

REPORT OF THE AIR RESCUE COMMISSION

International Commission for Alpine Rescue (ICAR)

**October 17-20, 2018
Chamonix, France**

PREPARED BY:

Brian Webster

Safety Specialist
Parks Canada
Box 900, Banff, AB
Canada T1L 1K2

Brian.webster@pc.gc.ca

Charley Shimanski

ICAR Air Rescue Commission President
Mountain Rescue Program Coordinator
Flight For Life Colorado
67 Pauls Road, Evergreen, Colorado 80439 - USA

charley.shimanski@gmail.com

Introduction

The International Committee for Alpine Rescue (ICAR) annual meeting was held in Chamonix, France from October 17-20, 2018. The Convention was jointly organized by all French ICAR Members, with representatives from ENSA, ANENA, La Chamoniarde, FFME, ANMSM and the Mountain Rescue Group (GSM), which comprises rescue workers and doctors from the PGHM (gendarmes), the CRS (police), the GMSP (fire and rescue service) and helicopter crews from the Gendarmerie Nationale and the Sécurité Civile.

2018 marked the 70th anniversary of ICAR and the 60th anniversary of the creation of public service mountain rescue teams in France.

This congress was a prodigious event and a great opportunity to share techniques and discuss how to improve the safety of mountain rescue personnel.

The main topic of the ICAR 2018 Convention was "The Influence of Climate Change to Mountain Rescue Operations".





Accommodation was provided in 3 different hotels: The Alpina Eclectic, the Chalet Le Prieuré and the Mercure Centre. The exhibition area was located at the Majestic Congress Center and the meeting rooms were spread across Chamonix (Majestic Congress Center, Maison de la Montagne, and Alpina Eclectic Hotel).

The local evening event took place at "Les Gaillands". Perfectly dry and sunny weather conditions accompanied the entire event.

With the practical workshop day on Friday, a different program structure was experimented with. Originally planned at "Les Grands Montets" the location of the practical workshop required to be relocated to "Pointe Helbronner" shortly before the convention started (due to a fire incident at the Grands Montets mid-station).

The Air-Rescue Commission was attended by a record of 72 delegates representing 20 countries (Austria, Bulgaria, Canada, Croatia, Czech Republic, France, Germany, Italy, Norway, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, and USA). The Air Rescue Commission was chaired by Patrick Fauchère (KWRO/OCVS, Switzerland), with assistance from Eva Sophia Shimanski.



Airbus supported the Practical Workshop Day with an H145 helicopter on the scene (on top of the helicopters organized and provided by the event hosts). We are eternally grateful to Airbus for their support, as 23 pilots from the Air Rescue Commission were able to fly the new aircraft (a record number of pilots).

Air Rescue Commission President

Patrick Fauchère Flight Operations Manager; Air-Glaciers

In 2018, Patrick Fauchère was the President of the ICAR Air Rescue Commission. He led the Air Rescue Commission during its assembly in Chamonix.

Patrick has been a helicopter crew member since 1981, and a pilot since 1989. He has more than 11,000 hours as a helicopter pilot, all in mountains (Switzerland, India, and Bhutan). 4,500 of those hours have been under rescue missions, including 2,300 HHO or HEC missions.

Patrick has been a delegate to the ICAR Air Rescue Commission since 1999, -Vice President of the ICAR Air Rescue Commission from 2004-2008, and President of the Air Rescue Commission since 2008.



After ten years as ICAR Air Rescue Commission President, Patrick announced his retirement as Commission President following the 2018 Congress in Chamonix. At the final evening Gala, ICAR President Franz Stämpfli presented Patrick with an award for his ten years of service as Air Rescue Commission President.



Professionally, Patrick served from 2004-2012 as Flight Safety Manager of Air Glaciers, Switzerland, and as their Flight Operations Manager since 2012.

Patrick is a board member of the KWRO-OCVS, of the Swiss Helicopter Association and serves as the EHA Delegate at the EASA (European Aviation Safety Agency). He participates in different working groups at EASA (SPO, HEMS, and PCDS).



Patrick Fauchère
ICAR Air Rescue
Commission
President 2008-2018



Patrick was also unanimously elected as an ICAR Honorary Member by the Assembly of Delegates.

The ICAR Air Rescue Commission extends its heartfelt gratitude to Pat Fauchère, and to outgoing Air Rescue Commission Vice President Michel Pierre for his work on behalf of the Commission.



Dropbox Basecamp

In addition to this written narrative summary of the Air Rescue Commission proceedings, Air Rescue Commission delegates are given separate access to the Air Rescue Commission “Dropbox Basecamp,” where PowerPoint and other electronic presentations are made available for download.

Congress Video

Once again, Topograph Media developed an extraordinary video recap of the conference. The Two-Part Series is available at these links:

- [ICAR 2018 Andorra Video by Topograph Media Part 1](#)
- [ICAR 2018 Andorra Video by Topograph Media Part 2](#)



2018 Presentations

Air Rescue Incidents and Accidents

Detailed below are summaries of the Air Rescue Commission presentations made in Chamonix.

SWITZERLAND

Helicopter Crash (EC135)

During take-off from a rescue site the pilot initiated a 180 degree turn in order to follow road. In doing so the left skid touched a snowbank which was then followed by a blade strike. The helicopter stayed on its skid and the tail boom was separated. There were no injuries.

Fire in Cabin (AW 109)

The pilot smelled smoke in cockpit and landed. Upon investigation no fire was found, but burn marks were located on luggage in luggage compartment. It is unknown how the fire started. There were no injuries.

Tail Rotor Strike (EC145)

While landing in a confined forested area the tail rotor struck some branches. Minimal damage to aircraft. There were no injuries.

AUSTRIA

Long-line Damaged by Skier

In preparing for a long-line rescue the rope was spread out on the snow. A skier skied over the rope and the rope was damaged.

Lessons Learned: Better crowd control on site would have prevented this incident.

ITALY

Helicopter Crash (AW 139)

This was a HEMS response to a ski area (Campo Felice). On board was the pilot, trained crewman, mountain rescuer, doctor and a nurse. On approach the crew discussed the poor visibility (described as 50 m cloud base and 500m visibility). Pilot landed at ski resort, loaded patient and took off. Less than 2.5 minutes after take-off the helicopter impacted against the south-west side of Monte Cefalone.

The helicopter was destroyed and all 6 persons on board were killed. Post-accident investigation found the torque values of both engines reached very high values prior to impact.

Helicopter Crash (AW 139)

While attempting a hoist operation during an avalanche response in very cold conditions, the downwash created a white-out effect. The pilot lost reference and aborted the mission. There were no damage or injuries.

USA INCIDENTS AND ACCIDENTS

Likely a Collision with Geese - Pafford "Air One" (November 19, 2017 – Rural Arkansas)

The Bell 407 HEMS helicopter took off from Pine Bluff headed towards a Regional Medical Center. A witness reported hearing geese get loud right before the helicopter flew over a reservoir. "Several bird carcasses were located in the wreckage of the helicopter" according to the National Transportation Safety Board (NTSB).



<http://metroforensics.blogspot.com/>

3 killed in Grand Canyon Crash - Tourist Flight (February 10, 2018)



The EC130 B4 was destroyed when it crashed on an approach to land. Three passengers died. The pilot and three passengers sustained serious injuries, and the wreckage was engulfed in a post-crash fire.

The helicopter was not equipped with a crash-resistant fuel system required by a 1994 FAA regulation. A loophole exempts newly manufactured helicopter with certificates approved before 1994. Papillon will retrofit our tour fleet with crash resistant fuel systems according to Papillon owner and Executive Vice

President Lon Halvorson.

Tourist Helicopter into East River - All 5 passengers die, pilot survives (March 11, 2018) New York City, NY

5 passengers on a "doors open" photography flight. Each passenger was restrained in the helicopter with:

1. Helicopter manufacturer's 4-point seatbelt, and
2. An aftermarket harness tethered to hard points.

The front passenger and two rear outer passengers sat sideways facing outside. The 2 inboard passengers sat tethered on the floor with their feet on the skids. During flight the front left passenger turned outside to take a photo. At that point, the pilot heard a "low rotor rpm" alert.



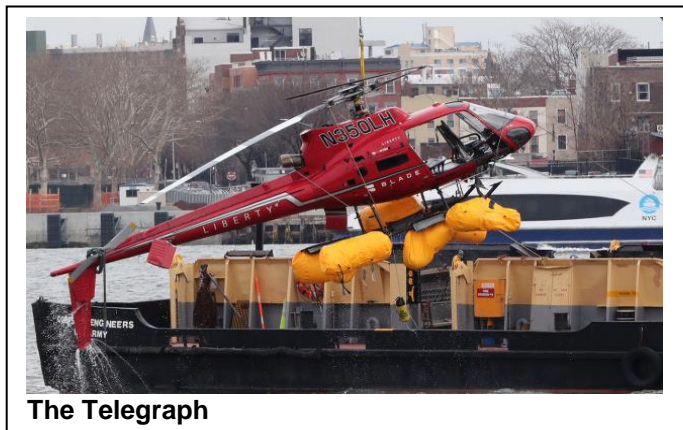
The Engine pressure and fuel pressure warning lights illuminated. The pilot lowered the collective and made a distress call, then yelled to the passengers to get back in their seats. He reduced rotor rpm "to glide better."

The pilot then attempted to restart the engine (failed), tried the starter again (failed), checked the fuel control lever (normal), activated the floats (2 failed), and reached down for the emergency fuel shutoff lever, it was in the off position.

The front seat passenger's tether was underneath the emergency fuel shutoff lever.

The pilot then turned the fuel shutoff lever to "on," restarted the engine, realized that the engine "wasn't spooling up fast enough," realized it was too late to avoid a crash, and positioned the fuel shutoff lever back to "off".

After impact, the pilot kept his restraint on and reached down for the front seat passenger's carabiner. He tried to release front seat passenger while the helicopter was listing to 45°. He egressed the helicopter, stood on the belly, and waved for help



It was noted that pilots had earlier raised concerns about the tethers that secured the passengers. They noted it was difficult for passengers to disconnect the carabiners that connected the tethers to the harnesses.

Three Killed in Night Crash - Ascension Spirit Air (April 26, 2018 – Hazelhurst, Wisconsin)

The AS350 B2 had transported a patient to Madison, Wisconsin (305 km away). The crash happened on return, 20 km from the helicopter's destination. Civil twilight was 2031 hrs., 2 hours before the accident.

At the time of the accident the weather was

- Wind: calm
- Visibility: 10 statute miles
- Sky: clear

The crash occurred at 2250 hrs. The helicopter impacted trees and terrain during cruise flight. The helicopter's cabin was crushed, its rotors were sheared off and there was a debris trail for 80 metres.



Rotor Strike with Rescuers' Rope

This was a follow up to the 2016 ICAR report involving the Utah Highway Patrol and Salt Lake County SAR. The pilot was attempting to perform a one-skid load of the deceased hiker with the help of several rescue team members.

One of the recovery team had secured himself to a rope that was anchored above the tip path plane of the helicopter. While the rescuers approached the aircraft to load the litter, that rope – still attached to the terrain above – was pulled taught into the plane of the rotor disk, and was caught by the main rotor blade – ten inches from the blade tip. The rope was then pulled rearward by the main rotor blade and made contact with the tail rotor. The pilot did an extraordinary job of maintaining control of the aircraft and maneuvering away from the rescuers on the ground. He regained control, and then made an emergency landing at a lower altitude.



Lessons learned:

- Skid load was not the optimal procedure for this situation. Rescuers originally asked for a long line or winch rescue but this was not immediately available. It should be noted that this was a non-urgent incident in that the patient was deceased.
- Communications. There was no safety oversight. If there had been a safety person appointed to oversee the operation, they may have prevented the accident. The rescuers on site, but not involved in the helicopter loading operation, were busy filming the event rather than providing safety oversight.
- If a check list procedure had been implemented prior to calling the helicopter this accident may have been prevented.

Air Rescue Commission Presentations

Boost Dual Hook Long Line System

By Mark Ledwidge (Canada)

<https://www.boostsystems.ca/products/>

This presentation spoke briefly to the evolution of fixed line HEC systems in Canada from its inception in the early 1970's up until the present. The presentation then profiled Boost Human External Cargo Systems which is a Canadian company that provides dual hook fixed line HEC system.

Summary of Boost HEC System

- Two hook fixed line HEC system
- Fully certified by Transport Canada and FAA
- EASA certification is expected soon
- Hook installed in field in less than one minute via elementary task
- Hook manufactured by Onboard Systems
- Two redundant release systems (hydraulic and electrical)
- Hydraulic release system controlled by the pilot on cyclic
- Capacity of system is 500 kg
- Compatible with a variety of aircraft including Bell, Eurocopter, and Airbus

Colorado Hoist Rescue - A military/civilian SAR partnership

By Dale Wang (USA)



Rocky Mountain Rescue Group has partnered with the army to provide SAR capacity in the Rocky Mountain region of Colorado. The army provides the helicopters and pilots and the local SAR teams provide mountain rescue technicians. This presentation speaks to the challenges and logistics of a partnership between two National Guard bases and four MRA SAR teams to provide an effective mountain rescue response.

Topics discussed included;

- Specialized equipment
- Personnel Selection
- Risk Management training
- Operations Overview



Snohomish County Helicopter Rescue Team

By Øyvind Henningsen (USA)



This presentation profiles the Snohomish County Helicopter Rescue Team. This is a law enforcement/civilian partnership between the local sheriff's department, fire department and the SAR group. The sheriff department provide the aircraft and pilots, the fire department provides the medics and the Everett Mountain Rescue Team provides the rescue technicians.

The rescue team is responsible for mountain rescue in Washington State which includes 71,000 square miles, 7.5 million people and averages 80 rescues per year.

Transition from BK 117 C1 to BK 117 D2

By Michael Schweiger (Austria)

In April 2018, Austrian Air Rescue (ARA) transitioned from using BK-117 C1 helicopters to H-145 (BK-117-D2) helicopters. This presentation describes the challenges of switching over and working with the new H-145 helicopter. Discussed was

- Justification for choosing the H-145 helicopter
- New training procedures (SOA's) for the crew
- Schedule for base maintenance
- Having the hoist on the right-hand side
- Planning and purchasing of medical equipment



Towards the end of the presentation, there was a discussion of the pros and cons of rescuer hoist being located on the left side or right side of the helicopter, given pilot visibility and situational awareness as well as center of gravity issues.

151 HELICOPTER SQUADRON

By Captain Damjan Bevk, Flight Safety Officer

Captain Bevk reported on the helicopter rescue program in Slovenia.

- The helicopter squadron consists of 8 Bell 412 and 4 AS532 AL Cougar and a Flight Technical Company.
- Young pilots with a CPL (H), IR (H) license come from flight school unit
- The 151. Helicopter Squadron is trained for TR Bell-412 or AS-532
- Compulsory annual conditioning of rescue crews
- The first rescue operation of the Slovenian Air Force was 30.6.1994 in the German direction – Triglav.



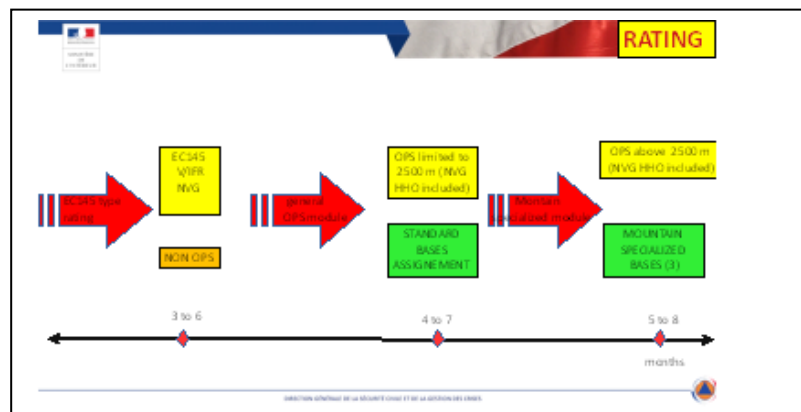
The program responded to 141 Mountain Rescue calls in 2017, and 313 HEMS calls.

RESCUE HELICOPTER CREWS – RATING/TRAINING PROGRAMS

By Renaud Guillermet - Sécurité Civile

Mr. Guillermet described the Sécurité Civile (French Government) program for training and rating helicopter rescue crews. Sécurité Civile has 23 main bases with 35 EC 145 (C2) helicopters, 12 Mountain Rescue sites, and 8 Seasonal Bases.

They operate with 2 crew members since the early 1960's. Their BK-117 pilots are 90 % former military with very significant experience with NVG and IFR. Each crewmember is assigned to a specialized mountain HEMS/Rescue base.



The crewmember training regimen and rating system is very complex, and worthy of study for all programs worldwide.

BREEZE EASTERN HOIST SYSTEMS

By Jimmy DeCuollo and Phillip Stauffacher
<https://www.breeze-eastern.com/>

Messrs. DeCuollo and Stauffacher gave a brief presentation on the present and future states of hoist programs worldwide, including changes to the technologies employed by HEC programs. They provided valuable insight into new innovations in the world of HEC.

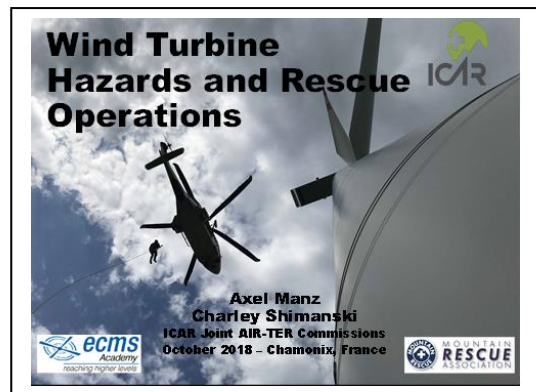


Wind Turbine/ Hazards and Rescue Operations

By Charley Shimanski and Axel Manz

Wind power is far and away the cheapest way to add renewable energy capacity to the grid. As a result, there has been dramatic growth in the building of wind farms. In 2017 alone, Germany, the UK, France, Belgium and Ireland all set new records for wind-power production.

Wind turbines create structural hazards and turbulence factors downwind, while also presenting rescue challenges, resulting in a growing need for trained rescuers to provide rapid extrication and evacuation capabilities.



This presentation reviewed Wind Power Industry trends, aviation hazards created by the towers, and current methodologies in rescue techniques – not only inside the tower shaft but also by human external cargo (HEC) helicopter operations.

Challenges inside the tower include:

- Configuring the stretcher for horizontal and vertical orientation
- Passing hatches in the tower
- Providing medical care in a confined space

Rescue out of the hub can require Confined Space Rescue (CSR) Operations

Helicopter rescue challenges include:

- Meteorological Evaluation Towers are very difficult to see (50-125 meters tall)
- A wind turbine farm can cause problems with radar signals:
 - Fog and clouds, heavy winds, stormy conditions are common
 - Requires three rescue options:
 - Helicopter
 - Sea vessel
 - Combination (bring casualty to a vessel, ride the vessel outside the park and pickup from the vessel)
- Pilots have poor visual reference when near vessels
 - Big vessels mean easy reference
 - Small vessels mean poor reference

NEW HEMS PROGRAM IN BHUTAN

By Dr. Charlie Mize

Dr. Mize is a co-founding member of BearBadger, a physician-led team that undertakes high-risk patient retrieval, and is the founder of Bhutan Emergency Aeromedical Retrieval, the Kingdom of Bhutan's prehospital helicopter critical care and mountain rescue team. He was the principal developer of a new HEMS program in the kingdom of Bhutan, working closely with the government and local hospital where he specializes in emergency medicine and resuscitation. He gave a description of the process he led to bring a HEMS program to Bhutan.



Dr. Mize's impressive project included a sophisticated mapping effort to identify helispots throughout the remote areas of Bhutan. Dr. Mize accomplished this feat in an impressively short amount of time. He is a leading expert on the retrieval of critically-ill and injured patients from austere environments at high-altitude.

RISKS OF LOW FREQUENCY HELICOPTER USE ON MT HOOD, OREGON

By Dr. Van Tilburg (USA)

Dr. Van Tilburg presented five case studies on Mt. Hood, offering his valuable perspective on risk management in environments where helicopter rescues are somewhat uncommon.

PREVENTION OF THE COLLISIONS WITH DRONES

By Secours en Montagne, Chamonix Mont--Blanc

The developers of a public safety video presented their project, a video developed that highlights the dangers of drones when HEMS programs are responding to search and rescue activity.

The video is available on YouTube:

<https://www.youtube.com/watch?v=0rbXWPS2bil>

PREVENTING RESCUE HELICOPTER MID-AIR COLLISIONS

By Miha Avbelj

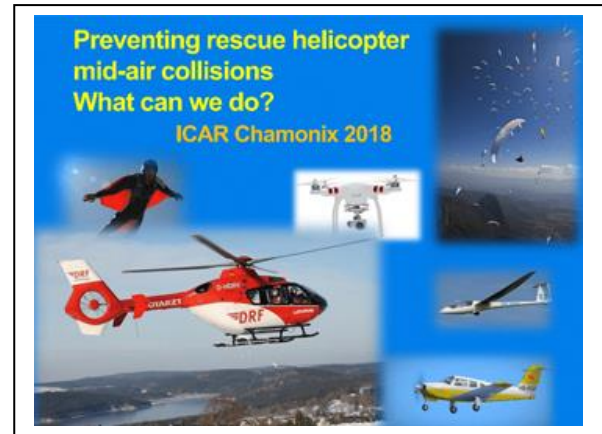
Preventing Helicopter mid-air collisions is a key topic for the ICAR Air Rescue Commission. This presentation offered many suggestions on what can be done to prevent mid-air collisions, including:

- Electronic supported prevention methods
- Simple prevention methods
- Search applications

Mr. Avbelj summarized collision avoidance considerations as they relate to other aircraft, wingsuit flyers, hang gliders and drones. He described in great detail various electronic mechanisms for collision avoidance,

Mr. Avbelj also described the FLARM collision warning system, and also discussed efforts to work closely with the user community of paragliders/hanggliders. He also described the wingsuiter culture and philosophy about human flight in this culture.

Mr. Avbelj also closed with a discussion about searching for missing sport aircraft and operators.



HELICOPTER EMERGENCY MEDICAL SERVICES IN AUSTRALIA

By Justin McLean, MD; Flight Physician; New South Wales Ambulance, Australia

Dr. McLean summarized the HEMS programs of New South Wales, Australia, as well as the other regions of the country (Queensland, Western Australia, Northern Territories, Victoria, South Australia, Victoria, and Tasmania. He also described the Inter Agency Safety Forum, a valuable forum of representatives from agencies throughout the continent.

He demonstrated the TOLL state of the Art simulation center, and the ACE training center.

Dr. McLean also discussed the Pre-Hospital Massive Transfusion program,



Avalanche Rescue Systems

By Dmitry Gavva – Resero Connect

<https://www.youtube.com/watch?v=AqIAi0yJMvY>

Resero Connect is a panic button, emergency beacon, and black box recorder rolled into one. Designed to improve safety for all mountain activities, regardless of the conditions or network availability. Resero Connect has two components; 1) the panic button, and 2) the Resero Connect App. Which contains your personal details, any information about any medical conditions, and information about your preferred sports. When triggered, Resero connect instantly notifies

rescue services, providing the wearer's personal information and exact coordinates to ensure that assistance arrives without delay.

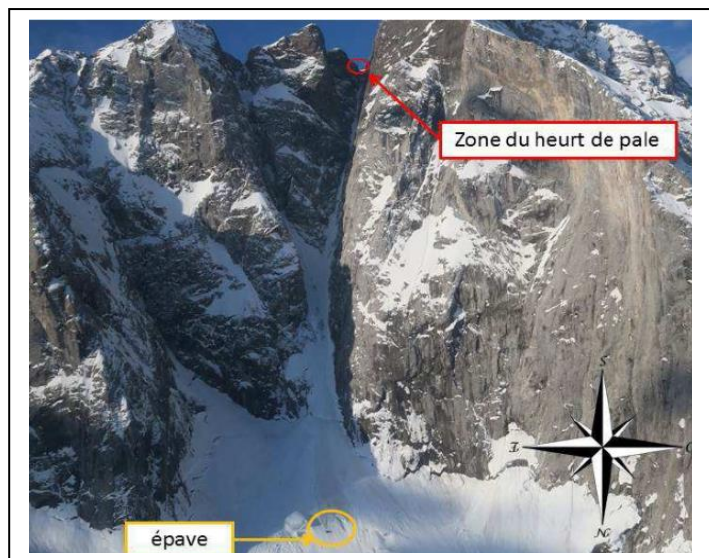
ACCIDENT REVIEW: EC145 CRASH IN 2016

By Emmanuel Chavanne (France)

This presentation reviewed a fatal helicopter crash in the Massif du Vignemale (Hautes-Pyrenees) in 2016. Shortly after takeoff (from a high mountain ridge) an EC145 had a blade strike with a mountain wall during a rescue training mission. The helicopter crashed and all four persons on board were killed. Altitude was 10,350 feet, weather was good and it was determined that there was no mechanical failure.

The cause of the accident was determined to be;

- The repetition of the rotations of the flight resulted in a mind-set of routine procedure.
- Imprecise representation of flight due to nature of topography
- There was masking of terrain by the helicopter cock-pit configuration, and by snow on the windshield (due to rotor downwash).



LIFESEEKER

By Hector Estevez

<http://www.centum-rt.com/en/lifeseeker/>

Lifeseeker representatives presented the Lifeseeker System... an innovative airborne system capable of locating mobile phones accurately even in areas without network coverage and under adverse weather conditions.

The system takes advantage of the enormous social impact that mobile communication technologies have had in recent years in order to turn a mobile phone into an emergency beacon capable of leading rescue teams to its exact location.

Lifeseeker also acts as a relay and can provide a communication channel between the missing person and the rescue team.

Lifeseeker allows to perform searching missions under low or no visibility conditions, including night flights, reducing sweep time of the searching area and optimizing the operational costs. Lifeseeker enables the detection of hidden or buried people, for instance under snow, foliage or rubble.



Air Rescue Commission Leadership

At the end of the meetings, the ICAR Air Rescue Commission delegates presented to the ICAR Congress its proposed new leadership team. Charley Shimanski was proposed as the new President of the AirCom and Renaud Guillermet as Vice-President. Both were then elected during the Assembly of delegates.

2019 ICAR Congress

The 2019 ICAR Congress will be held in Zakopane, Poland. The theme will be "Teamwork."

The Agenda is as follows:

- Tue 08 Oct 19 > Arrival
- Wed 09 Oct 19 > Practical Day
- Thu 10 Oct 19 > Congress
- Fri 11 Oct 19 > Congress
- Sat 12 Oct 19 > Congress (incl. ICAR Assembly of Delegates)
- Sun 13 Oct 19 > Departure

Links

[ICAR 2019 Zakopane Poland TOPR Promotion Video \(external link\)](#)

[Malopolska Tourism Organization \(external link\)](#)

[Tatra National Park on Wikipedia \(external link\)](#)

[TOPR Website \(external link\)](#)

[Zakopane Destination Video \(external link\)](#)

[Zakopane Guide \(external link\)](#)

[Zakopane Website \(external link\)](#)

<http://www.alpine-rescue.org/xCMS5/WebObjects/nexus5.woa/wa/icar?menuid=1094&rubricid=262&articleid=13176>

For More, [CLICK HERE...](#)

For further information regarding this report, contact:

Brian Webster

Safety Specialist

Parks Canada

Box 900, Banff, AB

Canada T1L 1K2

Brian.webster@pc.gc.ca

Charley Shimanski

ICAR Air Rescue Commission President

Mountain Rescue Program Coordinator

Flight For Life Colorado

67 Pauls Road, Evergreen, Colorado 80439 - USA

charley.shimanski@gmail.com