AIR RESCUE REPORT

International Commission for Alpine Rescue

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

October 13-17th, 2015 – Killarney – Ireland

PREPARED BY

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INTRODUCTION

The International Committee for Alpine Rescue (ICAR) annual meeting was held in Killarney, Ireland during the non-rainy week of 13-17 October 2015, lending to good views and good hiking. The event was hosted by Mountain Rescue Ireland.

The venue for the conference was the International Exhibition Centre set in the beautiful town of Killarney. South and west of the town of Killarney in Co. Kerry is an expanse of rugged mountainous country. This includes the McGillycuddy's Reeks, the highest mountain range in Ireland.

PRACTICAL DAY SESSIONS

The Technical Rescue and Medical Commissions organized the Practical Day at the Gap of Dunloe, near Kate Kearney's Cottage, with a multi-faceted demonstration of new or rarely used techniques.

The Irish group showed off some techniques on how to use turf for technical anchors. Some of these techniques may prove useful in areas where technical winter skills may be needed in alpine terrain.

A demonstration by the Polish rescue group, TOPR, was provided showing how they have incorporated Dyneema rope systems, especially for long technical evolutions or guiding lines.

Figure 1 Intermittent CPR Demonstration for evacuation

Intermittent CPR is being explored as an option for those who go into cardiac arrest secondary to hypothermia. The crux for those who respond to avalanches will be to determine what the cause of cardiac arrest is. TOPR supports an aggressive hypothermia protocol and presented a case report of a witnessed hypothermic arrest that was successfully resuscitated after more than 5 hours of evacuation/CPR over complex terrain, and 9 days of ECMO (cardiac by-pass) in the hospital, with no neurological deficits.

Dave Clarke (MRA-USA president/Portland Mountain Rescue) demonstrated a tried and true technique of a two-tension system using the CMC MPD. The system itself has been used for many years, but the devices used were the main focus of this demonstration. There are multiple ways to set up technical systems, and better ways to run them. Many participants jumped in to give these techniques a go, learn some finer nuances, and take this information back home to spread to others. The beauty of ICAR is reflected in the dissemination of information at a viral rate. (Beverly)

Figure 2 two-tension system demonstrations.

The video including action from this demonstration will be posted to:
http://topographmedia.com/

The link will be active and updated to this report as the link becomes available. Notification is generally sent through the MRA list serve. Topograph Media has been providing excellent video coverage of the ICAR events and is a good resource to show your local team much of the material presented at ICAR.

There is a significant overlap in the techniques of terrestrial rescue as the overlap in the avalanche rescue venue, especially when there is technical terrain to assess, mitigate, and respond to. Complex glaciated terrain is matched in technical difficulty by the receding glacial alpine environment where rock on snow now exists. Having the ability to utilize all mountaineering rescue skills is exceedingly important, as is demonstrated later in this report.

ACCIDENTS & INCIDENT REVIEWS FROM MEMBER COUNTRIES

Switzerland
AgustaWestland 109- Returning from rescue mission. Helicopter crashed near the base. 1 injured, 2 HEMS crew members non-injured. Investigation pending.

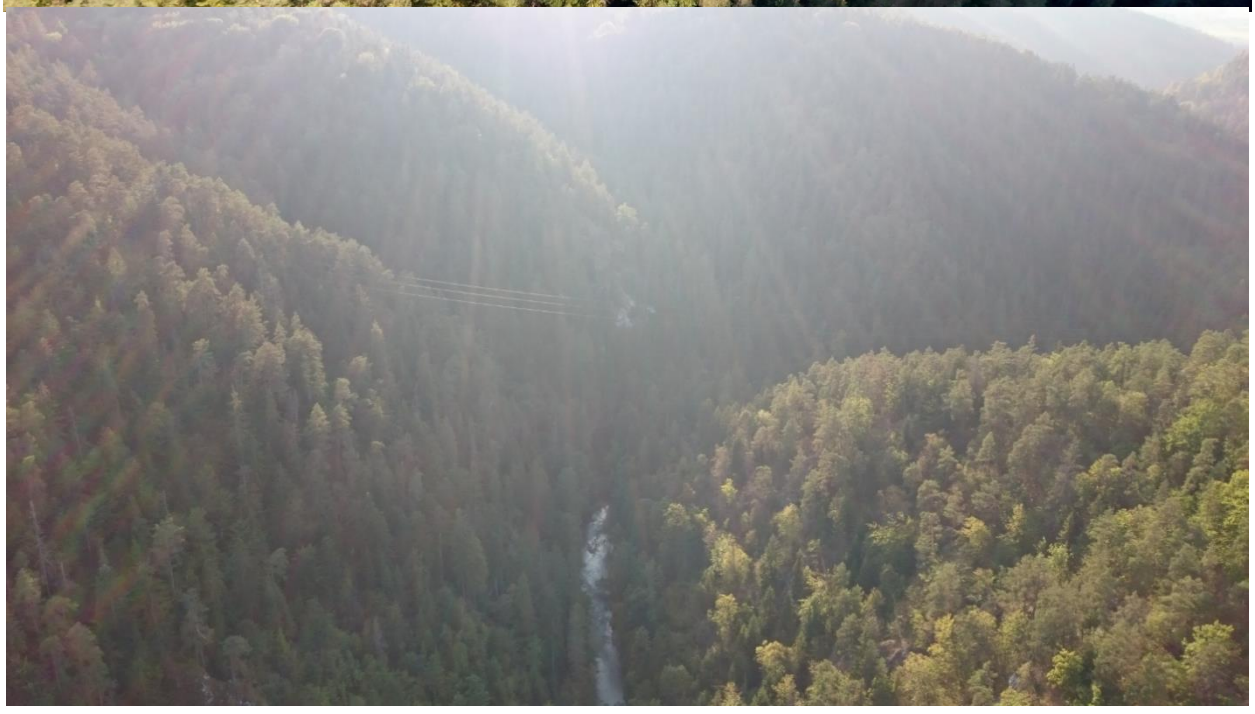
Airbus AS350B3- 30 meter, Sling load, aircraft lost and pilot killed. Probable that the line contact with the tail rotor. Sling line witness marks on the main and rail rotor. Sling load was a small flat roof section weighing 650 kg. Aircraft found sitting on the glacier. Sling load line was cut in multiple pieces. Investigation pending.

SAR- Initial request was 2 hours before darkness. Delayed due to weather and darkness. Mission performed the next morning. Both victims were found to be fatally injured in rock fall. Rescue personnel were concerned about rock fall in the area. Inserted doctor and police officer only, to check the victims. Second rock fall occurred injuring the doctor (shoulder) and the police officer (ankle).

AgustaWestland 109- Struck wires while maneuvering close to the ground. No injuries

Slovakia

AgustaWestland 109- HEMS response for young child that had fallen with extremity and possible head injury. Hoist rescue was anticipated due to terrain. Landed enroute to pick up a local mountain guide. Aircraft struck wires shortly after locating the scene. 4 fatalities (pilot, HEMS crewmember, Doctor and mountain guide). Location of wires was known to company personnel.



Austria
Airbus EC-135- Long line rescue with main rotor blade strike reviewed.

Italy
AgustaWestland 139- The cable winch bumped power line low / medium voltage cable break and fall to the ground medical personnel. During hoist operations Helicopter AW139 brands I-COLk, winch line, and dropped in translation, he hit a power line of low / medium voltage not visible to the crew. The winch cable is sheared off at the height of the point of contact with the power line, causing the fall of the two people (doctor and nurse) entered for the hook from an estimated height of 7/10 meters. People have reported fractures in the legs and pelvis, but would not be life threatening. The helicopter I-COLk is on the site of the event still awaiting decisions by the competent authorities and the state of airworthiness.


inaer
fly the future

United States – Maryland State Police

AgustaWestland 139 - During a night time training evolution the hoist operator was manipulating the searchlight that was next to the covered cable cut switch. The bridge of his finger raised the shear cover allowing his finger to activate the cable cut. Maryland State Police work with AgustaWestland to develop a guard for the cable cut switch and implemented a policy that the hoist light is not be used a search light during hoist operations.

United States – Santa Barbara Sheriff's Office
Bell UH1- During hoist extraction of law enforcement officer during a marijuana eradication mission the hoist operator noticed that the hoist was faster than normal and the pendant was not responding to his inputs. The hoist operator alerted the pilot who overrode the hoist down. The hoist lowered faster than normal and the officer landed faster than normal

United States – Los Angeles County Fire Department
Bell 412- While performing HELOC during a wildland fire mission the aircraft experienced a dual engine failure with three people on board. Emergency landing with significant damage to aircraft and 1 minor injury.

United States – Travis County *STAR Flight*
Airbus EC145- After a 20 minute search for a missing/injured hiker ***STAR*** *Flight* was requested to extricate the victim. The insertion was uneventful. During the extrication a slow spin started. The crew initiated forward airspeed. As the spin stopped the flight nurse was observed to be riding lower than normal and then fell.

United States – Utah State Police
Airbus AS350B3e- Night time search for missing hiker. The night crew was unable to locate the hiker and stopped search around 0300. In the morning a new crew started the search and located the victim. Multiple one skid operations were performed to insert the ground rescue team.

The victim was deceased but a decision was made to remove the body by helicopter. The victim was lowered by rope to the extrication area.

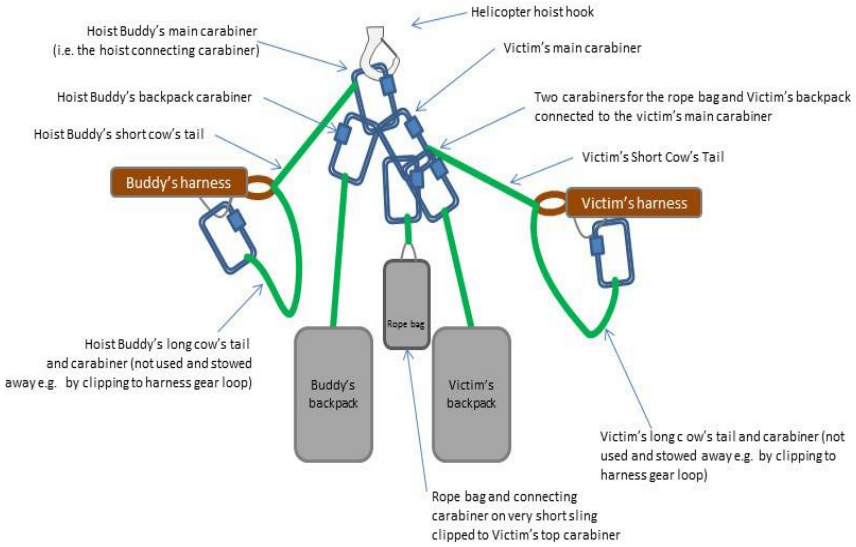
The helicopter approached and established a one skid hover. As the rescuers moved the victim (lowering lines still attached) toward the helicopter the lines were pulled into the main rotor. The pilot was able to fly away but there was substantial damage to the helicopter.

South Africa- SAAF/Mountain Club of South Africa

Aerospatiale SA330- During hoist training event with 2 SAR volunteers being hoisted from 8-10M over flat terrain one member fell sustain severe injuries. While connect to the hoist configuration they failed to account for an extra carabiner. One rescuer was not connected to the hoist. Ground personnel were able to identify an issue but did not have communications with the helicopter.

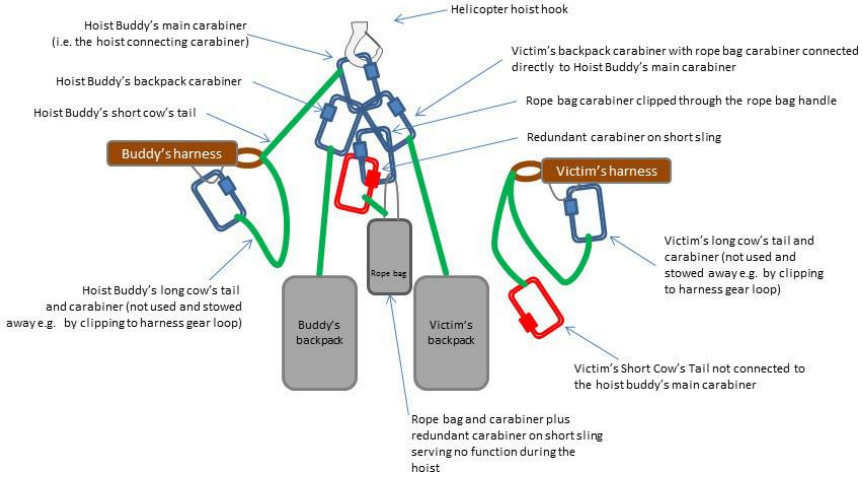
Hoist configuration with the five primary connecting carabiners as expected by the hoist buddy

(for illustrative and explanatory purposes only based on interviews and submitted photos)



Presumed actual hoist configuration showing 5 carabiners connected to the hoist but which excludes the Victim's main hoist safety connection carabiner

(for illustrative and explanatory purposes only based on interviews and submitted photos)



Mexico

Bell 206 - There is very limited information on this incident but appears to be a helicopter rappel demonstration. While rappelling from the aircraft with a litter the rescuer appears to lose control of the rappel and descends rapidly down the rope and lands very hard on the ground.

Presentations

Joint Terrestrial, Avalanche and Air Rescue Commission

German Wings Response

Gendarmerie Air Ops- 105 flight hours, 350 hoist operations, 500 personnel

Scoop and Run Procedure

Advanced Helicopter Rescue Technique

Purpose: In order to get very close, very fast, and with high-risk terrain.

Procedure with the helicopter: Training level is quite high and the use of a hoist is a serious issue. Long line/short line is preferred because of avoidance of shock load on the hoist system. However, shock load absorbers will be used and static lines will be incorporated, rather than using dynamic lines. The goal of the rope is to be as thin as possible. Steel cable is a good medium to use since it can cut through the snow that has been dug out and become heavier after settling. Fixed carabiner links are used, along with a full body harness with a high ventral point of attachment.

The pilot keeps a 1kg balloon on the avalanche surface of the snow slope in order to use as a reference.

Probing should be done using a sturdy and short probe. Burials >1.5m deep are not considered scoop and run situations. Suggestion that a shovel should stay attached with a fine cord/bungee.

A decision must be made if 3 people can be taken down to safety. Otherwise, both rescuers must be taken to a safe zone first and leave one behind. For pilots, it is a complex situation. Procedure developed by Swiss and is currently being used in Switzerland and Norway.

HEC/HHO

Discussion about the scope of work including the harness and attachment points. Many organizations have implemented a pause when lifting off to confirm everything is attached and loaded correctly. Recommend reducing the time the victims/rescuers are outside the aircraft to the smallest amount of time. Reduce the number of person involved in these operations to minimum.

Assess the situation
Minimize amount of time persons on hook
Training
Checklist

- Pre-Mission
  - Briefing
    - All members involved in the mission participate
    - Everyone has the same information
    - Obstacle check/awareness
- Mission
  - Cabin secure or similar call
  - Communication

        - System
        - Air to ground system required
        - All information to team members
        - Standardized communication, keep simple
        - Standardized commands for critical operations
        - Standardized hand signals for situations where radio communication is not possible or lost
    - Device
        - Sling
            - Originally developed for water rescue, is being used for other purposes but recommend that organization consider other devices (triangle) for most situations. Sling use should be limited to only those circumstances required with limited other options or unstable situations
            - Victim in slight should be attended by rescuer
            - Minimize time in the sling
            - Physiological effects on victim
            - Consider crotch strap when equipped and time allows

- Training
    - Defined and regular training program
    - Joint training between ground and air crew
    - Minimize group size

- Equipment
        - Suitable for the mission
        - Standardized inspection
        - Training for personnel using the equipment
        - Standardization where ever possible

- Mission
        - Minimum training for members
        - Currency

Air to Ground Communications

Discussion about different air to ground communication system used by the ICAR Air Rescue committee members. Similar difficulties across members with establishing air to ground communications.

Distractions for air crew
Ground personnel familiarization with communication procedures
Problems with communication systems including; analog, digital, common frequencies etc.
Keep simple, digital systems allow very complex radio programming

Recommendation:
Yes- Arms extended over head in the shape of Y
No- One arm extended overhead and one arm pointed down in the shape of /

- Briefing Card

- Communication with helicopter
- Do not move
- Secure objects
- Maintain eye contact with pilot
- Assess situation
- Approach axis for the helicopter
- Obstacles
- Include picture drawing

Next Year Topics

- Rope testing
- Accident reports (database and language)
- Database on obstacles

Discussion Topics

Next Year's conference will be held 19-22, October 2016, Borovets, Bulgaria.

Official minutes done on behalf of Air Rescue Commission's President

Patrick Fauchère