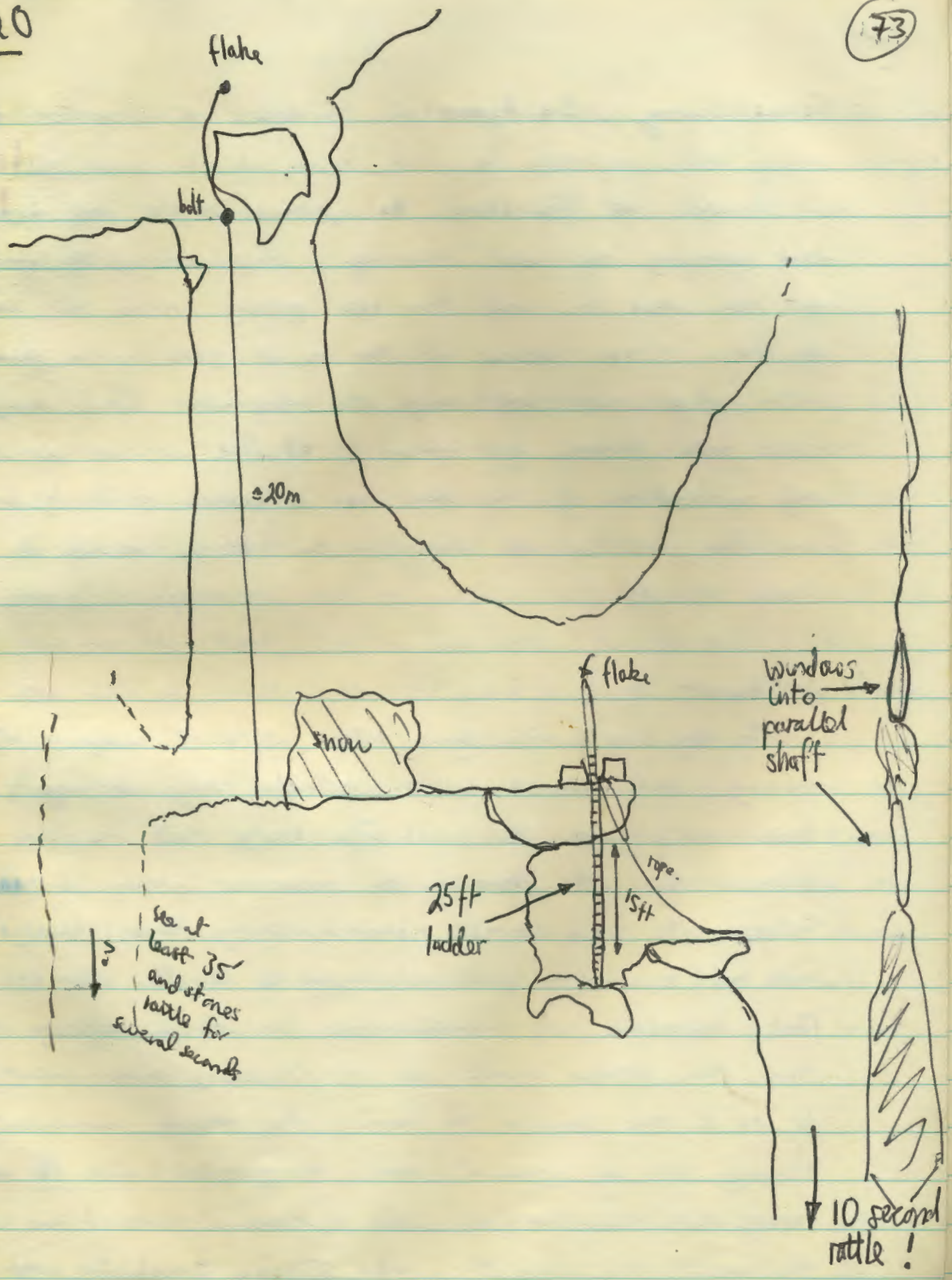
for a ladder. (≃ 10 feet)

(2) If you go behind the snow lump (a human size gap ≃ 2 Naylors) you reach a big dead wedged in the rift. Peering down I could see a ledge about 15 ft below which needed a ladder. Beyond this was a huge abyss! Jan came ~~West back to camp~~ down and I spent a happy few minutes hurling rocks down the 'hole'. Jan timed on his watch. ≃ 3 seconds of free drop followed by rattling around with some quite long pauses for another 7 seconds. I then stepped back from the edge and demisted my glasses. Decided that I required a line to protect me traversing out over the hole, so due to complete lack of natural we slung a rope around the huge dead in the roof above us. Now spent ages wondering what to do. Unfortunately it is virtually impossible to rig a free hang all the way — the walls slope so that you touch after ≃ 40 feet. Also something is sticking out ≃ 35 ft down. Rigging the top will be tricky as there are no

naturals — needs bolting. The rock is not too brill — one side covered in calcite, the other ~~is~~ veined heavily. Also in order to get the best hang a long traverse out is required - not too bad as there are some small ledges. ≃ 10 feet out, the rock is better on the right hand side, and maybe a 'Y' hang across the rift would give the best ing. Another poss, is to traverse right across to where another parallel hole is visible which may give a ~~bb~~ better hang. Rocks hurled into the parallel shaft meet the first one ≃ 60–70 ft down. and rattle onwards etc:

Eventually ran out of time so didn't whang a bolt on, but left it rigged waiting for a suitable loony to descend.

F20


flake
bolt
≈20m
flake
snow
windows into parallel shaft
rope
25ft ladder
15ft
sea at least 35' and stones rattle for several seconds
10 second rattle !

(74)

67

Ground Survey 3rd August. S. Crale H. Winchester A. Riley

Arrived at Top Camp the previous night and hoped to start surveying the next morning. Unfortunately, the mist and rain closed in and there was nothing to do but loiter in the tents. I was pleased at this as it gave me a chance to catch up on sleep lost during the mega-drive down through France with Richard and Sarah. El Tefe was not pleased; the only achievement of the day was a cairn built by himself and Jan late in the evening – this became known as Steve's Cairn or C2.

Sat. 4th August.

The day was marginally better, at least early in the morning, and for a session in the early evening. We built another cairn (C4), El Tefe having built one some time immediately after dawn. We measured sloping distances between the main cairns, which involved Steve charging off with a 50m tape and me hanging on to the other end. Took declinations and inclinations in a web of confusing readings. Steve then bombed around the F7 (Perdices) area shouting for me to take readings to him. This became somewhat amusing as he appeared and disappeared with the mist swirling round us. Gave up when I found I couldn't see him at all; could only hear the oaths drifting through the mist.

Went out for one last barbarous session at about 5pm–7pm and measured two more sets of distances, took a few bearings. El Jefe, in enthusiastic mood, bombed off to F14, 15, 16 to do likewise.

Sun 5th August.

El Jefe went down to see the action at Arío, leaving me to carry on. Started off by building a new cairn (C5) which fell down once and is now extremely wide at the base, narrow at the top, and critically unstable. It overlooks bog alley and the base of the depression and so provides a baseline for that area to the West; it is also visible from the other 4 cairns. Took lots of readings from C5, and was then joined by Andy. We measured three legs from C5 to C3, C4 and C1. Andy plonked a straight furrow between cairns, leaving me in progressively more precarious positions on slabs of limestone. It was a session of meticulous measurement, with inclinations taken on each somata leg to overcome the problems of the irregular terrain. I then started working out lots of information, which involved rechecking bearings and back-bearings and doing a quick sprint round the cairns.

Mon 6th August

Under instructions from Andy, calculated horizontal distances from sloping distances, then vertical distances. I coped with the

right-angled triangles but had forgotten the existence of the sine rule for other triangles, so calculation of distances from points other than cairns had to wait until 2 engineers and a physicist could remember it between them. Iestyn ventured off into the cosine rule before being shouted down by popular opinion. I spent many happy hours drawing triangles, while enjoying the first day of sunshine up here in the mountains. Attempted to put points on paper but only a rough job as yet, until X and Y coordinates can be calculated.

Tues 7th August

Another day of sunshine, but had to hide from it this time because of sunburn. On to the X, Y, Z coordinates until interrupted by Andy and Jan, when we went off to explore F20, and I took yet more bearings and inclinations from Andy's new caves. Still got lots more calculations to do, and need to redraw points on to a more appropriate scale on the graph paper. I have no bearings/inclinations for F3, F4, F9, F17 (bearings but no incs), F18, F19, F21, F23, F27.

There are further readings in log book

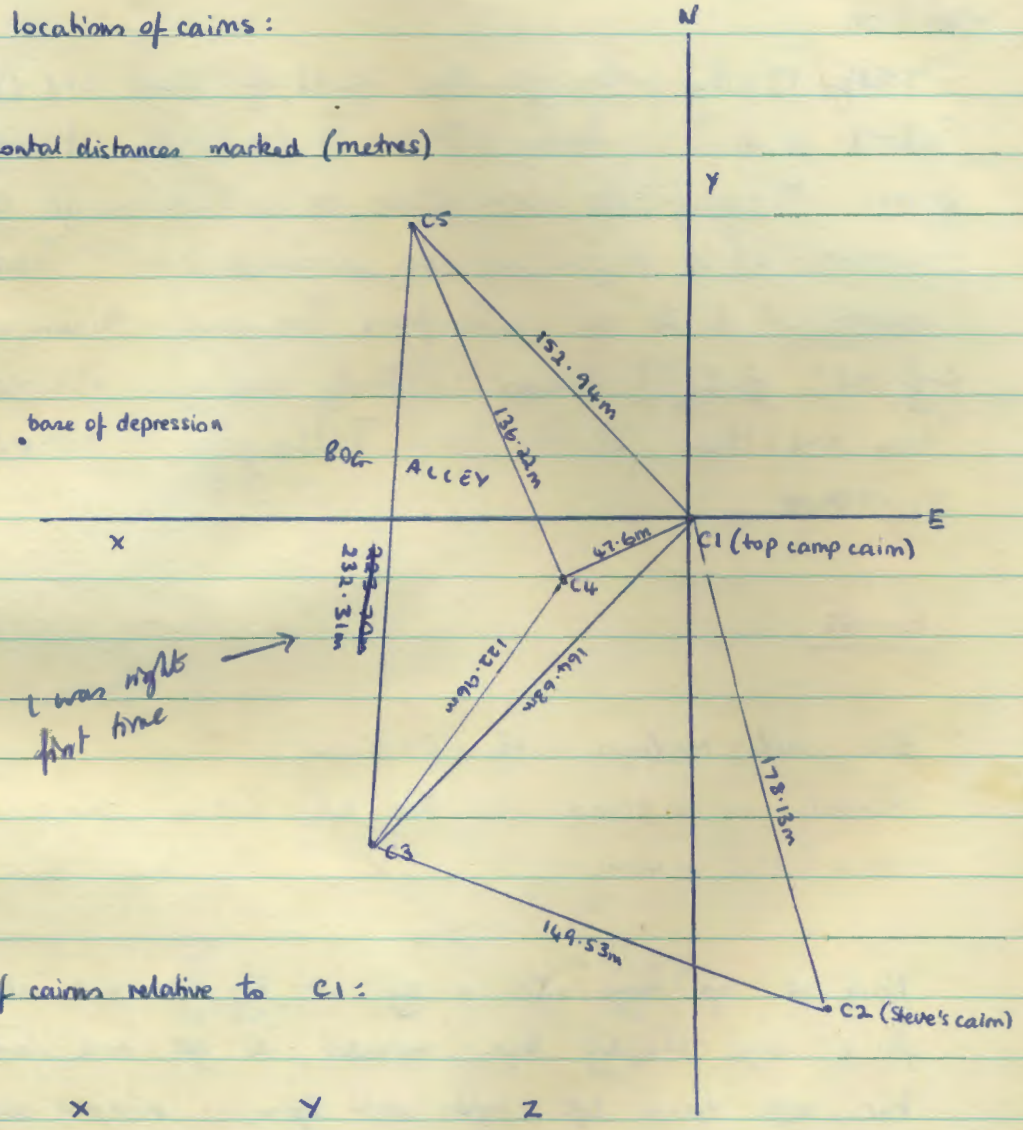
I have only one set for ~~F10~~, F13, so cannot locate that.

I have adequate info for all other caves F1 – F28. I am going rapidly through Jefe's notebook.

I understand from Ian that F3 and F4 are two holes about 50 metres down dog alley which were never painted; of not significant dimensions; can be considered lost and numbers reallocated.

Approx locations of cairns:

Horizontal distances marked (metres)



I was right first time

Location of cairns relative to C1:

	X	Y	Z
C2	24.79	- 176.4	+ 57.88
C3	- 110.82	- 118.84	+ 20.24
C4	- 43.48	- 19.37	- 0.5
C5	- 112.76	103.32	- 15.27

Wed 8th.

Misty with periodic burst of rain and (rare) sunshine. Festered a.m. Andy retreated to los Lagos. 1 survey leg at lunchtime p.m. Magnificent solo attack on La Verdelluenga culminated in success. It is, in fact, an easy scramble from the Jocadero, the grassy col to its W visible from Top Camp. View was about 20 yds but that's plenty for snails. Actually I did get a glimpse down towards Cuin and I think the view from Jultayo was probably much more impressive.

Fri 9th.

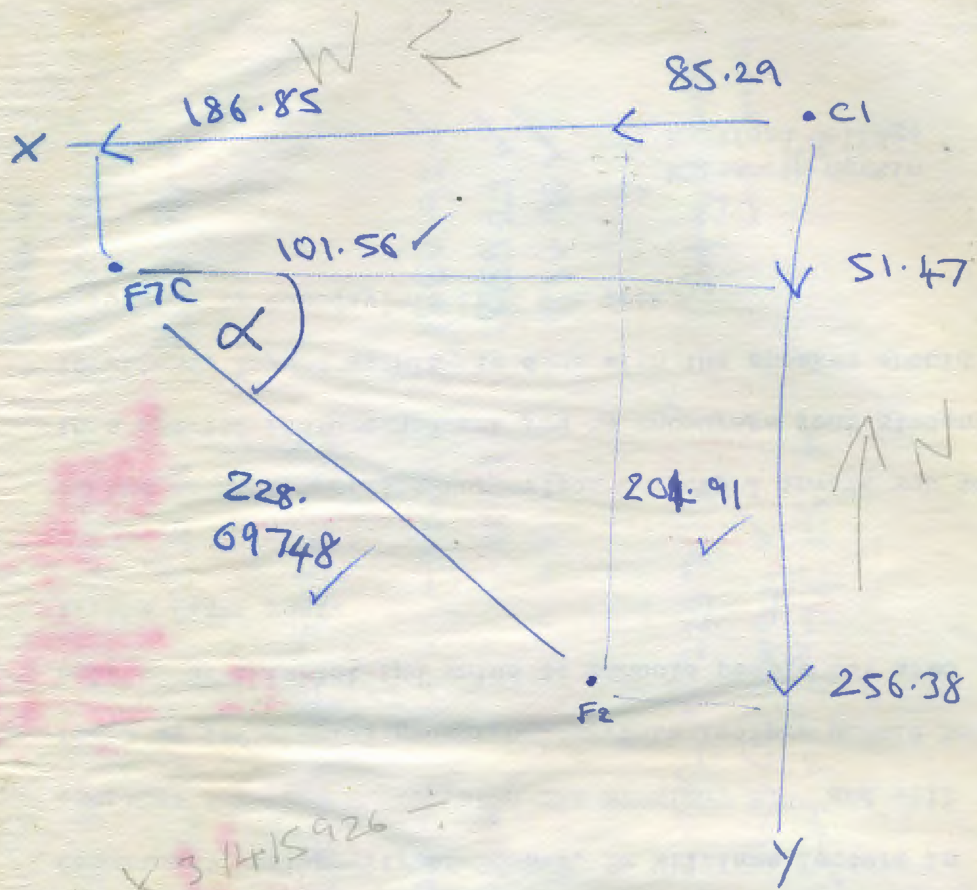
Avio met readings at 0935 am

Rainfall = 0.20mm Min temp 6.9°C Max 10.3°C

Mist. Vis ~ 40m.

Back at top camp after a day at los Lagos and into Lagos for a large shopping trip. Intended to get back last night but, not having left Lagos until 8pm, I wimped out and stayed at Avio. Saw nothing of it as I arrived by moonlight and left with visibility at ~20m, although Steve kindly pointed out the sights behind the mist. Joined fairly soon at top camp by Ian who picked up his gear and went back off to Avio with Steve to descend the great pit. Ian and Phil Duncan arrived early afternoon 'Where's the cave?' said

Phil. It's easy to point out from camp but looks totally different in the mist-filled gullies. Three of us, laden with ropes and gear, took an hour to find the wretched thing. I then went back via F7 A-D to check bearings because I can't get F7 to work at the moment. I couldn't take bearings from missing caves on the ridge because of poor visibility. Lesley picked up his camp gear, and I hiked life and limb with the petrol bomb, camp stove, to prepare a meal for hungry cavers.



180 X 3.1415926

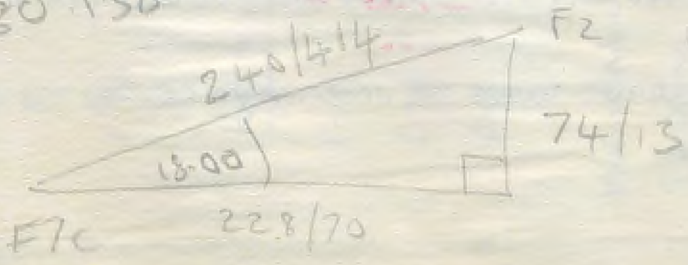
$$\alpha = \sin^{-1} 204.91/228.69748$$

$$= 63.635507^\circ$$

cos α H = L

$\cos^{-1} L/H$

80.138



	E	metres N		Altitude
	X	Y	Z	
F2	-85.29	-256.38	+51.94	1939.94 ✓
F7C	-186.85	-51.47	-22.19	1865.81 ✓

Rel to C1 (at an altitude of 1888 m)

F7A	-208.31	-28.80	-37.08	1850.92 ✓
F7B	-193.40	-44.06	-28.79	1859.21 ✓
F7D	-180.92	-56.24	-21.14	1866.86 ✓

Horizontal distance F2 - F7C = 228.70 m ✓

Bearing F7C → F2 = 153.64 degrees ✓

Vertical distance F7C → F2 = 74.13 m ✓

Sloping distance = 240.41+11

360
154
206

3 legs F7C → F2
- L = 80.138 m
- I = 18.00°
- D = 153.64°

(80)

11/8/84

F 20 continued (5) Phil Duncan, Ian Haylock

The short ladder pitch rigged by Andy and Jan places you in a rift which is traversed to a give a ≈ 35 M free hang down to a "saddle" shaped peice of rock with drops on either side. A rebelay gave another free hang over the other side of the saddle of ≈ 55 M down a spectacular shaft onto a snow plug. (The other side of the saddle may be explored by future parties.) From the snow plug we explored 2 routes, one ending in a ≈ 12 M drop onto another snow plug with a route apparently leading off. Strong draughting air was noted. The other route led through a wide crack to the head of a long shaft estimated at ≈ 60 m. This route didnt appear to be snow plugged Incedentaly, how does one plait a 180 M rope to give 10 strands? or without weaving another rope into it? an interesting mathematical puzzle, even more