ICAR CONFERENCE 2026

Book of Abstracts

Innsbruck, Austria — October 6–10, 2026 · Updated October 6, 2026

AIR AIR — Air Rescue Commission AVA AVA — Avalanche Rescue Commission DOG DOG — Rescue Dog-Handlers
MED MED — Mountain Medicine TER TER — Terrestrial Rescue Commission JOINT Joint Session

Thursday & Friday, October 8–9

AIR — Air Rescue Commission

AIR • Thu Oct 8 — 08:30

1. Local Rescue Team Presentation

Presenter(s)	Markus Amon (ÖAMTC); Local ARA Representative (ARA)
Country / Team	Austria — ÖAMTC / ARA
Abstract	Local helicopter rescue organizations ARA Flugrettung and ÖAMTC present their operational capabilities, services, and resources. The session introduces participants to the local rescue infrastructure, equipment, and coordination frameworks that support mountain rescue operations in the alpine region. Learn how these organizations operate and integrate with broader rescue networks.

AIR • Thu Oct 8 — 09:00

2. Adaptation of Helicopter Mountain Rescue Operations to Climate Change

Presenter(s)	Julien Benet
Country / Team	France — GSM (Groupe Spéléo Secours)
Abstract	Mountain environments are changing rapidly—glacier retreat, melting permafrost, and increased rockfall hazards directly impact helicopter rescue operations. Rescue teams must constantly reassess risks before and during interventions as terrain becomes more unstable and dangerous. The goal of this session is not to replace rescuer experience, but to provide better information and tools for sound decision-making. International cooperation through organizations like the ICAR Air Rescue Commission allows rescue teams to share experiences and best practices across borders. The central challenge: how can we deliver fast, effective mountain rescue while adapting to an Alpine environment in constant flux?

AIR • Thu Oct 8 — 09:30

3. ESPNR: Human External Cargo with Sling

Presenter(s)	Jakob Uske (Airbus); Jonathan Hall (EASA)
Country / Team	Airbus / EASA
Abstract	The European Safety Promotion Network for Rotorcraft (ESPN-R) presentation introduces the organization's mission, history, and operational framework, with specific focus on Human External Cargo (HEC) operations. The session outlines HEC requirements in Europe and the US, includes live demonstrations of real HEC systems and equipment, and covers Personal Carrying Device Systems and their various types. Typical HEC operational scenarios are presented. The session then examines what can go wrong in sling load and HEC operations and how to prevent common failures through proven best practices—both during active operations and in critical pre-operation ground preparation. Participants will understand the full scope of safety considerations in sling load operations.

AIR • Thu Oct 8 — 10:30

4. Incidents & Accidents Report

Panel Discussion

Presenter(s)	Moderated by Clayton Horney (CHRT, USA) & Nigel Harling (MREW, England)
Country / Team	USA / England
Abstract	In helicopter search and rescue, incidents and accidents hold critical lessons. This panel discussion, moderated by Clayton Horney and Nigel Harling, reviews real operational incidents and near-misses from around the world. We'll examine what happened, why, and what can be learned. Participants are invited to bring their own incidents and accidents for discussion. This is straightforward incident review—exploring the human and systemic factors at play, identifying patterns, and extracting practical lessons that strengthen operations.

AIR • Thu Oct 8 — 13:00

5. AIRCOM Recommendations — Panel Discussion

Presenter(s)	Moderated by Dale Wang (MRA, USA) & Jelien Benet (GSM, France)
Country / Team	USA / France
Abstract	This session reviews the Commission process for recommendations and presents two critical proposals for approval. The first addresses a revision of the "HEC Safety Check" process—an essential safety protocol for helicopter external cargo operations. The second considers endorsement of all or part of the ESPN-R hoist Personal Carrying Device System (PCDS) guide recommendations. Participants will examine the rationale behind each proposal, understand the implications for operational safety, and provide input on Commission adoption.

AIR • Thu Oct 8 — 14:00

6. An Example of Multi-Agency Coordination & Cooperation: Lessons Learned from the Ahr Valley Flood 2021

Presenter(s)	Volker Lischke; Gerd Windhausen
Country / Team	Germany — DRK Germany
Abstract	The 2021 Ahr Valley flood in Germany revealed critical challenges for helicopter rescue during large-scale disasters. In response, the German Red Cross Mountain Rescue Service conducted URFF23, a large-scale civil protection exercise in Hessen, testing multi-helicopter operations under realistic conditions. Six helicopters, 38 Air Rescue Specialists, and numerous emergency personnel participated over five hours, evacuating approximately 90 people via Helicopter Hoist Operations and 40 residents without HHO. The exercise demonstrated that early operational command establishment, standardized procedures, aerial reconnaissance, and defined flight corridors significantly improve safety and efficiency. Particularly valuable was the opportunity for joint training and familiarization of the personnel involved.

AIR • Thu Oct 8 — 14:30

7. Gondola Rescue Training Program

Presenter(s)	Damjan Bevk
Country / Team	Slovenia
Abstract	Slovenia's helicopter hoist rescue training program, conducted at Vogel Ski Resort, demonstrates effective multi-agency cooperation among helicopter crews, mountain rescue teams, cable car operators, and national protection services. The training focused on safe passenger evacuation from cable car installations using helicopter hoist techniques, with emphasis on operational planning, crew coordination, communication, and risk assessment. Realistic scenarios addressed hazards specific to helicopter operations near cables, towers, and cabins. By combining helicopter rescue procedures with mountain rescue techniques, participants improved aircrews-to-ground coordination and standardized procedures. The exercise underscores the value of regular joint training, clearly defined responsibilities, and inter-agency cooperation for complex cable car emergencies in alpine terrain.

AIR • Thu Oct 8 — 15:30

8. Lezard Educational Program and Limitations

Presenter(s)	Jean François Martin
Country / Team	France — GSM France

AIR • Thu Oct 8 — 16:00

9. Emotions Save Lives — But Are We Training Them?

Presenter(s)	Eleonora Avi; Renaud Guillermet
Country / Team	ICAR
Abstract	Emergency and mountain rescue work demands more than technical skills—it also requires emotional competencies. How rescuers manage emotions affects their decision-making, teamwork, and interactions with patients. The EMO-EMS research program, conducted in Italy, studied emotional competencies across emergency services including helicopter rescue and mountain rescue teams. The program developed a questionnaire to measure emotional regulation and empathy. Findings showed that different rescue roles face different emotional demands—there's no one-size-fits-all approach. The project is now creating training programs that teach emotional skills alongside technical training, helping rescue professionals prepare for the full demands of their work.

AIR • Thu Oct 8 — 16:30

10. EHA – European Rotors

Presenter(s)	Frank Liemandt
Country / Team	European Rotors
Abstract	The European Helicopter Association and European Union Aviation Safety Agency (EASA) present the 6th edition of EUROPEAN ROTORS, held for the first time in Lyon, France, November 30–December 3, with support from the French Helicopter Association (UFH). This session previews the conference program, including safety briefings, hands-on training opportunities, and exhibition highlights.

AIR • Thu Oct 8 — 17:00

11. Hoist Emergencies and Abnormal Situations

Panel Discussion

Presenter(s)	Moderated by Alexander Weissenboek and Julien Eymard (ESPNR)
Country / Team	ESPNR
Abstract	Helicopter Hoist Operations involve specialized emergency and abnormal scenarios across three categories: aircraft system failures, hoist-specific mechanical and electrical anomalies, and environmental or operational hazards. Hoist emergencies include runaway conditions, power failure, cable jamming, and load spin. Aircraft system failures range from engine failure in hover and AFCS malfunction to tail rotor degradation and hydraulic or electrical system compromise. Environmental hazards encompass obstacle strike, inadvertent IMC, and severe weather conditions exceeding flight envelope limits. The session also addresses maintenance-related challenges—unclear instructions, procedure non-compliance, and parts unavailability—that directly impact operational readiness and safety. Examination of these scenarios strengthens decision-making across all phases of HHO.

AIR • Fri Oct 9 — 08:00

12. ICAR IDWG — Update

Presenter(s)	Nigel Harling
Country / Team	MREW
Abstract	The ICAR International Drone Working Group's mission is to advance safe and effective drone integration across ICAR rescue operations. Established in 2020 with representation from all four commissions, the working group focuses on deconfliction protocols between drones and manned aircraft, coordination between drone operators, and effective communication in operational environments. This session will speak to the group's priorities: developing best practices, assessing drone capability and capacity in rescue scenarios, and engaging global regulators on standards.

AIR • Fri Oct 9 — 10:00

13. Challenges and Possibilities Concerning Helicopter Flight in Icing Conditions

Presenter(s)	Erik Nordmann
Country / Team	NLA

AIR • Fri Oct 9 — 11:00

14. EASA Update

Presenter(s)	Fabrice Legay; Eric Benett
Country / Team	EASA
Abstract	European Union Aviation Safety Agency (EASA) representatives provide an update on current and emerging regulatory priorities affecting rotorcraft operations. The session addresses key safety topics, RCOMM activities, and the RC Safety road map, with focus on stakeholder engagement and coordination. Additional briefings cover drone operations regulations, conspicuity requirements, and emerging issues in unmanned aircraft integration with manned operations.

AIR • Fri Oct 9 — 13:30

15. Static Electricity Hazard

Presenter(s)	Jostein Rødseth Brede; Lasse; Clayton Horney
Country / Team	Norway — RNAF-330sqn; USA — CHRT (Clayton Horney)
Abstract	Electrostatic discharge (ESD) during helicopter rescue operations is a significant but underrecognized safety hazard. This session will present data from a prospective study of

	839 Norwegian hoist operations and a national survey of rescue personnel. Our findings show ESD occurred in 3.3% of operations, with higher rates over water (4.9%) than land (2.3%). Notably, precipitation was present in 71% of ESD events. Half of reported incidents resulted in moderate to severe consequences—painful shocks, involuntary movements, falls, and equipment failures. Additionally, 24% of hoisted personnel report concern about long-term health effects. Current grounding systems have unknown real-world effectiveness. The data pushes for improved awareness, systematic incident reporting, and better understanding of environmental and operational risk factors to reduce ESD-related harm during hoist operations.

AIR • Fri Oct 9 — 14:30

16. Rotor Wing Disaster Response

Presenter(s)	Steve Soliz
Country / Team	Bell Helicopter
Abstract	When disasters strike—as seen in Nepal's flash floods—helicopter response is essential where road and fixed-wing options are limited. Effective rotor wing disaster planning requires robust coordination with local governments and healthcare infrastructure, with separate plans addressing medically vulnerable populations and major population evacuation. All organized response efforts should be built on four foundational components: Preparedness, Response/Deployment, Operations, and After Actions. This session examines each stage with real-world examples, covering training, government coordination, crew management, aviation authority liaison, and critical honest review of events to drive continuous improvement for future disasters.

AIR • Fri Oct 9 — 15:00

17. AIRCOM Recommendations — Panel Discussion (Friday Session)

Presenter(s)	Moderated by Dale Wang (MRA, USA) & Jelien Benet (GSM, France)
Country / Team	USA / France
Abstract	The Interdisciplinary Drone Working Group (IDWG) presents recommendations for review and discussion regarding the committee's direction and goals moving forward. This session examines the working group's progress, key findings, and proposed actions that affect drone operations across mountain rescue and helicopter operations. Participants will engage with current recommendations while contributing input on the committee's strategic priorities and operational focus.

AVA — Avalanche Rescue Commission

AVA • Thu Oct 8 — 11:00–11:30

18. Hindsight: Lessons We Carry Forward

Presenter(s)	Christian Riepl; Vegard Olsen; Andrea Dotta; Kirsty Pallas; Mike Koppang
Country / Team	Austria — ÖBRD / Norway — NF / Switzerland — ARS / Scotland — SMR / Canada — KCPS
Abstract	Five rescuers from different teams and backgrounds each share a past case or experience — or, in some cases, more than one — that had a significant impact on their team, and the lessons from it they still carry forward today. Drawing on diverse operational experience, the panel reflects on how a formative case can reshape a team's approach — whether to training, decision-making, leadership, rescue operations, community education, or team communication and culture. The session is AVA-focused but deliberately brings together a range of teams, experiences, and expertise, offering the audience a candid, practical look at how hindsight becomes habit.

AVA • Thu Oct 8 — 13:00

19. Built for Response: A3's New Pro Rescue and Pro AvSAR Courses

Presenter(s)	Jen Reddy
Country / Team	USA — American Avalanche Association (A3)
Abstract	In 2026, the American Avalanche Association introduced a two-tier professional curriculum for avalanche rescuers: Pro Rescue, building individual technical proficiency in transceiver, probe, and excavation skills for simple and complex burials, and Pro AvSAR, preparing team leaders to run larger organized responses using Incident Command System principles and structured risk management. Both courses blend field-based scenario practice with online instruction across a 32-hour structure, combining objective skills testing with reflective assessment, and incorporate ICAR transceiver and marking guidance. The talk describes their development and how this pathway can support recruiting, training, and retaining professional avalanche rescuers internationally.

AVA • Thu Oct 8 — 13:30

20. Avalanche Accident Ruderer Berg – From the Snowpack to the Rescue Mission

Presenter(s)	Lukas Rastner; Thomas Mair
Country / Team	Italy (South Tyrol) — BRD-AVS
Abstract	This presentation examines a major avalanche accident on the South Tyrol–North Tyrol border last winter that caught roughly ten people and caused four fatalities, triggering a large-scale rescue operation involving about five helicopters and numerous personnel.

	The talk opens with the regional snow and avalanche situation — including the avalanche bulletin and the deep persistent weak layers behind the low-probability, high-consequence event — before covering the known facts of the accident and the rescue response. Lessons learned from responders involved in the operation may also be included, potentially as part of a panel discussion.

AVA • Thu Oct 8 — 14:00

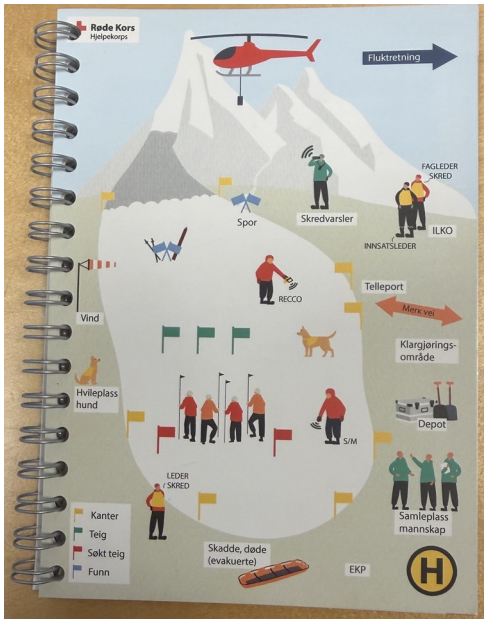
21. GIS-Based Multiscale Analysis for Avalanche Risk Assessment and Operational Forecast Verification

Presenter(s)	Davide Rossi
Country / Team	Italy — Meteomont National Center (MC)
Abstract	Avalanche risk assessment requires integrating heterogeneous observational and remote-sensing data across multiple spatial scales. This talk presents a multiscale GIS methodology developed to reconstruct the snowpack and meteorological conditions behind a real avalanche — the Valgussera avalanche (Foppolo, Italian Alps, 29 January 2026) — and verify the operational forecast issued for it. The workflow combines seven data sources (Meteomont field observations, Sentinel-2/3 imagery, Air Force forecasts, a digital terrain model, UAV RGB/thermal survey, and cartographic data) within QGIS, using NDSI snow-cover mapping, IDW-interpolated snowpack temperatures, and weighted multicriteria hazard modelling. A new discordance coefficient compares regional forecasts against field-observed hazard, revealing strong overall consistency alongside a systematic 7–13 cm underestimation of local fresh snow. The results show GIS-based multiscale integration can meaningfully support forecast verification and hazard mapping — while confirming automated systems can't replace forecaster judgement — offering a transferable method for other alpine regions.

AVA • Thu Oct 8 — 15:00

22. Norwegian Red Cross Avalanche Card

Presenter(s)	Jan Peder Hoggen; Kjetil Å. Nevøy
Country / Team	Norway — NRK (Norges Røde Kors); Suldal Røde Kors / Ressursgruppe Skred
Abstract	This talk introduces the Norwegian Red Cross Avalanche Card, a laminated field reference developed by Suldal Røde Kors and the Avalanche Resource Group of the Norwegian Red Cross to give rescuers a shared visual language for organizing an avalanche scene. The card lays out the standard roles, zones, and symbols used on site — from the incident and avalanche-forecaster leads (Innsatsleder, Fagleder Skred) to search-sector markers, RECCO and companion-rescue positions, dog rest areas, a helicopter landing point, equipment depot, and a personnel muster point — alongside a colour-coded flag legend for boundaries, sectors, searched sectors, and finds. The card is used both operationally, to keep a fast-moving multi-team search coordinated and legible at a glance, and educationally, to teach avalanche awareness and standard scene organization to new rescuers.



The Norwegian Red Cross Avalanche Card (Suldal Røde Kors / Ressursgruppe Skred)

AVA • Thu Oct 8 — 15:30

23. Multimodal Search for a Buried Subject in Avalanche in Kozia Dolina: Neosoft, Recco, Probing

Presenter(s)	TOPR
Country / Team	Poland — TOPR (Tatrzańskie Ochotnicze Pogotowie Ratunkowe), Zakopane
Abstract	A missing person was reported by family, with no known location. A search was commenced by groups of rescuers, some accompanied by dogs. Several areas of avalanche debris were searched with beacons and RECCO devices. After discovery of a particularly sizeable avalanche debris field (roughly 1 km long), the search concentrated in this area: beacon, RECCO, and NeoSoft (mobile-phone search) scans were conducted. Eventually RECCO and NeoSoft narrowed down the area and led to locating the body 3 metres under the snow surface.

AVA • Thu Oct 8 — 17:00

24. How to Turn Theoretical Knowledge into Practical Skills with Digital Training

Partner Presentation

Presenter(s)	Michael Vogt (nivia); Gustav Philipp Vogl (schneeWISE)
Country / Team	Germany — nivia & schneeWISE
Abstract	Equipment manufacturers share responsibility for ensuring users can operate rescue gear

	correctly when it matters. This session presents a digital training tool that makes that possible: scenario-based, highly interactive e-learning where the learner takes on the role of rescuer, makes real decisions, sees the outcome, and receives expert feedback. The format replaces one-off, in-person instruction with fast, repeatable, anywhere-access practice — building both technical skill and the ability to perform under stress. The same model can be adapted to any rescue organization and extended to additional training topics beyond avalanche response.

AVA • Fri Oct 9 — 10:30

25. ÖGSL Digital Snow & Avalanche Tools

Presenter(s)	Dr. Jan-Thomas Fischer; Leo Zoltan; Chris Hesselbach
Country / Team	Austria — ÖGSL
Abstract	This talk introduces ÖGSL — the Austrian Association for Snow and Avalanches — its role within Austria's snow and avalanche community, key projects it has supported, and possible directions for its future development, alongside a brief overview of Austria's organizational and educational structures in this field. The second half focuses on avalanche terrain identification: innovative maps and tools that help both training and rescue operations by making complex terrain easier to understand and communicate in the field.

AVA • Fri Oct 9 — 13:30

26. Avalanche Forecast in Rescue Ops

Presenter(s)	Patrick Nairz
Country / Team	Austria
Abstract	A given avalanche danger level can describe very different local hazard situations, calling for fundamentally different risk-assessment approaches depending on the underlying avalanche problem. This distinction matters most in rescue operations, where teams often must enter exposed terrain under time pressure, making a careful, situation-specific assessment essential to limit the risk of secondary avalanches. Using examples from recent avalanche incidents, this talk shows how the specific avalanche problem shaped operational planning, decision-making, and the risk-management measures needed to carry out complex rescue missions safely and effectively.

DOG — Rescue Dog-Handlers

DOG • Thu Oct 8 — 09:00

27. The Austria Team Introduces Itself

Presenter(s)	Reinhard Hirschmuggel (Head of the Doghandlers)
Country / Team	Austria — ÖBRD
Abstract	Reinhard Hirschmuggel, the national coordinator for Austrian dog handlers, will introduce us to his organization, the Austria Mountain Rescue Service. Currently, there are about 235 dog handlers working in the mountain rescue service. The dog handlers and their dogs are trained to search for missing persons and to assist in avalanche rescue operations. Thanks to the dogs, several people have been rescued alive in recent years.

DOG • Thu Oct 8 — 15:30

28. Avalanche Accident Zinkenschlucht

Presenter(s)	Reinhard Hirschmuggel
Country / Team	Austria — ÖBRD
Abstract	The precarious avalanche situation — at alert level 3 — following heavy snowfall in Styria had claimed one life. This operation, which took place on February 21, 2026, illustrates the challenges posed by stormy weather with intermittent snowfall. Based on the information that the buried person was not carrying any technical equipment, a total of 120 rescue personnel plus an avalanche dog were involved in the search. The logistics posed a major challenge for the incident command.

DOG • Thu Oct 8 — 16:00

29. Integration of Geodata and Technologies

Presenter(s)	Jan Hepnar
Country / Team	Czechia — HSCR
Abstract	Description of the current management of search operations in the Czech Republic, and use of modern software and online data collection from canine search teams and other technical means and rescuers. The second part presents a proposal for cooperation: integrated into any software teams are currently using, built upon the systems already in place at the Mountain Rescue Service and the Police of the Czech Republic, and further developed from what has been achieved together on other joint projects.

DOG • Thu Oct 8 — 16:30

30. Adjusting Training for Rescuers in Response to Global Warming

Presenter(s)	Fabrice Huot

Country / Team	France — GSM
Abstract	A new "3M Program" launched in June 2026 — covering landslides, rockfall, and Seracs avalanches — for all dog handlers, in addition to the existing avalanche program. Many dog handlers also suffer from PTSD due to repeated exposure to death, empathizing with victims, and the secondhand stress of being on call every day. In response, a new mental-health program for incoming dog handlers has been started with a psychologist specializing in PTSD.

DOG • Thu Oct 8 — 17:00

31. K9 HAZMAT & Veterinary Aid Training

Presenter(s)	P. Czermak
Country / Team	Poland — GOPR
Abstract	Search and rescue dogs operate in demanding environments where they may be exposed to injuries, toxic substances, chemical contamination, and extreme weather conditions. This presentation discusses the importance of veterinary first aid and hazardous materials (HAZMAT) training for K9 handlers in the GOPR Mountain Rescue Service. It outlines the essential knowledge and practical skills required to assess an injured working dog, stabilise its condition, and provide immediate care before professional veterinary assistance becomes available. Particular attention is given to recognising life-threatening conditions, controlling bleeding, managing fractures, preventing hypothermia, and safely evacuating an injured dog from difficult terrain. The presentation also addresses procedures for operating in potentially contaminated environments, including hazard recognition, use of personal protective equipment, canine decontamination, and prevention of secondary exposure. Integrating veterinary first aid with HAZMAT awareness strengthens handler preparedness, improves operational safety, and supports the health and effectiveness of search and rescue dog teams during complex mountain rescue operations.

DOG • Fri Oct 9 — 08:30

32. Trust Your Dog

Presenter(s)	Imboden Philipp
Country / Team	KWRO-OCVS
Abstract	Searching for a person in Zermatt with lots of distractions.

DOG • Fri Oct 9 — 09:00

33. New Training Center for Disaster Search Dogs

Presenter(s)	Knut Skar
Country / Team	Norway — NRH

Abstract	This is a presentation about a USAR site (rubble site) constructed in Norway. It's built especially for dog search, where the amount of scent coming up through the rubble above can be controlled. The rubble simulates concrete buildings, wooden buildings, and landslides, in addition to a special area for environmental training of the dogs.

DOG • Fri Oct 9 — 10:00

34. Why Doghandlers Shouldn't Be Afraid of High Technology

Presenter(s)	Ion Santuloiu
Country / Team	Romania — ANSMR
Abstract	Drones with IR, or handheld IR devices, are very useful in the search for lost humans, but not decisive — only complementary. A drone cannot see under the canopy of a forest, not even in winter when the trees have no leaves, let alone in mountain evergreen forests. So for open spaces a drone helps, but for forests, bushes, or small bridges, a dog is needed. The best approach is to equip dog handlers with small, high-performance IR devices for a better view of the environment and for safety. In one case, a drone guided the handler toward a human-like shape in open ground, but the handler suspected otherwise because the wind was coming from that direction and the dog stayed calm — no human scent. It turned out to be a concrete slab partially covered with dirt and vegetation, taking on a shape like a person lying on the ground.

DOG • Fri Oct 9 — 10:30

35. WBR

Presenter(s)	Margie (Marguerite) van Komen; Sam Chovan
Country / Team	USA — Wasatch Backcountry Rescue (WBR)
Abstract	"The Integration of State and Federal Resources and WBR" — a look at how Wasatch Backcountry Rescue works with state and federal resources in its search and rescue operations.

MED — Mountain Medicine

MED • Thu Oct 8 — 08:30

36. Snow Submersion Asphyxia

Presenter(s)	Kyle McLaughlin
Country / Team	Canada — Parks Canada
Abstract	Snow submersion asphyxiation (SSA) is an under-recognized cause of death among skiers and snowboarders in deep, unconsolidated snow, particularly in tree wells after storms. Inconsistent terminology, incomplete surveillance, and limited evidence have hindered standardized prevention, rescue, and management guidance.

MED • Thu Oct 8 — 09:00

37. Fatal Non-Avalanche Snow Burial in Japanese Backcountry Terrain: A Five-Year Case Series

Presenter(s)	Kazue Oshiro
Country / Team	Japan — Association for Mountain Medical Rescue (AMMR)
Abstract	Non-avalanche snow burial (NASB) is a recognized cause of fatal asphyxia in deep snow, commonly associated with tree wells. We reviewed fatal winter backcountry incidents reported by prefectural police throughout Japan over five years and identified six fatal NASB cases. None involved a tree well, including two incidents during tree skiing in which scene investigation excluded tree-well involvement. All burials occurred on open slopes or in terrain depressions containing deep unconsolidated snow. All victims were found head-first, and all deaths were attributed to asphyxia. These findings broaden the environmental context in which fatal NASB should be recognized.

MED • Thu Oct 8 — 10:00

38. ICAR MEDCOM Recommendation on Frostbite Care for Physicians

Presenter(s)	Alex Poole; Linda Johannson
Country / Team	Canada — CSMM (Canadian Society of Mountain Medicine)
Abstract	The Canadian Frostbite Network and an approach to the ICAR MEDCOM Frostbite guideline: We seek to create a new ICAR MedCom frostbite care guideline for physicians to refer to when determining the best care for their frostbitten patients, tailored to the resources available. We will consult international expert members of the MedCom to form a consensus and a recommendation from ICAR that can be published and used worldwide in many settings.

MED • Thu Oct 8 — 10:30

39. HAI Frost – Iloprost Study

Presenter(s)	Lea Dümpelmann
Country / Team	EURAC
Abstract	This report describes the first field administration of intravenous iloprost for severe frostbite at Everest Base Camp during the 2026 season. Seven patients were treated successfully. Key findings address medication storage, infusion pump performance at altitude, treatment tolerability, and operational challenges including manpower, monitoring demands, and rescue-provider interactions.

MED • Thu Oct 8 — 11:00

40. Update on Emergency Care for Avalanche-Buried Patients

Presenter(s)	Giacomo Strapazzon, MD PhD
Country / Team	Italy — Corpo Nazionale Soccorso Alpino e Speleologico (CNSAS), Milano / Eurac Research, Bolzano
Abstract	Avalanche fatalities result from asphyxia, trauma, and hypothermia. Survival for critically buried subjects relies on the speed of extrication, absence of trauma, presence of a patent airway and air pocket, immediate field treatment, and rapid transport to the most appropriate hospital by organized search and rescue (SAR) and emergency medical services (EMS). Survival may be improved with helicopter EMS, advancements in safety and rescue equipment technology, early deployment of professional SAR teams with checklists and standard operating procedures (SOPs), and the use of drones. Prehospital and in-hospital care of an avalanche accident requires medical, technical, logistical, and organizational competencies. This talk will update recent developments and practical management, discussing implications for best practice in prehospital care, triage, transport, and in-hospital management of avalanche patients.
Literature	Strapazzon G, Thomassen O, Van Tilburg C, McLaughlin K, Skaiaa SC, Brugger H, Pasquier M. Emergency care for avalanche buried patients – a narrative review. Scand J Trauma Resusc Emerg Med 2026;34(1):63. doi: 10.1186/s13049-026-01543-2.

MED • Thu Oct 8 — 11:30

41. Gradient Expectations: Rethinking Core Temperature in Accidental Hypothermia & Minimum Reporting Standards in Accidental Hypothermia

Presenter(s)	Steve Roy
Country / Team	Canada — ISMM
Abstract	There is significant heterogeneity in how accidental hypothermia cases and research are reported. This creates ambiguity and limits the interpretability of much published data. This session will review examples of how current practice limits interpretability and how standardization of reporting could greatly improve the usability of published data.

MED • Thu Oct 8 — 13:00 (MEDCOM internal updates on recommendations)

42. Stress Resilience Guideline — Final Update

Presenter(s)	Jon White
Country / Team	UK — MREW
Abstract	Revision of the 2023 ICAR Recommendations for Stress Resilience in Alpine Rescue, including developing an eye-catching poster and developing recommendations based on research evidence. These recommendations are to be approved at the Assembly of Delegates.

MED • Thu Oct 8 — 13:00 (MEDCOM internal updates on recommendations)

43. Medical Assessment of Mountain Rescuers

Presenter(s)	Evelien Cools
Country / Team	ARS
Abstract	Mountain rescue teams play a vital role in responding to emergencies in the most demanding and hazardous environments. No studies on fitness levels and health assessment in mountain rescuers exist. The aim of this study is to give an overview of medical assessment of team members of mountain rescue organizations that are part of the International Commission for Alpine Rescue (ICAR).

MED • Thu Oct 8 — 13:30

44. HEMS DOC Training and Competencies

Presenter(s)	Matthias Haselbacher
Country / Team	Austria — ÖAMTC
Abstract	The aim of this project is to establish a unified ICAR Recommendation regarding the baseline emergency medical and mountaineering qualifications required for emergency physicians operating on alpine emergency helicopters.

MED • Thu Oct 8 — 13:30

45. Airway Management in Mountain Rescue Recommendation

Presenter(s)	Matthias Jacob
Country / Team	BWB
Abstract	An update on the ICAR MEDCOM clinical practice guideline on prehospital airway management in mountain rescue: this guideline for prehospital airway management includes a combination of techniques applied in a stepwise fashion appropriate to the patient's clinical status and provider training.

MED • Thu Oct 8 — 14:00

46. Rescuers Competencies Project

Presenter(s)	Kazue Oshiro
Country / Team	Japan — AMMR
Abstract	This ICAR MedCom project aims to develop international consensus on core competencies for responders providing medical or first aid care during mountain rescue. An initial set of competency statements was collated from training syllabi provided by ICAR member organisations and reviewed by the Steering Group in preparation for the Delphi process. With research support from Eurac Research, the Delphi methodology and survey have been developed and pilot tested. An international expert panel has now been established, with Round 1 of the three-round Delphi process scheduled to begin later in 2026. This presentation will update MedCom on progress, methodology, and next steps toward international consensus.

MED • Thu Oct 8 — 14:00

47. Regional Pain Management and Procedural Sedation

Presenter(s)	Marc Blancher
Country / Team	ANMSM
Abstract	Following the ICAR MEDCOM Recommendation on Pain Management, this is the next stage of updating the existing recommendation and further developing it with topics on loco-regional pain treatment and procedural sedation. This is a development session for the pain management project.

MED • Thu Oct 8 — 15:30

48. Use of Hybrid Model for SAR Medical Training

Presenter(s)	Chris van Tilburg
Country / Team	USA — MRA
Abstract	Rescues on Mount Hood, Oregon, USA, exploded in the last decade. We needed to expand the medical training of rescuers, while balancing the time commitment to train on other components of rescue (rope, crevasse, avalanche, navigation). We decided to teach the Emergency Medical Responder course, 60 hours, using a hybrid model. This course was chosen over DiMM and Wilderness First Responder, because EMR is recognized in the EMS system in the USA. The course has three parts: self-study, tele-video conferencing, and in-person scenario-based training. This presentation reviews the positive and negative aspects of hybrid medical training for SAR personnel.

MED • Thu Oct 8 — 16:00

49. First Aid Training Introduced as a National Standard for Mountaineering and Outdoor Activities

Presenter(s)	Julia Fieler
Country / Team	Norway — Norwegian Red Cross
Abstract	In the absence of first aid courses focusing on the outdoor and remote environment, a group of medical personnel with experience from the rescue service developed an instructor education and standardized first aid courses for mountaineering and outdoor activities in Norway. The training focuses on prevention of accidents by increasing knowledge and preparedness in trip planning, first aid and safety equipment, how to act when an accident occurs, and a straightforward approach to prioritizing and treating injuries in remote areas and the cold Norwegian environment. The standard describes both how to educate instructors and the content of basic first aid courses of 1 and 3 days.

MED • Thu Oct 8 — 16:30

50. The Role of MEDCOM in Providing Guidelines for Training and CME in Mountain Rescue

Presenter(s)	Jason Williams; Martin Musi
Country / Team	UNM-IMMC
Abstract	This session will be a development session on training during the Diploma in Mountain Medicine (DiMM), a joint project, and will discuss further development of training rescuers and trainers through ICAR. It covers two linked updates: Diploma in Mountain Medicine Updates — new regulations and the Learning Outcomes Project; and Rethinking Training: From Field Experience to Digital Learning — Medical Training for ICAR Project: Train the Trainers & Train the Rescuers.

MED • Fri Oct 9 — 09:00

51. From Training to Partnership: A Decade of Mountain Medicine Education in the Khumbu

Presenter(s)	Aaron Reilly
Country / Team	UNM-IMMC
Abstract	For nearly a decade, the University of New Mexico International Mountain Medicine Center (UNM IMMC) and the Khumbu Climbing Center (KCC) in Phortse, Nepal, have collaborated to strengthen medical education and rescue capability within the Himalayan climbing community. Central to this partnership is an Alpine First Responder course taught annually by UNM IMMC physicians and Wilderness Medicine Fellows alongside KCC instructors, providing practical medical and rescue training tailored to the realities of working in the high mountains of Nepal. Over time, the relationship has developed into much more than an annual educational program — it has become a sustained partnership built upon shared expertise, mutual learning, and a commitment to

	developing locally relevant and sustainable training. For IMMC faculty and fellows, teaching in Phortse provides an equally valuable opportunity to learn from Sherpa climbers whose experience operating in extreme mountain environments is unparalleled. This presentation explores the evolution of the IMMC–KCC collaboration, lessons learned over a decade of working together, and how long-term international partnerships can move beyond episodic training toward shared capacity building — offering a model for preparing the next generation of mountain rescuers through collaboration rather than simply the transfer of knowledge.

MED • Fri Oct 9 — 14:00

52. Paramedic Administered Intranasal Esketamine in Alpine Rescue Service

Presenter(s)	Alexander Egger
Country / Team	Austria — ÖBRD
Abstract	The objective of this retrospective data analysis is to investigate the practicality and efficacy of nasally administered esketamine 0.25% (3.5 mg per actuation) for moderate to severe (NRS ≥5) traumatic pain in alpine environments during routine use by paramedics of the Austrian Mountain Rescue Service.

MED • Fri Oct 9 — 14:30

53. Aconcagua Altitude Medicine and Rescue Research Update

Presenter(s)	Aaron Brillhart
Country / Team	UVM
Abstract	Aconcagua (6,961 m) in Argentina is the world's highest peak outside of Asia and is attempted by thousands of climbers annually. A large park medical service oversees the medical aspects of over 100 rescue evacuations per year on Aconcagua, encountering many cases of altitude illness and high-altitude pulmonary edema. In this presentation we will review insightful and exciting recent research relevant to mountaineering rescues, fatalities, safety, altitude illness prevention, and medical care on the mountain.
Literature	Free Open Access literature for ICAR delegates: Climber Mortality on Aconcagua 2013-2024 — https://journals.sagepub.com/doi/full/10.1177/10806032251330534 Medical Evacuations of Climbers on Mount Aconcagua 2022-2024 — https://journals.sagepub.com/doi/full/10.1177/10806032251323504 Characteristics of Climbers with High Altitude Pulmonary Edema on Aconcagua — https://journals.sagepub.com/doi/full/10.1177/10806032241303438

MED • Fri Oct 9 — 15:00

54. Pulmonary Function by Litter Position

Presenter(s)	Roger Mortimer
Country / Team	NCRC
Abstract	Being in a litter affects breathing. This study measures this effect in the horizontal and vertical positions. A vertically positioned litter allows for easier breathing. Rescuers should make choices about litter position for patients and not just always default to the horizontal position.

TER — Terrestrial Rescue Commission

TER • Thu Oct 8 — 08:30

55. Highlines vs. Crosshauls

Presenter(s)	Tom Wood; Rich Siemer
Country / Team	USA — MRA
Abstract	Horizontal rope systems are used in rope rescue to access or transport a patient across a canyon or river or over difficult terrain. These systems are also characterized by the ability to move the load both horizontally and vertically. Historically, reeving highlines have been the system that rescuers use most in these situations, but a technique known as a crosshaul, borrowed from the rope access industry, offers similar capabilities using fewer ropes. This presentation will compare the advantages and disadvantages of using a reeving highlines and crosshauls with objective observations and data gathered from load monitors during operations.

TER • Thu Oct 8 — 09:00

56. REMS – Rapid Extraction Module: Fast Techniques for Fast Rescue at Wildfire Accidents

Presenter(s)	Craig McClure; Guilherme Settanini
Country / Team	USA — CMC USA
Abstract	The Wildland Fire REMS concept is a relatively new and successful response model for accessing and evacuating fire personnel in remote wildland fire environments. This session will introduce attendees to the function, standards, and challenges faced in training urban/suburban firefighters for backcountry operations.

TER • Thu Oct 8 — 10:30

57. Search for Missing People – What Are We Doing Wrong in Norway

Presenter(s)	Sondre Langenes
Country / Team	NRK
Abstract	The bicycle-wheel model and Robert Koester's statistics have given us a shared framework for launching effective searches for missing persons. New digital tools have given the Norwegian rescue service a common platform for coordinating effectively, both at the command post and in the field. This has also given us unique insight into how we actually work — and it reveals a whole range of pitfalls we keep stepping into. Crucially, digitalisation did not create these pitfalls. It exposed problems that have been there all along. Effective tools can make us fast without making us wise: we apply frameworks mechanically and lose the reasoning behind them, and we forget that statistics describe averages while the person in front of us is a single case. Standardisation and streamlining bring real gains — but they can quietly mask the erosion of the decision-making and

	expertise they were meant to support. Do we need to rethink? This challenge is sharpened by geography. Norway is a long, thinly populated country served by many organisations and a very large volunteer base — yet in many areas real operations are rare and training is limited. That combination makes it genuinely hard to build and maintain competence, and it is a problem shared by rescue services well beyond Norway. This talk explores how the Norwegian rescue service is now regrouping to rebuild understanding, knowledge-sharing, training, and best practice from the ground up in the wake of digitalisation. We look at the same pitfalls and recurring mistakes, at how we are trying to address them systematically through a revised national guideline, and at how we are working to better understand both ourselves and the missing person using Norwegian data. Not least, we ask how we should train the leaders and search crews of the future. Participants to this session will leave with a shared vocabulary for the pitfalls that follow digitalisation, a concrete example of using a national guideline to build common understanding across a dispersed rescue service, and an approach to rebuilding training and competence that applies whatever country they work in.

TER • Thu Oct 8 — 11:00

58. Swiss Alpine Rescue – A Key Link in the Rescue Chain, from Preparedness to Response

Presenter(s)	Andrea Dotta
Country / Team	ARS
Abstract	The presentation begins with a major operation in Ticino, where the ARS played a key role in its success, and then continues with a large-scale exercise and the training needed to prepare for such events.

TER • Thu Oct 8 — 11:30

59. Cable Car Incident, Karren

Presenter(s)	Johannes Peiker; Klaus Drexel
Country / Team	Austria — ÖBRD
Abstract	On June 23rd, 2025, the Karren cable car in Dornbirn, Austria, was damaged during an extraordinary downburst weather event, trapping 19 passengers in the cabin 150 meters above the ground. The severity of the incident meant that the intended rescue concept could not be applied, posing significant challenges to cable car operators, technicians, and rescue teams tasked with the evacuation. This presentation outlines the situation as it unfolded and the sequence of actions required to complete the evacuation successfully — from clearing fallen trees blocking access roads, to extracting passengers from the suspended cabin, to guiding them safely down through steep terrain to the valley. It will further discuss the lessons learned from this operation and address questions of responsibility and liability during large-scale rescue missions.

TER • Thu Oct 8 — 13:00–14:00

60. Deep Purple – Cave Rescue in Morca 2023, Turkey

Presenter(s)	Dinko Novosel; Giuseppe Conti; Denes Akos Nagy; Bülent Genc
Country / Team	Croatia — HGSS/ECRA
Abstract	In September 2023, an unprecedented international cave rescue operation was launched in Morca Cave, Türkiye, after an experienced caver from the USA became critically ill at a depth of approximately 1,040 metres. The operation presented exceptional challenges at every level. Politically, an urgent framework for international assistance had to be established in a country with limited deep-cave rescue capacity. Logistically, a multinational team had to operate from an isolated mountain plateau at 2,200 metres, with difficult access and no reliable water supply. Medically, the patient required intensive treatment underground by several physicians before evacuation was possible. Technically, around 160 rescuers worked underground, coordinating different national rescue systems, rope techniques, and communication equipment across extreme depths. This presentation examines how command, logistics, medical care, and multinational technical teams were integrated under severe time pressure, and how these challenges were overcome to complete one of the deepest and most complex cave rescues ever undertaken successfully.

TER • Thu Oct 8 — 14:00

61. Education Curriculum Around Risk Management

Presenter(s)	Craig McClure; Guilherme Settanini
Country / Team	USA — CMC USA
Abstract	The CMC school cadre collaborated to address a gap in education regarding risk management, risk awareness, and communication. Adopting the known GAR (Green, Amber, Red) model commonly used in SAR, we developed a single card matrix for discussion, classification, and mitigation of risk. We would like to share that tool to further discussions around risk and provide a vocabulary and starting point for rescue organizations.

TER • Thu Oct 8 — 15:00

62. The Final Patient: Extending the Life-Saving Value of Mountain Rescue Through Operational Learning and Purposeful Storytelling

Presenter(s)	David Nel
Country / Team	South Africa — MCSA (Mountain Club of South Africa)
Abstract	This talk asks whether rescue organisations that accept responsibility for saving lives should equally accept responsibility for realising the lessons that could prevent future emergencies. Drawing on operational experience with Wilderness Search and Rescue Western Cape and the Mountain Club of South Africa, the presentation argues that every rescue generates learning — about human factors, decision-making, and the conditions

	behind incidents — that is often underused. It proposes training the next generation of rescuers not only to respond, but to capture and communicate those lessons, using purposeful storytelling grounded in research on narrative persuasion and disaster resilience to turn operational experience into safer, more resilient communities.

TER • Fri Oct 9 — 10:00

63. Waterproof Drysuit for Injured Persons During Cave and Canyon Rescue Operations

Presenter(s)	Giuseppe Antonini; Francesco Berti
Country / Team	Italy — CNSAS
Abstract	Waterproof drysuit for injured persons during cave and canyon rescue operations. [Full abstract limited to this description per the submission form; presenter is a national canyon and cave rescue instructor for CNSAS, Italy.]

TER • Fri Oct 9 — 10:30

64. From Ad Hoc Response to Modular Capacity: How Three Disasters Shaped HGSS into a UCPM-Ready Organisation

Presenter(s)	Marko Rakovac
Country / Team	Croatia — HGSS
Abstract	Mountain rescue organisations are increasingly deployed to disasters outside their traditional domain. The capabilities needed for floods, earthquakes, and structural collapses are often built ad hoc during the event and lost afterwards. This pattern limits preparedness and interoperability. This presentation traces how three successive disasters transformed the Croatian Mountain Rescue Service (HGSS) from a specialist mountain organisation into one with structured, modular, and EU-interoperable disaster response capacities. The 2014 Gunja floods (3,500 people evacuated) first proved that HGSS skills were transferable beyond mountain terrain. The 2020 Zagreb earthquake demonstrated the value of rope access in urban structural assessment. The 2020–2021 Petrinja earthquake (2,657 interventions, all 25 stations deployed over 30 days) tested sustained large-scale operations and validated drone-based damage mapping. Each event produced lessons that HGSS formalised into permanent capability. Today HGSS maintains three specialist capacities relevant to the EU Civil Protection Mechanism: cave search and rescue, unmanned aerial systems, and flood rescue, alongside contributions to Croatia's MUSAR module. The presentation analyses this evolution and offers a framework for other ICAR organisations navigating the same transition.

TER • Fri Oct 9 — 14:30

65. CNSAS-SNATE: National Organization and Technical Helicopter Rescue Training

Presenter(s)	Ennio Rizzotti; Francesco Valgoi
Country / Team	Italy — CNSAS
Abstract	This talk covers CNSAS — the organization delegated to provide mountain rescue services in Italy — its structure spanning both training and operations, the Helicopter Rescue Technician Training School, and the service's coverage across the entire Italian territory.

Joint Sessions

JOINT SESSION — DOG / TER • Thu Oct 8 — 10:00 • Room: TERCOM

66. Extensive Search for Missing Person, New Zealand — Case Study

Presenter(s)	Peter Zimmer
Country / Team	New Zealand — NZLSAR
Abstract	This case study follows the 20-day search for a person (also referred to internally as "Operation Artigau") who fell into a stream canyon in a New Zealand national park after stepping off a popular day-walk trail. The operation drew on nearly all of the local SAR team's resources — its swiftwater/canyon team, incident management and sub-alpine teams, and search dogs — totaling around 40 volunteers and 823 volunteer hours across a search area of barely 100 metres. Despite recovering personal belongings, rescuers could not retrieve the body, believed trapped by hydraulic pressure in one of the canyon's "sieves." The presentation covers the operation and the specialist training it demanded of search and rescue personnel.

JOINT SESSION — AVA / DOG • Thu Oct 8 — 17:30 • Room: AVACOM

67. Cooperation Between Rescuers and Dog Handlers at the Accident Scene

Presenter(s)	Marcel Meier (ICAR); Kyle Hale (CARDA, Canada)
Country / Team	ICAR / CARDA (Canada)
Abstract	Time is life. This aspect requires special attention during an avalanche rescue operation. This presentation focuses on the extremely important collaboration between the various rescuers and the dog handlers during an avalanche rescue operation.

JOINT SESSION — MED / AVA / TER / DOG • Fri Oct 9 — 08:00 • Room: TERCOM

68. Hypothermic Cardiac Arrest During a Mountain Storm

Presenter(s)	Sven Christjar Skaiaa; T. Nissen (Denmark) — per schedule credit; co-authors per abstract: A. Roslin, T.P.H. Nissen, A. Holtan, K. Wisløff-Aase, N. Nordstrand, Å. Rasmussen, A. Fiane, L. Romundstad
Country / Team	Norway — 330 Squadron (RNAF-330sqn)
Abstract	This case describes one of the longest documented successful resuscitations from hypothermic cardiac arrest: over 18 hours combining bystander CPR, advanced life support, and extracorporeal CPR. A 25-year-old man suffered a witnessed cardiac arrest during a storm in the Norwegian mountains; onset of CPR was delayed 64 minutes by terrain and weather, and bystanders sustained manual compressions for nearly three hours before evacuation. After ECMO-assisted rewarming, the patient achieved sustained ROSC and made a full neurological recovery. The talk explores the medical decisions and ethical dilemmas rescuers face when continuing prolonged CPR in remote, hostile environments.

JOINT SESSION — AIR / AVA / TER / MED • Fri Oct 9 — 08:30 (Drones block, segment 1 of 3) • Room: TERCOM

69. Drone-Use of Human External Cargo

Presenter(s)	Michiel van Veelen
Country / Team	Netherlands — EURAC Researcher
Abstract	Drones are rapidly expanding beyond search operations into multiple aspects of mountain emergency medicine. This lecture presents current evidence on drone-assisted search and rescue, telemedical support, AED delivery, and drone-assisted patient evacuation, discussing clinical benefits, operational challenges, and future opportunities for mountain rescue organisations.

JOINT SESSION — AIR / AVA / TER • Fri Oct 9 — 08:50 (Drones block, segment 2 of 3) • Room: TERCOM

70. Current and Planned Drone Fleet Capacity in TOPR: Cargo, Search, Automated Docks, AED Delivery

Presenter(s)	TOPR
Country / Team	Poland — TOPR (Tatrzańskie Ochotnicze Pogotowie Ratunkowe), Zakopane
Abstract	TOPR's drone fleet provides aid in search operations, incident reconnaissance, transport of survival equipment to rescuees awaiting rescue, and delivery of rescue equipment to rescuers in action. The fleet has seen rapid development over the last five years: imagery obtained by drones is analysed with AI software, and docks located near mountain huts are used to deliver AEDs to ongoing bystander CPR and other equipment. The presentation includes several case reports of the fleet in operational use.

JOINT SESSION — AIR / AVA / TER • Fri Oct 9 — 09:10 (Drones block, segment 3 of 3) • Room: TERCOM

71. Evaluating a RECCO Drone-Aided Detector System for Avalanche and Year-Round Search and Rescue Operations

Presenter(s)	Patrick Dryer
Country / Team	USA — Juneau Mountain Rescue
Abstract	This presentation summarizes the results of field trials in Juneau, Alaska designed to evaluate the operational performance, including flight parameters and operational use cases, of a drone-mounted RECCO detector system. The trials assess how altitude, speed, and search patterns affect detection performance in complex coastal mountain environments, including dense forests, steep gullied slopes, and snow-covered high-alpine glaciers. Controlled flight missions using RECCO reflectors were performed across these diverse terrain types. Results indicate optimal performance parameters and search strategies for the RECCO drone solution when applied to avalanche scenarios as well as steep and forested terrain. Localization accuracy was considered sufficient to guide

	ground teams to a RECCO "hot spot." The trials demonstrate the operational feasibility of drone-assisted RECCO searches, which can reduce search times and increase rescuer safety compared to ground-based RECCO searches.

JOINT SESSION — AVA / MED • Fri Oct 9 — 10:00 • Room: MEDCOM

72. Japan Winter Hazards

Presenter(s)	Kazue Oshiro; (abstract also credits) Tomikazu Murakami
Country / Team	Japan — Association for Mountain Medical Rescue (AMMR)
Abstract	The Japanese winter backcountry is marked by heavy snowfall, dense forests, and steep creek terrain, producing two distinctive hazard patterns. First, a nationwide five-year review found six fatal cases of non-avalanche snow burial, none involving a tree well — all occurred on open slopes or in terrain depressions with deep unconsolidated snow, with digital location technology aiding some victim searches. Second, in steep creek terrain that remains only partly snow-covered, skiers and snowboarders — increasingly international visitors unfamiliar with local terrain — can reach the abrupt edge of an exposed waterfall with little warning, falling into voids between snowpack and rock or into the plunge pool, where entrapment and cold-water exposure make rescue extremely difficult. Three such incidents have occurred in the past four years. The talk draws practical lessons for hazard recognition, backcountry education, and rescue operations.

JOINT SESSION — AIR / MED • Fri Oct 9 — 10:30 • Room: MEDCOM

73. The Medical Operational Workflow

Presenter(s)	Sven Christjar Skaiaa; D.R. Vatle
Country / Team	Norway — 330 Squadron (RNAF-330sqn)
Abstract	The Royal Norwegian Air Force 330 Squadron developed the Medical Operational Workflow (MOW) between 2019 and 2022 to standardize transitions between mission stages and improve operational efficiency. MOW links existing medical, flight, and rescue standard operating procedures into a coherent, team-based continuum. An observational study comparing 1,298 patients before implementation (2009–2019) with 538 after (2023–2025) showed median scene time decreased from 15 to 12 minutes despite higher patient severity and more advanced interventions. Adjusted scene time fell 24.3%, with largest reductions among the most severely ill. MOW was subsequently adopted across all six 330 Squadron HEMRO bases in spring 2026.

JOINT SESSION — AVA / DOG • Fri Oct 9 — 11:00 • Room: AVACOM

74. "When Every Minute Counts – Insights from Incident Command" — Rendl Avalanche, St. Anton am Arlberg, February 20, 2026

Presenter(s)	Chris (Christian) Riepl — Bundesreferent Lawinen, staatl. gepr. Berg- und Skiführer

Country / Team	Austria — Österreichischer Bergrettungsdienst (ÖBRD)
Abstract	The avalanche incident on Rendl, St. Anton am Arlberg, on February 20, 2026, represented a complex and demanding large-scale rescue operation. The avalanche extended over approximately 1,000 vertical metres and resulted in three distinct deposition zones within the runout area. Five persons were involved in the incident; three sustained fatal injuries and one was seriously injured. From the perspective of mountain rescue, the operation placed particular demands on incident command, the allocation and coordination of resources, and the establishment of effective communication structures. The involvement of multiple mountain rescue teams, avalanche dog units, helicopters, and other emergency services required continuous coordination and a clear flow of information. This analysis examines key lessons learned in incident management, task allocation, communication, and inter-agency coordination, with the aim of identifying strengths and potential areas for improvement in future avalanche rescue operations.

JOINT SESSION — TER / MED • Fri Oct 9 — 11:00 • Room: TERCOM

75. Manual CPR: Still Alive! Improving Cardiopulmonary Resuscitation Techniques and Outcomes in the Mountains and Winter Rescue Environment

Presenter(s)	Aaron Brillhart
Country / Team	USA — University of Vermont Medical Center
Abstract	Sudden medical cardiac arrest occurs in the mountains, and rescuers respond to these events. In this presentation we will discuss electrifying ski patrol and mountain rescue CPR research and techniques, including during transport when appropriate. We will focus on rescuer safety and improving patient outcomes from medical cardiac arrest in the mountain and winter environment.
Literature	Free Open Access literature for ICAR delegates (limited time only): https://journals.sagepub.com/share/ZTRYY9V6C8PSNCXRYXI8?target=10.1177/10806032251364148

JOINT SESSION — TER / MED • Fri Oct 9 — 11:30 • Room: TERCOM

76. ALPINLOG — Digital Incident Documentation and Communication Platform for Mountain Rescue

Presenter(s)	Tobias Huber
Country / Team	Austria — Austrian Mountain Rescue Service (ÖBRD)
Abstract	ALPINLOG is a modern digital platform designed to support the complete documentation and communication process during mountain rescue incidents. It enables ski patrols, mountain rescue teams, helicopter emergency medical services, and other rescue organizations to capture all relevant incident information directly at the scene using

	smartphones or tablets. The application replaces handwritten documentation with a structured digital workflow, ensuring standardized data collection, improved documentation quality, and immediate availability of information for all authorized partners involved in the rescue chain.

JOINT SESSION — AVA / MED / TER / DOG • Fri Oct 9 — 12:00 • Room: TERCOM

77. Automated Verbal Commands During Avalanche Companion Rescue

Presenter(s)	B. Wallner
Country / Team	Austria — ÖAMTC
Abstract	Rapid avalanche companion rescue is essential for survival, yet transceiver searches are frequently performed under considerable psychological stress, which may impair performance. This study investigated whether automated verbal commands (VOICE) integrated into a new generation of avalanche transceivers improve search performance, facilitate learning, and reduce acute mental stress during simulated companion rescue.

JOINT SESSION — TER / MED • Fri Oct 9 — 13:30 • Room: TERCOM

78. Epidemiology & Characteristics of Canyoning SAR in Italy, 2009–2023

Presenter(s)	G. Strapazzon; A. Tomasi
Country / Team	Italy — CNSAS
Abstract	Nationwide retrospective study analyzing canyoning rescue operations in Italy over a fifteen-year period, describing their epidemiology, clinical characteristics, and rescue patterns. The study highlights the importance of specialized rescue planning, dedicated personnel training, and the early management of trauma, drowning, and environmental exposure.

JOINT SESSION — AVA / TER — Partner Presentation • Fri Oct 9 — 14:00 • Room: TERCOM

79. Know Your Enemy, Know Your Technology – A Process-Oriented Approach to Mitigating Interference Effects During Avalanche Rescue

Presenter(s)	Dieter Kotlaba
Country / Team	Germany — ORTOVOX (partner)
Abstract	Electromagnetic interference can complicate avalanche rescue searches by reducing receiving range or causing unstable indications. Potential sources of interference include personal electronic devices, metallic and magnetic objects, electrical or electronic infrastructure, and atmospheric electrical activity. Their effects depend, among other factors, on the specific combination of avalanche transceiver and interfering source, the distance, and the operating mode. This paper considers interference separately for transmit and search mode and combines published studies with qualitative internal

	observations and practical measurements. The 20 cm recommendation in transmit mode and the 50 cm recommendation in search mode are discussed as important practical guidelines. In particular, practical implementation in search mode shows that this recommendation alone does not guarantee interference-free searching. The paper focuses on a conceptual six-step process, intended to support advanced users and professional organizations in considering potential interference during preparation, detecting it during a search, and adapting their procedures to the specific device.

JOINT SESSION — AIR / MED • Fri Oct 9 — 16:00 • Room: MEDCOM

80. Patient Airway Management During Helicopter Hoist Maneuvers: Manual versus Automated Ventilation with an i-gel Airway During Helicopter Hoist Operations

Presenter(s)	Scott McIntosh; Jason D. Williams
Country / Team	University of Utah and University of New Mexico Mountain Medicine Institute
Abstract	This research evaluates the impact of advanced airway management during Helicopter Hoist Operations (HHO) by assessing manual BVM versus automated ventilation and provider workload in the hoist environment. The findings aim to better characterize operational demands and inform training, performance, and patient safety in helicopter mountain rescue operations.

JOINT SESSION — DOG / AVA / TER • Fri Oct 9 — 16:00 • Room: TERCOM

81. Rescued Alive from Avalanche after 1.5h

Presenter(s)	Meier Marcel
Country / Team	ARS
Abstract	This presentation is intended as a follow-up to Thursday's presentation, "Cooperation Between Rescuers and Dog Handlers at the Accident Scene."

Saturday, October 10

Sat Oct 10 — 08:00

1. Three Dimensions, One Readiness: An Innovative Model for Mountain Rescue Training

Presenter(s)	Claudio Artoni; Maria Chiara Pavesi (guest — not an ICAR member); Piergiorgio Vidi
Country / Team	Italy — CNSAS
Abstract	Mountain rescue training has traditionally centered on technical skill and environmental risk assessment, but this framework increasingly misses how human factors — stress, decision-making, communication, fatigue, group dynamics — shape real operational outcomes. Drawing on the evolution of rescuer training in Italy, this talk traces the shift from static, checklist-based risk models toward a dynamic, multidimensional view of risk, and proposes an integrated three-axis training model — technical, environmental, and human — that treats each as interdependent rather than separate. The aim is to help instructors design programs that embed psychological and human-factor competence as a measurable core skill, offering a transferable model for rescue training more broadly.

Sat Oct 10 — 08:30

2. Hypothermia Treatment During Extreme Rescue

Presenter(s)	Sigurd Mydske; Stein Moeller; Karianne Wergeland Gundersen
Country / Team	Norway — NARG
Abstract	Hypothermia poses a significant threat to victims of mountaineering accidents in Norway. We will present two extreme mountain rescue operations performed by The Norwegian Alpine Rescue Group, where hypothermia was a serious concern, and then lead a discussion on how hypothermia can be treated in extreme conditions and exposed terrain.

Sat Oct 10 — 09:00

3. United in Rescue – Prepared for Crisis: How Everyday Cooperation Creates National Resilience

Presenter(s)	Kjetil Nevøy; Elin Seim; Stein F. Møller; Dag Rune Vatle
Country / Team	Norway — Norwegian Red Cross / Norwegian Air Ambulance (NLA) / 330 Squadron, Royal Norwegian Air Force (330 Sqn RNoAF)
Abstract	Norway has built a unique national rescue system in which government agencies, emergency services, healthcare providers, and volunteer organisations operate as integrated partners rather than separate silos — essential in a country of vast distances, difficult terrain, and fast-changing weather, where no single organisation holds all the needed resources or expertise. Volunteers are a genuine operational component, not just

	a supporting resource, contributing trained personnel and local knowledge alongside professional services. This same integrated structure underpins Norway's broader Total Defence and national-preparedness concept: capability for major crises is built through everyday cooperation, not created during the crisis itself. The talk covers how Norway sustains this culture through joint training, shared communication systems, and long-term relationship-building, and draws out principles — shared responsibility, mutual trust, integrated leadership — that are transferable to other countries' rescue systems.

Sat Oct 10 — 10:00

4. The Shaky Isles – AF8: Disaster Planning for New Zealand's Alpine Fault Rupture

Presenter(s)	Sarah Gordon; Dick Price
Country / Team	New Zealand — NZLSAR
Abstract	An overview of New Zealand's disaster management system from an earthquake risk context at national, regional, and local level, including medical and ski area operational response. New Zealand's experience with destructive earthquakes means coordinated planning for future earthquake risk is vital. An example of a systems approach using the Coordinated Incident Management System (CIMS) and SAFER frameworks for scaled, adaptive responses to a major event.

Sat Oct 10 — 10:30

5. Preparing Austria's Mountain Rescue Service for Crisis and Disaster Response

Presenter(s)	Martin Gurdet
Country / Team	Austria — ÖBRD
Abstract	This presentation offers insight into how the Austrian Mountain Rescue Service is applying federal funding — received for the first time — to strengthen operational readiness, communication structures, and crisis-response capability. It focuses on the early implementation phase: rolling out digital collaboration tools, improving internal communication, transferring knowledge across the organization, and the challenge of uniting seven regional mountain rescue organizations into one coordinated national system. The talk highlights both the opportunities this funding creates and the practical hurdles of national-level coordination.

Sat Oct 10 — 11:00

6. Rockfall and Avalanche Danger Resulting from Helicopter Downwash

Presenter(s)	Dale Wang; Clayton Horney
Country / Team	USA — Mountain Rescue Association (MRA) & Colorado Hoist Rescue Team (CHRT)

Abstract	Rockfall injury at rescue scenes can be caused by factors including the aircraft, rescuers, and non-participating parties. Rescue aircraft such as the H-145 and UH-60 can move rocks from 1.5 inches (3.8 cm) up to 3.5 inches (8.8 cm) respectively, with the largest downwash velocities achieved one rotor diameter below the rotor disc — a helicopter may sit a significant distance above the subject while still exerting maximum rotor velocity on nearer terrain. Aircraft can also dislodge sand, soil, and vegetation, which can in turn move much larger rocks; wind conditions, terrain composition, and soil moisture all affect the degree of rockfall. Mitigation involves proper PPE for rescuers and subjects, ground teams setting up operations outside known fall lines, coordinating ground-team approach timelines with known aircraft ETAs, and both ground teams and aircrew assessing risk to personnel below the scene from non-participating parties above it.

Sat Oct 10 — 11:30

7. Disaster Victim Identification in the Event of a Catastrophe in the Mountains

Presenter(s)	Corinna A. Schön
Country / Team	SGGM
Abstract	Mass incidents can happen anytime and anywhere — also in the mountains. This presentation aims to provide insight into the work of a DVI (Disaster Victim Identification) team and to demonstrate how effective cooperation on the mountain can be achieved, even under challenging conditions.

Sat Oct 10 — 12:00

8. 100 Years of Camaraderie: Why Traditions and Change Are Vital

Presenter(s)	Dr. Chris Van Tilburg
Country / Team	USA — MRA
Abstract	Hood River Crag Rats, a USA Mountain Rescue Association (MRA) charter member, turns 100 years old in 2026 — the oldest team in North America and a founding MRA member. This talk explores why culture and tradition matter for an all-volunteer group in high-risk work (from matching checked shirts to the president's nickname, "Big Squeak"), and why necessary change — admitting women in 1994, out-of-county residents in 2018 — is often the hardest part. It closes with recent adaptations: an Advanced Life Support team, simplified rope rescue systems, and a hybrid Emergency Medical Responder training model.