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 Mountain Rescue Service of the High Tatras. 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, Japan, Montenegro, Norway, Poland, Slovak Republic, Slovenia, Sweden, Switzerland, and United States of America.

ACCIDENTS & INCIDENT REVIEWS FROM MEMBER COUNTRIES:

United States- U.S. Coast Guard Accidents

The U.S. Coast Guard unfortunately experienced four major helicopter accidents during 2010, including;

- MARCH 3, 2010- An HH-60 Jayhawk crashed at 2865 meters (9,400 feet) in the Uinta Mountains (UT), while returning from a security detail associated with the Vancouver Winter Olympics. The aircraft, along with a second helicopter, was en route to its Home base in Elizabeth City, NC and had refueled in Salt Lake City UT. The crew of five survived the accident with three sustaining serious injuries. According to the US Coast Guard, "snow and wind affected visibility."

- APRIL 20, 2010- An HH-65C from Air Station Detroit (MI) crashed into Lake Huron, during a night hoist training exercise with a 12 meter (41-foot) utility boat. The accident occurred at 9:45 p.m. as the pilots flew visually unaided. Three crew members survived without serious injuries when the helicopter crashed in 15 meters (50 feet) of water and sank.

- APRIL 29, 2010- An MH-65C (newer version of HH-65 Dauphin) was severely damaged while taxing at the Arcata/Eureka Airport. The aircraft was assigned to the Air Station Humboldt Bay, which has experienced the following accidents over the past 16 years. On July 12, 1994, an HH-65A crashed into a cliff on Shelter Cover in foggy conditions while responding to a report of a grounded sailboat. The four crew members died. On June 8, 1997, an HH-65A wrecked at sea about 64 km (40 miles) off Cape Mendocino, while approaching a sailing vessel that had lost its rudder. All four crew members died. On Feb. 11, 2006, an HH-65B had lowered a rescue swimmer in the surf at Samoa Beach for a rescue effort involving an overturned motor boat, when the chopper crashed from a hover into the surf. The three on board the helicopter suffered minor injuries. Two of the four on board the boat died.

- JULY 7, 2010- A HH-60 Jayhawk crashed in the Pacific Ocean on the coastline near La Push (WA), when it struck power lines that reached from the mainland to nearby James Island. The power line, which was located between 76-122 meters (250-400 feet) AGL, provided power to a lighthouse. Three of the four crew members died in the accident. The aircraft was en route to Sitka (AK).

United States (Nevada)- Accident

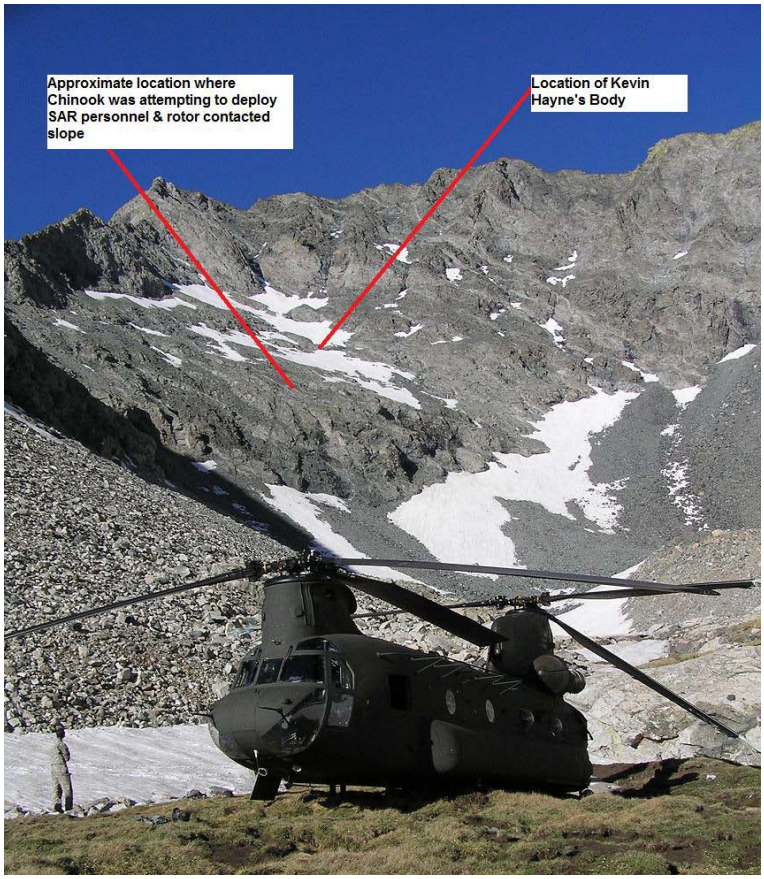
On July 19, 2010 a Bell 206 L3 (Long Ranger) operated by El Aero Services crashed adjacent to Angel Lake (NV) in the Ruby Mountains, while supporting a rope rescue operation. The accident occurred as the aircraft was extracting three Elko Fire Department firefighters, who were providing mutual aid support to the Elko County Sheriff. The three firefighters plus gear weighing 338 kg (857

pounds) and were inserted with a toe-in landing to perform a rope rescue of female, who was stranded on a 52 meter (170 foot) cliff. The aircraft staged at a nearby campground during the rescue operation. Following the rope rescue evolution, two firefighters walked back to parked helicopter from the base of the cliff. The helicopter then flew, with the other firefighters aboard, to pick up the third remaining firefighter with gear. During the departure from the cliff, according to the NTSB, *"Witnesses observed the helicopter lift off from the cliff face, and make a turn to the right. The helicopter moved very fast down the cliff face, disappeared below the tree line before coming back into view prior to impact with the ground."* The pilot suffered serious injuries; however the three fire fighters were not injured. At the time of the accident air temperature was 24 Celsius (75 degrees) and light gusty winds at 16 km/h (10 mph). The accident was photographed by campers watching from an adjacent campground.

United States (Colorado)- Accident

On June 15, 2010 a Colorado Army National Guard CH-47 Chinook sustained a rotor strike and crashed, while performing a rescue operation on Little Bear Peak, which is a "four-teener" peak in south central Colorado with an elevation of 4,278 meters (14,037 feet). The aircraft was in the process of inserting Alamosa Volunteer Search and Rescue (AVSAR) personnel in response to climbing fall. At 0900 hours an 18 year-old climber sustained a 91 meter (300 foot) fall on 45 degree ice-coated rock in a treacherous section known as the "hourglass". The climber's partner found him alive and unresponsive and immediately activated their SPOT (satellite communication device), however the signal was never received. The partner eventually contacted 911 when he reached their car at the trailhead at 1300 hours. AVSAR requested assistance from Flight for Life (Lifeguard 4- Pueblo, CO) and Buckley AFB, which dispatched a Colorado Army Guard CH-47. The CH-47 reached the command post in the valley, where the crew chief met with civilian SAR personnel on the ground and conducted an abbreviated mission briefing. Five AVSAR technicians were flown with the aircrew of seven. As the aircraft hovered over the climber, who had died earlier from his injuries, in a snowfield at 3,981 meters (13,060 feet), the rotor wash hit the body causing both arms to move concurrently due to rigor mortis. The aircrew, believing the climber

was still alive, made an abrupt decision to change plans and land as close as possible. As the rear ramp of aircraft was moved towards a rock outcropping, two spotters checked rotor clearance from their position on the rear ramp. Just as the ramp was about to contact the ground, the rear rotors struck the mountain side with a "very violent shaking." The aircraft dropped 305 meters (1000 feet) in 20 seconds and crashed near the location where rescuers were originally going to be inserted. Although the CH-47 was significantly damaged, no personnel on board sustained injuries. The AVSAR personnel continued with the recovery operation of the fallen climber, while the flight crew was later extracted by two HH-60 Blackhawk helicopters. Following the air crash, the staged Flight for Life A-Star helicopter was launched for reconnaissance, mutual aid assistance was requested from the surrounding county SAR teams and the incident commander requested relief. The after-actions review of the incident highlighted the following; a thorough and formal mission briefing is absolutely essential, adequate pre-planning and training with outside agencies, lack of onboard communication for the SAR personnel prevented any discussion on the attempted change in landing zone and the importance of having a crash rescue plan identified. The CH-47 was dismantled at the crash scene and flown out with a salvage operation that took several weeks.



United States (Idaho) - Incident with Potential

During the rescue of an injured firefighter from the Deer Park Fire with the Sawtooth National Forest (ID) an aeromedical helicopter fell backwards off an improvised landing zone on the fire line. On August 10, 2010 a firefighter lookout was struck by a

91 kg (200 lb) rock sustaining a left femur fracture. He was transported in a litter over very rugged terrain to a helispot, which was improvised on a steep ridgeline. A touchdown pad was constructed with logs surrounding the perimeter on the slope. A Lifeflight Network (ID) EC-135 responded for the medical evacuation. During the landing, helispot personnel discovered they could not communicate with the aircraft, due to a narrow-band versus wide-band conflict in radio programming. When the pilot landed toward the back edge of the pad, he was signaled to move forward however he was reluctant to do so because of nearby obstacles. The weight of the aircraft on the exposed edge of the touchdown pad caused it to collapse, during the spool down of the helicopter. The helicopter tipped backwards coming to rest on the enclosed Fenestron tail rotor. The pilot was the only person on board, as the medical providers had already exited the aircraft. A second landing zone was constructed uphill on the ridgeline and an AS 350 B2 contract fire helicopter was brought in to complete the medical evacuation. The EC-135 was pulled upright with the brute force of available firefighters and inspected on scene by a company mechanic, where it was found to be airworthy. The U.S. Forest Service published a formal incident review known as a f*acilitated learning analysis* (FLA), which identified areas for improvement including;

- **Improve and Standardize Emergency Medical Standards, Training and Equipment**
    - Configure agency helicopters with extraction capability
- **Establish Better Communication Standards with Cooperating Partners**
    - USFS radios are primarily set to narrow band, but they do have the capability of transmitting on wide band. Lifeflight air ambulances tend to be wide band and setting these two the same will enhance the success of communications.

Reference: http://www.wildfirelessons.net/documents/Deerpark_FLA.pdf

United States (Alaska)- Accident

On August 10, 2010 a Sikorsky UH-60 helicopter with the Alaska Air National Guard slid and rolled on its side sustaining heavy damage following a landing on the Knik Glacier (AK) east of Anchorage, which occurred during an operational SAR response. The aircrew of three was uninjured in the accident, during a rescue effort to reach five subjects who survived the crash of a Piper PA-32 aircraft two days earlier. The private aircraft went down on August 8th, while sightseeing above the glacier. The following day rescue aircraft were unable to respond due to 112 km/h (70 mph) winds, and four pararescuemen struggling against white-out conditions reached the crash survivors with two sleds loaded with food, water shelter and additional snowshoes in the event an aerial rescue could not be carried out. On August 11th two HH-60 helicopters managed to successfully extract all personnel following the accident.

United States (Montana) - Accident

The 341st Missile Wing located at Maelstrom Air Force Base, Great Falls (MT) reported a UH-1N sustained a "hard landing" on August 9, 2010 at an unimproved landing strip near Wise River (MT) during a rescue mission. The incident began on August 8th, when a 16 year-old male with the Montana Conservation Corps suffered an 18 meter (60 foot) fall down a slope, sustaining a head injury, while he was hiking on a day off. The accident occurred at 2926 meters (9600 feet) in the Pioneer Mountains, in the southwest corner of Montana. Following the accident at 1800 hours, USFS Dispatch was notified and requested St. Patrick Life Flight from Missoula (MT) 160 km (100 Miles) away. The lifeflight crew was provided with coordinates, which turned out to be a trailhead far from the actual accident scene. After landing below the accident site at Lion Lake (2682 meters- 8800 feet), the aeromedical crew reached the patient following an arduous climb. The care providers were at the patient's side at 2100 hours, which followed sunset at 2048 hours. The patient was not suffering any altered level of consciousness and had been moving around at the accident scene following their injury. It was recognized that no safe extraction of the patient would occur that night, due to the very steep terrain. A plan was made to remain in place with the patient. At 2200 hours a request was made through USFS Dispatch for the US Air Force to respond 257 km (160 Miles) for a hoist rescue, with the assumption that this would occur at first light. The 341st Missile Wing at Maelstrom Air Force Base is the only SAR hoist capability in Montana. At 0345 hours on August 9th, the USAF UH-1N arrived and at 0410 hours inserted a flight nurse via hoist, which provided the first opportunity for direct communication with the aircraft from the ground. The aircraft, normally crewed by five personnel, included two pilots, a crew chief and a flight nurse, who was pregnant and on her first SAR assignment. The stretcher was inserted via hoist and the patient packaged. The aircraft, using its spotlight, kicked debris on the rescuers with rotor wash at the accident scene in the 9 meter (30 foot) wide canyon with 18 meter (60 foot) walls. The patient was hoisted out at 0430 hours. According to witnesses, there was "nothing out of the ordinary" during patient extraction. The aircraft then orbited and prepared to extract the nurse. As the helicopter positioned in a hover, cross-ways to the canyon, there was a loud "odd screeching noise" and the helicopter suddenly banked away from the scene. The aircraft reached the Wise River Airport, 21 km (13 miles) away and sustained heavy damage during the landing. It is evident that the aircraft sustained a tail rotor strike at the accident site.

Civilian personnel directly involved with this incident cited the following deficiencies;

- Poor communication from scene hampered situational awareness.
- Sheriff had lack of operational control during interagency response.
- US Air Force crew configuration was substandard.
- Mission pressure to conduct a high-risk night hoisting operation.

Norway- Entanglement Incident

An incident with potential occurred during a daytime hoist training exercise with a Royal Norwegian Air Force Sea King on May 18, 2010. The training exercise involved extraction of two rescuers who were suspended on the cliff from a hanging belay. The Westland Sea King prepared to hoist one rescuer from a hoisting height of 37 meters (120 feet). During the hoist extraction, two non-locking carabiners on the rescuer's shoulder gear sling became inadvertently connected to the belay line on the cliff face. With the rescuer dangerously entangled with the belay line on the ground, the hoist operator recognized the situation and began to reverse the hoist. The rescuer managed to free himself from the gear sling and immediately swung out away from the cliff.

Japan- Accident

On July 25, 2010 a Japanese fire-rescue helicopter (JA31TM) crashed during a mountain rescue operation near Tokyo, resulting in five fatalities. The AS365N3, owned by the Saitama Prefectural Government, had lowered two rescue workers to the ground just prior to the accident. The two rescuers, an air rescue team member and a firefighter, were inserted via hoist from a 30 meter (98 feet) hover. They later told investigators that the helicopter descended when the two were one meter above the ground, then they suddenly dropped another 50 centimeters. They also said they heard a flip-flop sound that they had never heard before. The survivors said the weather at the time was fine at the accident site and there was no sign it would worsen. At the time of the accident, the helicopter was responding to a 55-year-old female who had fallen near a waterfall. The crash occurred in a mountainous area around 11 a.m. about 4 km (2.5 miles) southwest of the Karisaka tunnel on National Route 140, which is 75 km (47 miles) northwest of Tokyo The five who died were the pilot, copilot, two prefecture aviation safety workers and a rescue worker from a local fire department. The pilots were from Honda Airways Co. (subsidiary of Honda Motor Company), which operated the helicopter for the Saitama Prefecture. The pilot had worked for the company for more than 20 years. There is speculation that the aircraft began "settling with power" caused by temperature and altitude.

In a tragic turn of events associated with this accident, two journalists died attempting to climb in the mountainous region to cover the story of the air crash. Police had told the media to stay away from the site. The NTV reporter and cameraman were being guided by a member of the Japan Mountain Guides Association, when they turned back because the guide decided it was dangerous for them to keep climbing in the clothes they were wearing. The two journalists parted company from the guide and later returned attempting to get some footage from a mountain ridge. Their bodies were located two km from the crash site, one subject was found barefoot and the autopsies indicated they drowned.

Japan- Accident

A Japanese Coast Guard Bell 412 EP helicopter suffered a fatal wire strike accident on August 18, 2010 resulting in the deaths of all five crew members aboard. The Coast Guard helicopter "Akizuru" crashed after its landing skids apparently hit offshore power lines reaching Sanagi Island in the Kagawa Prefecture of southwestern Japan. The accident occurred in clear weather during daylight hours with the helicopter flying 50-100 meters (165-328 feet) AGL. The coast guard's regional office initially told the media that the helicopter crashed during a "patrol flight," but later on revised it statement saying the helicopter went down in between demonstration flights for a group of apprentices aboard a patrol boat. In the public controversy that followed, the head of the Japan Coast Guard's regional headquarters in Hiroshima and his deputy were dismissed for "intentionally and systematically concealing information" relating to the fatal crash. At the time of the accident, the co-pilot was seated in the captain's seat as part of training for certification as a captain.

Luxembourg- Rescuer Injury Accident

On July 15, 2010 an MD902 helicopter crew responded to a seriously injured worker on a wind turbine. The accident occurred at an altitude of 457 meters (1500 feet). In winds gusting 13 to 20 knots (15-23 mph), the aircrew attempted a fixed-line "human cargo sling" (short-haul) rescue with a 50 meter (164 feet) line. During the insertion of the rescuer to a work platform on the wind turbine, the crew member was seriously injured, when they struck a blade of the turbine. Immediately following the accident, the rescuer was lowered to the ground, where EMS personnel on scene were able to provide direct care. The aircrew accomplished the original rescue of the worker by delivering the fixed rope to the platform on the wind turbine with a weighted rope without a rescuer. The pilot was experienced with 14,500 flight hours and 3000 hours in this aircraft type.

United States- Hoist Maintenance Injury Accident

A Department of Defense aircraft maintainer Virginia Air National Guard in Sandston, VA was servicing the hoist cable of a HH-60 Blackhawk internal hoist, when they suffered a traumatic injury causing the loss of three fingers. The maintainer was using a garbage can as a collection container to temporarily store hoist cable as it was spooled off the hoist cable drum for inspection. The maintainer was alone at night conducting the inspection. As the cable was retracted from the garbage can back into the hoist, the worker was putting his hand into the container to rearrange the cable. Apparently his hand became entangled and caught up in the cable approaching the bell mouth of the hoist. In the time it took for the hoist to decelerate, his fingers sustained crushing injuries from the hoist. Following the

Zephyr maintenance system

accident, agency inspection procedures have been modified. Similar incidents have happened in France with two cases causing injuries. A number of hoist operators have adopted am automated system developed by Zephyr that reduces the risk of such injuries.

Switzerland – Downwash incident

A doctor was hoisting down to an accident site from an EC145 when the downwash of the helicopter blew down a large branch. One of the by-standers helping the victim was injured by the falling branch.

Germany – Mechanical failure

During training at the Eurocopter factory a number of years ago, an EC135 experienced sudden loss of pedal control in flight. The pilot followed procedures for a stuck pedal and after performing two approaches onto a concrete runway, was able to perform a run on landing without incident. It appears that the tail rotor driveshaft was broken.

Italy, South Tyrol – Food poisoning

During the Stelvio road bicycle race, a HEMS crew was departing to respond to a competitor experiencing a seizure. Shortly after take-off, the pilot reported to his crew that he was experiencing 'tingling" in his feet. He landed immediately and subsequently also suffered a seizure. He was airlifted to hospital by another crew. Upon investigation, it was determined that some of the food prepared for the racers, a pasta dish, contained Panther cap mushrooms. These are highly poisonous. Ultimately, twenty six people developed the onset of seizures. They all recovered.

Nepal – Crash

At the time of writing, November 7, 2010, a rescue helicopter crashed in Nepal during a rescue operation. Sadly, the pilot, Captain Sabin Basnet and technician, Purna Awale both died in the crash. The crew flying an AS350 B3 aircraft were responding to two stranded Japanese climbers who had fallen ill on Ama Dablam (6812 m). The crew was able to land at nearly 6300 metres and rescue the first of the two climbers. When the crew returned to pick up the second climber, they crashed while attempting to land in what is believed to be high winds. The main rotor struck a serac during the attempt to land and then fell 1200 metres down the east face. The bodies of the two crew members and the second climber were recovered by another helicopter crew the following day.

PRESENTATIONS:

Germany- Rescue Simulation Facility

The German rescue organization Bergwacht is currently employing an indoor rescue training facility to provide realistic instruction opportunities in helicopter rescue and gondola or ski lift evacuation. The 5.9 million Euro ($8.3 million USD) facility, located in Bad Tolz, Germany was completed late 2008. 3500 Bergwacht volunteers currently conduct 10,000 rescues annually and 20% of the incidents involve helicopter responses. The training facility permits use to occur in any weather, day or night, and also prevents hundreds of training flight hours. The facility is a 60-meter (197 feet) long, 20 meter (65 feet) high and 20 meter wide building with several suspended ski lift and gondolas cars. A helicopter fuselage with a rescue hoist can be moved into position for a rescue evolution. Overhead fans generate wind and noise from loudspeakers creates a realistic environment. An artificial rock wall can be incorporated into rescue scenarios. The project was supported by the Bavarian government, German Federal Environmental Foundation, German Red Cross and corporate assistance.

Nepal- Himalayan Helicopter Rescue Program Update

In a joint effort Nepalese-based Fishtail Air and personnel from Air Zermatt of Switzerland combined forces this year to provide the first Himalayan standby helicopter rescue service in history. The Fishtail Air operation completed numerous helicopter evacuations during the 2010 climbing season. Most notably on April 29, 2010 they completed the world's highest altitude helicopter fixed rope (short-haul) rescue from the slopes of Annapurna. Air Zermatt's Daniel Aufdenblatten piloted the helicopter, while Swiss Mountain Guide Richard Lehner was suspended during the fixed rope rescue operation that extracted three Spanish climbers, one-by-one from an elevation of 6,950 meters (22,802 feet) to base camp at 4000 meters (13,123 feet). The climbers had become stranded for 36 hours below the summit exhausted, snow-blind and unable to move their hands or feet. Rescuers employed a production model Eurocopter AS350 B3 Ecureuil, which is certified by the manufacturer to 7000 meters (23,000 feet).

This joint effort came about following a 2009 request for Air Zermatt to assist with a rescue of Slovenian climber Tomaž Humar from the south face of Nepalese

peak Langtang Lirung 7,227 meters (23,711 feet). Tomaž suffered an accident on November 9 during the descent on a solo climb and became stuck. After expedition organizers lost communication with Tomaž, Air Zermatt and Fishtail personnel located his body on November 14 at the height of 5600 meters (18, 373 feet) and completed a recovery via fixed rope technique.

Additional significant operations completed during the 2010 season:
Manaslu- 6200 meters- April 26- seven members of Korean Expedition
Ama Dablam- 5500 meters- May4 - rescue of a Russian climber
Dhaulagiri-6800 meters May 16- four Chinese and three Sherpa with four via fixed rope
Everest Camp 2- 6500 meters- May 17- recovery of two fatalities (landing and short-haul)

In 2005, Eurocopter test pilot Didier Delesalle successfully demonstrated the capabilities of the AS350 B3 by landing on the summit of Everest at 8,848 meters (29,029 feet). However the significant risks associated with flying at high altitude is echoed by the fact that helicopter crashes have occurred at Everest Base Camp in 1997, 2003, 2005 and 2007.

The costs of these rescue efforts are paid by the involved expeditions. In the past an evacuation from Everest Base Camp cost $10,000, however the recent competition and increased availability of helicopters to this location has dropped the price to $5,000. The future plan for the Fishtail Air operation is to operate independently. In 2011 Nepalese pilots and rescuers will complete training in Switzerland prior to the climbing season and then perform rescue operations back in Nepal without outside assistance. There is optimism that the program will be able to invest profits to assist the local population.

Croatia- Antirotation line

Ivelja Dalibor presented the techniques used by the Croatian Air Force for preventing spinning on stretchers during hoisting operations with the MI8 helicopter. There was some discussion concerning the risk of entanglements with the additional line tied to the rescue load. The system is designed with quick release of the line in the event of a problem occurring.

Croatia – Thermal imaging

The Croatian Air Force has been testing thermal imaging viewers for searching. They are using a handheld unit with a monitor that is used in the door of the MI8 helicopter. Tests were done on land at sea. Results were good on land while the helicopter was in a hover. At sea, only subject partially above water could be observed.

Poland – Night rescue operations

Wojtek Mateja presented video of night rescue hoist operations in the High Tatras. The aircraft in use is the Sokol hoist equipped helicopter. The rescue team averages two to three night operations a year. These are done without the use of night vision goggles (NVGs) under night VFR conditions only**.** The operation presented was under good night lighting conditions at the higher elevations but with difficult strong winds.

France – Mountain rescue with IFR/NVG

Michel Pierre presented the night flying rescue operations in the Sécurité Civile of France. They are using an IFR certified EC145. Extensive initial and recurrency training is required for the pilots. In addition, flights into airports can only be done with facilities that can accommodate IFR flights. This includes a variety of land and satellite beacons for effective and safe instrument approaches. The Global Navigation Satellite System (GNSS) is in use in a number of airports in France and is in development for a number of hospital heliports.

Day

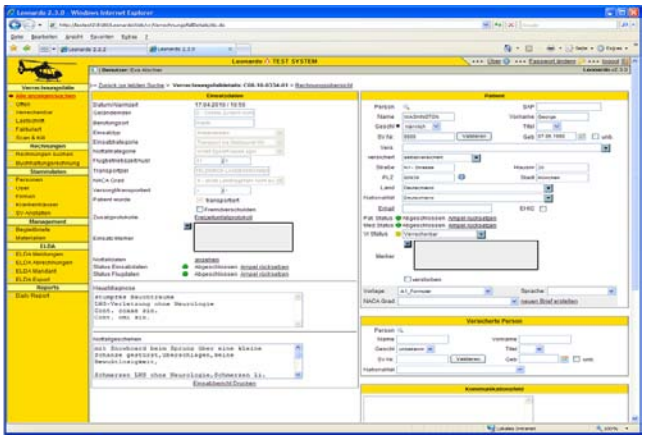
Currently, the Sécurité Civile is one of the few helicopter operator in France with the capacity to develop and operate with this type of flying. All of their aircraft are set up to receive the Galileo satellitte system that in the future will allow them to benefit from the high precision

EGNOS IFR tracking system. It was pointed out that there are still limitations to the equipment and that these flights are not possible in all weather and nightime conditions. Careful decision making on the part of the pilot is critical to safe operations.

Night with NVG

Austria – Helicopter operations database

Karlheinz Burtscher demonstrated the versatility of the new internet based database for the operations of OAMTC. The system allows seamless communications between all 22 bases in Austria. The system captures all flight logs, maintenance records, scheduled maintenance etc. Parts inventories are covered by a separate software program. The biggest efficiencies that are achieved include real time invoicing, paperless records and more timely maintenance scheduling.



Austria - SOPs

WolfgangRigo presented on the various SOPs in use in their organizations. They currently have eleven SOPs including primary rescue inter hospital flights, night operations, slope landings, human external cargo, variable rope operations, capture rescue, search dog operations, Searches, cable car operations, and rescue net. All of these operations include checklists and all crew members are thoroughly trained in their use.

Switzerland – Dyneema Ropes

Enrico Ragoni presented on the use of Dyneema rope for helicopter long line applications. Dyneema® is a trade mark of the Dutch company DSM Dyneema®
and consists of high modulus polyethylene HMPE. This type of rope was compared with others. It is considered a high performance rope for the applications discussed.

Norway – Checklists in HEMS Operations

Dan Halvorsen presented the checklist system used by the Norwegian Air Ambulance EC135 HEMS crews. Given the increased complexities of operations including numerous night flights and IFR operations, the value of systematic checklists has become a necessity. They feel that these do not take any additional time and in fact ensure that all aspects of the operation are looked after. Other HEMS operators agreed that these are invaluable as part of a safety management system.

NLA OM Part B EC135 App1 HEMS N-CL

HEMS NORMAL CHECKLIST EC 135
NORSK LUFTAMBULANSE AS

For information only, x-check with HFM
*Items with * to be performed on IFR flights*

	ENGINE STARTING	
1	BAT MSTR SW	ON
2	N2/NR	Check deflection
3	CAD	No IMP FAIL
4	FADEC SW 1 & 2	ON/Check CAD
5	Overhead sw: (DSPLY, FIRE, EMER BAT, XFER)	Test <-(SHED BUS)
6	PRIME PUMPS	ON
7	Anti Coll light	ON
8	CPDS	Units, fuel, FLI ■▽▼, 24V
9	Collective	Locked
10	Rotor Brake	Check OFF
11	Rotor Area	Clear
12	MAIN sw 1st eng	IDLE & check
13	MAIN sw 2nd eng	IDLE& check
14	Overhead sw's	As required
15	HYD	Check
16	AFCS & SAS	Test & ON
	BEFORE TAKE-OFF	
1	**ENGINE MAIN switches**	**Flight/guarded/ "xx"%/High Nr on**
2	**STBY Horizon**	**Free**
3	**Instruments**	**Checked**
4	**Warnings & Cautions**	**Normal**
5	**Avionics**	**Set**
6	**Autopilot**	**ON**
7	**Rad Alt DH**	**"xx" feet**
8	**Klar bak?**	**Klar bak!**
9	**Take-off brief**	**Performed**
10	**Checklist completed**	
	AFTER TAKE-OFF	
1	T/ O time	Note
2	Navigation	Set up
3	Flight Following	Establish
4	**Checklist completed**	
	*** CRUISE**	
1	**Altimeters**	**"xx" gives "xx" feet**
2	**Rad Alt**	**1000 feet**
3	**Fuel**	**"xx" kilos "xx" minutes**
4	**MSA**	**"xx" feet**
5	**Checklist completed**	

NLA OM Part B EC135 App1 HEMS N-CL

HEMS NORMAL CHECKLIST EC 135
NORSK LUFTAMBULANSE AS

For information only, x-check with HFM
*Items with * to be performed on IFR flights*

	*** APPROACH**	
1	**ATIS/ WX**	**Checked**
2	**Clearance**	**Received**
3	**Approach brief**	**Performed**
4	**Compasses**	**"xx" degrees**
5	**Altimeters**	**"xx" - "xx" feet**
6	**Entry check**	**Performed**
7	**Checklist completed**	
	*** FINAL**	
1	**Rad alt DH**	**180 feet**
2	**Missed approach altitude**	**"xx" feet**
3	**Checklist completed**	
	BEFORE LANDING	
1	Warnings & Cautions	Normal
2	Instruments	Normal
3	**Rad Alt DH**	**"xx" feet**
4	**Radar**	**Off/Stdby**
5	**Landing Brief**	**Performed**
6	**Checklist completed**	
	ENGINE SHUT DOWN	
1	ENGINE MAIN sw	IDLE
2	Collective	Lock
3	STBY/ HOR	Cage
4	All consumers	Off (not AC)
5	ENGINE MAIN sw When rotor stopped	OFF
6	VEMD	Check report
7	FADEC sw	OFF
8	BAT MSTR sw	OFF
	*** BEFORE IMC**	
1	Take-off weather	
2	Take-off performance/terrain clearance	
3	Destination weather	
4	Fuel requirements	
5	Enroute performance/ terrain clearance	
6	Icing – contingency plan	
7	Altitude corrections for wind and temp.	
8	**Medical aspects**	**Consider**
9	**Horizons**	**Erect**
10	**Altimeters**	**"xx" - "xx" feet**
11	**Compasses**	**"xx" degrees**
12	**AFCS**	**Functional & set**
13	**Clearance**	**Received**
14	**Entry check**	**Performed**
15	**Checklist completed**	

European Aviation Safety Agency (EASA) update

Patrick Fauchère discussed the latest developments between EASA and the Swiss Office of Civil Aviation (FOCA) concerning approvals of personnel carrying devices (PCDS). Stakeholders in Switzerland have requested that EASA recognizes harnesses and other PCDs approved with the European EN norm. This subject is still under discussion between the various authorities.

IKAR/CISA 2011

It will be held in Åre Sweden in the Province of Jämtland, October 18 to 23 2011.