THE SECOND INTERNATIONAL CAVE DIVING RESCUE CONFERENCE

29TH OCTOBER - 5TH NOVEMBER 1988

GORIZIA, ITALY

GRUPPO SPELEO 'L.V. BERTARELLI'

CONTENTS

A letter of invitation

Introduction

Map showing conference location

Map of Gorizia

Items discussed at the conference

Acknowledgements

Details of dives made

The British lecture (on behalf of BCRC)

Appendices:

(1) The conference programme

(2) French notes on their sump rescue apparatus

(3) Review: The UIS Cave Diving Commission Magazine

(4) A glossary of Italian diving terms

(5) Sump rescues - key points

Club Alpino Italiano
Sezione di Gorizia
Fondata nel 1883
Gruppo Speleo «L. V. BERTARELLI»
Via Rossini, 13

Gorizia, 2.6.1988

The equipe of the 2nd group (Friuli Venezia Giulia) of the "Corpo Nazionale Soccorso Alpino Sezione Speleologica - Commissione Speleosubacquea" will organize in November the "Incontro Internazionale di speleologia subacquea per tecnici del soccorso speleologico (International cavediving meeting for technical people of the speleorescue)".

The meeting will take place in Gorizia and there will be the possibility of diving in some cave in our region.

The programm includes reports, discussions, demonstrations of new techniques.

We are pleased to invite mr. John Cordingley to the "International Technical Semenar of cave diving".

As we are aware of the great experience in cave diving of mr. John Cordingley, we would kindly request his presence in Gorizia as relator.

He will be our guest for the whole week.

It is our pleasure ti invite him and be able in this way to create between a stronger friendship and a better cooperation for the future.

Our best regards.

Alessio Fabbricatore
chairman of the organisation

INTRODUCTION

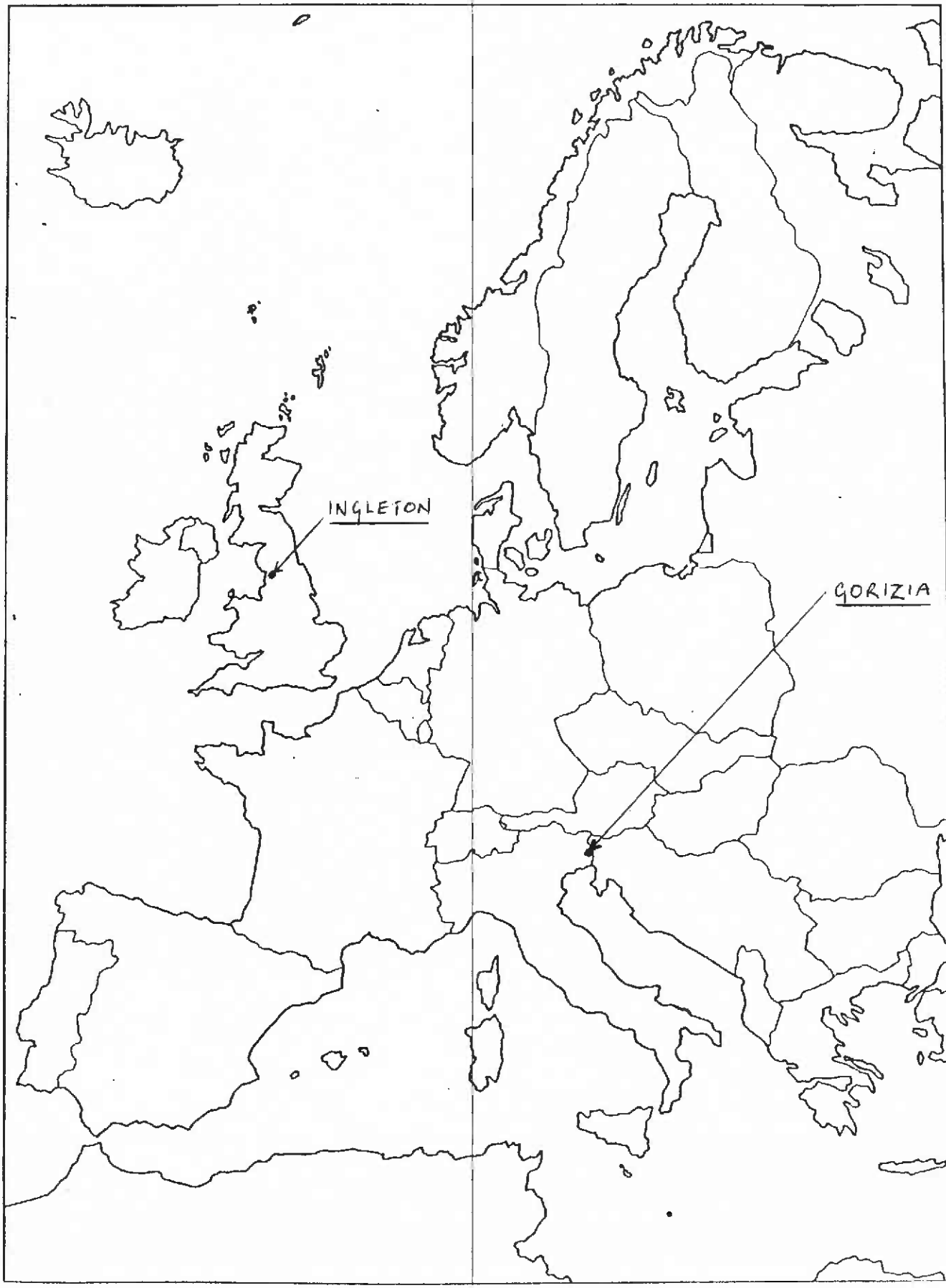
In October 1985, John Cordingley and Graham Proudlove represented Great Britain at the first international meeting to discuss the huge problems of rescuing injured persons through increasingly long, deep and difficult sumps. This unique event was held at Francheville near Dijon in France. It proved to be very helpful to us in Britain when we began to try to prepare for that inevitable day when our first really serious rescue happens in such circumstances.

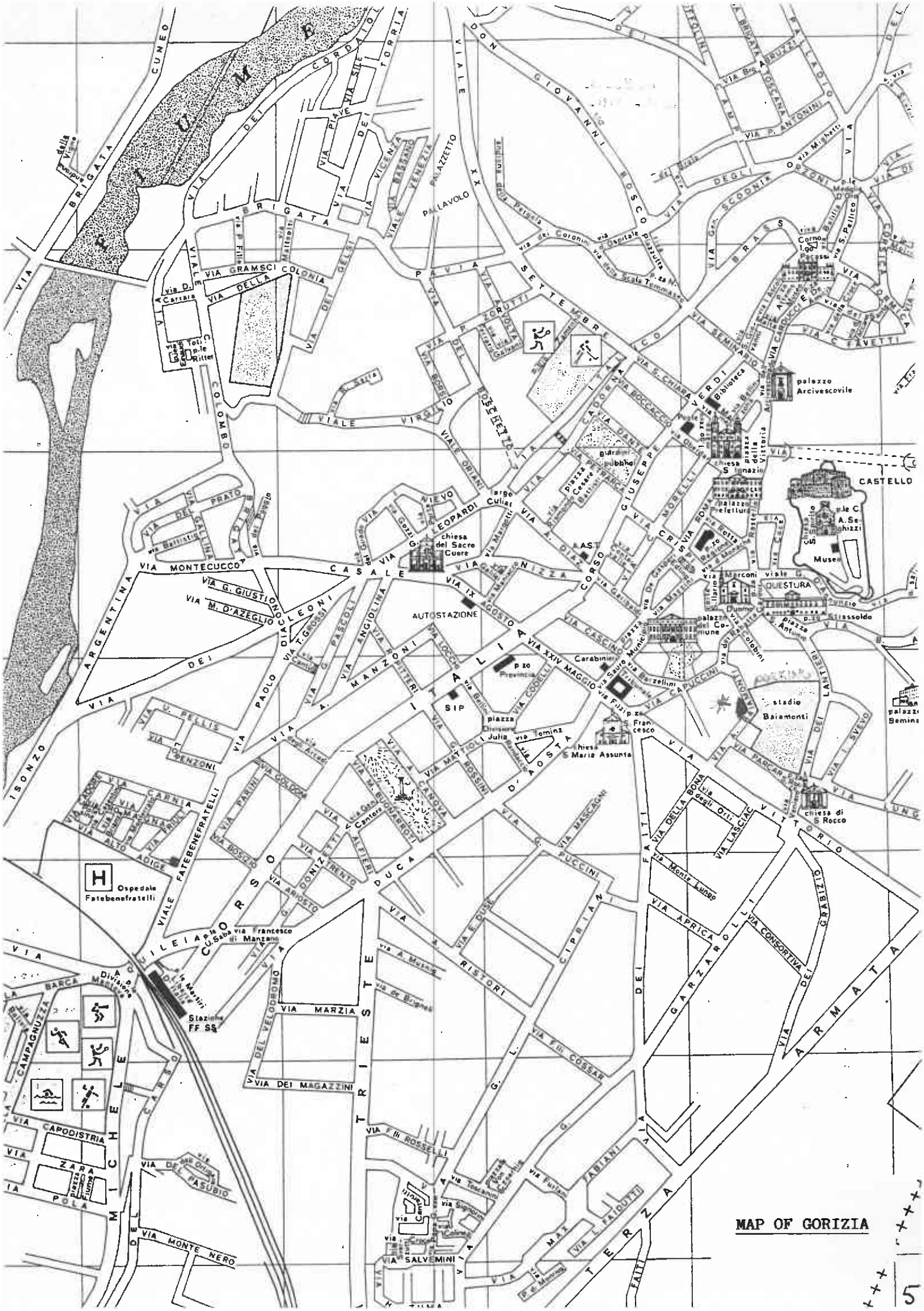
Early in 1988 the French announced that there would be a second similar conference towards the end of the year at Dijon University. We felt that we had made some progress in Britain but still had many problems to overcome. Therefore Russell Carter and John Cordingley made plans to attend as it co-incided with our holidays. However, later in the year it was apparently decided that the meeting would be put back by a week and the venue was changed to Gorizia in North East Italy! Fortunately, our respective employers were good enough to support us by granting the necessary leave of absence so that we could attend. Although their help is acknowledged later in this report we would also like to express our grateful thanks to them here.

Thus on 29 October we finally arrived in Gorizia to receive the hospitality of the "Corpo Nazionale Soccorso Alpino Sezione Speleologia - Commissione Speleosubaquea". It proved to be an excellent week of both formal meetings (with full translation service) and practical cave diving. As expected, much information was collected but we were also able to pass on many useful ideas which British cave rescuers have developed in recent years. Unfortunately in most countries (including Britain) the pace of developments in underwater exploration seems to be far more rapid than in the ability to rescue injured persons from remote locations beyond such flooded zones. This is one of the biggest problems facing cave rescue teams at the moment. It is a problem which every cave diver should be thinking about right from the start of training!

R L Carter John Cordingley

Europe - SHOWING CONFERENCE LOCATION IN N.E. ITALY




MAP OF GORIZIA
5

ITEMS DISCUSSED AT THE MEETING (SEE APPENDIX 1)

The French pointed out that trainee divers were those most at risk from accidents. The theme of safety should be paramount in all aspects of cave diving training. Trainees should be able to select suitable equipment and learn certain "rules" which are common to all nations irrespective of their particular diving conditions (eg carry two separately valved tanks, use at most one third of available breathing gas on the way in, learn the basics of line handling, carry several lights and other back up systems etc). They recommend that different regulators should be used every 20 bars or so, such that similar amounts of air remain in both cylinders all the time. The trainee cave diver should have the correct attitude to cave diving and feel comfortable under water (note that many of the fundamental principles of training for open water and cave diving are exact opposites!) Books and films about cave diving must be produced responsibly. If they show poor techniques they will promote unsafe practices.

The organisation of sump resources in France is fairly efficient. Lists of cave divers are regularly updated with information about particular skills and equipment which each can offer. There are also specialist teams eg for deep sump operations. Would be cave rescue divers also need to train as good diving ability is no guarantee of being able to be of use in a rescue situation. Government funded transport is used which is not always rapid and delays in the past have possibly cost lives when divers were stranded in airbells. They like to have a diver with personal experience of the site in control. The French have also developed several kinds of specialised sump rescue apparatus. The most recent of these is a man-sized dry tube at constant internal pressure of 1 bar using an oxygen rich gas supply with a CO_2 scrubber (see Appendix 2). This is known as "L'Azerotte" and removes problems associated with ear clearing, hypothermia and breathing gas duration etc. It is bulky but there are certain British sites where this type of apparatus could provide the only means of rescuing a badly injured person. (see appendix 2)

The subject of international co-operation on sump rescues was raised by the French. They are keen on the idea of setting up some kind of internationally acceptable arrangements so that delays can be reduced in future, possibly via the vehicle of the EEC in 1992. French teams played key roles in recent rescues in Morocco and Poland but were hampered by severe diplomatic problems causing long hold ups. Like British cave divers they also offered to assist at the Zeebrugge ferry disaster but were turned down.

The Swiss intervention at the Gorgazzo incident in Italy was actually delayed by almost a week by "red tape". There was also talk of trying to establish international agreements on standardizing equipment and rescue methods etc. (We in Britain should consider this very carefully. The choice is either to be involved in these talks and at least have our say or to be left out and risk possible future difficulties as a result. The next opportunities for this will be UIS meetings at Budapest (Hungary) in 1989, Austria in 1990 and the cave diving camp in Bulgaria in 1991. The writers feel that we in Britain should not bury our heads in the sand and at least monitor events of this nature).

The Swiss also expressed strong feelings that prevention of rescues is better than cure. Each diver must be self-sufficient and should have made contingency plans in case the worst happens in a remote location. In Switzerland there are seven regional cave diving rescue teams who can also call on other specialists (eg mining/blasting/pumping/ medical etc). Lists of individuals in other countries are also kept in case of a very large scale operation. Speed is essential. There is a centralised control (by region A) which calls out regional teams and is also responsible for financial and insurance arrangements. This works only because Switzerland is a small country. Unfortunately there is a need to obtain clearance from region A if personnel wish to assist on rescues abroad - some members dislike this due to the delays caused.

As tends to be the case in Britain the specialist cave rescue equipment is owned by the teams but diving equipment used belongs to the individuals. Team lists carry information about the ability and equipment owned by members. This has caused some argument in the past when individuals perceived that their esteem might be threatened! (Many British cave rescuers would argue that complete democracy is not always the most effective way to run a rescue team.) The Swiss pointed out the need to remember to adjust plans as a rescue proceeds in the light of information continually being obtained. A team should leave one of their better divers to co-ordinate the rescue which is a big help to the divers in the water and be aware that as not everyone is an expert in all conditions personnel must be selected very carefully.

The Italians stated that most of their sump rescue operations tend to be body recoveries. They have many problems with individuals trained only for open water diving who jump into sumps with one aqualung, one hand-held torch etc. Many of these wear no means of buoyancy compensation and few ever consider obtaining drysuits. However recent co-operation with the French and Swiss is improving the situation and many more competent Italian cave divers are emerging.

The Italians wanted to propose a rule that buoyancy compensators should always be worn. We English disagreed with this and argued that it is better to educate divers to be able to select for themselves the most suitable equipment to meet particular diving conditions. We also stressed that if both a BC and a drysuit were used then the direct feed supply to each should come from separate cylinders. Our comments met with widespread approval. The Czechoslovakians also agreed but made the point that whatever gear is selected it must first be well tried and tested in open water. The Italians also suggested that the recently launched "UIS Cave Diving Commission Magazine" could be used as a forum for the exchange of information on sump rescue techniques.

(It is worth mentioning here that many caving areas in Italy are still volcanically active. The teams have thus had considerable experience of cave rescues being hampered by the presence of high concentrations of gases such as SO_2, H_2S, CO, CO_2 and CH_4. If gas contamination is ever anticipated as becoming a problem in Britain the Italians would no doubt be able to give us useful help).

The Czechoslovakians (who have a considerable cave diving tradition) also favour the mounting of lamps on the forearms to keep them as far as possible from the eyes thereby improving passage illumination in poor visibility caused by suspended particles. We have since tried this on silty dives such as Peak Cavern's Far Sump, with some success. The technique might give advantages to divers transporting a victim in poor visibility on a rescue. In Czechoslovakia the mine rescue services are able to carry out rescues through flooded passages. Trapped miners can opt either to learn to dive or to be brought out in a dry bag using a type of rebreather. Apparently they always choose the crash course in cave diving!

(Note that talks were delivered by delegates from several other countries but much of what was said is already known of in Britain and thus will not be specifically referred to here. A written version of the lecture given by the British contingent appears later in this report. The official Italian report on this conference is to be published in summer 1989 as part of the second edition of the UIS Cave Diving Commission Magazine).

DECOMPRESSION COMPUTERS

This subject in particular generated much discussion not only because their mis-use may result in decompression-related incidents but also partly because they have a potential role in promoting both safety and speed in a sump rescue situation. The general feeling was that the principle on which they work is fairly sound but not all the programmes used are suitable for cave dive profiles.

For multi-level diving the Swiss and French take an average depth and use this for decompression calculations using conventional tables. Accidents will always occur from time to time with any decompression schedule and the only cure would be not to dive at all. The Swiss do sometimes rely on computers but introduce the extra safety factor of decompressing on oxygen. Even they think that they are expensive (!) but still worthwhile to give some idea for stops provided that the diver still uses his brain (to allow for any factor applying to particular dives which increase the risk of D.C.S.). It is important also to take along watch, depth gauge and matched tables (ie the same as those used in the programming of the computer). Relaxation in the period following diving is also extremely important. A general rule is always to err on the safe side whilst decompressing - it is better to spend longer in the water than the rest of your life in a wheelchair! (Note that the forthcoming C.D.G. Manual will include much advice on the use of computers in cave diving).

SUMMARY

Once again we are satisfied that having attended an international meeting of this kind has been well worthwhile. We expected to be far behind other countries in preparations for the unthinkable, yet as it turned out, we were actually able to pass on much information not yet developed in several countries. Although we tried to persuade people otherwise, British cave divers are considered by some as "experts" in sump rescue techniques in difficult diving conditions. It would be very nice if this were the case - sadly the reality is that we still have many problems to overcome in Britain.

As with most conferences, one of the most useful aspects is that of the contacts made which will improve our interchange of ideas on equipment and techniques in the future. It is really interesting to see the ways in which other divers have overcome similar problems to our own. It would be a big advantage if more participation by the American and Australian cave divers was encouraged, though of course travel costs are a major obstacle. We sincerely hope that the British Cave Rescue Council continues to send representatives to future meetings of this nature.

ACKNOWLEDGEMENTS

We have pleasure in recording our gratitude, for help in various ways, to the following:-

The Sports Council

The David Anderson Memorial Fund

The British Cave Rescue Council

The Governors of St Wilfrid's C E High School

Reprographic Services Ltd (Derby)

The Cave Diving Group (Northern and Derbyshire Sections)

Bill Whitehouse

John Cross

"Thunderchild" the compressor

F Zappa and Joe's Garage

Jen Davies

GORGAZZO SPRING Polcenigo, Pordenone.

01.11.88.

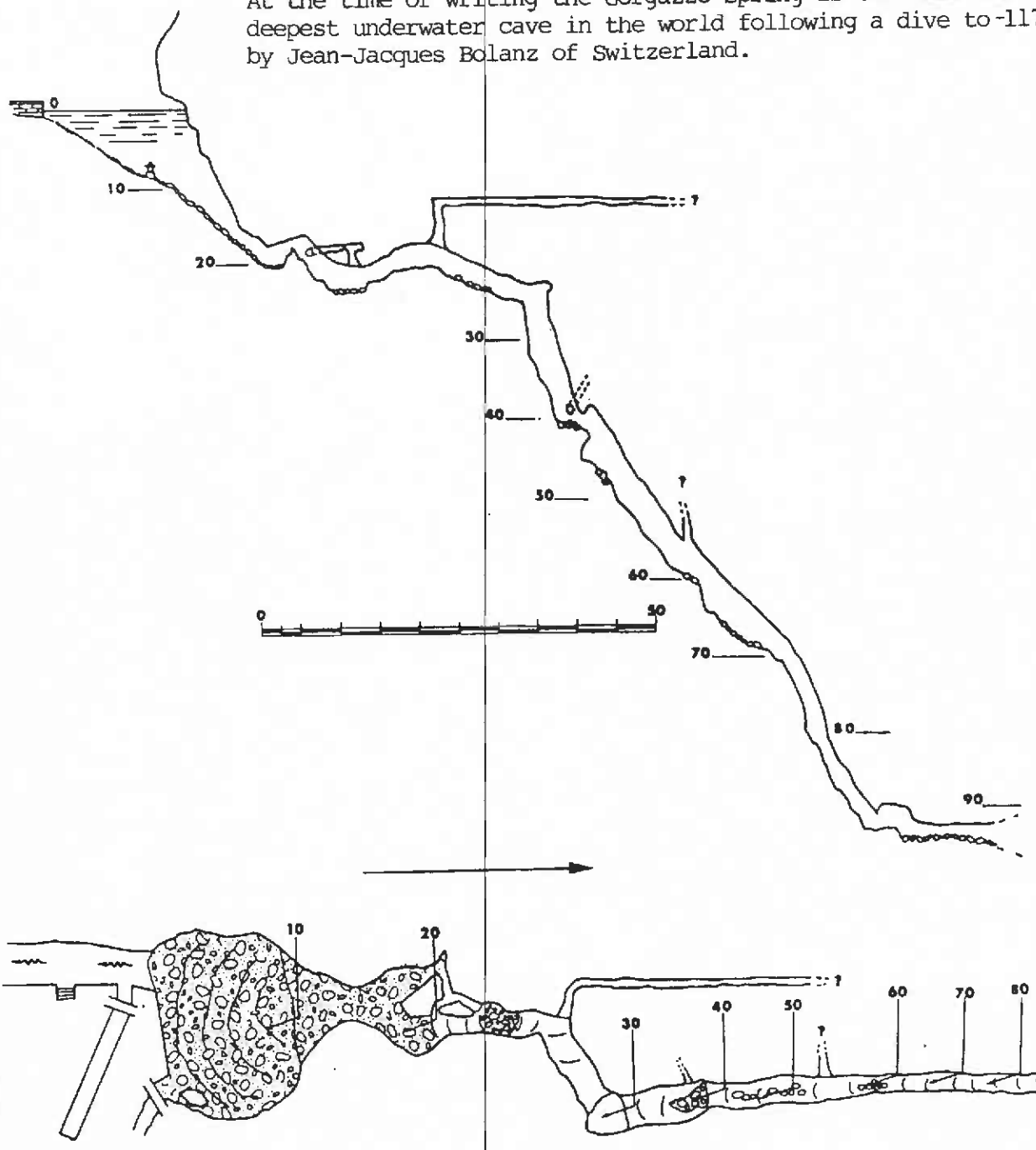
DIVERS: RL Carter, JN Cordingley.

This famous resurgence drains a large area of the mountains to the north west of Pordenone (home of the Zanussi washing machine). The deep blue pool is some 40m in diameter with a 2 cumec outlet in dry conditions. At -17m the cave entrance opens into a chamber from where a 5m diameter tunnel leads off. We dropped off our decompression lead and stage tanks here before the passage section reduced slightly forcing an energetic swim against the crystal clear current At -27m the sump went almost vertical as a fine shaft in pure white limestone. A useful ledge at -40m gave us a chance to catch our breath before continuing into the void. On this dive we reached a depth of 63m before starting the long climb back to daylight. A most enjoyable decompression was made in the sunny entrance pool watching the fish and collecting enough coins to pay the Autostrade toll on the drive back to our accomodation in Gorizia.

1½ hours after surfacing we both made a repeat dive. RLC descended to -22m to photograph the Italian cave divers towing a voluteer in a stretcher around whilst JNC dived with Alexander Mikhov (Bulgarian) to -27m. Both of us did a long precautionary decompression before resurfacing again. This was one of the most enjoyable days of cave diving that either of us have ever done. The site is highly recommended (see survey).

GORGAZZO 61/36FR

At the time of writing the Gorgazzo Spring is the thirteenth deepest underwater cave in the world following a dive to -117 m by Jean-Jacques Bolanz of Switzerland.



MARTINI
ROSSETTI
RUSSO
SAVOIA

TIMAVO SPRING San Giovanni Di Diuno, Trieste.

02.11.88.

DIVERS: RL Carter, JN Cordingley, A el Mahler, Wolfgang Morlock (West Germany), Alexander Mikhov (Bulgaria)

The three huge resurgences of the Timavo group produce most of the water in the Fiume Timavo, shortly before it flows into the Adriatic Sea. The main sink is 40km away in Yugoslavia but another branch of the system is known to exist (from dye test results) sinking some 20km away in the Fiume Isonzo, south of Gorzia. All three entrances lead to very large and complex submerged passage networks, as yet unconnected with each other. It is not clear exactly how much has been systematically explored but it seems that the longest penetration was of the order of 400m and the deepest (on a separate route) to -80m. We entered the most southerly of the three entrances in vis. of about 6m.

Our brief from the Italian divers was a simple 200m circuit along a thick rope marking one route around the shallow part of the maze at an average depth of 8m. However, RLC and JNC wandered off along numerous other lines (as one does) intent on seeing as much of the cave as possible. One route heading northwest was followed for 150m (maximum depth -21m) before returning, and several oxbows were swum through. We worked our way around the loop until daylight was visible and having plenty of air left, swam round it twice again.

The sump is like a bigger version of Keld Head in many ways, but much more complex. Out-tagging of every junction is a must. We regained the entrance area after about an hour, where a huge pile of wartime ammunition was found and duly inspected before surfacing.