



CISA – ICAR « Entanglement »

Croatia 2013

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Entanglement

Entanglement : to be avoided

Interface :

rescuer to/from the ground

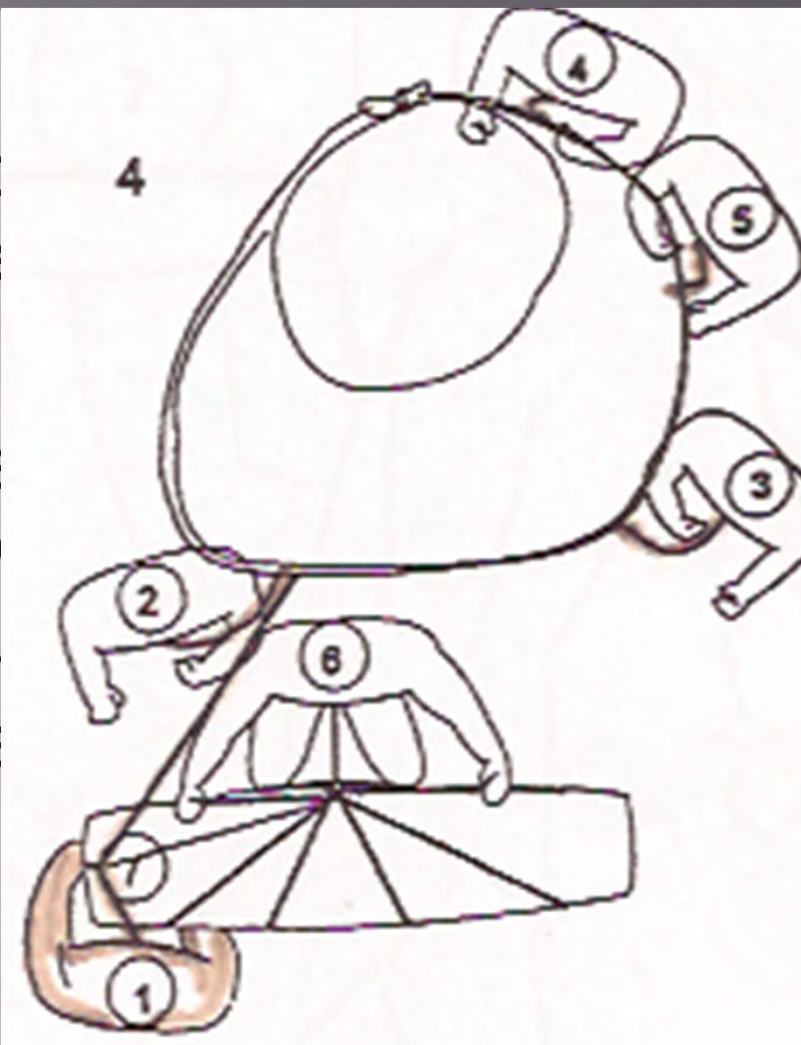
helicopter free / attached to the ground

Can be disastrous



Entanglement

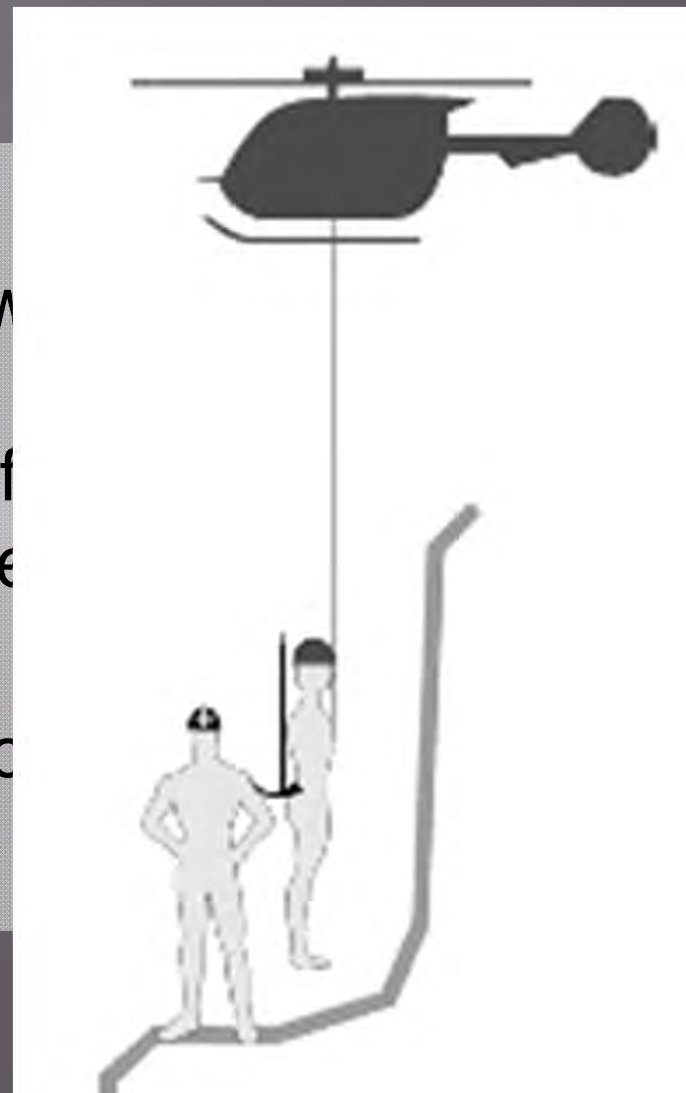
- 1997 / Hoist / exercice,
- 6 rescuers and one patient secured by one 8mm safety line
- 1 rescuer and the patient
- The helicopter being not able to move the patient, the stretcher moved and the other rescuers got caught
- No communication occurred and the helicopter continued to pull up,
- The safety line finally broke and sustain fatalities.





Entanglement

- 2001 / Fixed rope / mission,
- The friend of the patient who was every thing was all right caught in the harness of rescuer did not see or feel friend flew attached only by
- 4 persons are on the hook planned.





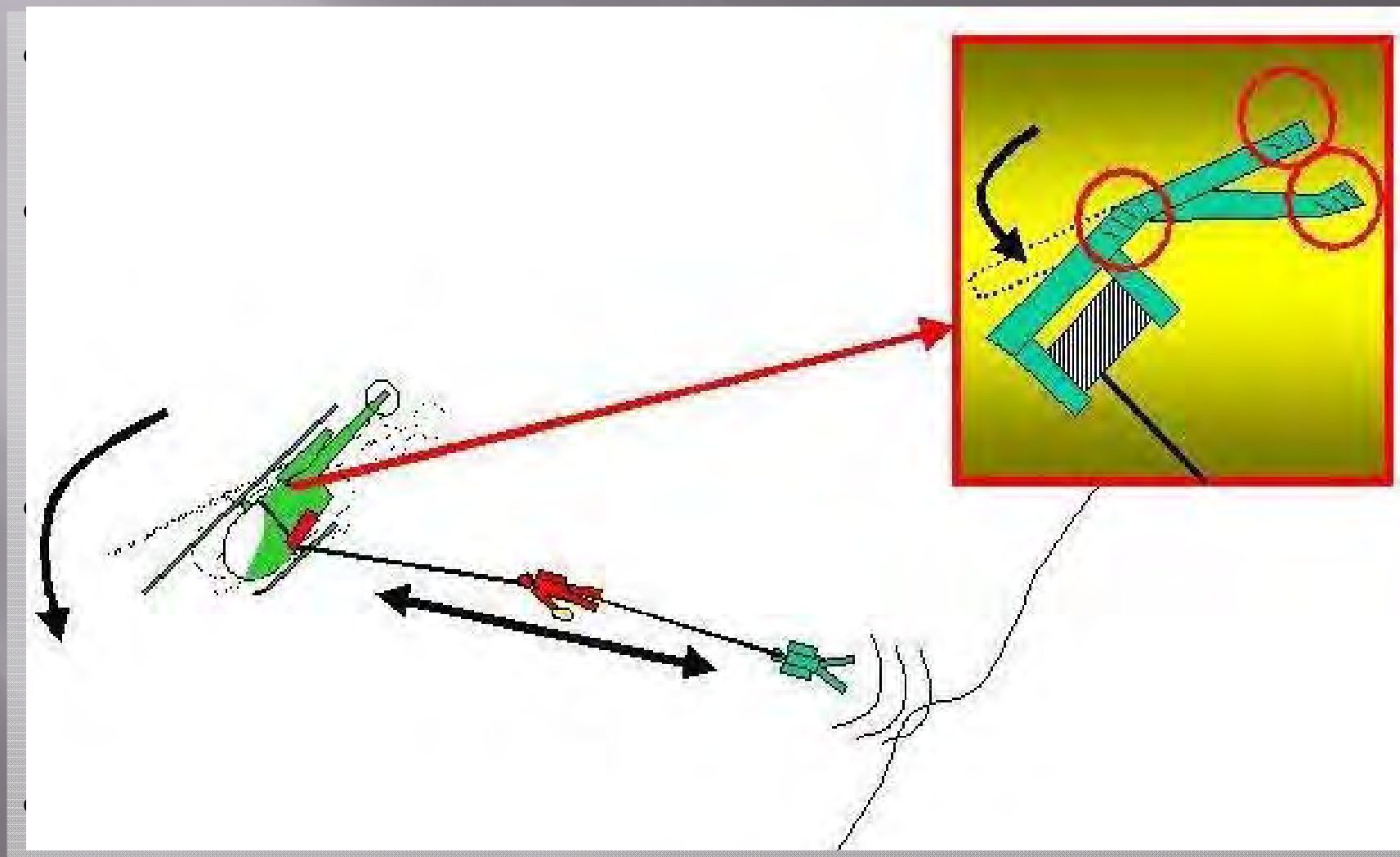
Entanglement

- 2002 / Fixed rope / mission,
- A rescuer got caught by a loose strap. He managed to secure himself on the hook,
- No communication,
- Overtorque of the aircraft.
- Photos Brett Sutteer Grand County EMS



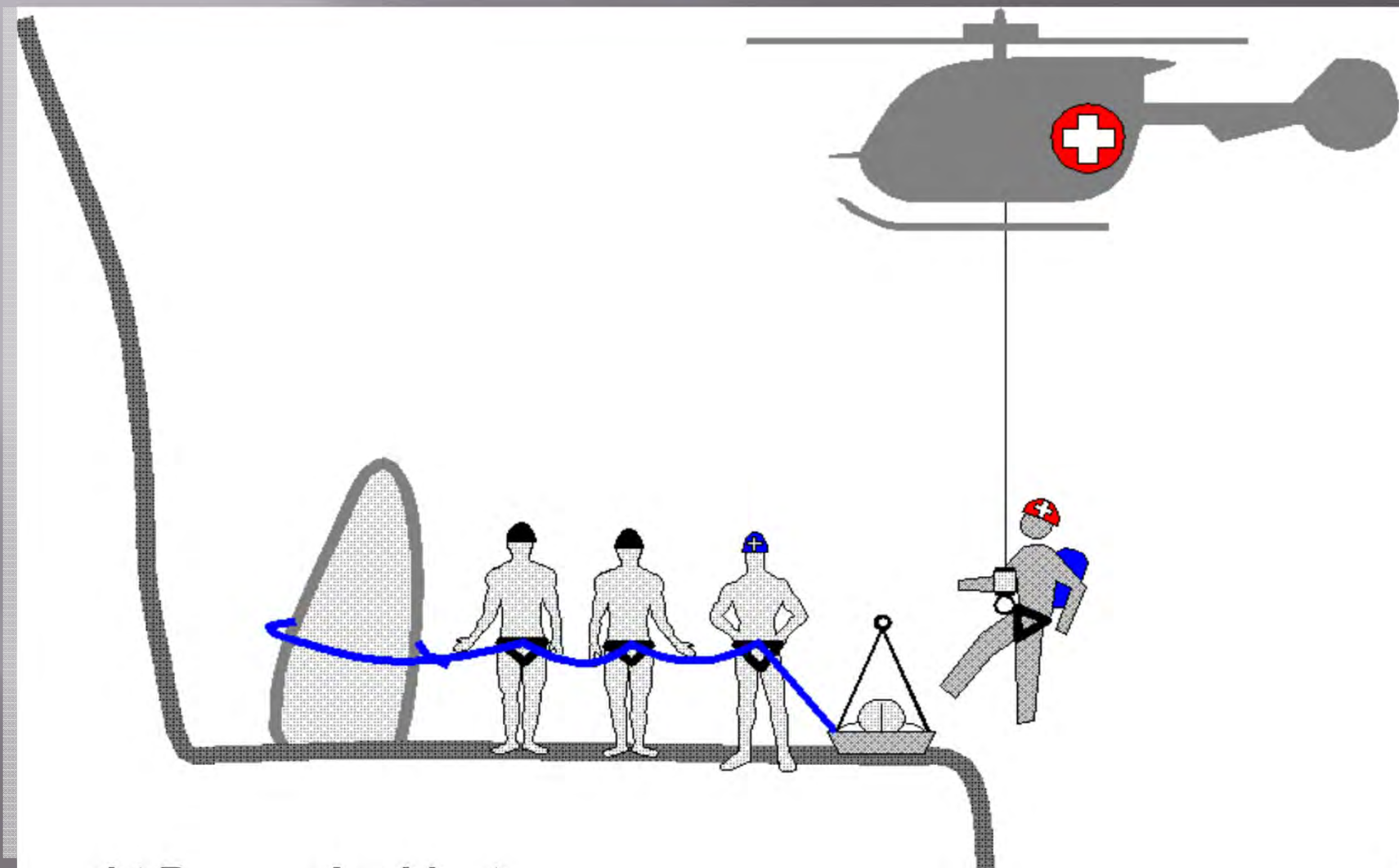


Entanglement



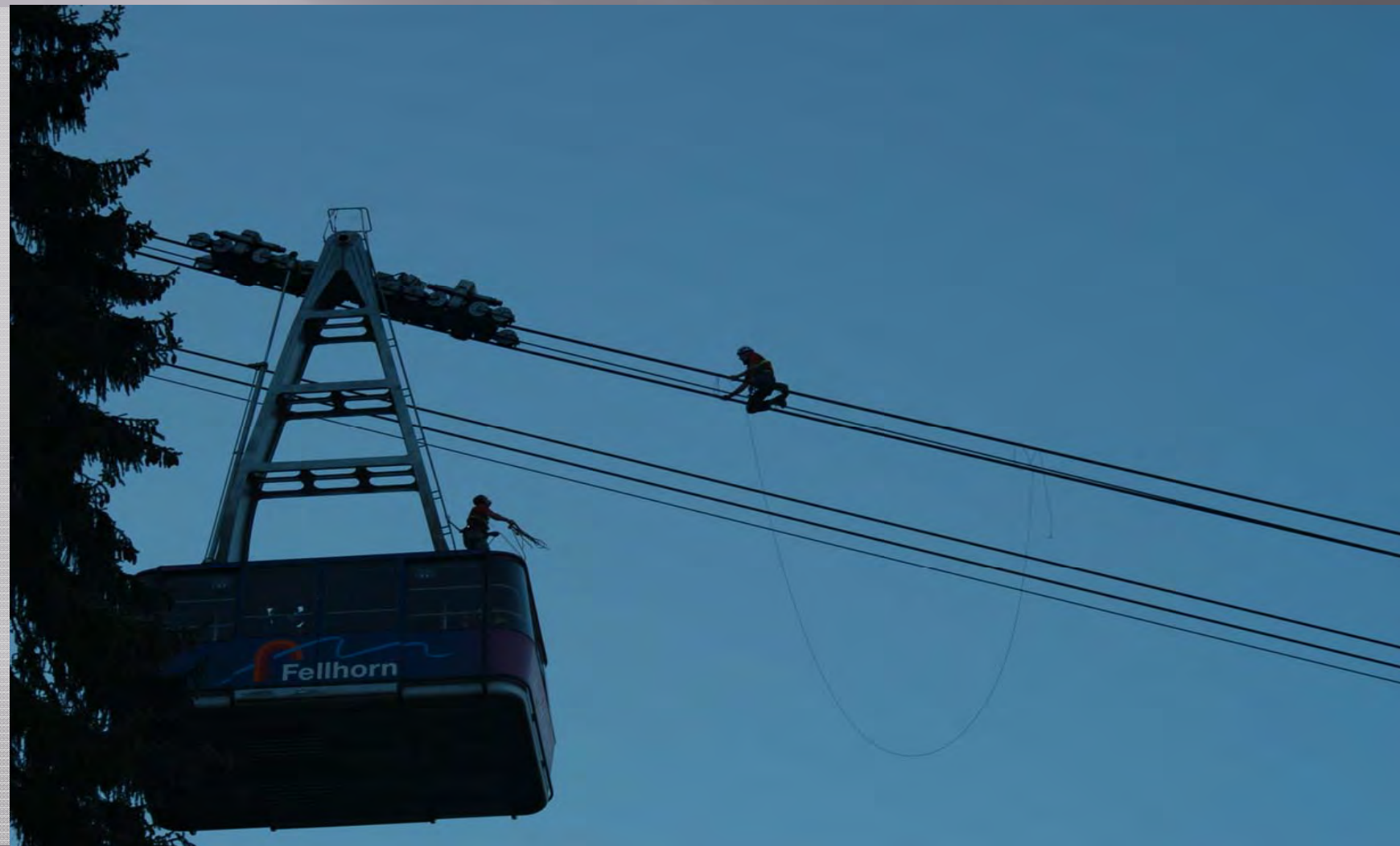


Entanglement





Entanglement





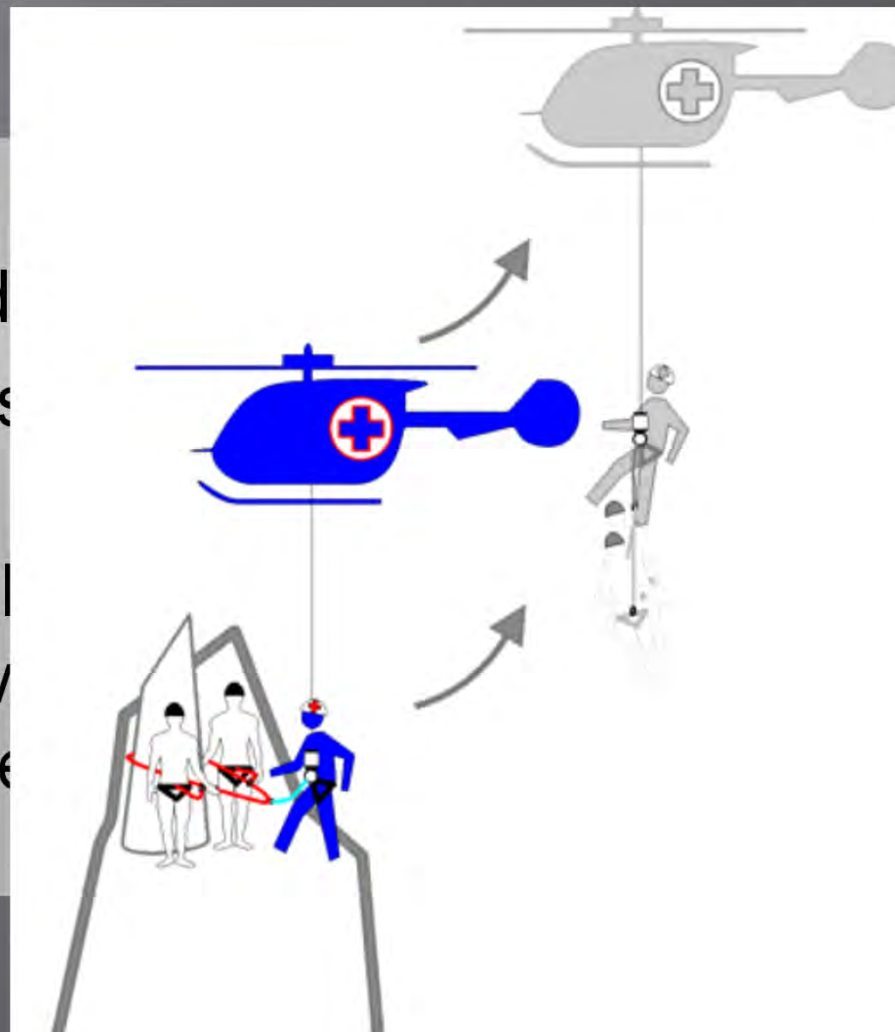
Entanglement

- 2005 / Fixed rope / mission,
- Evacuation at high altitude / one person not injured,
- No communication,
- The person could hook himself on the line but could not remove the safety ice screw,
- Crew had to pull out due to performance and fortunately the screw let go,
- Climber fly up to the helicopter skid (dynamic rope).



Entanglement

- 2005 / Hoist / mission,
- Rescuer was hoisted d
- Rescuer secured hims
- the 2 persons,
- Pilot experienced high
- plus the 2 climbers w
- fortunately came off the





Entanglement

- 2006 / Hoist / exercise,
- The hoist cable get entangled on the boat,
- The cable broke and the rescuer fall on the ground (10 meters),
- The cable hit also the hoist operator in the cabin.



Entanglement





Entanglement

- 2010 / Hoist
- Extraction of
- During the
carabiners of
became con
- The hoist of
the rescuer
belay line.





Entanglement

- 2011 / Hoist / mission,
- The hoist operation was on t
near the forecastle mast,
- The pilot lost sight of the sh
drifted back towards a m
forecastle,
- The pilot was unable to re-es
the cable became fouled,
- The cable failed and the 2
deck.





Entanglement





Entanglement

- 2012 / Fixed rope / mission,
- While evacuating a chairlift the bubble door of the pilot got fogged and iced due to the freezing (-25°) outside temperature,
- The pilot lost references and pulled the rescuer up,
- The rescuer was already secured on the chair,
- Thanks to proper radio communication the rescuer could advise the pilot and he was able to correct the situation.



Entanglement

Two more incidents:

- Hoist extraction
- Evacuation gondola



Entanglement

- Some thoughts,
- Communication is paramount,
- If possible take care not to have too many persons at the belay,
- If possible separate belay for rescuer and patient,
- If possible use other strope colour for the belay of the rescuer and the patient,
- Always have a cutting device ready,



CISA

- 16 HEC / HHO incidents or accidents (1992-)
 - 8 fatalities / 5 rescuers injured
- 11 cases during missions and 5 during exercices



CISA

- **ICAR REC A 011-2003/2009 E**
- **International Commission for Alpine Rescue**
- **Air Rescue Commission**
-
- **Recommendation REC A 011-2003/2009 E of the Air Rescue Commission**
- **of the 25 September 2009**

- **about the Human External Cargo (HEC) Safety Checks**

- A safety check should be performed prior to the extraction of HEC. The aim of the safety check is to prevent entanglement by ensuring that the rigging and equipment has been checked and that the load is clear of obstructions. Once the pilot is satisfied that the check is complete, he is clear to depart the scene.

- *Done at Coylumbridge, Scotland on October 4, 2009.*
- *The president Gilbert Habringer*

- **Intégrée dans la “SOP HEC” d’Air Glaciers**



CISA

- Safety check,
 - Assess the situation,
 - In doubt don't,
 - Happy landings and safe rescue,
-
- Questions / Thank you