

AIR RESCUE REPORT

International Commission for Alpine Rescue

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



IKAR-CISA

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INTRODUCTION

This year's congress was hosted by the Croatia Mountain Rescue. The commission was chaired by Patrick Fauchère, of Air-Glaciers. The Air-Rescue Sub-commission met with members representing 18 countries. They were Austria, Bulgaria, Canada, Croatia, Czech Republic, France, Germany, Greece, Italy, Montenegro, Norway, Poland, Slovak Republic, Slovenia, Sweden, Switzerland, United Kingdom and United States of America.

FIELD DAY

A joint field day was organized between the Terrestrial and Air Rescue Commissions focusing on entanglement issues between the helicopter and technical rock face. Croatia Mountain Rescue (Mi8) and Air Zermatt (Bell 429) teams demonstrated helicopter rescue techniques employed when interfacing between mountain and helicopter. In addition, Bell (429) and Eurocopter (EC135 P3/T3) brought in their latest helicopter demonstrator. All Pilots of the air rescue commission were given the opportunity to fly the aircraft.

ACCIDENTS & INCIDENT REVIEWS FROM MEMBER COUNTRIES

Switzerland-Abseiling (Training) -Patrick Fauchère

Petzl ID- Mountain guide was unable to control the descent rate with 2 person abseil out of a helicopter. No injuries, abseiling height 40M, 2 person load. Pretest of equipment was satisfactory, and user well versed with equipment. The device and rope were sent to manufacturer for inspection. Wear on rope and Petzl ID was within limits. Total load on system was within specifications. Environmental conditions included higher humidity. Discussion about aviation G forces considered as part of the problem, as abseiling system was set up while helicopter still moving. No single cause of problem identified. Actual action was to limit future use of Petzl ID to one person loads.

Austria-HEC Patient not clipped in-Karlheinz Burtscher/Markus Amann

Patient with shoulder injury, no landing zone aircraft inserted the Doctor via toe in. Aircraft departed and went to find landing zone to attach fixed rope. Rescuer short hauled on the fixed line back to the scene. Normal procedure is to insert rescuer and aircraft departs while the patient is prepared. Rescuer elected to have aircraft remain in position (due to poor weather). During flight to the scene the rescuer attached one of the three tethers to his harness to avoid it flying around. The Doctor attached to the third tether. Victim placed in harness (Petzl triangle) and the victim was holding on to the short haul line with one hand. Rescuer visualized that all three tethers were attached and gave the preflight check. The aircraft tensioned the system and rescuer gave clear to climb. The patient was not attached but was holding on and fell less than 1m. No additional injuries. New rescuer, this was his 3rd fixed line rescuer. Equipment used to demonstrate factors that contributed to incident.

Austria-Engine Failure-Karlheinz Burtscher

OAMTC EC135T1, HEMS flight, start-up and pre take-off check was normal. Post take off normal until slight yaw with needle split and caution light. Engine failed during cruise flight. Declared emergency, performed a single engine emergency landing that was uneventful. On the ground restart, engine failed at 50% N1. Root cause- worn spline on the fuel pump drive system between the HMU and Reduction Gear Train.



Austria-Main Rotor Blade Strike-Karlheinz Burtscher

OAMTC EC135, HEMS flight, Pilot had landed the helicopter on a narrow uphill path to drop of the HEMS crew. Pilot decided to reposition the helicopter with 120 degree turn to the right. HEMS crewmember was standing in front of the helicopter to guide the pilot via radio. During the maneuver the main rotor struck a rock that was outside the pilot's field of vision.



Austria-Banner Strike-Karlheinz Burtscher

OAMTC EC135, HEMS flight (confirm), high reconnaissance and final approach indicated a safe landing area. While in a 1m hover pilot heard loud bang. Helicopter started left side down rotation with strong vibrations. Pilot immediately lowered the collective, resulting in hard landing. During landing, a large plastic banner was pulled off an adjacent building and sucked into the tail and main rotor.

Austria-Blade Bullet Hole-Karlheinz Burtscher

During preflight a bullet hole was found in one of the main rotor blades.



Swedish Police- Hoist Incident (Training) -Odd Fischer

While on a training mission in Norway, the helicopter approached rescuer with 200 feet of cable out. Rescuer attached to hoist cable when aircraft experienced loss of control due to unexpected winds. This resulted in rescuer being dragged 20 meters across the glacier before pilot regained control of aircraft. There were no injuries.

Canada-HEMS Accident-Brian Webster

Sikorsky S-76 crashed one minute after take-off from airport (1 km) during HEMS flight. All personnel (two pilots and two paramedics) killed. Weather was 3 degrees C, overcast and light rain. Time of crash was midnight. No NVG being used. SAR response came from armed forces base in Trenton (830 km away). Cause of crash unknown at this time.



Canada-Accident-Brian Webster

Canadian Coast Guard BO105 (3 crew members, all fatalities) on ice research flight crashed through the ice. All crew members died due to hypothermia.



United States (California)-Hoist Incident (Training)-Casey Ping

A California National Guard LUH-72 (EC145) supporting California Emergency Management helicopter rescue training of fire department personnel. The mission was to insert and extricate rescue personnel and victims from still water environment. The rescuer was attached to the hoist cable and directed to move from the cabin in order to begin the insertion. The rescuer was standing on the intermediate step. The hoist operator signaled for the rescuer to step to the skid. The rescuer, thinking he was on the skid assumed the hoist operator wanted him to step off the step. The rescuer did resulting in significant shock load to the hoist. Cable management was a contributing factor.

United States (Colorado)-Hoist Incident-Casey Ping

A Colorado National Guard UH-60 requested to extract patient that had fallen from Mount Bancroft. The patient was initially unconscious and became hypothermic while waiting for rescue. Mountain rescue personnel had been inserted by HEMS aircraft ~200m below the accident site. Hoist extrication was requested due to patient condition and difficult extrication in exposed terrain. The National Guardsman was being inserted via the Jungle Penetrator and sustained a fractured lower leg. The National Guardsman was able to assist with the litter extraction of the patient. Mountain rescue personnel were unaware of the injury until this point. The mountain rescue team was able to treat and splint the Guardsman which allowed him to be extricated via hoist.



United States (California)-Hoist Incident-Casey Ping

Ventura County Sheriff Aviation unit had been conducting hoist and short haul marijuana eradication missions throughout the day. During a hoist extraction of personnel, the hoist operator failed to attach his tether to the aircraft. The hoist operator identified this failure as he was assisting personnel into the aircraft. As a result Ventura County has initiated a challenge and response program for securing personnel in the aircraft.

United States (Texas)-Hoist Incident (Training)-Casey Ping

Travis County *STAR Flight* personnel performing recurrent water insertion and extraction hoist training. The aircraft had landed to pick up rescue personnel. The hoist operator left the aircraft to assist with loading of equipment. Upon return and prior to lift off the pilot requested “Secure Cabin,” the hoist operator after checking the cabin and other personnel announced “Cabin Secure.” The hoist operator sat in the door for several minutes before realizing that he was not tethered.

United States (Nevada)-Hoist Accident-Casey Ping

Las Vegas Metro Police Aviation Unit requested for night time search for stranded hiker on Mt. Charleston. Hiker was located and it was determined that hoist extraction was necessary. Rescuer was inserted to the hiker’s location. During the extraction phase, the rescuer became detached from the hoist hook and suffered a fatal fall. No abnormalities have been identified with the hoist, hoist hook, or harness. The hoist hook was a non-locking version and there is speculation that rollout may have been a factor.

United States (California)-Hoist Accident-Casey Ping

California National Guard HH-60 supporting the California Department of Fish and Wildlife with marijuana eradication/site cleanup in the Sequoia National Forest. Details remain sketchy, but the victim either fell from the aircraft or the hoist. The victim survived the fall and was extricated and transported by helicopter to the hospital where he later died.

Australia-Hoist Accident-Casey Ping

The crew of a Bell 412EP helicopter was tasked to pick up a male patient who was reported to have fallen in the hills around Macs Cove, near Lake Eildon, Victoria (Vic.). The crew was informed that, due to the difficult terrain and the size of the patient, a winch extraction would likely be required. The patient was located in a heavily-wooded area in steep terrain about 1-1.5 km from the nearest road. The trees in the surrounding area were up to 60 ft. high and the crew noted numerous dead branches that could create a hazard for winching operations.



The crew located a suitable area into which to winch the paramedic to assess the patient's condition. They discussed likely retrieval options and decided that a stretcher winch would be too dangerous due to the steep terrain, surrounding vegetation and the possibility of fouling. Due to the small winch area and the possible fouling hazard, the crew elected for a double-lift extraction with the patient in a rescue/retrieval strop (strop). The paramedic and air crewman were unable to get the winch portable radio to work, so they decided that the paramedic would use hand signals to indicate whether a winch extraction would be required. On arrival, the crew noted that some trees had been cleared to create a larger winching area and that the patient had been moved to this area. After about 5 minutes the paramedic signaled to the crew that he was ready to winch and the crew positioned the helicopter over the winching area in an approximately 80 ft. hover, about 20 ft. above the tree canopy.

Initially, the winching procedure appeared to proceed normally. The air crewman reported that the paramedic appeared to have his arms and legs wrapped around the patient, as is the normal procedure. When the paramedic and patient were approximately 30–40 ft. above the ground, the air crewman noticed that they had moved towards the edge of the winch area and close to the upper branches of the trees. The paramedic stated that he came in contact with the branches and had to use both hands to fend off as he came through the tree canopy. The helicopter was moved back and right about 5 ft and the winch continued. The air crewman reported that once the paramedic and patient were clear of the canopy, at about 15 ft. below the aircraft, he noticed that the patient was moving or wriggling.

The air crewman stopped the winch for a control check, and shortly after resuming the winch, noticed that the patient's arms were not in the usual position in the strop and that the paramedic appeared to be shouting at the patient. The air crewman elected to continue winching in, and informed the pilot that the patient was slipping. As the paramedic and patient reached the height of the helicopter's right skid-landing gear, the paramedic was facing the helicopter and the patient was facing outwards. The paramedic reported attempting to pin the patient against the skid in an attempt to stop him slipping. The air crewman continued winching until the paramedic's head was level with the middle of the door opening. At this stage the air crewman informed the pilot that he could see the patient slipping further. He dropped the winch pendant and reached down, grabbing the patient's shoulder in an attempt to stop his fall. The air crewman stated that by this stage the patient appeared to be unresponsive and limp.

Despite the crew's efforts, the patient slipped out of the strop and fell to the ground, sustaining fatal injuries.

Saudi Arabia-Hoist Accident (Training)-Casey Ping

Accident occurred when conducting a demonstration at local mall that included the hoist insertion via Lifesaving System Rescue Basket of fire personnel. It is reported that the hoist hook was removed from the attachment bails to allow fire personnel to enter the basket. One bail was attached to the hoist hook and when picked up allowed the basket to hang vertically. The fire fighter fell from that basket and was fatally injured.

Norway- Hoist Incident- Fritz Gulbrandsen

AW139- Discovered during preflight inspection. Hoist hook was used for attachment point for fixed rope. It was not included in scheduled maintenance. Hook not properly seated and damaged by vibration during flight.

France- Accident- Michel Pierre

Responding to a missing person in a river, the pilot did a reconnaissance without rescue personnel. Pilot found lifeless body in river. Upon departing from landing area to get rescuers the aircraft struck overhead power lines. The aircraft was able to land nearby with no injuries. Main rotor blades had to be replaced.

Joint Terrestrial and Air Rescue Committee Meeting- Entanglement Issues

The Terrestrial and Air Rescue Committee met in joint session to review the field day. The field day focused on the entanglement issues between the helicopter and technical rock face. Several methods were presented on how various organizations deal with the risk.

Petzl presented an overview of the Lezard. Prototype device that may help address the entanglement issue when the rescuer is anchored to the wall and attached to the helicopter. When the device is connected to the helicopter hoist hook or short haul line, it allows the line attached to the wall to be automatically released when lifted by the helicopter. The product is still in development, but expected to begin field testing in 2014.



The practical day and joint session were a success. During the Saturday morning presentation, a wrap up of the situation was presented with some conclusions and considerations to be taken into account when working in these situations.

Presentations

Eurocopter EC135 P3/T3- Eurocopter presented a technical overview of the EC135 P3/T3 aircraft.

Bell 429- Bell Helicopter presented a technical overview of the 429 aircraft.

POLYCON Wireless Intercom- Technical overview of the Polycon Wireless Inter Communication System. The system was being used by some of the operators present and they discussed advantages and limitations of the system.

Part 91, Part 135, Public Aircraft Operations- Overview of the differences between United States FAR's Part 91, Part 135 and Public Aircraft Operations. The vast majority of SAR operations in the United States are conducted by government owned aircraft. There were discussions about commercial operators being contracted by government to provide public aircraft operations or commercial operators performing SAR. Discussion about the ability to move between the various FAR's depending on the mission type.

Cost of Missions- After the 2012 Air Rescue Committee meeting, a survey about cost of missions was distributed. The committee reviewed the results of the survey.

France Rescuers View Night Vision Goggles (NVG)- Mountain rescue personnel provided an overview of their work to equip rescue personnel with NVG. Several different configurations were tried before an acceptable solution was identified. The hoist cable presents some unique challenges. There are some limitations.



France Rescue Center- Presentation of the latest coordination Rescue Center building in Haute Savoie, France.

Night Vision Imagine Systems (NVIS) Norway- NVIS was implemented in Norway in 2002 after 3 fatal night HEMS accidents. Since then they have completed 8,500 flight hours and 21,000 landings while using NVIS. Presentation by Peter Kahrs of the standard operating procedure in use within Norskambulance



Bulgarian Rescue-Bulgarian Mountain Rescue Service provided an overview of rescue mission on Rila Mountain with 3 people injured. Some of the challenges included a lack of formal air rescue program, long reaction time for military helicopters, hoist rescue availability and lack of ability for those helicopters to land at hospitals.

Discussion Topics

EASA Pilot Age 60-65- For CAT (Commercial Air Transport), pilots are limited to age 60. This will affect drastically the HEMS operators as they will lose experienced pilots. More, to replace them the HEMS operators will have to engage young pilots with less experience. Combined with the future FTL schemes for HEMS, this could result in some consequences on safety.

EASA Flight and Duty Time limitations- EASA have adopted some of the most stringent flight and duty time limitations in the world. Airliners are concerned for the time being.

EASA Personal Carrying Device Systems (PCDS)- EASA continues to move towards the requirement that PCDS must be certified, including the harness worn by rescue personnel. With the number and type of aircraft and rescue harnesses available this has the potential to create significant obstacles for the helicopter organizations.

EASA SPO/HEMS- The new Part SPO will be published by the end of the year. It is important that all concerned operators reply and comment the document. For HEMS an NPA shall also be published by Q2/2014.

Hoist cables- Experiencing early cable failures, they have replaced 4 or 5 cables for bird caging. There have been similar issues in the US and many organizations are sharing hoist cable issues. This is allowing us to be more effective with the hoist manufactures in resolving issues. Greater participation would increase the effectiveness.

Rotor Wash- There have been several incidents or accidents, including the Mount Rainier incident in 2012, in which rotor wash has been considered a factor in the accident. The major helicopter manufactures were contacted regarding rotor wash information for their aircraft. There appears to be little information available. There was discussion about the effects of rotor wash on rescuer, victims and personnel on the ground. The Swiss AIB published some data in the accident report n° 2174, check www.susta.dmin.ch.

Review of NSW Australia Accident- The final accident report was distributed to all members prior to the Conference. The key findings were discussed with suggestions to prevent future occurrences.

Next meeting will be held in Lake Tahoe, USA from the 5th to the 10th of October 2014.