

APPENDIX 5

Planning Methods.

Several planning techniques were used during the period before the descent. For overall planning, to ensure that all the necessary preparations were complete before leaving for France, a Critical Path Scheduling (C.P.S.) diagram was constructed. (See Fig.1) The steps to construct such a diagram are:

- (a) Decide on the activities to be performed.
- (b) Decide on the order in which activities must be done.
- (c) Draw logic diagram. Each activity is represented by a numbered arrow, with the time taken to complete it written underneath.
- (d) Enter the expected duration of each activity.
- (e) Add up the times for each path of the network. The longest path is the Critical Path. (Shown as thicker arrows.)
- (f) The Earliest and Latest Start times can be entered for each activity, but are omitted in Fig.1 for clarity.

A simple summary of the main events is listed as follows:-

AUG. to OCT. of the year before the expedition. Contact the Mayor of Engels.
 DEC. Contact Cavers, Medics, and Sponsors.
 JAN. Open Bank Account. Decide Transport arrangements. Estimate costs.
 FEB. Get Deposits. Book ferry.
 MAR. Finalise members list. Order tackle.
 APR. Mayor sends confirmation. Fix Insurance. Plan expedition in detail.
 MAY. Send Dossier to Mayor.
 JUN. Obtain equipment, supplies, etc.
 JUL. Purchase tickets. Pack gear. Travel.
 AUG. Expedition starts.

For assessing how long to book the cave for, a Bar Chart was constructed using estimates of activity times based on experience. An example of a Bar Chart for rigging the Entrance Series and for ferrying tackle is given in Figure 2. The aim was to rig and derig the cave within a week allowing an extra week for contingencies such as bad weather. The Bar Chart indicated that rigging could be completed in two days, and derigging in three days, leaving two clear days for bottoming trips, photography and tourist trips.

For planning team activities in the field, and for general communication of ideas, a depth/time diagram was used, as shown in Figure 3. This sort of chart proved the most useful, as passing points for various teams could be assessed to avoid bottlenecks, and as modifications were easy to make as changes of plan occurred. Some typical times used in these plans are tabulated as follows:

	APPROX. TIME ALLOWED (HRS)	
	"Free"/Lightly loaded	Tackling/Heavily loaded
Surface to Campl to Surface.	6-8	13-15
Surface to Bottom and back.	12-24	-
Surface to Campl.	1½-2	6-7
Campl to Bottom.	3-4	7-8
Bottom to Campl.	4-5	9-12
Campl to Surface.	3-4	7-8