be rescued more quickly than ever. To date, the Rega app has been downloaded over 900,000 times.

10 November: www.rega.ch is optimised for mobile devices, too. The new responsive design reacts to the user's screen and adapts the layout accordingly.

10 December: The last member of Rega's helicopter fleet, the Da Vinci "HB-ZRS", is equipped with an IFR-compatible cockpit.



11 March



10 May



18 June



13 August



22 August

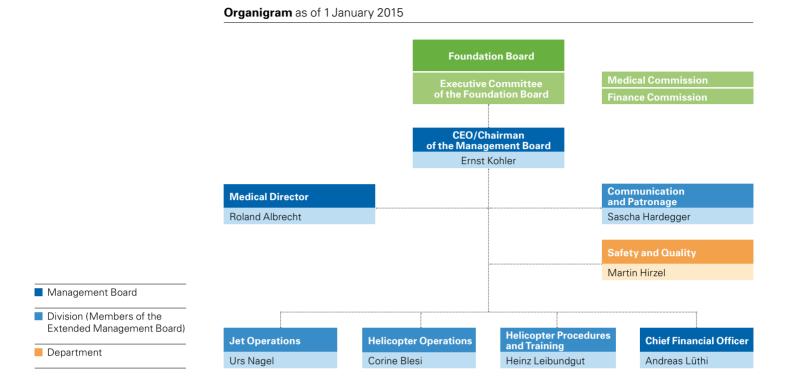


21 September



2 November

Management Board



From left to right: Sascha Hardegger, Roland Albrecht, Corine Blesi, Andreas Lüthi, Ernst Kohler, Heinz Leibundgut, Urs Nagel



Conditions of Rega Patronage

To ensure that Rega can provide a professionally run and suitably equipped air rescue service at all times in accordance with its objective as a charitable foundation, it needs private donations

You can become a Rega patron by paying the following minimum contribution:

- CHF 30.- for individuals
- CHF 60.– for couples (married/cohabiting couples or registered partners)
- CHF 70.– for families (parents with children who are under 18 on the day of payment)
- CHF 40.– for one-parent families (single parents with children who are under 18 on the day of payment)

Patronage is valid for the current calendar year and starts on the date of payment. If patronage is not renewed it will expire on 15 May of the following year.

As a token of appreciation for this support, Rega can, at its own discretion and within the bounds of its resources, waive the costs for the services listed below for patrons, wholly or in part. This includes both rescue services that Rega provides itself and any services of other providers which it organises. Such services can only be provided at reduced or no cost, however, if health insurers and other insurance companies or other liable third parties do not or only partially cover the costs of the rescue mission. Under all circumstances, Rega provides its rescue services and grants any possible cost reductions without any legal obligations, since these can only be given within the limits of Rega's human and technical resources, as well as the means at disposal. In particular, operational, medical or meteorological reasons may prevent Rega from engaging in rescue operations.



1. Switzerland and the Principality of Liechtenstein

- Rescue flights and flights undertaken for medical reasons to the closest suitable hospital
- Rescue operations conducted by rescue teams of the Swiss Alpine Club SAC
- Search operations in cooperation with the police and other competent organisations, as long as there is reasonable hope that help can be given to the missing persons
- Evacuations and preventive missions in case of danger to life and limb
- Flights to recover dead persons after consultation with the competent authorities
- Flights to rescue injured, sick or dead cattle and transport them to the next location that can be reached with another means of transport, provided that the owners of the animals are natural persons and family patrons

2. Worldwide

- Advice in case of medical problems abroad provided by Rega's Operations Centre
- Medically indispensable repatriation flights to Switzerland for patrons resident in Switzerland or in the Principality of Liechtenstein, as well as for Swiss nationals living abroad

Rega will take a decision as to whether assistance is provided on the basis of medical, social and operational considerations. Rega shall determine the type and time of operation. Rega may entrust third-party organisations with the execution of rescue operations.

Rega's Operations Centre (emergency number in Switzerland: 1414; from abroad: +41 333 333 333) is available around the clock to anyone in need of help due to serious accident or acute illness.

Rega Centre

Postfach 1414 8058 Zürich-Flughafen Tel. 044 654 33 11

Rega 1, Dübendorf

Überlandstrasse 299 8600 Dübendorf Tel. 044 802 20 20

Rega 2, Basel

Postfach 4030 Basel-Flughafen Tel. 061 325 29 66

Rega 3, Bern

Flugplatzstrasse 1 3123 Belp Tel. 031 819 65 11

Rega 4, Lausanne

Route de Romanel 33 1018 Lausanne Tel. 021 644 22 66

Rega 5, Untervaz

Postfach 7204 Untervaz Tel. 081 300 09 99

Rega 6, Locarno

Aeroporto cantonale 6596 Gordola Tel. 091 820 50 00

Rega 7, St. Gallen

Postfach 320 9015 St. Gallen Tel. 071 313 99 33

Rega 8, Erstfeld

Reussstrasse 40 6472 Erstfeld Tel. 041 882 03 33

Rega 9, Samedan

Plazza Aviatica 6 7503 Samedan Tel. 081 851 04 04

Rega 10, Wilderswil

Bönigstrasse 17 3812 Wilderswil Tel. 033 828 90 30

Rega 12, Mollis

Flugplatz 8753 Mollis Tel. 055 614 55 55

Rega 14, Zweisimmen

Postfach 210 3770 Zweisimmen Tel. 033 729 10 30

Partner helicopter base

Rega 15, Genève

Hôpitaux Universitaires de Genève Base hélicoptère 1217 Meyrin Tel. 022 798 00 00

Publication

Publisher Swiss Air-Rescue Rega PO Box 1414 CH-8058 Zurich Airport

Editorial team Sascha Hardegger Karin Hörhager Philipp Keller Ariane Lendenmann

English version Wordmaster English Translations, Ottenbach

Photos
Andrea Badrutt
Olivier Born
Marcel Haldimann
Philipp Keller
Tom Lüthi
Christian Perret
Markus Rieder
Martin Rindlisbacher
Iris Ritter
Rega Photo Archive/Other

Production tutto fatto, Zurich

Design Schenker visuelle Kommunikation, Zurich

Prepress Swissprinters, Zurich

Print Hürzeler AG, Regensdorf

This publication is printed on 100 % recyclable and FSC-certified paper.

A PDF version is available at www.rega.ch.

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