



2016 AIR RESCUE REPORT to the Mountain Rescue Association

International Commission for Alpine Rescue

Kommission für Luftrettung/Commission pour le Sauvetage Aérien/Commission for Air Rescue

**October 19-22, 2016
Borovets, Bulgaria**

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Photo: Adam Ward/ News Corp Aust.

Introduction

The International Committee for Alpine Rescue (ICAR) annual meeting was held in Borovets, Bulgaria from October 19-22, 2016. The event was hosted by Mountain Rescue Services of the Bulgarian Red Cross (BRC).

The Air-Rescue Commission was attended by 43 delegates representing countries from both Europe and North America. The Air Rescue Commission was chaired by Patrick Fauchère (KWRO/OCVS, Switzerland). Charley Shimanski represented the MRA as the USA delegate.

Preconference - Wednesday, October 19

Air Rescue Commission Presentations

Helicopter longline avalanche rescue

The pre-conference on October 19th included a demonstration of a technique during which rescuers are inserted to an avalanche accident by longline, yet remain attached to the helicopter while it hovers overhead. The objective of this technique is to enable a rapid extrication of the rescuers from the scene in the event of a second avalanche. A few teams in Europe utilize this technique, which should largely be utilized by programs that can be airborne from their rescue base within minutes of an avalanche accident. This is a high risk technique, and the survivability of the subject(s) must be weighed against the risk of the operation.

It is not a technique that should be utilized for all avalanche accidents, particularly those where there has been significant time between the accident and the rescuer insertion.



USA Terrestrial Commission Alternate Delegate Dr. Alison Sheets (center) during a simulation of the fixed longline avalanche rescue technique

Accident/Incident Reviews - Thursday Morning, October 20

Air Rescue Commission Presentations

Blade Strike on a Lama (Switzerland)

While in a nose-in hover, two passengers exited the aircraft. The helicopter then went into ground resonance (common with a Lama). The pilot repositioned the aircraft. When the third passenger was exiting, the aircraft experienced a blade strike on the left side, the pilot pulled the collective, but ten metres below, the aircraft hit the ground and rolled over on its side. There were no injuries.

Drone Incident (Switzerland)

While preparing for take-off during a Human External Cargo (HEC) mission, a pilot of an EC 135 helicopter noticed a drone passing 15 metres over top of the helicopter. There was no contact, but this was determined to be a close call. The aircraft continued the mission. The operator of the drone was never located.

Drone Incidents (Austria)

A total of 10 incidents between drones and helicopters was reported during 2016, including one at night in a controlled airspace. All were close calls, but no contact was made. It was reported that EASA will be introducing prototype recommendations governing drone use.



A HEMS helicopter in Fresno, California (USA) had a near miss with a drone in 2016.

Main Rotor Blade Strike (Norway)

While in a hover a patient was being loaded on board. The aircraft skid slid on rocks due to wind which resulted in an apparent blade strike. The crew flew to base at which time minor damage to the main rotor was identified.

Paraglider Incident (Switzerland)

An AW 109 inadvertently came in close proximity to a paraglider on a final approach. This resulted in a partial collapse of the paraglider's canopy on one side. There was no impact on the helicopter.

Bell 429 Helicopter Crash (Slovakia)

During a night time HEM mission in north Slovakia the pilot landed to pick up a patient at a small landing zone on a ridge top (below tree line). The patient (with a broken leg) was loaded on board and the aircraft departed. After takeoff, approximately 30-45 seconds into flight, the aircraft hit terrain and exploded. The crew of three and the patient all died. The flight data recorder was destroyed. The weather was reported as good and the pilot was wearing NVG. The cause of the crash remains unknown.



Paragliders are operating in helicopter airspace at a growing rate, in Europe especially

Close Call with Rope Coming Close to Tail Rotor (Norway)

An AW 139 was conducting a hoist operation off of a small boat. During the operation the tagline was released and was not held down. The tagline flew up by itself in close proximity to the tail rotor. The hoist operator reported seeing the line hit the horizontal stabilizer and responded by cutting the cable. There were no injuries.

Landing in Snow Incident (France)

An EC 145 was unloading rescuers while landed on snow at a ski resort. The snow collapsed below the skid resulting in the tail bumper contacting the snow. There were no injuries or damage to the aircraft.

Super Puma Crash (Switzerland)

An Army Super Puma crashed shortly after take-off. After dropping off passengers the aircraft departed and just after take-off made contact with an overhead cable. The two pilots on board were killed and one crewmember in the back was seriously injured.

United States - Honolulu Fire Department Short Haul Accident

September 2, 2016 – Honolulu, Hawaii

Assisting a hiker with a medical emergency, rescuers loaded the patient into a rescue basket.

The basket contacted a utility pole, causing the firefighter to fall 30 feet. The patient remained in the basket and was transported to a landing zone.

The fall left firefighter with broken bones, cracked ribs, internal injuries, and he felt a jolt of electricity. HFD has hired a helicopter training instructor for next three months. Instructor is a retired flight instructor with the Honolulu Police Department.

United States – Careflight Helicopter; Colorado

July 21, 2016 – Grand Junction, Colorado

En route to hospital with a patient, the pilot heard a noise and turned to his left.

The pilot noticed the medic shutting the left front window. Nothing was said and the flight resumed.

After dropping off the patient, the medic told the pilot he believed they had lost a blanket in flight. The medic had secured the blanket loosely under the foot strap. The medic decided not to say anything, thinking it would distract the pilot.



Firefighter falling from Rescue Basket during short haul operation in Hawaii.

United States - King County Washington

July 17, 2016

Mount Adams, Washington

The King County Sheriff's helicopter was performing a flight to insert two SAR personnel onto Mt. Adams. Pilot executed a reconnaissance approach from the north to south and expected a slight head wind.

However, as he was using too much left pedal, he decided to abort the approach and execute a second approach from south to north. On the second approach, below effective transitional lift, at an altitude of about 100 feet above ground level, and pointed towards the mountain, the helicopter yawed to the right and then accelerated into a fast right hand spin.

Both pilots immediately recognized the loss of tail rotor effectiveness. The pilot pushed in full left pedal and attempted to fly the helicopter away from terrain.

After one and a half spins, the helicopter impacted the ground, bounced back into the air, and continued with a straight and level flight away from the mountain.

Firefighters arranged wooden pallets to balance the damaged helicopter on landing.



Damage to the King County Sheriff's helicopter sustained during contact with the ground. Pallets were arranged at a local airport to allow for a safe landing with damaged skid.

United States - Delaware State Police

July 11, 2016; Georgetown, Delaware

The Delaware State Police aviation unit was conducting monthly external hoist operations training with the Delaware Air Rescue Team.

The three-person team consisted of a rescue specialist, a system operator, and a safety officer. The team members rotated positions. The accident flight was the seventh iteration, and the first flight where the fatally injured crewmember was system operator.



The wreckage was heavily fragmented with only the aft fuselage being generally recognizable.

On the rotation during which the accident occurred, the restraints were checked and verified secure. The helicopter lifted off the ground, moved to the practice area, and then the system operator requested and was granted permission to move to the helicopter skid. The system operator stepped onto the skid, and then fell from the helicopter. He was treated at the scene and transported to hospital, where he was pronounced dead.

United States – Haynes LifeFlight

Haynes LifeFlight; March 26, 2016
Coffee County, Alabama

The landing zone (LZ) had fog, drizzle, and overcast clouds at 300 feet. Upon takeoff, the helicopter climbed vertically into a cloud layer 150 feet AGL. It continued its climb to 1,100 feet. Moments later, radar contact was lost.

The LifeFlight Communications Center did not receive its normal 15-minute check-in. Satellite tracking showed the helicopter was still at the LZ, which they knew to be incorrect. The wreckage was eventually located in a swampy, heavily wooded area. The wreckage was heavily fragmented with only the aft fuselage being generally recognizable.

The engine and transmission were separated from their mounts. A 10 by 20 foot crater was present. The debris path exhibited a 45-degree descent angle through trees. 80-100 foot trees exhibited impact damage and evidence of blade strikes.

United States – 12 Marine Crewmembers Lost in Mid-Air Collision

January 14, 2016
Near Haleiwa, Hawaii

Two CH-53E helicopters failed to return following a nighttime training. A Coast Guard helicopter spotted debris 2 ½ miles off of Oahu.

3 of the 4 life rafts were recovered. Some of the rafts were inflated, but it was unclear how they came to be inflated. There is no indication that anyone was aboard the rafts, based on their condition.

Marine Corps aviation-related deaths hit a five-year high (An earlier deadly CH-53E crash occurred in North Carolina.). The commanding officer of this Base had been removed from his job 3 days prior because of unacceptable unit performance.



United States – Lone Survivor Signals Rescuers; Native Air Ambulance

December 14, 2015

Apache Junction, Arizona

The helicopter crashed in the rugged, snow-covered terrain in the Superstition Mountains. Evening flight in fog and cold weather could be factors that led to an "unintended flight into ground" crash.

Pilot David Schneider, 51 and flight nurse Chad Frary, 38, died. Medic Derek Boehm was critically injured. Boehm attempted lifesaving measures on one of the victims who showed signs of life, but was unsuccessful.

Boehm signaled rescue teams using a flashlight. The crash area was difficult to reach - a military helicopter rescued the survivor.



A paramedic survivor of this accident attempted lifesaving measures on one of the victims who showed signs of life, but was unsuccessful.

United States - 4 Die in Heavy Fog Crash; "Skylife 4"

December 10, 2015

McFarland, California

The flight originated at night from the municipal airport. Heavy rain and thick fog existed at the time of the flight. The helicopter crashed on a sloping hill. The helicopter was destroyed when it impacted terrain during cruise flight. The pilot, flight nurse, paramedic and patient died. The wreckage debris path was 465 feet in length.

In conclusion, Shimanski noted that the most concerning trends include hoist operator/rescuer errors and pilots flying VFR into IIMC.

Presentations - Thursday Morning, October 20

Air Rescue Commission Presentations

"Le Lezard" Standard Operating Procedures

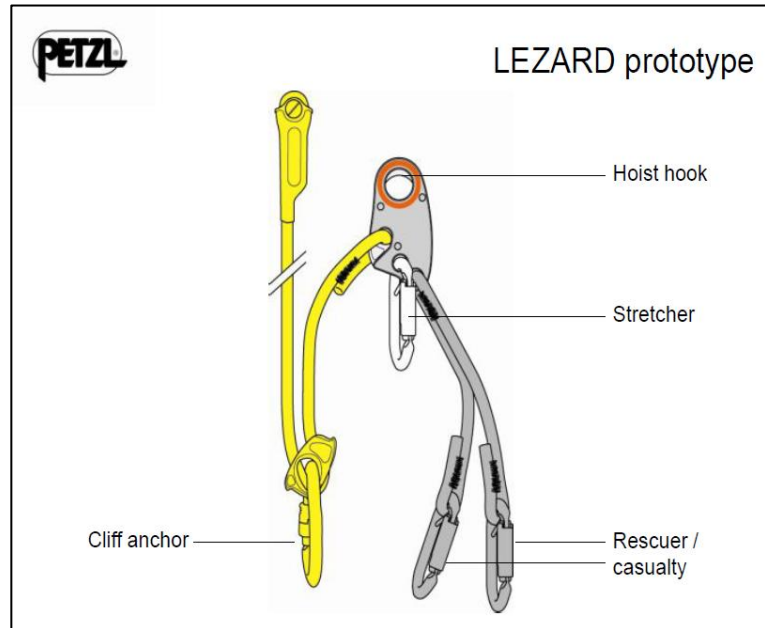
By Emmanuel Chavanne (French Gendarmerie)

The Petzl Lizard (aka Le Lezard) is a lanyard that creates an interface between the rescuer, helicopter and the anchor. The attachment to the anchor is automatically releasable (when the lanyard is attached to both the anchor and the helicopter) in a situation where the helicopter must fly.

The discussion revolved around the French Gendarmerie use of and standard operating procedures (SOP's) for the relatively new Lizard. The Gendarmerie took six months of testing to create the SOP's. There were some small changes made from the Petzl user manual in order to accommodate some specific needs.

The Gendarmerie currently train with the Lizard every four months. Emmanuel showed video of the Lizard in action. He emphasized that the Lizard required significant user training.

The French Gendarmerie, Sweden Police and Air-Glaciers in Switzerland currently are the only groups using the Lizard.



Drone Discussion

By Patrick Fauchère (Air-Glaciers, Switzerland)

Discussion revolved around observations that drones are rapidly becoming very popular in Europe. This is creating safety issues with HEMS and SAR helicopters as they operate in similar air space (within 100 metres above ground level)

- New Federal Aviation Administration (FAA) regulations governing drones in the USA are forthcoming.
- Austria had 10 drone incidents, including one at night.
- EASA is creating a “prototype regulation” in attempt to address drone usage.

Presentations - Thursday Afternoon, October 20

Air Rescue and Terrestrial Commission Combined Presentations

Review of Norwegian Alpine Rescue Groups and Norwegian Air Ambulance System

By Dan Halverson and Stein Møller (Norway)

- Norway has two Joint Rescue Coordination Centers (South and North) and a national cell phone dispatch system. It dispatches the local team and enables rescuers to respond with their availability.
- Norway has 10 rescue teams and 250 volunteers.
- Their quality management program has been a focus for many years. This includes coordination with military and civil helicopter programs, and inspection of rescue equipment once every 12 months.
- They conduct an annual training weekend with teams from all over the country. 100 of the 250 Norwegian Alpine Rescue Groups members attend, along with the Military helicopters (330 Squadron), and Norwegian Ambulance Services.

- Norway has roughly 25 HEMS helicopters. “SAR-System” is their national SAR database. All responding agencies, civil and otherwise, report into the same national system. The database is searchable by accident type, response type, etc.

Review of Prototype Automatic Release Sling

By Jan-Gunnar Hole (Norway)

- In an effort to develop a ‘break-away’ sling for technical helicopter sling operations, the “Automatic Release Sling” was developed. This sling is similar in function to the Petzl Lizard, but only consists of sling material and a three ring breakaway system. It works in any direction.
- In tests, pilot could not notice that the load had released from the mountain. To the rescuer, it felt like a normal pickoff.
- This is still a prototype and improvements and EN certification are forthcoming.
- This product is lightweight and easy to use (it will require new rings with each use).

ORTOVOX Emergency Card (NOTFALLKARTE)

By Dieter Kotlaba (Ortovox)

A card with emergency information that can be integrated into all backpacks was introduced.

Includes:

1. Emergency phone number for each country (e.g. 9-1-1)
2. In case of emergency numbers for yourself (ICE)
3. Medical and medicine information
4. Emergency contact info for your friends



Personnel Carrying Devices (PCD'S)

By Patrick Fauchère (Air-Glacières, Switzerland)

After the withdrawal of the simple PCDS in the PAD back in 2015, EASA has considered the amendment of CS27/29 as well as the Part SPO and SPA for alignment. A new definition of simple PCDS will allow these gear to be use without minor nor major change approval provided they meet EU standards.

This will allow rescue / workers to use their own EU harnesses when doing sling/hoist operations.

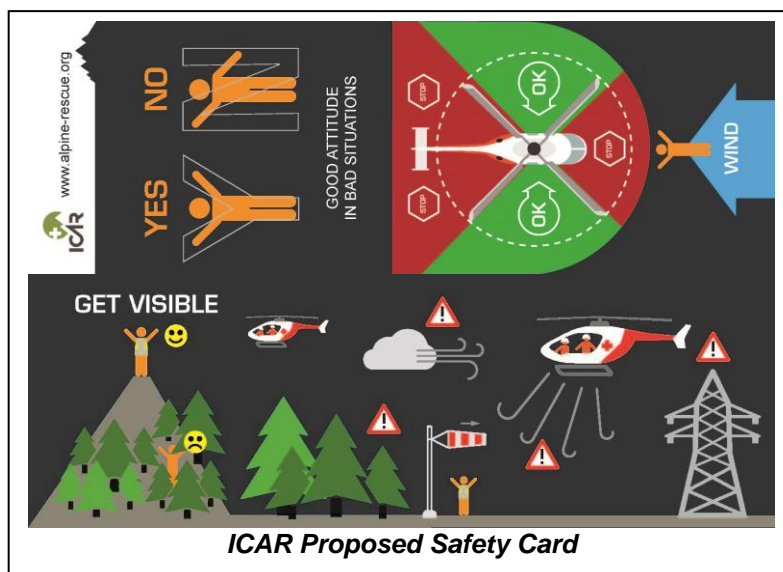
Air Rescue and Terrestrial Commission Combined Presentations

ICAR has developed a Safety Card to educate the public in helicopter operations. Rescue teams can add their own logo. Idea may be to push the card into clothes, bags, mountain gear, etc..

ICAR will NOT make printed versions available.

There was much discussion about a few changes/enhancements to the card.

One Commission member suggested that ICAR create a card for drones education.



Historically, the rescue strop was used to transfer personnel from vessel to the shore (lighthouse, etc.) or water rescue. Rescue strop use was then extended to search and rescue for lifting persons with a hoist or a cargo sling line (Human External Cargo HEC).

Today the rescue strop is the most widely used and THE appropriate method of rescue for HHO and HEC rescue from water.

Following worldwide significant losses the last decades, the Air Rescue Commission of ICAR has reviewed past accidents and developed this recommendation for best practice for the use of the rescue strop.

AIR-REC 0014 /Air Rescue Recommendation (available on the ICAR website)

Rescue Strop in Helicopter Hoist Operations (HHO)

Goal: To ensure rescuers understand limitations of STROP.

Recommendation AIR-REC 0014 is designed to minimize the time on the hoist and to keep the number of personnel outside the aircraft to a minimum.
Needs "Personnel REGULARLY trained..."

Much debate about carabiners ensued, including on the topics of:

1. Steel
2. Triple action automatic gate
3. How and when using the rescue stop

“When Rope Meets Rotor”

By Charley Shimanski, USA Delegate

An update was given on a 2015 accident during which a Utah Highway Patrol (USA) Eurocopter AS-350 B3 helicopter crew located a hiker who had died in an accidental fall.

The pilot was attempting to perform a one-skid load of the deceased hiker with the help of several rescue team members.

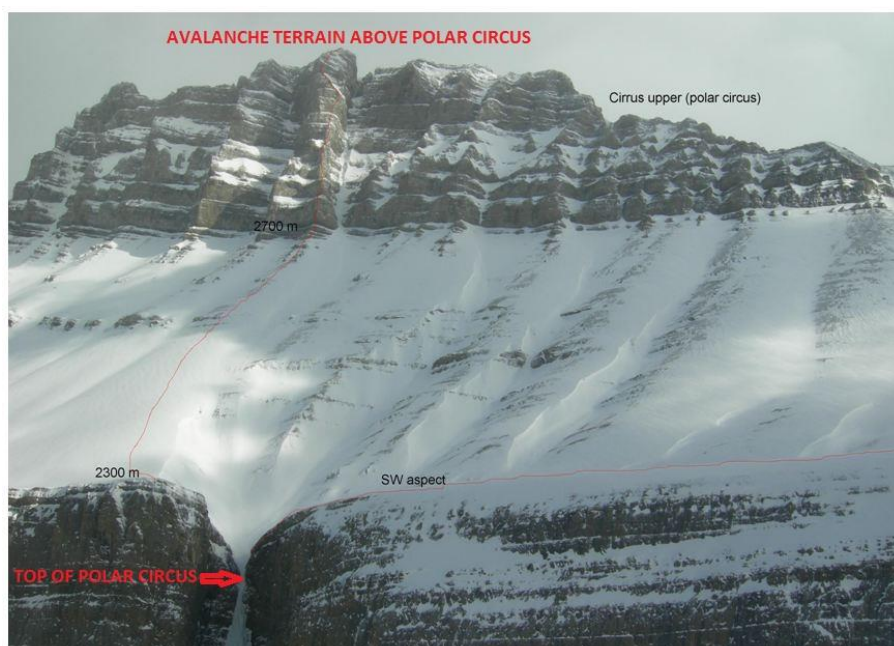
One of the recovery team had secured himself to a rope that was anchored above the tip path plane of the helicopter.” While the rescuers approached the aircraft to load the litter, that rope – still attached to the terrain above – was pulled taught into the plane of the rotor disk, and was caught by 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.



Presentation on Ice Climber Fatally Injured in Avalanche

By Brian Webster
Canadian Delegate

Located in the Canadian Rock Mountains north-west of Banff, Alberta, Polar Circus is a nine pitch (700m) water ice climb characterized by steep ice pitches interspersed with 35 degree snow slopes. Starting at 1550m the climb ascends an incised gully through a steep cliff



band to an elevation of 2300m. There is significant avalanche terrain both on the climb itself, and on the steep slopes above the climb.

On February 5, 2015 two ice climbers were descending Polar Circus following a successful ascent. After a period of relatively low avalanche hazard, it had started to snow during the day and the climbers were concerned about the rising avalanche hazard. After completing the fifth, of nine rappels, the lead climber began traversing a steep exposed snow slope (unroped) to get to the next rappel anchor. He was caught in a Class 2 avalanche and swept over the cliff below. His partner, who fortunately was carrying the ropes, descended the cliff, and after unsuccessfully conducting a visual search of the avalanche debris, continued his descent to the road to inform the authorities of the accident. The climbers were not wearing avalanche transceivers.

This presentation speaks to the logistics of mitigating rescuer risk, and coordinating air and ground search operations in a remote and technical location.

Possible Topics for 2017 ICAR Conference

- Wingsuit flying and BASE Jumping
- Slack lines
- Big wall Rescue
- Drones (continuation)



2017 ICAR

The 2017 ICAR Congress will be held October 18-22 in Andorra.