

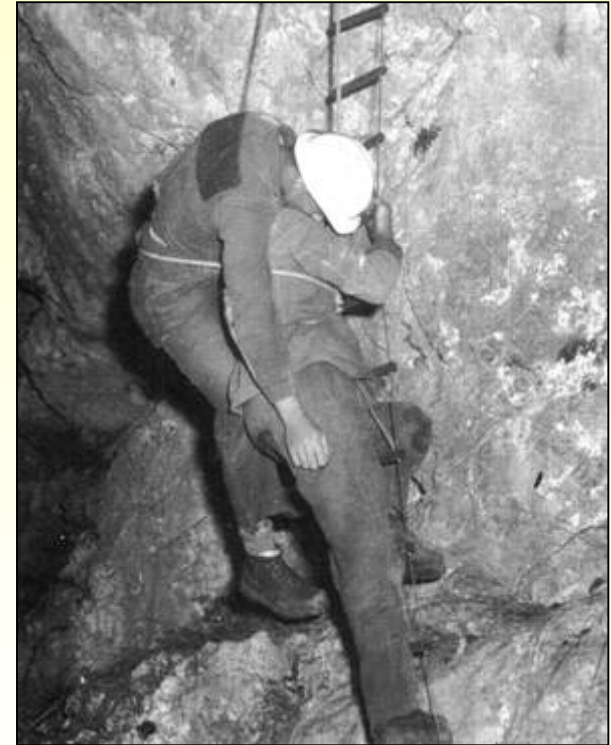


# Cave rescue in Croatia

Darko Bakšić  
Dinko Novosel

# A Short History of Cave Rescue in Croatia

- ⇒ **1925.** - first cave accident in Croatia was in Istria - Rašpor pit
- ⇒ **4th January 1950** - The Croatian Mountain Rescue Service (CMRS) was founded
- ⇒ **1959.** - cave accident in Srednja Cerovačka pećina - caver broke his leg - his colleagues rescued him
- ⇒ **1960.** - Tounj - Speleology Commission of the Croatian Mountaineering Association - carrying of wounded persons on leathers



# A Short History of Cave Rescue in Croatia



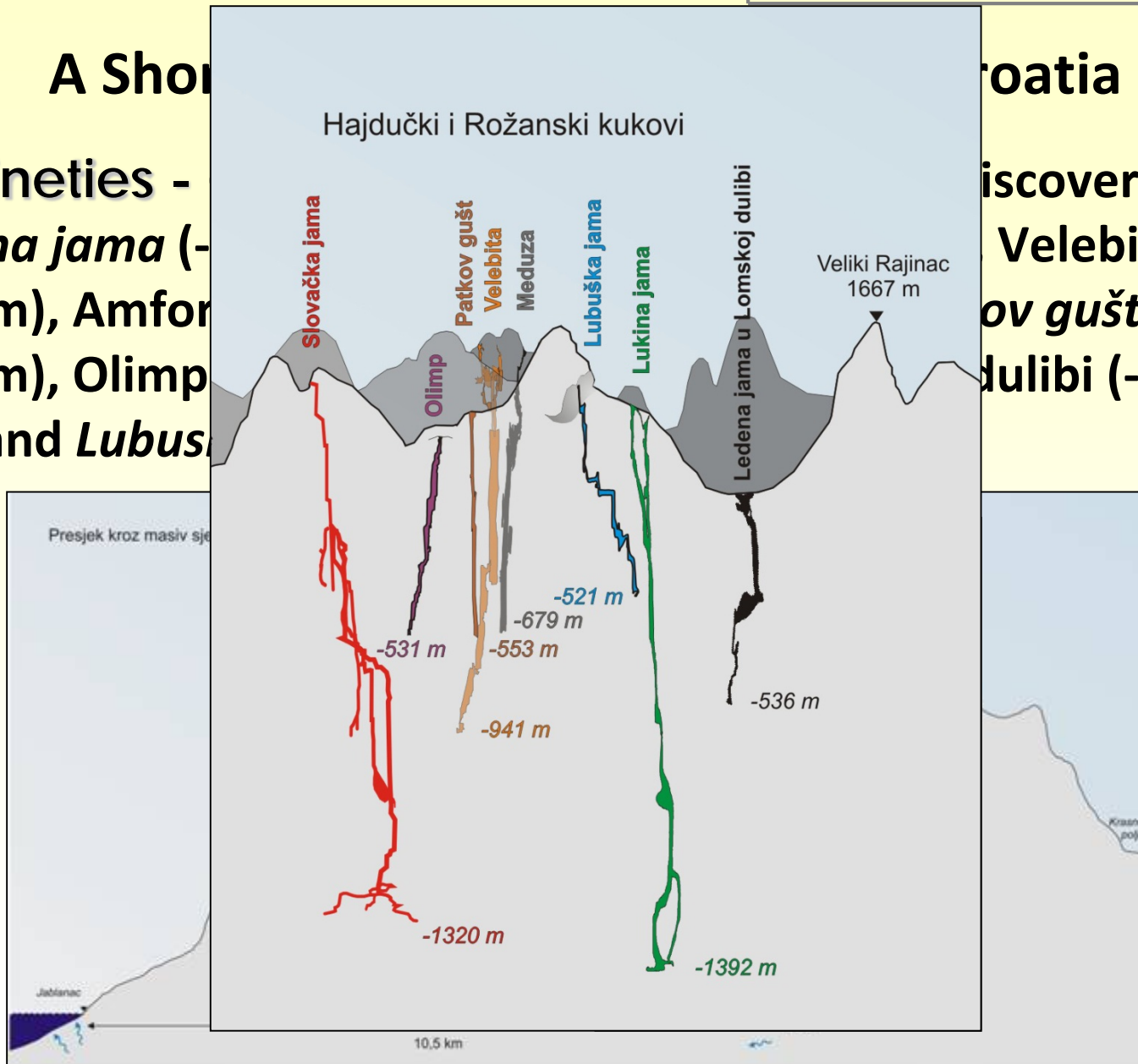
- ⇒ During 50s - 60s, both cavers and mountain rescuers played equal roles in cave rescue
- ⇒ 1971. - *Jamarska reševalna služba (JRS)* held the first Yugoslavian cave rescue congress in *Jopićeva špilja* near Karlovac - 30-member cave rescue team was organized in Karlovac
- ⇒ In the eighties many cavers became members of the *CMRS* - *CMRS* took over the leading role in cave rescue

# A Show

roatia

⇒ In nineties -  
*Lukina jama* (-  
941 m), Amfor  
553 m), Olimp  
m), and *Lubus*

discovered:  
*Velebita* (-  
*ov gušt* (-  
*dulibi* (-536



# A Short History of Cave Rescue in Croatia

- ⇒ discovery of deep pits influenced the development of caving, as well as the development of cave rescuing
  
- ⇒ 1997. - two bigger cave accidents
  - Veternica cave near Zagreb
  - Ledena jama u Lomskoj dulibi
  
- In 1997, the *CMRS* translated the French Cave rescue's manual and organized cave rescue training



# A Short History of Cave Rescue in Croatia

- ⇒ 1999 - *CMRS* members participated in the First European cave rescue in Göppingen
- ⇒ 1999 – International cave rescue course in Arbas – France (*SSF*) - three rescuers of *CMRS*



# A Short History of Cave Rescue in Croatia

⇒ **11th January 2001 - Cave rescue commission of CMRS was founded**



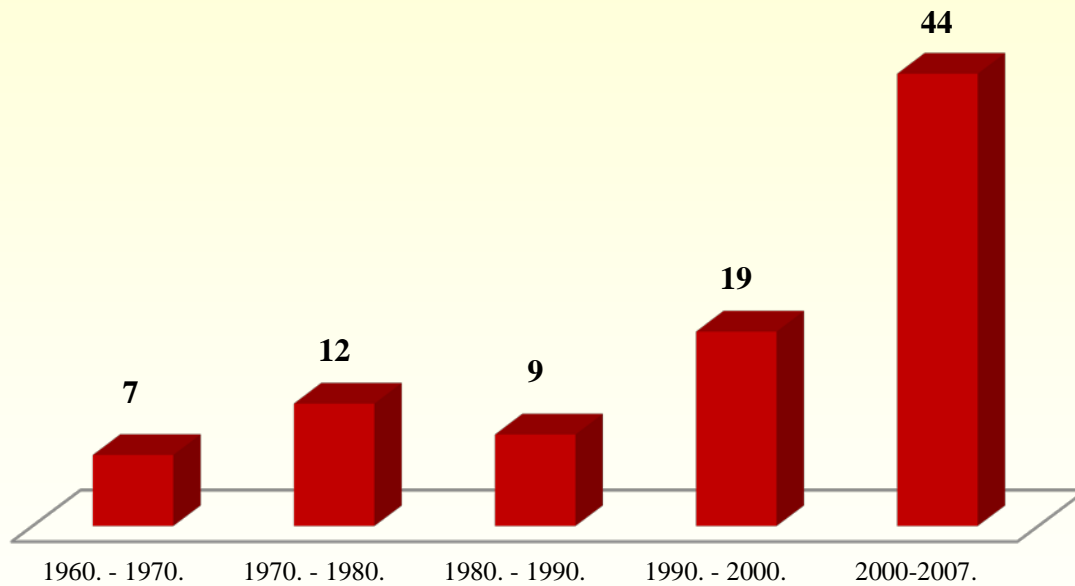
# Cave Accidents in Croatia

- ⇒ 1959 – 2007 - 91 cave accidents have been evidenced in Croatia
- ⇒ 78 people
- ⇒ 13 animals (dogs, cats and one bear)

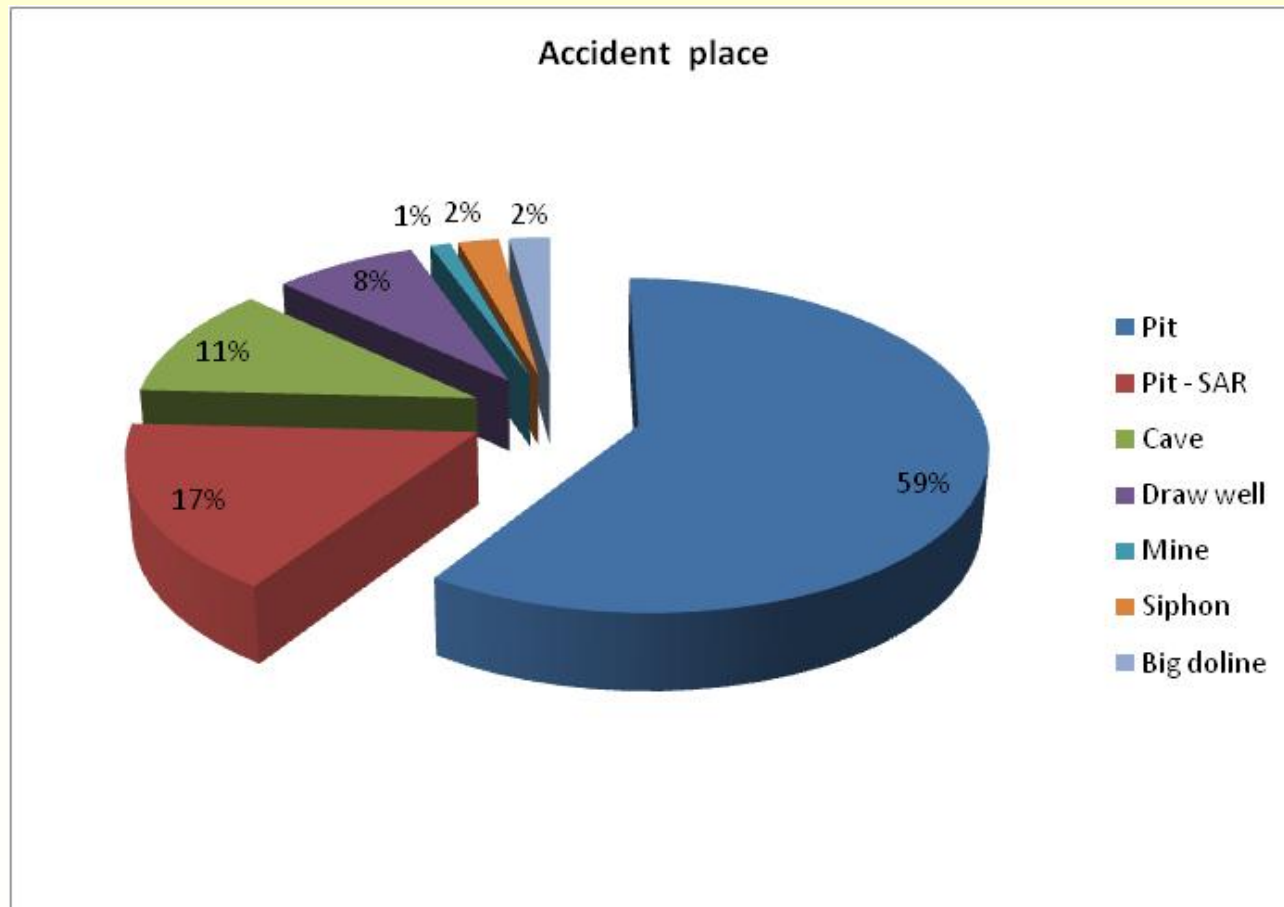




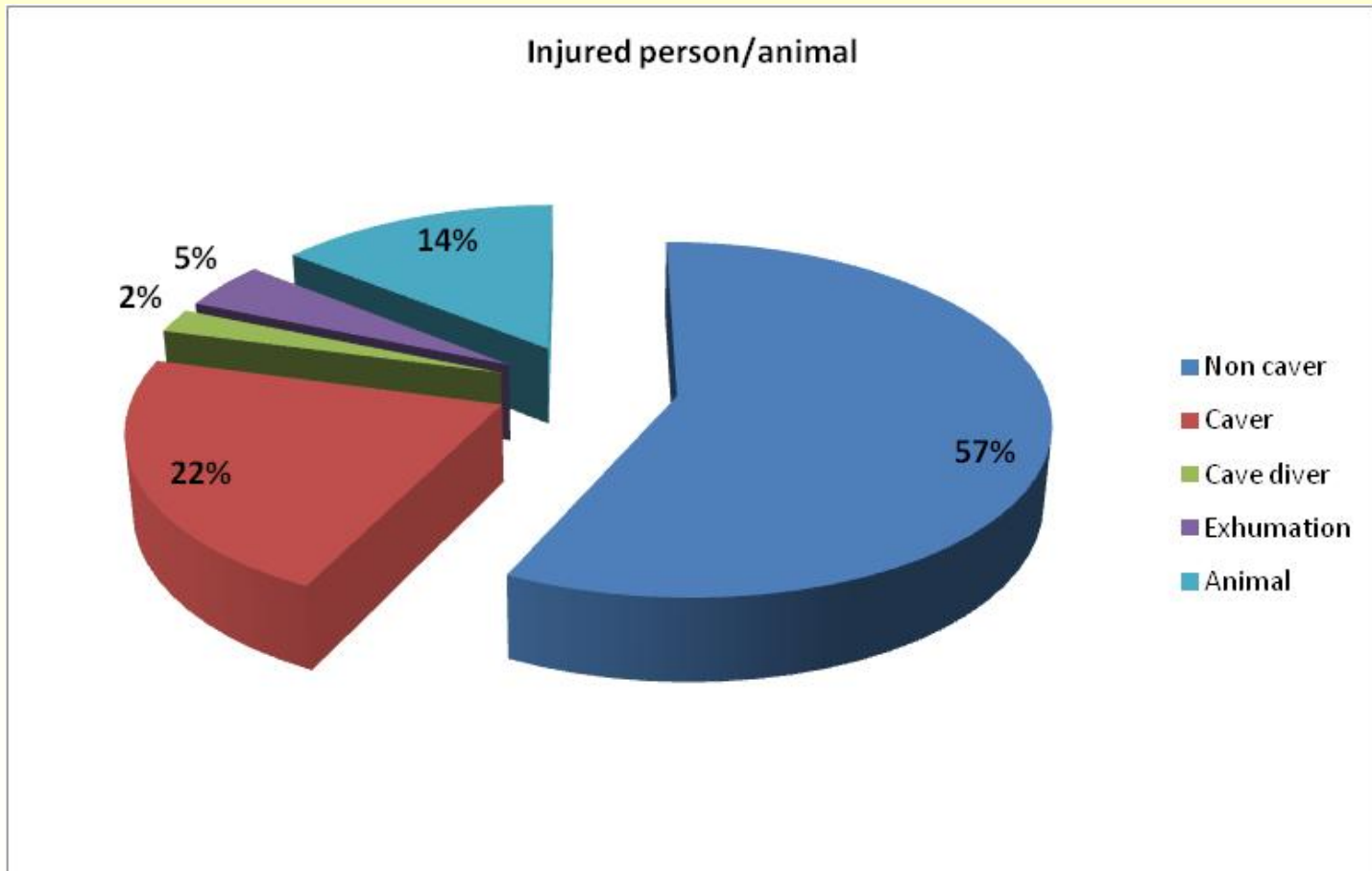
# Cave accidents in Croatia from 1959 to 2007



# Cave accidents in Croatia from 1959 to 2007

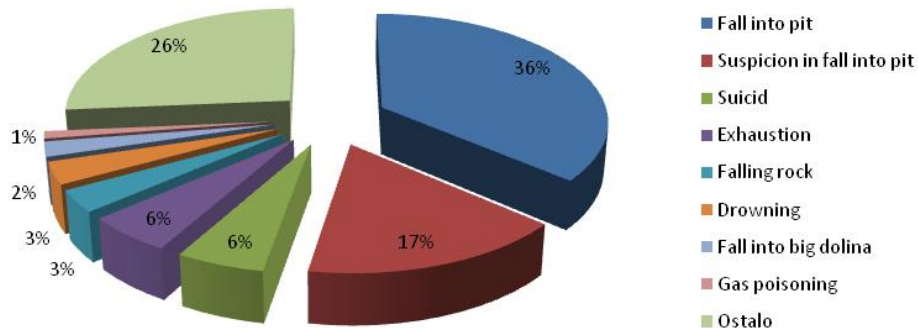


# Cave accidents in Croatia from 1959 to 2007

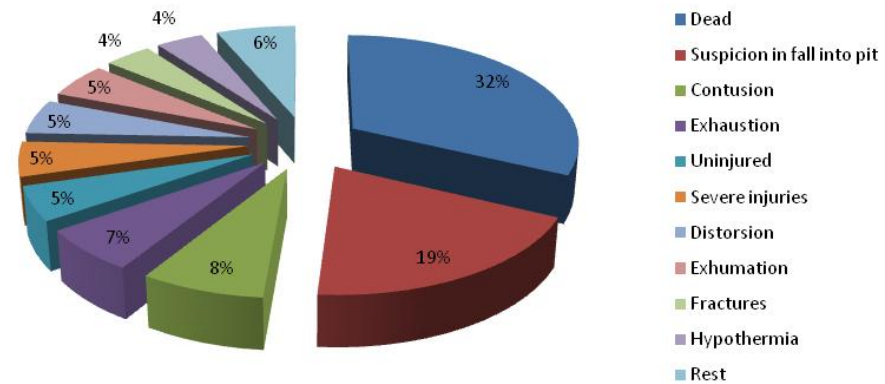


# Cave accidents in Croatia from 1959 to 2007

Cause of injury



Injuries



# The specificity of cave rescue in Croatia

⇒ Around 9000 caves and pits

⇒ In 15 known pits there are 16 vertical falls that are deeper than 200 m

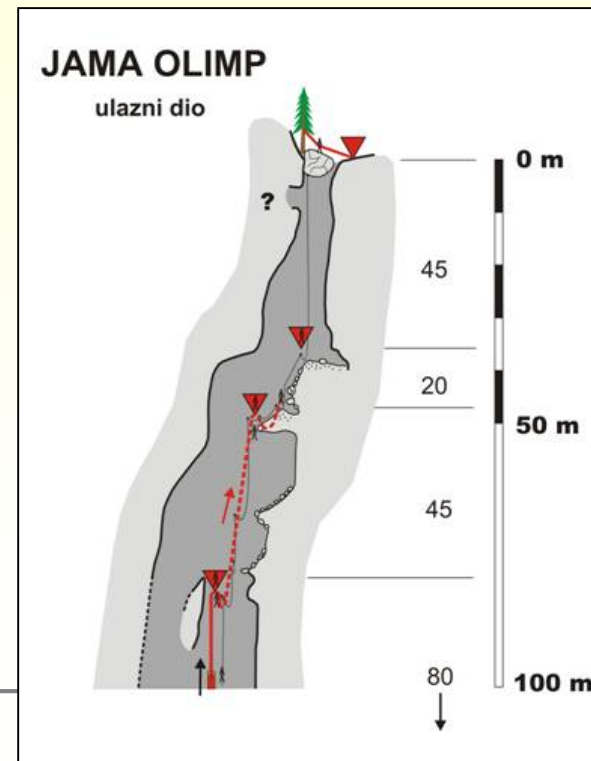
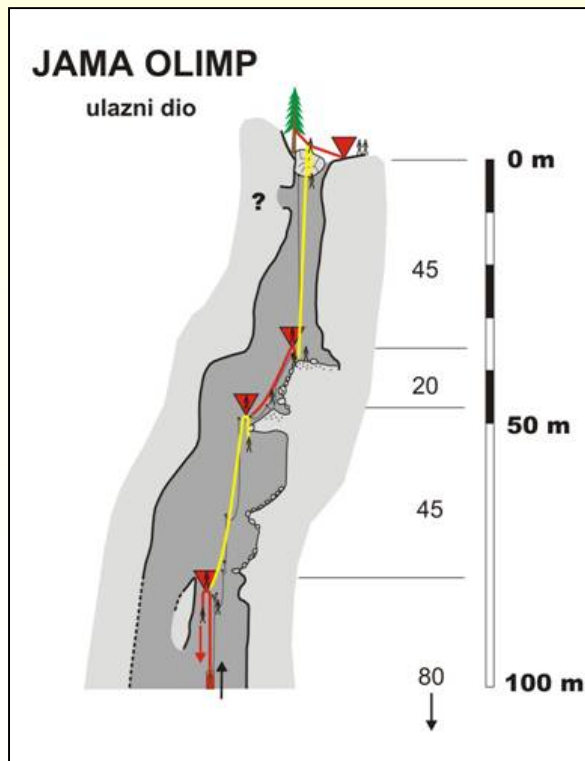


No	Pit	Vertical drop	Pit depth
1	Patkov gušt	553 m	-553 m
2	Jamski sustav Velebita	513 m	-941 m
3	Jama Meduza	333 m	-679 m
4	Lukina jama	329 m	-1392 m
5	Podgračišće II (Titina jama)	237 m	-329 m
6	Slišna jama	237 m	-237 m
7	Jama Sbardella	236 m	-247 m
8	Lukina jama	228 m	-1392 m
9	Jama Balinka	218 m	-283 m
10	Jama Grustišica	215 m	-235 m
11	Slovačka jama	213 m	-1320 m
12	Jama Marianna	210 m	-250 m
13	Jama Munižaba	208 m	-448 m
14	Mamet	206 m	-206 m
15	Stupina jama	205 m	-413 m
16	Xantipa	200 m	-323 m



# The specificity of cave rescue in Croatia

- ⇒ The *CMRS* applies same cave rescue techniques as *SSF (Speleo Secours Francais)*
- ⇒ also uses some techniques from the *CNSAS (Corpo nazionale Soccorso Alpino e Speleologico)*, especially for deep pit rescues.



# Caving in Croatia today



## ⇒ The Speleological Committee of the Croatian Mountaineering Association (SC CMA) – 15 clubs

**SO HPD Biokovo - Biokovo**, SO PD Dubovac – Karlovac, **SO HPD Dubrovnik – Dubrovnik**, SAK Ekstrem – Biokovo, **SO HPD Japetić – Samobor**, SO PD Klen – Vodice, **SO Liburnija – Zadar**, SD Lika – Gospić, **SO PD Malačka – Donja Kaštela**, SO HPD Mosor – Split, **SO HPD Spivnik – Blato**, SO PK Split – Split, **SO HPK Sv. Mihovil – Šibenik**, SO PDS Velebit – Zagreb, **SO HPD Željezničar – Zagreb**

## ⇒ Croatian Speleological Federation (CSF) – 14 clubs

**SD Ćićarija – Roč**, SD Buje – Buje, **DISKF – Zagreb**, SU Estavela – Kastav, **SD Istra – Pazin**, SD Jamar – Han, **SD Karlovac – Karlovac**, SK “Ozren Lukić” – Zagreb, **SD Pauk – Fužine**, SD Prezid – Prezid, **SD Proteus – Poreč**, SK Samobor – Samobor, **SD Špiljar – Split**, SD Ursus Spelaeus – Karlovac

## ⇒ Independent clubs - 12 clubs

**Hrvatsko biospeleološko društvo – Zagreb**, DISKF Dinaridi – Zagreb, **SD Dinaridi – Zagreb**, SK Had – Poreč, **SO HPK Dalmacija – Split**, SD Krstatice – Split, **SD Matokit – Vrgorac**, PD Profunda – Selca, **SD Rovinj – Rovinj**, Speleoronilačko društvo – Zagreb, **SU Spelunka – Veprinac**, SG Šišmiš – Zagreb

**Total 41 clubs – aprox. 300 cavers**



# Cave rescue in Croatia today

- 1 Požega
- 2 Varaždin
- 3 Zagreb
- 4 Samobor
- 5 Karlovac
- 6 Oglulin
- 7 Delnice
- 8 Tršće
- 9 Rijeka
- 10 Pula
- 11 Gospić
- 12 Zadar
- 13 Split
- 14 Makarska
- 15 Orebić
- 16 Dubrovnik
- 17 Osijek



## Cave rescue in Croatia today

- ⇒ **10 rescuers finished cave rescue training in France (SSF)**
- ⇒ **2 rescuers finished cave rescue training in Slovenia (JRS)**
- ⇒ **32 rescuers are able to rescue in complicated and deep caves**
- ⇒ **90 rescuers are able to participate in complicated rescue mission**
- ⇒ **all members of the CMRS (more than 300 rescuers) are capable of rescuing in less complicated objects**



## Cave rescue in Croatia today

- ⇒ **3 medical doctors – can provide aid to injured persons in most complicated and deep caves**
- ⇒ **20 medical doctors – can provide aid to injured persons in less complicated caves**
- ⇒ **All members of the CMRS finished BTLS**
- ⇒ **2 rescuers completed the *SSF's* course for the care of injured persons**





## Cave rescue in Croatia today

⇒ 3 divers completed a course in speleo-diving organized by the Unit for Technical Diving and Rescuing of the Ministry of Defense of the Republic of Slovenia



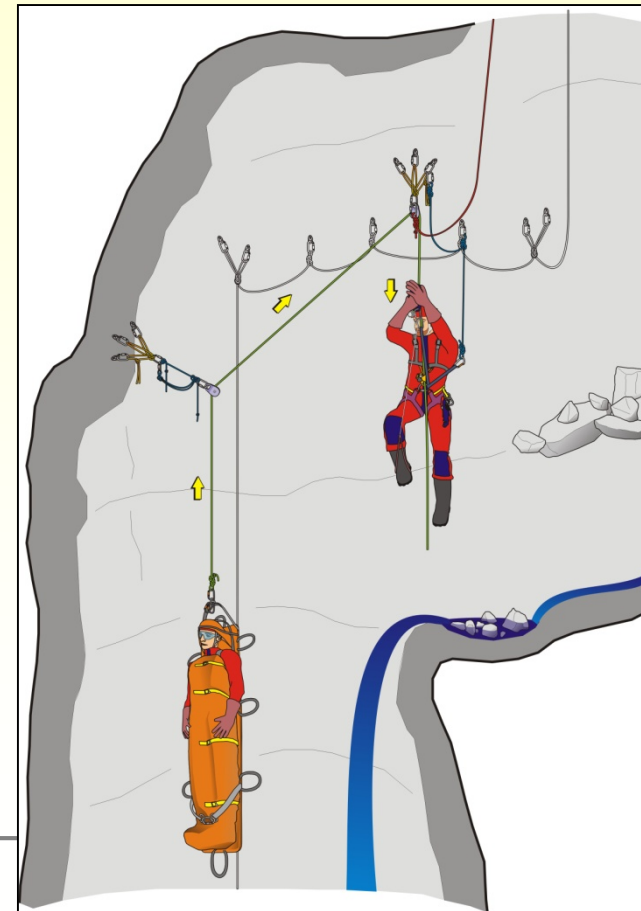
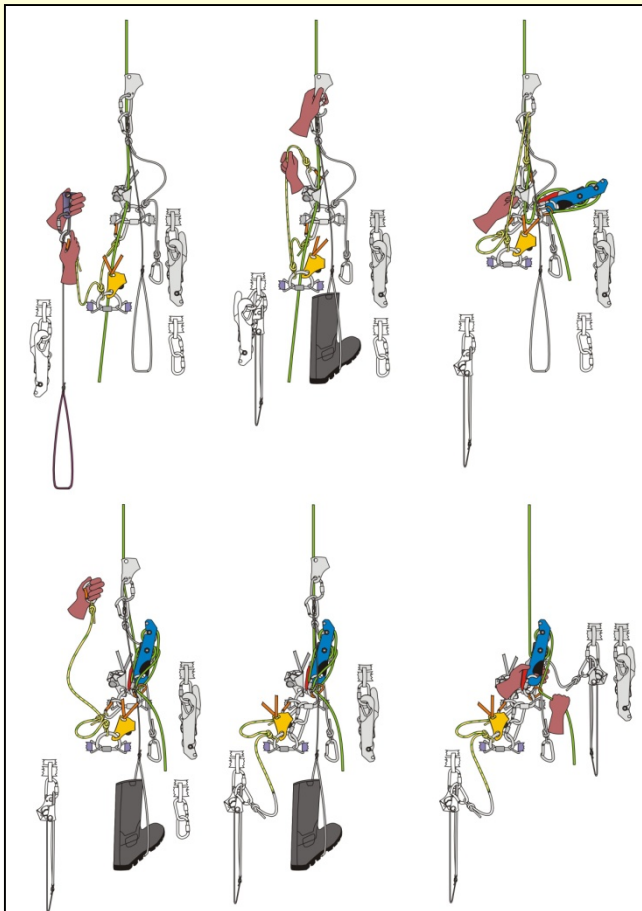
## **Cave rescue in Croatia today**

**⇒ Croatian Laws do not yet regulate training requirements or the use or storage of explosive materials intended for use in speleological rescues**

**⇒ CMRS does not have any licensed specialists to perform this task but some rescuers have been trained on his own to widen narrow passageways with explosive materials.**

# Cave rescue in Croatia today

Cave rescue manual – in preparation  
*Speleofon* prototype has been made





Questions?